BUFFALO
SEWER AUTHORITY



SPDES PERMIT NO. NY0028410

Revised LTCP Bridging Document

NYSDEC Consent Judgment R9-20060922-35

Revised: September 4, 2026



Prepared by BSA Capital Projects Program Management Team:

TYLin | ARCADIS | JMDavidson Engineering, D.P.C.

Schnabel Engineering | Hallmark Planning & Development | e3 Communications | Ravi Engineering | International Institute of Buffalo | CORE Environmental | Watts Architecture & Engineering | NASCO Construction Services | Atlantic Testing Laboratories | CWD Consulting | Frandina Engineering and Land Surveying | Jade Stone Engineering | JKMuir | KHEOPS Architecture, Engineering and Survey | People Inc.

Table of Contents

EXECUTIVE SUMMARY ..... **v**

SECTION 1 INTRODUCTION AND BACKGROUND 1-1

1.1 Introduction and Background 1-1
1.2 Objective 1-3

SECTION 2 PROGRESS TO DATE 2-4

2.1 Pre-2014 LTCP 2-4
2.2 2014 LTCP 2-4
2.3 2024 LTCP 2-5

SECTION 3 LTCP PROJECTS VALIDATION 3-6

3.1 Background 3-6
3.2 2024 LTCP Challenges and Evaluation 3-6
3.3 Alternatives Analysis 3-11
3.4 Alternative Refinement 3-20
3.5 Selected and Refined Alternative 3-26

SECTION 4 2026 AMENDED LTCP 4-28

4.1 Typical Year Performance and Regulatory Compliance 4-28
4.2 North and South Sewer Interceptor System 4-30
4.3 2026 Amended LTCP Projects 4-32
4.4 2026 Amended Schedule 4-42
4.5 2026 Amended LTCP Costs 4-42
4.6 2026 Amended LTCP Public Participation Plan 4-42

APPENDIX A: CONSENT JUDGMENT I

APPENDIX B: LTCP PROGRESS TO DATE II

APPENDIX C: PROJECT SCOPE COMPARISON – 2024 LTCP VERSUS 2026 AMENDED LTCP III

APPENDIX D: 2026 AMENDED LTCP SCHEDULE IV

APPENDIX E: 2026 AMENDED LTCP COST ESTIMATES V

APPENDIX F: 2025 PUBLIC PARTICIPATION PLAN SUMMARY REPORT VI

APPENDIX G: TECHNICAL MEMORANDA ON PROJECT SCOPE AND SCHEDULE UPDATES VII

List of Tables

Table ES-1: 2026 Amended LTCP Summary vii
Table 3-1: Summary of 2024 LTCP SPP Construction Challenges and Findings 3-7
Table 3-2: OLS Utilization Evaluation 3-9
Table 3-3: Project Feasibility Assessment Criteria 3-10
Table 3-4: Project Feasibility Results Summary 3-11
Table 3-5: Alternative 1 Summary 3-13
Table 3-6: Alternative 2 Summary 3-15
Table 3-7: Alternative 3 Summary 3-17
Table 3-8: Alternatives Summary 3-20
Table 3-9: Refined North and South Interceptor Sizing 3-26
Table 3-10: 2024 LTCP Projects Removed from 2026 Amended LTCP 3-27
Table 4-1: 2026 Amended LTCP Activations by Waterbody 4-29
Table 4-2: 2024 and 2026 LTCP Activations by Waterbody with treatment at 560 MGD 4-29
Table 4-3: 2024 and 2026 LTCP Activations by Waterbody with treatment at 520 MGD 4-30
Table 4-4: 2026 Amended LTCP Projects in Construction 4-34
Table 4-5: 2026 Amended LTCP Projects in Design 4-36
Table 4-6: 2026 Amended LTCP Planned Projects 4-40
Table 4-7: 2026 Amended LTCP Cost Estimates 4-42

List of Figures

Figure 3-1: Overview of Alternative 1 3-14
Figure 3-2: Overview of Alternative 2 3-16
Figure 3-3: Overview of Alternative 3 3-18
Figure 3-4: Updated North Sewer Interceptor Alignment 3-21
Figure 3-5: Updated South Sewer Interceptor Alignment 3-22
Figure 3-6: Scajaquada Tunnel Interceptor Layout (Brown Interceptor Sewer) 3-25

List of Appendices

APPENDIX A: CONSENT JUDGMENT
APPENDIX B: LTCP PROGRESS TO DATE
APPENDIX C: PROJECT SCOPE COMPARISON – 2024 LTCP VERSUS 2026 AMENDED LTCP
APPENDIX D: 2026 AMENDED LTCP SCHEDULE
APPENDIX E: 2026 AMENDED LTCP COST ESTIMATES
APPENDIX F: 2025 PUBLIC PARTICIPATION PLAN SUMMARY REPORT
APPENDIX G: TECHNICAL MEMORANDA ON PROJECT SCOPE AND SCHEDULE UPDATES

Glossary

Term	Definition
2014 EPA Order	The Amended Administrative Compliance Order, CWA-02-2014-3033, EPA issued to BSA on April 11, 2014
2014 LTCP	BSA's LTCP approved by DEC and EPA on March 18, 2014
2024 LTCP Optimization Bridging Document (2024 Bridging Document)	Appendix B produced by BSA on July 12, 2024, memorializing the Control Projects and estimated costs
2024 Proposed Amended LTCP (2024 LTCP)	The set of Control Projects and schedules outlined in the 2024 Bridging Document and the 2024 Control Projects Schedule
2024 LTCP Selected Alternative Memo	Memo produced by BSA on July 12, 2024, outlining the projects that would modify or otherwise replace the 2014 LTCP projects that are no longer sufficient to achieve the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP
2024 Control Project Schedule	Schedule submitted by BSA on December 31, 2024, establishing each Control Projects Design Start Date, Design Completion Date, Notice to Proceed date and Complete Construction Date
2026 Amended LTCP	The Long-Term Control Plan that BSA must submit for approval
Bird Island Wastewater Treatment Facility (WWTF)	BSA's Bird Island Wastewater Treatment Facility located at 90 West Ferry St, Buffalo, NY 14213
BSA or Buffalo Sewer	Buffalo Sewer Authority
Clean Water Act or Act	Federal Water Pollution Control Act
Consent Judgment or Judgment	The Consent Judgment and Appendices attached
Control Projects	The projects set forth in the 2024 Bridging Document. Control Projects can be divided into two broad categories: 52 Collection System Projects and the NFA Projects
DEC Commissioner's Policy 29	DEC's guidance for incorporating environmental justice concerns into DEC's permit review process
No Feasible Alternative Projects or NFA Projects	Multiple projects designed to improve treatment of wastewater discharges from WWTF Outfalls during wet weather events
Non-NFA WWTF Improvements	Projects not a part of the originally approved NFA project and categorized as typical WWTF operations and maintenance (O&M) activities/upgrades
Permit	SPDES Permit No. NY0028410, issued to BSA pursuant to ECL Article 17, Title 8 for Facility
Revised Control Project Schedule	In coordination with the Revised Bridging Document, the Revised Control Project Schedule will address necessary changes to the 2024 Control Project Schedule
Typical Year (TY)	The selected precipitation hyetograph, a statistical plot of the average rainfall intensity against the time interval used for LTCP modeling.

Abbreviations

AO	Administrative Order
BSA	Buffalo Sewer Authority
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
FE	Final Effluent
HGL	Hydraulic Grade Line
ILS	Inline Storage
LTCP	Long Term Control Plan
MG	Million Gallons
MGD	Million Gallons per Day
NFA	No Feasible Alternative
NTP	Notice to Proceed
NYSDEC	New York State Department of Environmental Conservation
OLS	Offline Storage
Parks	Buffalo Parks Department
PMT	Program Management Team
PPP	Public Participation Plan
RTC	Real Time Control
SAC	Stakeholder Advisory Committee
SPDES	State Pollutant Discharge Elimination System
SPP	Sewer Patrol Point
ST	Scajaquada Tunnel Interceptor
TY	Typical Year
USDOJ	United States Department of Justice
USEPA	United States Environmental Protection Agency
WWTF	Wastewater Treatment Facility

Executive Summary

The Buffalo Sewer Authority (BSA) has developed this Revised Bridging Document and accompanying 2026 Amended Long Term Control Plan (LTCP) to update and supersede prior LTCP planning documents in accordance with SPDES Permit No. NY0028410, the 2025 Consent Judgment with the New York State Department of Environmental Conservation (NYSDEC), and applicable federal Combined Sewer Overflow (CSO) requirements.

BSA provides wastewater conveyance and treatment services to approximately 450,000 residents and businesses throughout the City of Buffalo and surrounding communities. Since approval of the original 2014 LTCP, BSA has undertaken significant investments to reduce CSO discharges, improve system performance, and advance compliance with regulatory activation limits for receiving waterbodies throughout the service area. These efforts have included implementation of green infrastructure, sewer patrol point (SPP) modifications, conveyance improvements, operational optimization, and preliminary construction of projects identified in both the 2014 LTCP and the Proposed Amended LTCP (2024 LTCP).

BSA conducted an extensive public participation and stakeholder engagement effort between October 2024 and October 2025 under the Queen City Clean Waters (QCCW) Initiative. The stakeholder engagement effort included public meetings, stakeholder workshops, advisory committees, and project-specific outreach activities; reaching residents, advocacy organizations, public agencies, and environmental justice stakeholders. The process identified substantial concerns regarding long-term park closures, traffic disruption, property acquisition, neighborhood impacts, construction duration, and the concentration of large offline storage (OLS) facilities within vulnerable communities.

Following preliminary design of the initial projects in the 2024 LTCP, BSA and its Program Management Team (PMT) identified substantial constructability, feasibility, operational, and cost concerns with several major projects. Preliminary design activities revealed that projects had been developed primarily through desktop hydraulic modeling and optimization exercises without sufficient performance verification, constructability review, stakeholder coordination, or assessment of community impacts. As a result, multiple projects experienced significant scope growth, major cost escalation, operational concerns, or were ultimately determined to be infeasible. In response, BSA initiated the 2025 LTCP Projects Validation effort to comprehensively reassess the 2024 LTCP.

The validation process included extensive hydraulic modeling, constructability assessments, stakeholder coordination, land acquisition reviews, operational evaluations, and alternatives analyses involving hundreds of model simulations. The validation effort determined that several major offline storage (OLS) projects proposed in the 2024 LTCP were oversized, operationally inefficient, or infeasible due to land acquisition requirements, constructability challenges, transportation conflicts, or unacceptable community impacts. Additionally, the previously proposed Northern Relief Tunnel configuration was found to be insufficient to achieve required activation targets and presented significant constructability risks associated with shallow tunneling in dense urban conditions.

Collectively, the public participation effort and 2025 LTCP Projects Validation demonstrated the need to redefine the LTCP to achieve regulatory compliance objectives while substantially reducing community impacts and improving overall project feasibility. BSA subsequently evaluated multiple systemwide alternatives intended to meet regulatory compliance objectives while reducing community disruption, improving constructability, and minimizing long-term operational complexity.

As a result of the alternatives analysis, BSA selected a revised systemwide strategy centered on a deep North Sewer Interceptor and South Sewer Interceptor configuration. This Selected Alternative replaces numerous large offline storage facilities with a more integrated conveyance-based approach that maximizes utilization of the existing collection system and Bird Island Wastewater Treatment Facility while significantly

reducing neighborhood disruption, property acquisition needs, and long-term operational burdens. The Selected Alternative was identified as the preferred approach because it minimized community impacts, reduced property acquisition needs, decreased long-term operational complexity, and lowered overall construction disruption compared to the previously proposed network of OLS facilities.

The revised approach significantly decreases excavation impacts within parks, near schools, and within densely populated residential areas by consolidating portions of the system into deeper conveyance infrastructure rather than multiple near grade storage facilities. This revised strategy also better aligns with feedback received from community stakeholders, City agencies, and environmental justice representatives during the public participation process. The Selected Alternative substantially improves feasibility and constructability by eliminating several previously proposed OLS facilities, including the Military Road, Waterfront Park, Bass Alley, Collins Park, Clinton Street, Bailey & Regent, Schiller Park, and Canisius OLS projects. The revised approach retains only limited strategically located storage facilities, including reduced-capacity Roosevelt Park and Hopkins & Osage OLS facilities, supplemented by real-time control improvements, interceptor enhancements, sewer improvements, and targeted SPP modifications.

Modeling of the 2026 Amended LTCP demonstrates that the revised program achieves or exceeds all required TY CSO activation limits for the seven regulated receiving waterbodies, including the Black Rock Canal, Buffalo River, Cazenovia Creek, Erie Basin, Niagara River, and Scajaquada Creek. In several waterbodies, modeling predicts better performance than required regulatory thresholds.

This Revised Bridging Document presents the technical, regulatory, and community planning basis for the selected alternative, including the alternatives analysis, implementation strategy, revised project schedule, and supporting justification that collectively form the 2026 Amended LTCP. The document also establishes the framework for the remaining long-term capital investment program. Based on current planning-level estimates, the total capital cost for the LTCP collection system projects and treatment plant NFA components that have not yet been encumbered by BSA is approximately $2.01 billion in 2026 dollars. These costs reflect the revised interceptor-based strategy, remaining storage and conveyance improvements, associated system modifications, and supporting implementation activities required to achieve the objectives of the 2026 Amended LTCP.

Upon approval by NYSDEC, the 2026 Amended LTCP will serve as the governing framework for BSA's long-term CSO control program through completion of all required projects and achievement of regulatory compliance objectives.

Table ES-1: 2026 Amended LTCP Summary

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
NFA_1 NFA Phase I	Rehabilitate the WWTF's biological systems to reach its full original design capacity (360 MGD).	Unchanged	Niagara River	CSO-055	Construction	11/25/2019	6/23/2022	9/27/2022	5/25/2030
NFA_2 NFA Phase II	Completed as two separate contracts. Contract A includes improvements to the existing primary settling tanks, replacement of primary sludge pumping systems, scum pumping systems, drainage pumping systems, a new odor control system, and maintenance/rehabilitation improvements to the Primary Sludge Pump Station Building. Contract B includes improvements to partial-treatment mode systems, including new high-rate disinfection system chlorine contact disinfection system and appurtenant improvements.	Unchanged	Niagara River	CSO-055	Construction	10/28/2020	7/10/2025	7/23/2026	12/26/2031
CSO053_3.2 Bailey & Amherst RTC, Amherst Quarry PS RTC	Adds RTC at SPP255 (Bailey Avenue and East Amherst Street) and improves the efficiency of Amherst Quarry dewatering operations to reduce overflows. This project also includes updating sensors at Amherst Quarry and adding instrumentation at SPP338 (Bailey Ave & Kerns Ave).	Unchanged	Scajaquada Creek	CSO-053	Construction	12/1/2021	11/27/2024	5/28/2025	7/6/2028
CSO006_2 Gates Circle RTC	Diverts flow from the Bird Trunk to the Scajaquada Tunnel Interceptor via a controlled connection at SPP332 to relieve the Bird Trunk and Black Rock Canal SPPs. Conversely the RTC would convey more flow to the Bird Trunk if Scajaquada Tunnel does not have capacity. This project includes adding instrumentation at the Niagara Metering Station (SPP330) to inform the gate control.	Unchanged	Black Rock Canal	CSO-006	Construction	3/1/2022	10/8/2024	4/8/2025	5/17/2028
CSO010_1 Breckenridge Street CSO Project	A new sewer along West Avenue will capture flows from the Breckenridge Street combined sewer and West Avenue collector sewers, from Lafayette Avenue to Breckenridge Street and divert flows to Scajaquada Tunnel. A new energy dissipating drop shaft will be provided at West and Lafayette Street. Additionally, the combined sewer on Breckenridge Street will be relined from West Avenue to Herkimer Street.	Modified	Black Rock Canal	CSO-010	Construction	3/1/2022	2/25/2025	8/26/2025	1/31/2029
CSO053_11 Canisius RTC and Ventilation Facility	A tunnel will be constructed beneath Spillman Place to connect existing flows from SPP333 to the Scajaquada Tunnel Interceptor. A new RTC and Ventilation Facility near Canisius College will be constructed to further optimize flow conditions within the Scajaquada Tunnel.	Modified	Scajaquada Creek	CSO-053	Advanced Design	3/24/2022	1/31/2028	1/8/2029	3/31/2034

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO053_14 SPP175, SPP176, SPP177 Modification (Michigan Ave)	Weirs will be raised in three SPPs along Michigan Avenue. The weir SPP175 at Dodge Street and Michigan Ave will be raised to 56.10 ft (City datum). The weir at SPP176 at Michigan Avenue and Riley Street and SPP177 at Michigan Avenue and Glenwood Avenue will both be raised to 52.85 ft (City datum).	Unchanged	Scajaquada Creek	CSO-053	Construction	3/2/2024	12/31/2025	6/30/2026	12/31/2027
CSO053_1.5 SPP336B Modification (Humboldt Pkwy)	Modifications to SPP336B include removing the underflow orifice plate and raising the weir by 2.7'.	Modified	Scajaquada Creek	CSO-053	Construction	3/2/2024	12/31/2025	6/30/2026	12/31/2027
CSO053_8 SPP341A Modification (Genesee)	SPP341A is located on Genesee Street east of Kerns Avenue. This project includes the installation of a new vortex-style drop shaft to the Scajaquada Tunnel to accommodate a peak flow of 26.4 MGD.	Modified	Scajaquada Creek	CSO-053	Preconstruction	3/2/2024	12/31/2025	12/31/2026	12/31/2028
CSO053_5.2 Roosevelt Park OLS	A 1.7 MG tank will be constructed in Roosevelt Park to storage flow diverted from the Edison Avenue trunk sewer. The tank will dewater via pumping back to the Edison Avenue trunk sewer.	Modified	Scajaquada Creek	CSO-053	Advanced Design	3/2/2024	8/31/2027	2/28/2028	7/4/2031
CSO053_1.4 Sidney Street Sewer Improvement Project	Modifications to SPP336B include upsizing the underflow pipe to 4' diameter pipe and adding a gate with dynamic controls to the underflow pipe to throttle flow during large events to reduce the frequency of high HGLs in the ST.	Modified	Scajaquada Creek	CSO-053	Advanced Design	3/2/2024	6/30/2027	12/31/2027	12/31/2032
CSO053_2.5 SPP337 Modification (Colorado)	A new vortex-style drop shaft will be constructed to connect to the Scajaquada Tunnel to accommodate a peak flow of 48 MGD.	Modified	Scajaquada Creek	CSO-053	Preconstruction	3/2/2024	6/30/2026	12/31/2026	12/31/2028
NFA_3A NFA Phase III A	Two new 130-ft diameter final settling tanks and one new chlorine contact tank will be constructed to expand the capacity of the secondary treatment system at Bird Island WWTP. Work will also include stormwater modifications, partial relocation of the west side FE conduit, and misc. site improvements.	Unchanged	Niagara River	CSO-055	Advanced Design	3/29/2024	9/30/2027	3/31/2028	12/31/2032
GI - Park Package 1	Installation of an underground, stormwater detention area at Hennepin Park and the separation of stormwater and sanitary sewer piping contributing to the stormwater management practice. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, pavement, curbing, sidewalk, signage, the basketball court pavement, installation of an underdrain from the playground area, and any disturbed vegetated areas. The total impervious area managed is estimated at 13.1 acres.	Modified	Buffalo River	CSO-033	Preconstruction	9/27/2024	9/9/2026	12/22/2026	3/14/2028

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
GI - Park Package 2	Installation of green infrastructure practices at four Buffalo Parks including Martin Luther King Park, Genesee Gateway Triangle, Lincoln Park, and Eddie Dawson Park including underground storage, stormwater trenches, stormwater planters and the planting of additional trees. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 5.5 acres	Modified	Buffalo River	CSO-026	Advanced Design	11/1/2024	4/7/2027	8/18/2027	8/23/2028
CSO064_1.1 CSO-064 ILS (Louisiana & Mackinaw)	The existing 24" sewer upstream of SPP137 between South Street and Republic Street along Louisiana Street will be replaced by two 60" diameter sewers to provide in-line storage volume to help reduce overflows at SPP137.	Unchanged	Buffalo River	CSO-064	Preliminary Design	3/3/2025	12/31/2026	6/30/2027	6/30/2029
CSO064_1.2 SPP137 Modification (Louisiana & Republic)	The overflow weir in SPP137 will be raised to 0.50 ft (City datum) and the underflow orifice plate removed. These modifications will reduce overflows at CSO-064 and will be implemented in conjunction with the CSO-064 ILS project.	Unchanged	Buffalo River	CSO-064	Preliminary Design	3/3/2025	12/31/2026	6/30/2027	6/30/2029
System_2_3 SPP339 Modification (Texas & Kerns)	Modify SPP339 by increasing the diameter of the underflow pipe to 48" through the installation of a new drop shaft and raising the elevation of the overflow weir to 52.71 ft (City datum).	Unchanged	Scajaquada Creek	CSO-053	Preliminary Design	3/3/2025	6/30/2028	12/31/2028	6/30/2031
System_2_4 SPP340 Modification (Hagen & Kerns)	Modifications to SPP340 include increasing the diameter of the underflow orifice to 24" and addition a flap gate to prevent backflow from the Scajaquada Drain.	Unchanged	Scajaquada Creek	CSO-053	Preliminary Design	3/3/2025	6/30/2028	12/31/2028	6/30/2031
GI – ROW Package 1	Right-of-Way Package 1 consists of 22 green infrastructure systems, all of which are stormwater tree/infiltration trenches. The total impervious area managed is estimated at 10.9 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	3/31/2027	8/11/2027	8/9/2028
GI – ROW Package 2	Right-of-Way Package 2 consists of 17 green infrastructure systems, including 16 stormwater tree trenches and 1 rain garden. The total impervious area managed is estimated at 4.2 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	3/31/2027	8/11/2027	8/9/2028
GI – ROW Package 3	Right-of-Way Package 3 consists of 58 green infrastructure systems- all of which are stormwater tree trenches. The total drainage area managed is estimated at 15.6 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	5/12/2027	9/22/2027	10/4/2028

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
GI – ROW Package 4	Right-of-Way Package 4 consists of 26 green infrastructure systems all of which are stormwater trenches. The total impervious area managed is estimated at 8.1 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	4/7/2027	7/13/2027	7/12/2028
GI – ROW Package 5	Right-of-Way Package 5 consists of 43 green infrastructure systems, all of which are stormwater tree trenches. The total drainage area managed is estimated at 9.7 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	4/14/2027	8/25/2027	9/16/2028
GI – ROW Package 6	Right-of-Way Package 6 consists of 48 green infrastructure systems, including 43 stormwater tree trenches and 5 stormwater planters. The total drainage area managed is estimated at 15.5 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	4/28/2027	9/8/2027	7/19/2028
GI – ROW Package 7	Right-of-Way Package 7 consists of 41 green infrastructure systems, including 39 stormwater tree trenches and 2 bump outs. The total drainage area managed is estimated at 9.7 acres.	Modified	Buffalo River	CSO-026, CSO-033	Advanced Design	5/28/2025	5/5/2027	8/10/2027	8/30/2028
GI – ROW Package 8	Right-of-Way Package 8 consists of 28 green infrastructure systems – all of which are stormwater tree trenches. The total impervious area managed is estimated at 8.4 acres.	Modified	Buffalo River	CSO-026	Advanced Design	5/28/2025	4/21/2027	7/21/2027	7/14/2028
GI – ROW Package 9	Right-of-Way Package 9 consists of 25 green infrastructure systems, including stormwater tree trenches and infiltration trenches. The total impervious area managed is estimated at 8.9 acres.	Modified	Buffalo River	CSO-026, CSO-027, CSO-033	Advanced Design	5/28/2025	6/9/2027	9/15/2027	9/10/2028
GI – Park Package 3	Installation of green infrastructure practices at four Buffalo Parks including Schiller Park, Hank Nowak Park, and Mary Jean Sloan Park including underground storage and stormwater tree trenches within park property and along the public right-of-way. Site improvements will also include the replacement of existing, disturbed features in kind, including basketball courts, parking areas, curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 4.1 acres.	Modified	Scajaquada Creek, Buffalo River	CSO-053, CSO-033	Advanced Design	5/28/2025	4/14/2027	8/25/2027	8/27/2028
GI – Buffalo Public Schools Package	The Buffalo Public Schools package consists of 16 school sites with a combination of both on-site work and work within the surrounding public right-of-way. The 60% design includes stormwater tree trenches, infiltration trenches, underground storage systems, stormwater planters, and bioretention areas. The total impervious area managed is estimated at 34.8 acres.	Modified	Scajaquada Creek, Buffalo River	CSO-053, CSO-026	Advanced Design	6/10/2025	3/31/2027	7/7/2027	9/13/2028

x

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
GI – Buffalo Municipal Housing Authority Package	Installation of green infrastructure practices at two Buffalo Municipal Housing Authority sites (Ferry Grider and Langfield/ Kenfield) including underground storage within parking areas, stormwater tree trenches along the public right-of-way, and the planting of additional trees. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 41.6 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	6/10/2025	8/4/2027	11/10/2027	11/8/2028
CSO017_8 SPP326A Construction (Oak & Swan)	A new regulating structure (SPP326A) will be constructed near SPP327.	Modified	Buffalo River	CSO-017	Preliminary Design	3/3/2026	12/31/2028	6/30/2029	12/31/2030
CSO013_1 SPP304 Modification (Virginia & Busti)	Modifications to SPP304 include removal of the underflow orifice plate.	Unchanged	Black Rock Canal	CSO-013	Preliminary Design	3/3/2026	12/31/2027	6/30/2028	12/31/2029
System_1A Sewer Interceptor System Preliminary Design	Development of Basis of Design for North and South Interceptor Projects. As part of Basis of Design, project packaging and schedule will be developed.	New	All	All	Not Started	6/30/2026	6/30/2028	N/A	N/A
NFA_3B NFA Phase III B	Work includes modifications to the coarse bubble diffused air supply system, modifications to the six Final Control Buildings' infrastructure, upgrades to the existing final settling tanks, rehabilitation and retrofit of the existing Final Effluent Building including new chemical storage and handling room, new personnel spaces, and new code compliant electrical spaces.	Unchanged	Niagara River	CSO-055	Preliminary Design	9/1/2026	12/31/2027	1/1/2029	12/31/2034
CSO012_1.2 SPP023 Modification (Niagara Thruway & Albany St)	A new SPP023 will be constructed upstream of the existing and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor.	Modified	Black Rock Canal	CSO-012	Preliminary Design	3/3/2027	2/28/2031	10/31/2031	12/31/2033
CSO012_2.1 SPP296 Modification (Niagara Thruway & Albany St)	A new SPP296 will be constructed upstream of the existing and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor.	Modified	Black Rock Canal	CSO-012	Preliminary Design	3/3/2027	2/28/2031	10/31/2031	12/31/2033
CSO027_2 Babcock PS Weir Modification	Babcock Pump Station operates as an RTC facility to store flows in an upstream 11 ft by 11 ft box culvert during wet weather. The CSO027_2 modification project redirects flow from a 48" sewer to the box culvert instead of the sewer downstream of the pump station. This increases the in-line storage utilization and reduces the flow sent to the Swan Trunk in wet weather.	Unchanged	Buffalo River	CSO-027	Not Started	3/3/2027	4/30/2029	12/31/2029	12/31/2031
CSO016_1 Charles Street Weir Modification	Modify the weir in the Charles Street regulating structure by lowering the weir by 2 ft, while the length and height will be maintained at 9.5 ft and 6.5 ft, respectively.	New	Erie Basin Marina	CSO-016	Not Started	3/3/2027	4/30/2029	12/31/2029	12/31/2031

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO027_1 SPP317 Modification (Fillmore & Clinton)	Lower the overflow weir in SPP317 to 7.25 ft (City datum). Lowering the weir will result in increased flows directed to the Smith Street ILS facility, while lowering flows in the Swan Trunk.	Unchanged	Buffalo River	CSO-027	Not Started	3/3/2027	12/31/2028	6/30/2029	12/31/2030
System_1B Sewer Interceptor Pump Station	The new North and South Sewer Interceptors will be dewatered to the WWTF during and after wet weather events via a new dewatering pump station. This project is required as the interceptors are unable to drain by gravity.	New	All	All	Not Started	6/30/2028	2/1/2031	10/31/2031	10/31/2034
System_1 North Sewer Interceptor	The North Sewer Interceptor is designed to create more conveyance capacity to the WWTF, supplement capacity in the North Interceptor, and increase the ability of the system to store wet-weather flows.	Modified	All	All	Not Started	3/1/2028	7/30/2030	4/1/2031	11/30/2034
CSO027_3 SPP097 Modification	SPP097 is located on Babcock Street, 555 ft north of the Buffalo River. The underflow pipe at SPP097 will be upsized to 42 inches.	Modified	Buffalo River	CSO-027	Not Started	3/1/2028	10/31/2030	6/30/2031	6/30/2033
System_2_2 Schiller Park Ventilation Facility	A new ventilation facility will be built within Schiller Park to mitigate air releases caused by rapid filling and peak flows in the ST. This project is recommended due to the SPP modifications that occur downstream optimizing use of the ST.	Modified	Scajaquada Creek	CSO-053	Not Started	3/3/2028	4/30/2030	12/31/2030	12/31/2033
CSO006_3 Delavan Drain Weir Raising & RTC	There is an existing sluice gate near the end of the Delavan Drain that connects the Delavan Drain to the North Interceptor at the intersection of West Delavan Ave. and Niagara St. The sluice gate is currently closed all the time. The Delavan Drain RTC project converts this connection to a dynamically controlled gate that opens when the North Interceptor has available capacity and closes when there is no risk of overflow at CSO-006. This project would require adjustments to the connectivity between the Delavan Drain and the Scajaquada Drain, which sends a large amount of creek flow to the Delavan Drain during most storm events.	Unchanged	Black Rock Canal	CSO-006	Not Started	3/3/2029	10/31/2031	6/30/2032	12/31/2035
System_2 South Sewer Interceptor	The South Sewer Interceptor is designed to create more conveyance capacity to the WWTF, supplement capacity in the North Interceptor, and increase the ability of the system to store wet-weather flows.	New	All	All	Not Started	3/1/2031	2/1/2034	10/31/2034	12/31/2040

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO028_1 Hopkins & Osage OLS	The Hopkins and Osage OLS will store flow from the Hopkins Street sewer in a 0.95 MG tank at the eastern end of Osage Street. The storage tank will be dewatered via a pump station when there is available capacity in the South Park Avenue sewer and no risk of overflow at the downstream SPPs 125 and 126. This project also includes raising the weir at SPP123A to 2.40 ft (City datum) to send flow to the downstream off-line storage.	Unchanged	Buffalo River	CSO-028	Not Started	3/3/2031	10/31/2034	6/30/2035	9/30/2039
GI – 100 acres: Buffalo River	Green infrastructure projects would be constructed within the Buffalo River Basin sufficient to control runoff from 20% of the impervious area within the basin (100 acres managed). The exact list of projects to be implemented would be determined during the design phase.	Modified	Buffalo River	CSO-017, CSO-026	Not Started	3/2/2032	3/1/2035	3/1/2036	3/2/2039
GI – 280 acres: Niagara River	Green infrastructure projects would be constructed within the Niagara River Basin sufficient to control runoff from 20% of the impervious area within the basin (280 acres managed). The exact list of projects to be implemented would be determined during the design phase.	Modified	Niagara River	CSO-011, CSO-055	Not Started	3/2/2032	3/1/2036	3/1/2037	3/1/2040
CSO064_2 Perry Street Sanitary Sewer	This project will replace an existing sewer partially built into Hamburg Drain. The new sewer will start on Scott St near Illinois St to Louisiana St, then continue along Perry St to the Hamburg St. Pump Station.	Unchanged	Buffalo River	CSO-064	Not Started	3/3/2033	10/31/2035	6/30/2036	12/31/2038
CSO017_1.1 SPP054 Sewer Separation	The sewer upstream of SPP054 will be converted to a storm sewer and disconnected from the combined system and eliminate SPP054 as an SPP.	Unchanged	Buffalo River	CSO-017	Not Started	3/3/2033	10/31/2035	6/30/2036	12/31/2038
CSO033_2 Clinton St OLS	N/A	Removed	Buffalo River	CSO-033	Removed	N/A	N/A	N/A	N/A
CSO033_3 SPP104 Modification	N/A	Removed	Buffalo River	CSO-033	Removed	N/A	N/A	N/A	N/A
CSO017_10 SPP051 Modification	N/A	Removed	Buffalo River	CSO-017	Removed	N/A	N/A	N/A	N/A
CSO017_6 Bass Alley OLS	N/A	Removed	Buffalo River	CSO-017	Removed	N/A	N/A	N/A	N/A
CSO033_1 Bailey & Regent OLS (Moreland Park)	N/A	Removed	Buffalo River	CSO-033	Removed	N/A	N/A	N/A	N/A
CSO 055_1.1 Hertel North East ILS	N/A	Removed	Niagara River	CSO-055	Removed	N/A	N/A	N/A	N/A
CSO014_1.1 SPP206A&B RTC	N/A	Removed	Erie Basin Marina	CSO-014	Removed	N/A	N/A	N/A	N/A
CSO014_1.2 Erie Basin Marina OLS (Waterfront Park)	N/A	Removed	Black Rock Canal	CSO-014	Removed	N/A	N/A	N/A	N/A
CSO026_1.3 Collins Park OLS	N/A	Removed	Buffalo River	CSO-026	Removed	N/A	N/A	N/A	N/A
CSO011_1.2 SPP024 Modification	N/A	Removed	Buffalo River	CSO-011	Removed	N/A	N/A	N/A	N/A

CSO055_1.5 Military Rd OLS	N/A	Removed	Niagara River	CSO-055	Removed	N/A	N/A	N/A	N/A
CSO017_9 SPP059 Modification	N/A	Removed	Buffalo River	CSO-017	Removed	N/A	N/A	N/A	N/A
CSO053_12.1 Jefferson Ave GI	N/A	Removed	Scajaquada Creek	CSO-053	Removed	N/A	N/A	N/A	N/A
CSO053_12.2 Jefferson Ave GI	N/A	Removed	Scajaquada Creek	CSO-053	Removed	N/A	N/A	N/A	N/A

SECTION 1 INTRODUCTION AND BACKGROUND

1.1 Introduction and Background

The Buffalo Sewer Authority (BSA) provides wastewater conveyance and treatment services to approximately 450,000 residents and businesses located in the City of Buffalo and surrounding communities. BSA operates the Bird Island Wastewater Treatment Facility (WWTF), originally built in 1935, and later expanded in the late 1970s to include secondary treatment capabilities. The WWTF treats wastewater collected from BSA's service area and discharges the treated effluent to the Niagara River under authority of the Clean Water Act and the State Pollutant Discharge Elimination System (SPDES) permitting process. BSA owns, operates, and maintains the collection system that serves the City of Buffalo and surrounding communities, including interceptors and pump stations that convey flow from the service area to the WWTF.

In accordance with Administrative Order (AO) CWA-02-2014-3033 from the New York State Department of Environmental Conservation (NYSDEC), the United States Environmental Protection Agency (USEPA), and the United States Department of Justice (USDOJ), BSA developed a Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP) that was approved on March 18, 2014 (2014 LTCP). The 2014 LTCP sought to minimize CSO activations in the collection system and mitigate flow surges at the WWTF. The 2014 LTCP compliance criteria involved limiting the number of CSO activations based on a Typical Year (TY) precipitation basis for each receiving waterbody. Projects were proposed according to BSA's Combined Sewer System (CSS) hydraulic model to meet the CSO activation requirements.

Upon completion of the 2014 LTCP and implementation of the first phase of 2014 LTCP projects, the CSS hydraulic model was updated and expanded. On October 6, 2021, NYSDEC and USEPA approved BSA's Collection System Model – Model Update Report (2021 Approved Recalibrated Model) which BSA used to analyze the physical and financial feasibility and efficacy of projects included in the 2014 LTCP. Based on the 2021 Approved Recalibrated Model, it was determined that certain collection system projects included in the 2014 LTCP were no longer feasible or would not be able to achieve the TY CSO activation limits. BSA conducted an optimization process within the collection system model and identified new projects to improve utilization of existing system capacity and add conveyance and storage capacity where needed most to address activations.

In mid-2023, NYSDEC, USEPA and BSA agreed that BSA would submit a Proposed Amended LTCP to comply with the terms of its permit and to achieve the TY CSO activation limits associated with the 2014 LTCP.

On July 6, 2023, BSA submitted an initial LTCP Optimization Bridging Document to memorialize NYSDEC, USEPA, and BSA's technical discussions, consensus, and their mutual decision to develop a Proposed Amended LTCP to modify, remove, and add projects that meet the activation limits and establish updated schedules for implementation.

On December 22, 2023, BSA submitted a revised LTCP Optimization Bridging Document and an LTCP Optimization Selected Alternative memo.

On July 12, 2024, BSA submitted a further revised LTCP Optimization Bridging Document and LTCP Optimization Selected Alternative memo. Together, these documents make up the 2024 Proposed Amended LTCP (2024 LTCP). The 2024 LTCP provided a set of alternative projects to replace or otherwise modify some of the projects set forth in the 2014 LTCP with a technical explanation of how the projects would achieve the TY CSO activation limits.

On December 31, 2024, BSA submitted a revised schedule for the 2024 LTCP projects (2024 Control Project Schedule) that established each project's Design Start Date, Design Completion Date, Notice to Proceed Date, and Construction Completion Date. The 2024 Control Project Schedule requires all projects to be completed no later than December 31, 2040.

In 2024, with review by and cooperation with NYSDEC, BSA retained a Program Management Team (PMT) to immediately begin implementation of the 2024 LTCP. The PMT prime consultant brought an independent perspective to the program, having no prior involvement in development of either the 2014 LTCP or the 2024 LTCP optimization process.

During preliminary design and implementation planning activities conducted in 2024 and early 2025, the PMT identified constructability, feasibility, operational, and community impact concerns associated with several projects included in the 2024 LTCP. These findings included significant property acquisition requirements, utility conflicts, transportation impacts, constructability limitations, and operational challenges associated with numerous offline storage (OLS) facilities proposed throughout Buffalo neighborhoods.

Concurrently, BSA initiated a comprehensive Public Participation Plan (PPP) process under the Queen City Clean Waters (QCCW) Initiative in accordance with NYSDEC Commissioner Policy 29 (CP-29), Environmental Justice and Permitting. Between October 1, 2024 and October 1, 2025, BSA conducted extensive public outreach activities including public forums, stakeholder workshops, advisory committee meetings, environmental review hearings, community organization meetings, and project-specific engagement efforts throughout the City of Buffalo.

Through the public participation process, residents, advocacy organizations, public agencies, and environmental justice stakeholders expressed significant concerns regarding long-term park closures, roadway disruptions, neighborhood construction impacts, property acquisition, construction duration, and the concentration of large OLS facilities within vulnerable communities.

Collectively, the PMT validation effort and public participation process demonstrated the need to reassess the 2024 LTCP strategy to better balance regulatory compliance objectives with project feasibility, constructability, operational reliability, and community impact considerations.

In response, BSA initiated the LTCP Projects Validation initiative in Spring 2025 to comprehensively reevaluate the 2024 LTCP, assess alternatives, and identify a revised strategy capable of achieving the required Typical Year (TY) CSO activation limits while substantially reducing impacts to Buffalo neighborhoods and environmental justice communities.

On September 19, 2025, BSA signed a Consent Judgment with NYSDEC (**Appendix A**). The Consent Judgment specified the requirements for BSA to submit and, upon NYSDEC approval, implement an Amended LTCP to reduce the number of CSO discharges to waters of New York State and the United States and achieve the TY CSO activation limits specified in the 2014 LTCP. The Amended LTCP would update and supersede the previously approved 2014 LTCP and 2024 LTCP Optimization Bridging Document and LTCP Optimization Selected Alternative.

On November 30, 2025, BSA submitted the Public Participation Plan (PPP) Summary Report and a Letter of Intent to NYSDEC summarizing the results of the public participation process and detailing BSA's intent to submit an Amended LTCP. This document serves as the 2026 Revised Bridging Document and the 2026 Revised Control Project Schedule that will constitute the 2026 Amended LTCP once approved by NYSDEC.

1.2 Objective

The purpose of this Revised Bridging Document is to document the evolution of the LTCP program; summarize progress achieved toward compliance with the Typical Year CSO activation limits established under the 2014 LTCP; and present the technical, operational, constructability, and community planning basis for the 2026 Amended LTCP. This document outlines the 2025 LTCP Projects Validation initiative, including the engineering, operational, and public participation factors that prompted reassessment of the 2024 LTCP; the feasibility challenges and community impacts identified during preliminary implementation activities; the alternatives analysis process undertaken to address those challenges; and the rationale supporting the Selected Alternative. This document further establishes the basis for the 2026 Revised Control Project Schedule and the 2026 Amended LTCP, which collectively redefine BSA's long-term CSO control strategy to achieve regulatory compliance while improving constructability, operational reliability, and community outcomes.

SECTION 2 PROGRESS TO DATE

The following summarizes the types of projects that BSA has implemented to date. A more detailed table showing the projects and a brief description of each is included in **Appendix B**.

2.1 Pre-2014 LTCP

BSA has been making progress towards achieving the TY CSO activation limits for over a decade. Prior to the development of the 2014 LTCP, the following project types were implemented:

- Numerous green infrastructure projects involving the installation of rain gardens, permeable pavement, tree planting, and restoration of vacant lots. Based on the projects completed, it is estimated that 9.5 acres were controlled using rain gardens, permeable pavement and tree planting, along with good progress in controlling up to 334 acres through the demolition and natural restoration of vacant properties throughout the City of Buffalo.
- Numerous weir adjustments within BSA's sewer patrol points (SPPs) to increase the amount of inline storage (ILS) upstream and conveyance into the downstream intercepting sewer of the SPP and delaying the onset of overflows during wet weather events.
- Installation of 50,000 gallons in off-line storage (OLS) capacity to detain wet weather flows until the collection system and WWTF has sufficient capacity to accommodate the wet weather flows.

2.2 2014 LTCP

BSA implemented many projects that were a part of the 2014 LTCP prior to the approval of the 2024 LTCP. These projects continued the progress made from the pre-2014 projects and included the following:

- Continued adjustments of weir elevations and weir adjustments at many locations within BSA's SPPs to increase the amount of ILS upstream of the SPPs and delaying the onset of overflows.
- Removal of orifice plates or gates within the SPPs to direct more flow to the WWTF during wet weather events and reduce the frequency and volume of overflows.
- Increasing the diameter of existing overflow pipes at several locations to allow more flow to pass through the SPPs to the WWTF, reducing overflows.
- Storm and sanitary sewer separations and replacements to reduce the amount of stormwater conveyed to the WWTF.
- Installation of an additional 113,000 gallons in ILS capacity to detain wet weather flows until the collection system and WWTF has sufficient capacity to accommodate the wet weather flows.
- Implementation of 10 real time control (RTC) structures, with automatic gates/valves controlled via level and flow instrumentation located within the upstream and downstream sewers. These locations receive level and flow information from nearby sensors and cause the gates/valves to modulate to store flows within the upstream sewers without flooding basements and discharge the stored flows to the sewers when downstream sewer levels permit for ultimate conveyance to the WWTF.
- Numerous green infrastructure projects involving the installation of rain gardens, permeable pavement, tree planting, and restoration of vacant lots. Based on the projects completed, it is estimated that an additional 51.6 acres were controlled using rain gardens, permeable pavement and tree planting, along with good progress in controlling up to an additional 120 acres through the demolition and natural restoration of vacant properties throughout the City of Buffalo.

2.3 2024 LTCP

Prior to beginning the 2025 LTCP Projects Validation initiative further described in Section 3, several projects were completed as part of the 2024 LTCP and many other projects were started. The completed projects involved weir modifications to direct more flow to the WWTF, while reducing overflows, and one included upsizing of an existing underflow pipe. Additionally, a summary of the projects currently in progress is described below:

- Implementation of Phases I, II, and III of the No Feasible Alternative (NFA) recommendations at the WWTF to restore design capacity, increase design capacity, and disinfect and discharge higher flows prior to discharge to the Niagara River. Phase I and II are currently in construction, while Phase III is in final design.
- Four additional RTC structures at SPP 225 (Bailey and East Amherst Streets), SPP 333 (near Spillman Place), SPP 332 (Gates Circle), and SPP 338B on Humboldt Parkway.
- Installation of new CSO pipes and relining of existing pipes on West Avenue.
- Increasing the diameter of existing overflow pipes at several locations to allow more flow to pass through the SPPs to the WWTF, reducing overflows. Several of these locations, specifically at Colorado and Scajaquada Streets, Genesee near Kerns, and Texas near Kerns involve installing new drop shafts to a depth of approximately 50-feet to convey more flow to the Scajaquada Tunnel.
- Installing a new backflow gate near Hagen and Kerns to limit backflow from the Scajaquada Drain.
- Installation of an additional 1.7 million gallons in OLS capacity at Roosevelt Park to detain wet weather flows until the collection system and WWTF has sufficient capacity to accommodate the wet weather flows.
- Installation of several new overflow chambers to replace several existing SPPs to redirect flow from the Swan Trunk to the South Interceptor.

SECTION 3 LTCP PROJECTS VALIDATION

3.1 Background

When implementation of the 2024 LTCP began in early 2024, constructability challenges were encountered in the preliminary designs of the initial projects. Upon further investigation, it was determined that the 2024 Selected Alternative Optimization Memo, which was the genesis of the 2024 LTCP, was principally a desktop evaluation of the collection system that relied heavily on the collection system model and an optimization algorithm that searched for a cost effective and compliant combination of projects to meet activation targets. The 2024 Selected Alternative Optimization Memo did not include constructability reviews, site access and feasibility assessments, and project performance reviews in terms of infrastructure utilization and compliance performance for each of the recommended projects.

By late Spring 2025, it was determined that a number of projects in preliminary design were not constructable, were incorrectly sized or construction was significantly more complex than originally anticipated. Due to these findings, it was decided that a review of all the currently proposed projects in the 2024 LTCP was warranted. This review was identified as the 2025 LTCP Projects Validation and began by evaluating the 2024 LTCP projects not yet in design. This evaluation is further described in Section 3.2, below.

The 2025 LTCP Projects Validation simultaneously launched a parallel effort evaluating a new suite of alternatives to address CSOs throughout the system. Later, the process shifted to focus solely on new alternatives. The alternatives analysis process was iterative beginning with a focus on the large-scale projects. These projects would be most impactful to the performance and cost of any recommended solution. As the large-scale components were identified, efforts shifted to the smaller scale projects required to address the remaining CSOs. Attention was then given to eliminating projects that could be challenging to implement given multiple factors such as community impacts and constructability. Smaller scale projects were also evaluated for consolidation and/or elimination based on the chosen large-scale projects. Finally, the alternative was evaluated for integration into the existing Smart Sewer Program. Details of the alternative analysis process are included in Section 3.3

3.2 2024 LTCP Challenges and Evaluation

This section discusses the challenges encountered during the early design phase of the nine SPP projects and three offline storage tanks that entered design in 2024 and 2025, along with a full review of the remaining projects in the 2024 LTCP per the 2024 Control Projects Schedule.

3.2.1 Sewer Patrol Projects

The 2024 LTCP characterized the SPP projects as “simple, low-cost improvements that reduce bottlenecks in the sewer network and increase conveyance of wet weather flows”. These projects included upsizing relatively short sections of pipe, proposing new conduits to transfer more flow from SPP subcatchments to nearby intercepting sewers, and modifications to weir structures. From a performance standpoint in the model, each project was effective in mitigating the sewer overflows from the targeted SPPs. However, project scopes and construction cost estimates lacked field review and underestimated the complexity of construction. This resulted in one project being removed from the plan due to constructability challenges, project scope expansions, and significant construction cost increases for others. **Table 3-1** summarizes the construction challenges and findings for first nine SPP projects in the 2024 LTCP.

Table 3-1: Summary of 2024 LTCP SPP Construction Challenges and Findings

Project	Challenge	Result	Impact
SPP 337 Modification (Colorado)	Complex Constructability, Brownfield Site	Added Scope; New tunnel drop shaft and vortex energy dissipating device	Substantial Capital Cost Increase
SPP338 Modifications (Bailey and Kerns)	Field Investigation identified lack of access to manhole	Scope Change	Substantial Capital Cost Increase
SPP341A Modification (Genesee)	Complex Constructability	Added Scope; New tunnel drop shaft and vortex energy dissipating device	Substantial Capital Cost Increase
SPP339 Modification	Complex Constructability	Added Scope; New tunnel drop shaft and vortex energy dissipating device	Substantial Capital Cost Increase
SPP340 Modification	Backflow Prevention not anticipated	Added Scope; Backflow Gate	Substantial Capital Cost Increase
SPP304 Modification	Field Conditions More Complex	Scope Change	Substantial Capital Cost Increase
SPP326 Modifications	Field Conditions Not Evaluated	Impact to significant intersection in City	Substantial Capital Cost Increase
SPP024 Modifications	Field Conditions Not Evaluated	Not Constructable due to location under I-190	Project Removed
SPP137 Modifications	Field Conditions More Complex	Scope Change	Substantial Capital Cost Increase

3.2.2 Northern Relief Sewer/Tunnel

A Northern Relief Sewer/Tunnel project has existed in several forms, including a version in the original 2014 LTCP. The need to increase conveyance capacity to bring flows from the northern part of the collection system to the WWTF has been consistent. The proposed approach has varied from a large diameter open cut sewer to various tunnel considerations. The 2024 LTCP includes a 12-foot diameter shallow Northern Relief Tunnel.

Constructability concerns were raised with the Northern Relief Tunnel as presented in the 2024 LTCP. As currently proposed, it is a shallow tunnel with only two tunnel diameters of cover in some locations in a soft ground, highly developed urban area. The shallow depth and soft ground conditions create a high risk of damaging nearby buildings and structures and undermining existing buried infrastructure. Furthermore, a portion of the tunnel is in a mixed face condition requiring mining in both rock and soft ground at the same time. Tunnels are ideally designed to mine either rock or soft ground as the cutterhead is designed for the actual ground conditions. Mixed face mining complicates the cutter head design and impacts the ability to "steer" the machine to maintain alignment and grade. Finally, the proposed tunnel requires three separate launch locations which significantly increases the cost of construction.

During the evaluation of SPP024, SPP023, and SPP296, a discrepancy was identified between the scope of the Northern Relief Tunnel in the 2024 LTCP and what was modeled in the collection system model. The model contained a shallow, open cut sewer better characterized as a parallel relief sewer. The diameter varied along its length and was smaller than the proposed shallow tunnel, the length was much shorter than the proposed tunnel, and connections to the existing sewer network differed from the proposed tunnel. Once the model was updated to reflect the proposed 12-foot diameter shallow tunnel, it did not achieve the TY CSO activation limits.

3.2.3 Offline Storage Projects

The sections below describe the challenges encountered for the OLS projects.

3.2.3.1 Roosevelt Park OLS

The Roosevelt Park OLS preliminary design effort began in early 2024. At that time, it was discovered that the weir was modeled as a 100-foot long, 1-inch-tall weir. The weir was allowing dry weather flow to be diverted into the OLS tank on a regular basis and was deemed not constructable due to the size of the diversion structure necessary to accommodate the weir length. Modeling iterations were performed to test various weir configurations and determined that a 20-foot long, 5-inch-tall weir achieved the TY CSO activation limits for this project. The preliminary engineering report suggested further model testing during final design to determine if real time controls would further optimize performance and operations for this project.

When the City of Buffalo Parks Department (Parks) and the Charter School of Inquiry were engaged during preliminary design, additional project concerns were raised. A Parks Master Plan is underway to remodel parks across the City, including Roosevelt Park, which overlaps with the construction schedule for the Roosevelt Park OLS project. To avoid damaging the work done on the west side of the park during the Parks project, the Roosevelt Park OLS project would need to utilize the Charter School of Inquiry's property on the east side of the site for ingress and egress during construction. This became a significant concern due to the gravity drainage requirements for the OLS tank. Both the north and south driveways on the Charter School of Inquiry's property would need to be demolished to construct the inlet and outlet piping for the OLS tank, and one driveway would always be necessary for construction ingress and egress. This would greatly impact the Charter School of Inquiry's daily operations, including staff and parent/student travel to and from the school and the ability for the students to access the park during recess. BSA began to evaluate alternatives that included pumping to dewater the tank and accessing the construction site through the west side of the property to minimize construction impacts to the park, the Charter School of Inquiry, and the public. Further design considerations and coordination with stakeholders are occurring as the project progresses into final design.

3.2.3.2 Sidney Lark OLS

The Sidney Lark OLS project entered preliminary design at the same time as the Roosevelt Park OLS project in early 2024. Upon further review, the OLS tank proposed for this project was found to be significantly oversized in the model. The proposed tank had a capacity of 3.3 million gallons (MG), while the model showed that the project location could meet the TY CSO activation limits using a tank with a capacity of less than 1 MG. The relatively small tank volume led to more investigation that sought to use an RTC solution to eliminate the tank altogether. To maintain the project schedule, the project was bid to potential final designers as either an OLS or RTC project BSA is currently working with the final designer to reduce the scope of this project to a sewer improvement project to minimize unnecessary costs and community impacts.

3.2.3.3 Schiller Park OLS

The Schiller Park OLS project started preliminary design in early 2025. The 2024 LTCP defined the project as an 8 MG storage tank that captured flow at the upstream end of the Scajaquada Tunnel Interceptor (ST) on the far eastern side of the BSA service area. Around the same time, design of SPP projects 341A, 340, 339, 338, and 337 began. As modifications were made to the collection system model because of the SPP project designs, the team began to reexamine the impact that the Schiller Park OLS project would have on the system. A model simulation was performed in which the Schiller Park OLS project was removed from the model. The TY systemwide performance was evaluated against the CSO activation limits, and the results indicated that three sites increased in activations by one event above the required limits. The total overflow volume from the three sites in that one event was approximately 1.3 MG and occurred on the western and southern part of the BSA service area, far away from the proposed site of the Schiller Park OLS. It was determined that the Schiller Park OLS project was not effective at managing TY CSO activations. BSA targeted improving projects on the western and southern portions of the BSA service area to manage the 1.3 MG of flow necessary to achieve the TY CSO activation limits.

3.2.3.4 Performance Evaluation of Remaining OLS Projects

Due to the issues encountered with the first three OLS projects that entered preliminary design, the remaining OLS projects in the 2024 LTCP were evaluated based on modeled performance, constructability, and community impact. The first metric used to evaluate the OLS projects was OLS utilization. Percent utilization was determined using the model and calculating the percentage of the tank volume utilized during the largest event to achieve compliance relative to the specified OLS tank volume.

The system-wide analysis revealed that four OLS tanks were oversized and confirmed that Schiller Park OLS was not being utilized. **Table 3-2** details the results of the OLS utilization evaluation.

Table 3-2: OLS Utilization Evaluation

Project	Target Activations	2024 LTCP Tank Volume (MG)	Largest Event to Achieve Compliance (MG)	Percent Utilization	Oversized Based on Analysis
Schiller Park OLS	Achieved	8.0	0	0%	Yes
Military Road OLS	Achieved	11.6	11.6	100%	No
Collins Park OLS	Achieved	2.6	2.5	99%	No
Bass Alley OLS	Achieved	3.6	3.6	100%	No
Waterfront Park OLS	Achieved	5.6	5.6	100%	No
Clinton OLS	Achieved	21.7	4.3	20%	Yes
Bailey & Regent OLS	Achieved	4.5	3.1	69%	Yes
Hopkins & Osage OLS	Achieved	1.0	1.0	100%	No
Canisius OLS	Achieved	1.5	1.0	66%	Yes
Roosevelt Park OLS	Achieved	2.6	1.5	57%	Yes

This analysis was used to downsize the OLS tanks for the Clinton OLS, Bailey & Regent OLS, Canisius OLS, and Roosevelt OLS projects in later alternatives analyses.

3.2.3.5 Constructability & Community Impact

Input from BSA and community stakeholders was used to determine the criteria upon which to evaluate the other OLS projects in the 2024 LTCP. **Table 3-3** displays the criteria evaluated for each attribute.

Table 3-3: Project Feasibility Assessment Criteria

Attribute	Criteria
Land Acquisition	• City of Buffalo versus Private Ownership • Number of Acquisitions Required • Temporary and Permanent Easements
Constructability	• Environmental and Physical Constraints (Slope, Contamination, etc.) • Local Roadway, Interstate, Thruway, Railroad Impacts
Community Impact	• Affected Neighborhoods (Homes, Businesses) • Affected Community Centers (Schools, Parks, etc.) • Noise, Dust, Odors, Parking, Transportation Disruptions
Operations & Maintenance	• Pump Station Requirements

Record drawings, parcel map data, environmental map data, input from the community, and in-person site investigations were used to evaluate the OLS projects using the above criteria. **Table 3-4** details the results of the feasibility studies.

Table 3-4: Project Feasibility Results Summary

OLS Project	Land Acquisition Requirements	Constructability Concerns	Community Impacts	Operations & Maintenance Needs	Result
Schiller Park OLS	OLS Facility Not Required				
Military Road OLS	Temporary easement	Near 2 railroads Deep excavation on school property	School closed 2-3 years Nearby apartments	Pump station required	Not Constructable due to Community Impact
Waterfront Park OLS	No impact	Contaminated site	Park closed 2-3 years Nearby school and apartments	Pump station required	Constructable
Bass Alley OLS	Purchase of 5 properties – would require displacement of 5 homes in an environmental justice area	Steep slope near CSX Railroad	Division St Closure 2-3 years Nearby neighborhood	Pump station required	Not Constructable due to Land Acquisition
Collins Park OLS (1)	Purchase of 17 properties – would require displacement of 17 homes in an environmental justice area	Steep slope Excavation near interstate	Park closed 2-3 yrs I-190 Impacts	No pump station required	Not Constructable due to Land Acquisition
Hopkins & Osage OLS	No Impact	No significant challenges	Park Closed 2-3 years Nearby neighborhood	Pump station required	Constructable
Clinton OLS	No impact	No significant challenges	Park closed 2-3 years Historic places (Houghton Academy), nearby neighborhood	Pump station required	Constructable
Bailey & Regent OLS	OLS Facility Can be Eliminated by Consolidation with Clinton Street OLS				
Canisius OLS	In Design Phase (Later Determined it can be Eliminated)				
Roosevelt Park OLS	In Design Phase				

(1) Note: The Collins Park OLS tank could be reconfigured to be a deeper, pumped tank to decrease the land acquisition requirements, to an extent.

3.3 Alternatives Analysis

Due to the challenges identified with the SPP projects, the Northern Relief Sewer/Tunnel project, and the OLS projects discussed above, BSA began an alternatives analysis process to identify solutions that achieve

the TY CSO activation limits while maximizing system performance and minimizing community impact during and after construction.

The alternatives analysis was an iterative process. It began with a focus on the major components of a proposed solution set such as larger diameter sewers, large OLS tanks, and other large capital assets. Once the major components were determined, BSA began looking at the smaller projects, such as SPP, RTC, and sewer improvement projects. Each project was evaluated as an individual project and how it impacted the rest of the LTCP solution. Hundreds of model runs were conducted to optimize performance, constructability, and community impact across the whole LTCP alternative.

Note that the alternatives analysis was initiated prior to completing the model performance, constructability, and community impact evaluation discussed in Section 3.2. Therefore, some projects were included in early alternatives before they were determined not constructable.

The Bird Island WWTF maximum capacity is an important factor for evaluating the collection system alternatives. The NFA for the WWTF requires BSA to achieve a sustained peak flow capacity of 560 million gallons per day (MGD). All the collection system alternatives were evaluated using a WWTF capacity of 520 MGD; thereby adding a factor of safety that ensures performance objectives for CSO activations are achieved even in the event a process unit is out of service for maintenance, equipment failure, or some other cause.

3.3.1 Initial Alternatives Evaluation

Three initial alternatives were developed for the first round of evaluations. Alternative 1 most resembles the 2024 LTCP with a revised Northern Relief Sewer and multiple storage tanks. Alternatives 2 and 3 extend the deep sewer interceptor to the south of BSA's service area, eliminating the need for OLS tanks. The following sections discuss Alternatives 1 – 3 in greater detail.

3.3.1.1 Alternative 1 – North Sewer Interceptor

The first alternative investigated was a variation of the 2024 LTCP that utilized a deep North Sewer Interceptor to replace the previous shallow Northern Relief Tunnel with a similar alignment. The deep vertical alignment was a significant operational improvement providing a free outfall from the existing sewer network into the deep sewer. To achieve CSO activation limits in the model, the North Sewer Interceptor needed to be 18-ft diameter and 11,500 ft long. The deep configuration enabled the elimination of the Military Road OLS. The Bailey & Regent OLS project was also able to be eliminated by diverting flows to the Clinton OLS tank and changing the Clinton OLS tank from gravity dewatering to pumped dewatering. The Clinton OLS was also significantly oversized in the 2024 LTCP allowing the final size of the Clinton OLS in Alternative 1 to be reduced significantly. **Table 3-5** provides a summary of Alternative 1. Comments in the Capacity (MG) column compare Alternative 1 to the 2024 LTCP. **Figure 3-1** shows an overview of Alternative 1.

Table 3-5: Alternative 1 Summary

Project	Capacity (MG)
North Sewer Interceptor	22 (18-foot diameter, 11,500 feet long)
Military Road OLS	Removed
Roosevelt Park OLS	2.6 MG – Unchanged
Canisius OLS	1.5 MG – Unchanged
Waterfront Park OLS	8.5 MG – Upsized from 5.6 MG
Bass Alley OLS	3.6 MG – Unchanged
Collins Park OLS	2.6 MG – Unchanged
Clinton OLS	9.0 MG – Reduced from 21.7 MG
Bailey & Regent OLS	Removed - Consolidated with Clinton OLS
Hopkins & Osage OLS	1.0 MG – Unchanged

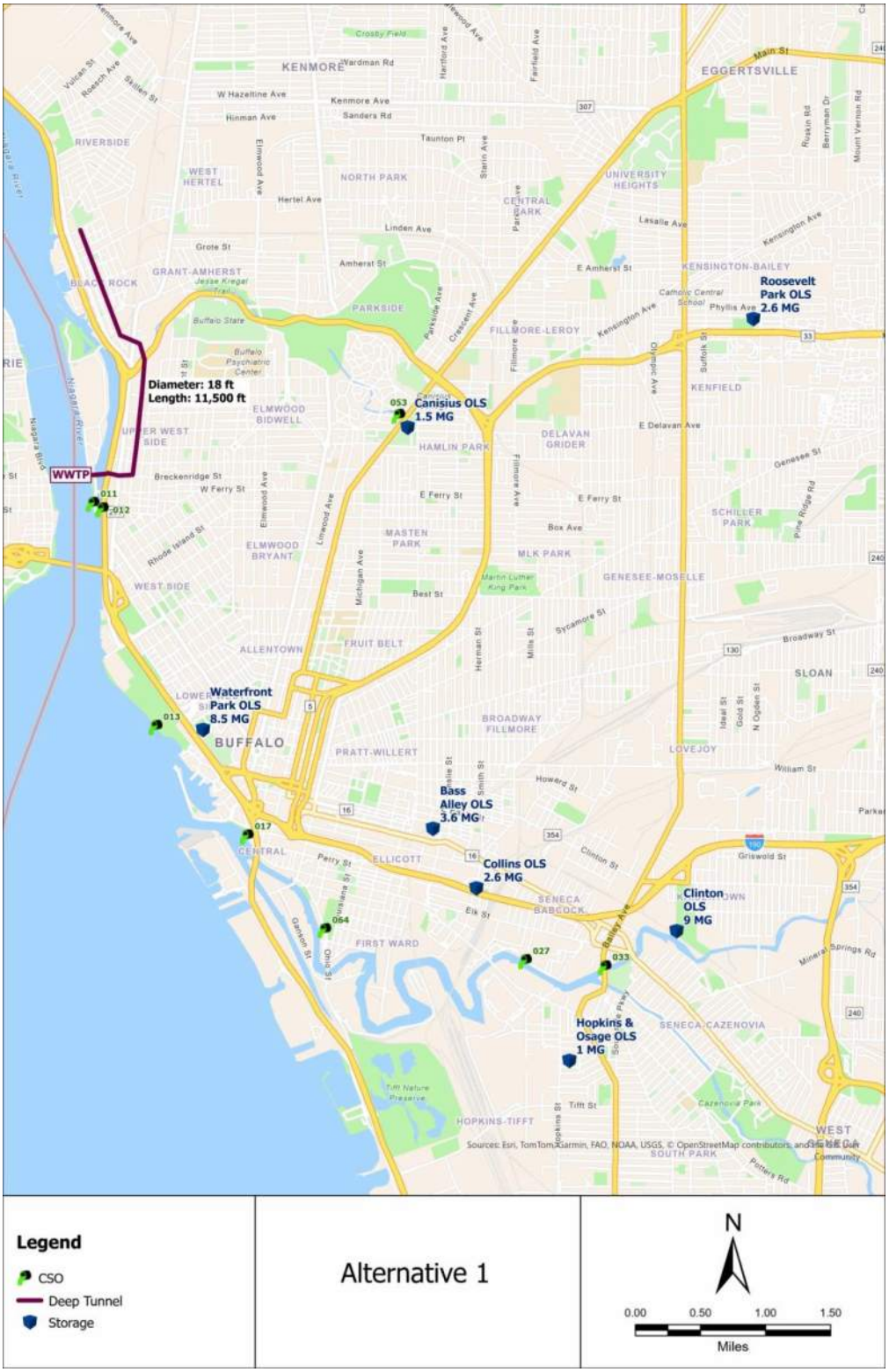


Figure 3-1: Overview of Alternative 1

The OLS tank at Waterfront Park required significant upsizing to achieve the activation targets. Waterfront Park is a frequently utilized park for City residents, and the site is adjacent to the Waterfront Elementary School and the Pine Harbor Apartments. There are also concerns the site could have contaminated soils that could pose risks during construction and increase costs.

3.3.1.2 Alternative 2 – North Sewer Interceptor & Short South Sewer Interceptor

To remove the need for a large OLS tank at Waterfront Park, the North Sewer Interceptor was extended further to the south terminating at Waterfront Park. To accomplish this, a section of interceptor labeled as the Short South Sewer Interceptor was added to the model. The North Sewer Interceptor remained the same diameter and length as in Alternative 1, and the Short South Interceptor was modeled as a 21-ft diameter interceptor that was 13,360 ft long. With this alternative, the Military Road OLS and Bailey & Regent OLS projects were eliminated, and the capacity at the Clinton OLS site remained significantly reduced. In addition to these benefits, the Waterfront Park OLS tank was eliminated, but a drop shaft and sewer diversion structure would still be required at Waterfront Park. A drop shaft at Waterfront Park would have a smaller footprint and the park would be able to remain open during construction. **Table 3-6** provides a summary of Alternative 2. Comments in the Capacity (MG) column compare Alternative 2 to the 2024 LTCP. **Figure 3-2** shows an overview of Alternative 2.

Table 3-6: Alternative 2 Summary

Project	Capacity (MG)
North Sewer Interceptor	22 (18-foot diameter, 11,500 feet long)
Short South Interceptor	35 (21-foot diameter, 13,360 feet long)
Military Road OLS	Removed
Roosevelt Park OLS	2.6 MG – Unchanged
Canisius OLS	1.5 MG – Unchanged
Waterfront Park OLS	Removed
Bass Alley OLS	3.6 MG – Unchanged
Collins Park OLS	2.6 MG – Unchanged
Clinton OLS	9.0 MG – Reduced from 21.7 MG
Bailey & Regent OLS	Removed - Consolidated with Clinton OLS
Hopkins & Osage OLS	1.0 MG – Unchanged

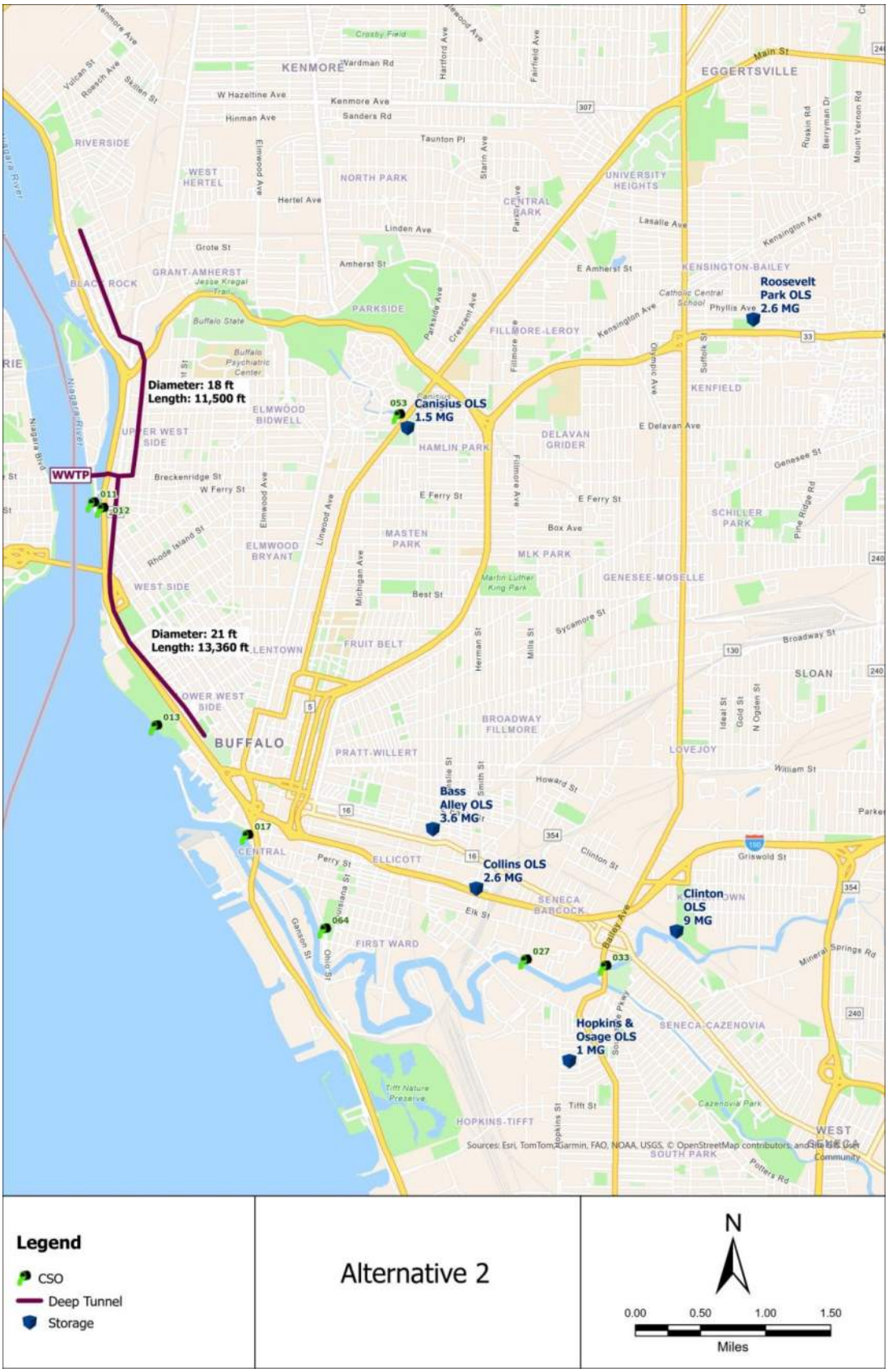


Figure 3-2: Overview of Alternative 2

This alternative was evaluated in parallel with the model performance, constructability, and community impact evaluation discussed in Section 3.2. Since it was determined that Bass Alley OLS and Collins Park OLS were not constructable, the next alternative sought to remove them from the solution.

3.3.1.3 Alternative 3 – North Sewer Interceptor & Long South Sewer Interceptor

To remove the need for Bass Alley OLS and Collins Park OLS, the South Sewer Interceptor was extended even further to the south. To accomplish this, a section of interceptor labeled the Long South Sewer Interceptor was added to the model. Initially, the Long South Sewer Interceptor was modeled as a 15-ft diameter interceptor that was 32,423 ft long. The North Sewer Interceptor remained the same diameter and length as in Alternatives 1 and 2. Alternative 3 removed the need for Military Road OLS, Bailey & Regent OLS, Waterfront Park OLS, Bass Alley OLS, Collins Park OLS, and Clinton OLS. **Table 3-7** provides a summary of Alternative 3. Comments in the Capacity (MG) column compare Alternative 3 to the 2024 LTCP. **Figure 3-3** shows an overview of Alternative 3.

Table 3-7: Alternative 3 Summary

Project	Capacity (MG)
North Sewer Interceptor	22 (18-foot diameter, 11,500 feet long)
Long South Sewer Interceptor	43 (15-foot diameter, 32,423 feet long)
Military Road OLS	Removed
Roosevelt Park OLS	2.6 MG – Unchanged
Canisius OLS	1.5 MG – Unchanged
Waterfront Park OLS	Removed
Bass Alley OLS	Removed
Collins Park OLS	Removed
Clinton OLS	Removed
Bailey & Regent OLS	Removed
Hopkins & Osage OLS	1.0 MG – Unchanged

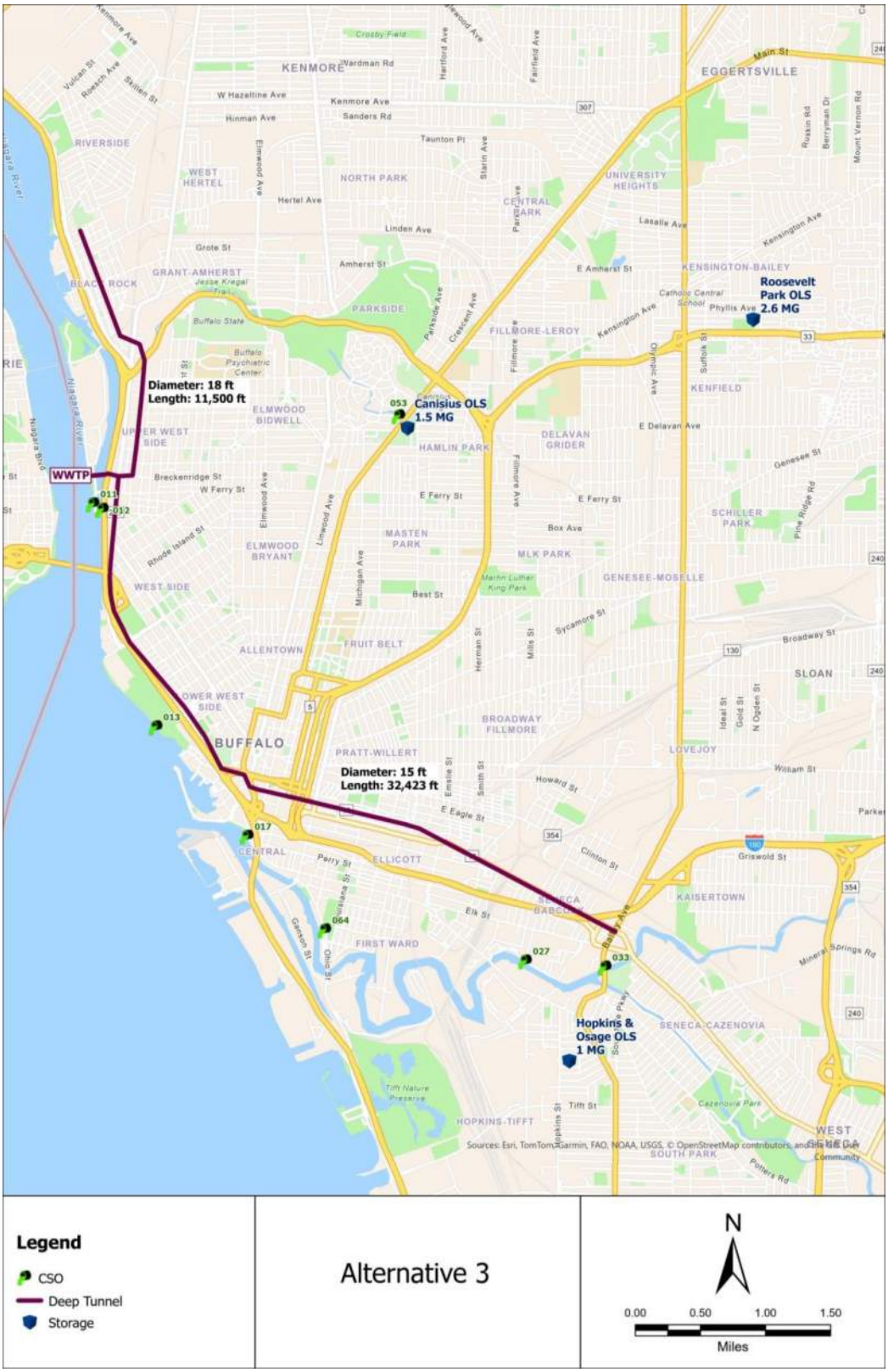


Figure 3-3: Overview of Alternative 3

Alternative 3 reduced the constructability concerns for Waterfront Park OLS, and removed constructability concerns for Bass Alley OLS, and Collins Park OLS, while also removing community impact concerns for Clinton OLS.

3.3.1.4 Initial Alternatives Summary

Alternatives 1 – 3 were evaluated against the 2024 LTCP and each other. The 2024 LTCP is infeasible because it does not achieve the CSO activation limits and it is not constructable. Alternative 1 and Alternative 2 meet the CSO activation limits but are both infeasible because they require the Bass Alley OLS and Collins Park OLS, which were deemed not constructable. Therefore, the only feasible alternative is Alternative 3 – North Sewer Interceptor & Long South Sewer Interceptor. **Table 3-8**, below summarizes this pre-refinement process comparison.

Table 3-8: Alternatives Summary

	2024 LTCP	Alt 1 - North Sewer Interceptor	Alt 2 - North Sewer Interceptor & Short South Sewer Interceptor	Alt 3 - North Sewer Interceptor & Long South Sewer Interceptor
Achieves CSO Activation Requirements?	No	Yes	Yes	Yes
Constructable?	No	No	No	Yes
Northern Relief Sewer Capacity (MG)	10	-	-	-
North Sewer Interceptor Capacity (MG)	-	22 (18-foot diameter, 11,500 feet long)	22 (18-foot diameter, 11,500 feet long)	22 (18-foot diameter, 11,500 feet long)
South Sewer Interceptor Capacity (MG)	-	-	35 (21-foot diameter, 13,360 feet long)	43 (15-foot diameter, 32,423 feet long)
Military Road OLS Capacity (MG)	11.6	-	-	-
Roosevelt Park OLS Capacity (MG)	2.6	2.6	2.6	2.6
Canisius OLS Capacity (MG)	1.5	1.5	1.5	1.5
Waterfront Park OLS Capacity (MG)	5.6	8.5	-	-
Bass Alley OLS Capacity (MG)	3.6	3.6	3.6	-
Collins Park OLS Capacity (MG)	2.6	2.6	2.6	-
Clinton OLS Capacity (MG)	21.7	9.0	9.0	-
Bailey & Regent OLS Capacity (MG)	4.5	-	-	-
Hopkins & Osage OLS Capacity (MG)	1.0	1.0	1.0	1.0

3.4 Alternative Refinement

Once Alternative 3 was chosen as the selected alternative, BSA continued to refine the remaining projects necessary to achieve the CSO activation limits. This section describes the approach and some key findings identified in this phase of the alternatives analysis.

3.4.1 North and South Sewer Interceptors

During alternative refinement, it was necessary to identify a more realistic and constructable alignment for the North and South Sewer Interceptors. A desktop analysis using GIS, aerial photography, and parcel information was performed. Consideration of turning radiuses for typical mining equipment and minimum

footprint requirements for construction of mining of shafts and a pump station were factored into the development of an alignment. **Figures 3-4** and **3-5** depict the updated alignment.



Figure 3-4: Updated North Sewer Interceptor Alignment

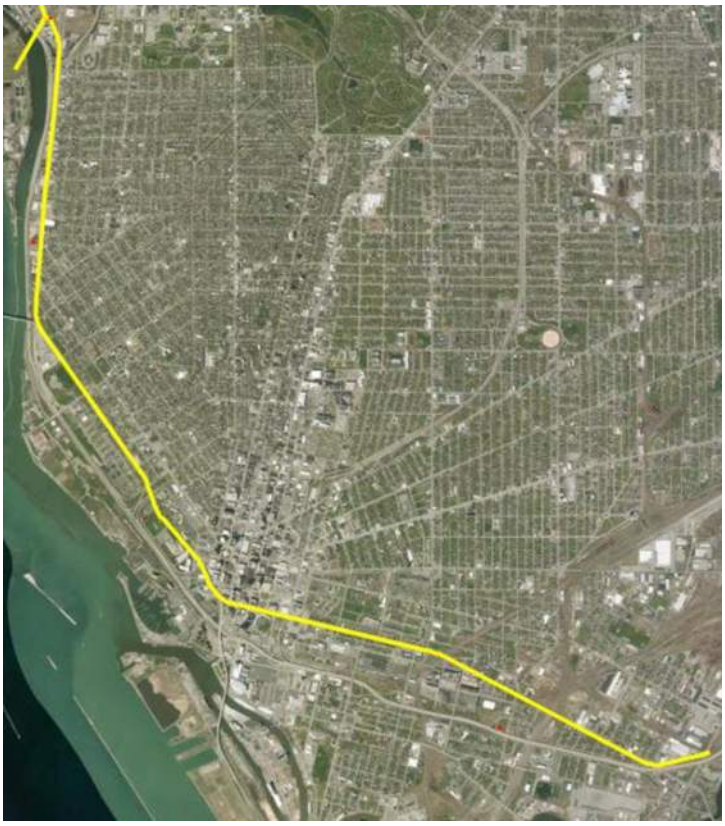


Figure 3-5: Updated South Sewer Interceptor Alignment

The model was updated with the revised alignment, and simulations were run keeping the diameters of the North and South Sewer Interceptors the same. Maintaining the same sewer interceptor diameter would potentially allow the use of a single boring machine versus multiple machines of different diameters. This introduces an opportunity for capital cost savings.

The alternative refinement process evaluated the proposed diameter of the deep interceptor system multiple times as other projects were adjusted, added, or eliminated. This is further described in the remainder of Section 3.4. The initial analysis at the beginning of the alternative refinement process using the updated alignment and matching diameters identified that a 19-ft diameter was necessary to achieve TY CSO activation limits. Further refinement of all other projects, discussed further below, enabled the diameter necessary to achieve TY CSO activation limits to be reduced to 17-ft and finally to 15-ft. Section 3.5 Selected and Refined Alternative provides the final sizing at the conclusion of the refinement process.

(Note: Following selection of Alternative 3 in Section 3.3, the Long South Sewer Interceptor naming was shortened to the South Sewer Interceptor for brevity. BSA intends to develop a new name(s) for the deep interceptor projects to enable better engagement with the community as the project advances.)

3.4.2 OLS Projects

During the alternative refinement process, final design of the Canisius OLS and the Roosevelt Park OLS projects were underway. BSA engaged with the final designers to optimize the size of the OLS tanks as a result of the OLS utilization evaluation. The Roosevelt Park OLS tank was able to be reduced to a 1.7-MG tank with pumped discharge, offering cost savings and community impact reductions for the involved

stakeholders. The Canisius OLS tank was able to be replaced with an RTC structure and an air ventilation facility.

The only other remaining OLS is the Hopkins and Osage OLS. This OLS has been determined to be constructable and is not impacted by the addition of the North and South Sewer Interceptors.

3.4.3 SPP, RTC, and ILS Projects

The SPP, RTC, and ILS projects were reviewed with the following considerations:

- Is the project still necessary with the addition of the North and South Sewer Interceptors?
- Is the project constructable?
- Does the project have a negative impact to the community?
- Can the project be optimized in the model to reduce size/capacity?

To accomplish these evaluations, record drawings, parcel information, aerial imagery, street view imagery, and in-person site visits were utilized. Design concepts were developed to define construction footprints and assess feasibility for each project and cost estimates were created. This evaluation resulted in the removal and modification of several projects. BSA submitted memoranda to DEC about some of the project scope and schedule changes that can be found in **Appendix G**.

3.4.3.1 Albany Street SPPs

There are three SPPs associated with Albany Street (SPPs 024, 023 and 296). As described in Section 3.2.1, the work in SPP024 was not feasible due to its location under Interstate 190. One new project was created to eliminate the three existing SPP modification projects. The new project will include bulkheading the existing underflow sewers in SPPs 023 and 296 and constructing new SPPs upstream with a common underflow pipe that connects to the South Interceptor. The new project eliminates the need for any modifications at SPP 024 by creating capacity downstream of 024 via the removal of flow from SPP 023 and 296.

The refinement at Albany Street had a substantial impact on the entire LTCP alternative development. The capacity relief provided by the new project at Albany Street had a cascading impact enabling increases of the North and South Sewer Interceptor diversion weir elevations which allowed for higher HGLs in existing sewer mains which improved the conveyance capacity through the siphon under Black Rock Canal to the WWTF. Improving the system conveyance thereby improving WWTF utilization enabled the North and South Interceptor Sewers to be reduced from 19-ft to 17-ft diameters.

3.4.3.2 SPPs 051, 059, and 104

Projects at SPP051 (Chicago & Exchange), SPP059 (Hamburg & Seneca), and SPP104 (Niagara Thruway & Bailey) were not required with the addition of the South Sewer Interceptor.

3.4.3.3 SPP206A&B RTC

The proposed RTC structure at SPP206A&B was not required with the addition of the South Sewer Interceptor.

3.4.3.4 Hertel North East ILS

Hertel North East ILS is located at the intersection of Hertel and Delaware Avenues. The 2024 LTCP proposed adding additional storage capacity upstream of the existing Hertel at Deer RTC structure. The Hertel and Delaware intersection is a high vehicular and pedestrian traffic corridor. Any work in this area

would cause significant disruption to the community. With the addition of the North Sewer Interceptor, this project was removed from the plan.

3.4.3.5 SPP326 (Oak & Swan)

SPP326 is located at the intersection of Oak and Swan Streets in downtown Buffalo. It is located next to Sahlen Field and the on-ramp to the I-190. There are constructability and community impact concerns due to the location of the project. The project has been revised to mitigate the constructability challenges and community impact. A new regulator structure will be constructed upstream of SPP 326 to reduce overflows at CSO-017.

3.4.4 Scajaquada Tunnel Interceptor Air Ventilation Requirements

The ST flows east to west in the central portion of the BSA service area, as seen in **Figure 3-6**. Prior large rainfall events in the ST tributary area have resulted in excessive surcharging and air venting, lifting manhole lids and discharging sewage to the surface. The SPP projects in this catchment increase inflows into the ST potentially increasing the frequency of excessive surcharging in events larger than the TY. BSA partnered with a civil engineering professor at Auburn University, an expert in hydraulic transient and air ventilation modeling, to evaluate the present day hydraulic and air surge conditions in the ST, as well as the future conditions that will result from implementing the SPP projects in the ST tributary area.

The analysis verified that the present-day conditions result in excess surcharging in events larger than the TY. This is not a present concern for achieving the TY CSO activation limits, but the addition of the LTCP SPP projects could amplify the issue. To mitigate hydraulic and air surge concerns, the projects connecting to the ST will include features for safely relieving entrapped air, such as vortex style drop shaft structures, air relief vents, and RTC gates capable of throttling flow to the ST during events larger than the fifth largest event in the TY.

Hydraulic transients and air ventilation needs are greatest near the upper end of the ST at the location of the former Schiller Park OLS which was eliminated earlier in the validation process. A project to safely relieve air from the ST during periods of rapid filling and transients is recommended at the location where the former Schiller Park OLS would have discharged back into the ST. This project does not impact the TY activation limits for the LTCP. It is recommended to better manage operations in larger events which may occur more frequently with the implementation of the recommended SPP modifications.

Figure 3-6: Scajaquada Tunnel Interceptor Layout (Brown Interceptor Sewer)

3.4.5 Smart Sewer System Integration

BSA has evaluated and employed a Smart Sewer approach for more than a decade with RTC projects already implemented in the collection system. The final step in the alternative refinement process was analyzing the global control strategy for the deep sewer interceptor system inflows. BSA's Smart Sewer Program vendor was provided with the current version of the model for testing. The primary goal of the global control strategy is to maximize conveyance to the WWTF for treatment, with the secondary goal to utilize storage when conveyance and treatment is unavailable. For the sewer interceptor system, operational logic at the diversion structures was analyzed, revised, and tested in full typical year simulations. The updated RTC operational logic combined with all the other refinements improved the alternative performance resulting in further reduction of the North and South Sewer Interceptors diameter to 15-ft.

3.5 Selected and Refined Alternative

Alternative 3 was selected and further refined for performance. Each project underwent additional evaluation to identify constructability challenges and necessary land acquisition, specifically in environmental justice areas and those highly impactful to the community. To the extent possible, these challenges were addressed or minimized. The refinement process progressively reduced the diameter of the North and South Sewer Interceptors from 19-ft to 17-ft and finally 15-ft while continuing to meet the TY activation targets. The size of the North and South Sewer Interceptors at the completion of the alternative refinement process are shown in **Table 3-9.**

Table 3-9: Refined North and South Interceptor Sizing

Project	Capacity (MG)
North Sewer Interceptor	9.2 (15-foot diameter, 6,940 feet long)
Long South Sewer Interceptor	44 (15-foot diameter, 33,005 feet long)
Deep Interceptor Pump Station	56 MGD

This resulted in elimination of several projects from the 2024 LTCP. **Table 3-10** below shows the 2024 LTCP projects that were eliminated from the 2026 Amended LTCP.

Table 3-10: 2024 LTCP Projects Removed from 2026 Amended LTCP

Project Name & Tag	Status	Receiving Waterbody	Most Impacted CSO
CSO033_2 Clinton St OLS	Removed	Buffalo River	CSO-033
CSO033_3 SPP104 Modification	Removed	Buffalo River	CSO-033
CSO017_10 SPP051 Modification	Removed	Buffalo River	CSO-017
CSO017_6 Bass Alley OLS	Removed	Buffalo River	CSO-017
CSO033_1 Bailey & Regent OLS (Moreland Park)	Removed	Buffalo River	CSO-033
CSO 055_1.1 Hertel North East ILS	Removed	Niagara River	CSO-055
CSO014_1.1 SPP206A&B RTC	Removed	Erie Basin Marina	CSO-014
CSO014_1.2 Erie Basin Marina OLS (Waterfront Park)	Removed	Black Rock Canal	CSO-014
CSO026_1.3 Collins Park OLS	Removed	Buffalo River	CSO-026
CSO011_1.2 SPP024 Modification	Removed	Buffalo River	CSO-011
CSO055_1.5 Military Rd OLS	Removed	Niagara River	CSO-055
CSO017_9 SPP059 Modification	Removed	Buffalo River	CSO-017
CSO053-12.1 Jefferson Ave GI	Removed	Scajaquada Creek	CSO-053
CSO053_12.2 Jefferson Ave GI	Removed	Scajaquada Creek	CSO-053

The following section presents the projects required to advance the 2026 LTCP.

SECTION 4 2026 AMENDED LTCP

BSA has invested hundreds of millions of dollars throughout the City of Buffalo to reduce combined overflow activations by almost half while dropping the overflow volume by over 400 million gallons per year. Like many CSO communities that developed Long Term Control Plans more than a decade ago, BSA has also realized that these plans change and evolve as the understanding of these complex systems improve and experiences are gained working in the community. Today, it is clear the 2014 LTCP and the past updates to that plan were not constructable and would not achieve the required outcomes.

The 2026 Amended LTCP is a substantial revision of the Queen City Clean Waters Initiative. BSA is confident that this updated plan provides a path to reduce combined sewer overflows furthering BSA's commitment to serving the community and having cleaner waterways. This updated plan is the result of a collaborative team of highly experienced professionals with decades of wet weather planning including people with deep familiarity with BSA's system, as well as fresh perspectives from wet weather experts new to BSA. While completed in less than eleven months, the team performed hundreds of full typical year model simulations, examined each proposed project, and sought out specialized expertise to validate one of the most crucial projects in the proposed 2026 Amended LTCP.

A major differentiator between the 2024 LTCP and the 2026 Amended LTCP is how the new plan reduces impacts to the community. The 2024 LTCP included many large-scale projects located across the City of Buffalo. To minimize challenges with land acquisition, those large-scale projects were proposed to be constructed on publicly owned lands including parks and schools. The projects would have prevented community access and use of public spaces for three or more years and may have altered the landscape in permanent ways. The 2026 Amended LTCP moves much of the major construction deep below ground, thereby greatly reducing the overall footprint of construction at the surface that will be visible and impactful to the community. The Green Infrastructure Program remains unchanged, meaning those community enhancements will continue to be added across the City of Buffalo. The 2026 Amended LTCP will meet the environmental goals and the deadline for completion.

Section 4 presents the 2026 Amended LTCP, providing a complete picture of the program to address the CSO overflows. This section summarizes how the 2026 Amended LTCP meets and exceeds the performance goals and describes all remaining projects that must be constructed to realize the goals. It requires a sizeable capital investment and BSA is committed to completing this ambitious plan by December 31, 2040. The program schedule and cost are presented in Sections 4.4 and 4.5, respectively. Finally, this updated plan will be shared with the community and stakeholders served by BSA along with ongoing community engagement to build support for the Queen City Clean Waters initiative.

4.1 Typical Year Performance and Regulatory Compliance

The 2026 Amended LTCP modeling predicts the proposed solution outperforms the required activation targets. Four waterbodies have CSO activation counts anywhere between 1 and 3 events fewer than the allowable maximum number of events. The other three waterbodies meet the allowable activation targets. This is achieved with the Bird Island WWTF operating at 520 MGD and 560 MGD demonstrating how the new North and South Sewer Interceptors provide operational resilience even when treatment capacity is reduced if a unit process outage occurred. **Table 4-1** provides the results by waterbody including the maximum allowable activations compared with the model predicted activations in each waterbody at treatment rates of 520 MGD and 560 MGD.

Table 4-1: 2026 Amended LTCP Activations by Waterbody

Waterbody	Required CSO Activation Limits (Level of Control)	2026 Amended LTCP CSO Activations, Treatment @ 520 MGD	2026 Amended LTCP CSO Activations, Treatment @ 560 MGD
Black Rock Canal	4	3	3
Buffalo River	6	6	6
Cazenovia Creek – B	0	0	0
Cazenovia Creek – C	6	5	5
Erie Basin	2	0	0
Niagara River	9	6	6
Scajaquada Creek	4	4	4

The 2026 Amended LTCP modeling also predicts the solution outperforms the 2024 LTCP. This comparison assumes the 2024 LTCP is feasible even though challenges were identified and presented in Section 3.2 - 2024 LTCP Challenges and Evaluation. Two versions of the 2024 LTCP are included in **Tables 4-2 and 4-3**. As discussed in Section 3.2.2, the Northern Relief Tunnel was modeled differently than how it is described in the 2024 LTCP. The columns beginning with "2024 Corrected" show the performance by watershed when the collection system model is updated with corrected Northern Relief Tunnel as described in the 2024 LTCP. Comparing the very best case of the 2024 LTCP with treatment at 560 MGD, as shown in **Table 4-2**, the 2026 Amended LTCP performs better in four waterbodies and matches the 2024 results in the other three waterbodies. The performance gap between the 2026 Amended LTCP only widens when compared to the "2024 Corrected" or when the WWTF treatment rate is lowered to 520 MGD.

Table 4-2: 2024 and 2026 LTCP Activations by Waterbody with treatment at 560 MGD

Receiving Water	2024 @ 560 MGD OF Activations	2024 Corrected @ 560 MGD OF Activations	2026 @ 560 MGD OF Activations
Black Rock Canal	4	4	3
Buffalo River	6	7	6
Cazenovia Creek - B	0	0	0
Cazenovia Creek – C*	6	5	5
Erie Basin Marina	2	5	0
Niagara River	9	10	6
Scajaquada Creek	4	4	4

*2024 LTCP reported 5 activations at Cazenovia Creek – C. The summary results of the last simulation of the 2024 LTCP model indicate 6 overflows at this location.

Table 4-3: 2024 and 2026 LTCP Activations by Waterbody with treatment at 520 MGD

Receiving Water	2024 @ 520 MGD OF Activations	2024 Corrected @ 520 MGD OF Activations	2026 @ 520 MGD OF Activations
Black Rock Canal	4	4	3
Buffalo River**	7	7	6
Cazenovia Creek - B	0	0	0
Cazenovia Creek – C*	6	5	5
Erie Basin Marina	2	5	0
Niagara River	9	10	6
Scajaquada Creek	4	4	4

*2024 LTCP reported 5 activations at Cazenovia Creek – C. The summary results of the last simulation of the 2024 LTCP model indicate 6 overflows at this location.

**The 2024 LTCP reported 6 activations in the Buffalo River waterbody. This resulted from two back-to-back events getting counted as a single event in the TY simulation summary.

4.2 North and South Sewer Interceptor System

The North and South Sewer Interceptors System is presented in more detail as the project warrants a more rigorous evaluation before establishing final details of facility sizes, project packaging and phasing. The approach for building out the sewer interceptor system proposes a preliminary design that examines the entire system in greater detail before locking in key basis of design details and optimizing a phased implementation. The preliminary design approach will ensure any changes to the conceptual design will meet the activation requirements for all locations in the system not deviating from the performance requirements of the 2014 LTCP.

The North and South Sewer Interceptors are the most significant and impactful projects proposed in the 2026 Amended LTCP. This system provides direct relief to the existing major sewers where wet weather conditions produce the highest levels of stress such as the Swan Trunk, South Interceptor, Scajaquada Tunnel Interceptor, and Hertel Trunk Sewers (two parallel sewers). The direct relief of the major sewers extends upstream in the system providing capacity to other SPPs such as SPP023, 024, and 296 as discussed in Section 3. The sewer interceptor system increases BSA's ability to maximize flows and treatment utilization by conveying wet weather flows directly to the Bird Island WWTF and provides storage for peak flows that occur in the typical year. Additionally, as a secondary benefit, the sewer interceptor system provides redundant conveyance capacity to the WWTF that could be utilized during dry weather to conduct maintenance or provide relief in emergency circumstances. In more extreme weather events, the new system currently includes a new CSO outfall providing regional consolidation conveying wet weather flows to the less sensitive Niagara River vs. overflows in the smaller tributaries within the City.

The system is comprised of multiple components or projects:

- North Sewer Interceptor
- South Sewer Interceptor
- Sewer Interceptor Dewatering Pump Station, which includes:
    - Pump Station
    - Pump Station CSO Overflow
    - Pump Station Force Main to Bird Island WWTF
    - Landfill Mitigation

The alternative analysis identified a 15-foot diameter as the minimum size to meet the activation limits throughout the collection system. With a project of this scale and the significant capital investment necessary to construct, it is too early to lock in all the design features or specifications. The prudent approach is to take the time necessary to thoroughly evaluate each component, perform geotechnical investigations along the alignment, and evaluate variations including varied diameters, pumping capacities and tunnel boring machine availability. Any changes to the conceptual design must meet or exceed the activation requirements for all locations in the system. This is a commitment to keep the activation targets as the priority while also endeavoring to find the most affordable and community-centered design and construction sequence for the entire system.

4.2.1 Deep Infrastructure Expert Evaluation

The current North and South Interceptor System is conceptual. The team of experienced wet weather professionals that evaluated the alternatives were confident the deep sewers are constructable based on firsthand experiences in other communities on the East Coast and throughout the Midwest. Given the financial magnitude of the sewer interceptor system and its importance to the success of the 2026 Amended LTCP, it was decided that engaging a firm that specializes in deep infrastructure projects was important to validate the projects so the 2026 Amended LTCP could proceed with confidence.

A firm was contracted in January 2026 to evaluate the North and South Interceptor Sewers and Pump Station. They were specifically charged with the following:

- Evaluate alignments
- Evaluate drop shaft locations, sizing, and near surface infrastructure that connect the deep sewer interceptors to existing trunklines
- Evaluate sites for mining operations
- Perform a desktop analysis of subsurface geology along the alignment for suitability.
- Develop a Class 4 construction cost estimate
- Evaluate potential project phasing approaches

The specialty firm's evaluation was initiated prior to the completion of the 2025 LTCP Validation; therefore, they were requested to evaluate a 17-ft diameter in the kickoff meeting rather than the 2026 Amended LTCP proposed 15-ft diameter. The Class 4 construction cost estimate prepared by the specialty firm is based on the 17-ft diameter and is the cost estimate that is included in the 2026 Amended LTCP. This adds a degree of financial conservatism to the program which is reasonable at this conceptual stage.

The Findings and Recommendations Memo will be submitted by the specialty firm hired to perform this investigation. It will include a recommended alignment, recommended shaft locations, and preliminary OPCC. The investigation will include recommended modifications to the earlier concept for the North and South Sewer Interceptor system. Most importantly, the evaluation provided a second review with addition research supporting the feasibility and constructability of the proposed sewer interceptor system.

4.2.2 Sewer Interceptor System Implementation

Finalizing the basis of design for the entire North and South Sewer Interceptor System is the first step to ensure the highest degree of success for this substantial infrastructure investment. There are critical details that require further investigation and study, such as transient modeling which may impact shaft sizes or tunnel diameter. The geotechnical investigation will establish a vertical profile through the most competent bedrock over the entire sewer profile.

As the early design effort progresses, the design focus will shift to the North Sewer Interceptor, Interceptor Pump Station, and any related projects for the pump station as detailed design and construction for these

features occur earlier in the overall 2026 Amended LTCP schedule. The early stages of the preliminary engineering will evaluate the following items, at a minimum, to finalize the basis of design:

- Diameter or diameters of the sewer
- Pump station capacity and siting
- Detailed alignment and diversion structure siting to initiate land acquisition
- Geotechnical boring program
- Transient and ventilation analysis
- Landfill characterization and design
- Pump station force main to WWTF
- New CSO Outfall
- Diversion structures
- Screening facilities

The preliminary design effort will explore alternative locations for the pump station and the related projects including pump station force main, new CSO outfall, and landfill mitigation. The current proposed pump station location in the landfill just north of the Bird Island WWTF presents significant cost and regulatory complications. Eliminating landfill mitigation is preferrable. An alternative pump station location may also provide a better alignment for the force main which must traverse the entire WWTF from north to south if the pump station is located within the landfill site. Options to eliminate the new CSO outfall will also be evaluated. The new CSO outfall currently requires more landfill disturbance and would entail permitting the discharge in international waters. The financial savings of an alternative pump station location could exceed $100M and the reduction in regulatory approvals (landfill mitigation and new CSO outfall), which would reduce risks of project delays.

At this time, the system can be grouped as three major packages: 1) Pump station including landfill mitigation, CSO outfall, and WWTF connection, 2) North Sewer Interceptor including near surface diversion structures and connecting sewers, and 3) South Sewer Interceptor including near surface diversion structures and connecting sewers. Packages 1 and 2 will be phased so they are advancing in progress concurrently, enabling a portion of the system to go into service within the first ten (10) years. Package 3 will be phased to be completed by December 31, 2040.

Each of these packages are expected to be comprised of a series of smaller contracts advertised for construction. This is similar to the approach for the current NFA projects including NFA Phase I (Contracts A through F), NFA Phase II (Contracts A and B) and NFA Phase III (Contracts A and B), for example. The preliminary design phase will evaluate different ways to break down the major packages into multiple smaller projects. This approach aims to provide flexibility for local contractors with limited bonding capacity relative to larger/national contractors to submit competitive prime bids, support local economies in City of Buffalo and Erie County through increased opportunity, and to provide BSA greater flexibility for financing the deep interceptor system implementation. Funding analysis will also be incorporated into the evaluation. The objective of this evaluation is to identify a cost-effective implementation approach that creates opportunities to engage local and regional companies keeping the investment local to Western New York and the City of Buffalo to the extent practicable. It will also aim to provide a stable capital investment funding approach to smooth out rate increases over the duration of programs implementation.

4.3 2026 Amended LTCP Projects

The 2026 Amended LTCP includes projects remaining to be completed by the 2040 deadline to achieve the activation goals in Section 4.1. Most projects in the 2026 Amended LTCP are of the similar type and scale to past work BSA has completed for reducing sewer overflows. Many of the projects are unchanged or

modified versions of the 2024 LTCP projects. **Appendix C** provides a comparison of project scopes between modified 2024 LTCP projects and the 2026 Amended LTCP projects.

The subsections below summarize the status of projects currently in construction, design, and future projects still deemed necessary.

4.3.1 Projects in Construction

BSA continued to move projects forward as required during the 2025 LTCP Projects Validation efforts. **Table 4-4** summarizes projects currently in preconstruction (awaiting Notice to Proceed [NTP]) or active construction status, including project descriptions, associated receiving waterbodies and CSOs, estimated construction costs, and anticipated implementation schedules.

4.3.2 Projects in Design

In addition to the projects in construction, there are also currently projects in various stages of design development, including preliminary design (<30%) and advanced design (30% - 100%) status. **Table** 4-**5** provides details for these projects including project name, description, most impacted waterbody and CSO, construction costs and estimated schedule.

4.3.3 Planned Projects

The planned projects in “not started” status have not yet started preliminary design. This includes both projects from the 2024 LTCP and the 2025 LTCP Projects Validation efforts required to meet regulatory compliance requirements. **Table** 4-**6** provides details for these planned projects including project name, description, most impacted waterbody and CSO, and estimated schedule. Project costs and schedule are described later in this section.

Table 4-4: 2026 Amended LTCP Projects in Construction

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
NFA_1 NFA Phase I	Rehabilitate the WWTF's biological systems to reach its full original design capacity (360 MGD).	Unchanged	Niagara River	CSO-055	Construction	11/25/2019	6/23/2022	9/27/2022	5/25/2030
NFA_2 NFA Phase II	Completed as two separate contracts. Contract A includes improvements to the existing primary settling tanks, replacement of primary sludge pumping systems, scum pumping systems, drainage pumping systems, a new odor control system, and maintenance/rehabilitation improvements to the Primary Sludge Pump Station Building. Contract B includes improvements to partial-treatment mode systems, including new high-rate disinfection system chlorine contact disinfection system and appurtenant improvements.	Unchanged	Niagara River	CSO-055	Construction	10/28/2020	7/10/2025	7/23/2026	12/26/2031
CSO053_3.2 Bailey & Amherst RTC, Amherst Quarry PS RTC	Adds RTC at SPP255 (Bailey Avenue and East Amherst Street) and improves the efficiency of Amherst Quarry dewatering operations to reduce overflows. This project also includes updating sensors at Amherst Quarry and adding instrumentation at SPP338 (Bailey Ave & Kerns Ave).	Unchanged	Scajaquada Creek	CSO-053	Construction	12/1/2021	11/27/2024	5/28/2025	7/6/2028
CSO006_2 Gates Circle RTC	Diverts flow from the Bird Trunk to the Scajaquada Tunnel Interceptor via a controlled connection at SPP332 to relieve the Bird Trunk and Black Rock Canal SPPs. Conversely the RTC would convey more flow to the Bird Trunk if Scajaquada Tunnel does not have capacity. This project includes adding instrumentation at the Niagara Metering Station (SPP330) to inform the gate control.	Unchanged	Black Rock Canal	CSO-006	Construction	3/1/2022	10/8/2024	4/8/2025	5/17/2028
CSO010_1 Breckenridge Street CSO Project	A new sewer along West Avenue will capture flows from the Breckenridge Street combined sewer and West Avenue collector sewers, from Lafayette Avenue to Breckenridge Street and divert flows to Scajaquada Tunnel. A new energy dissipating drop shaft will be provided at West and Lafayette Street. Additionally, the combined sewer on Breckenridge Street will be relined from West Avenue to Herkimer Street.	Modified	Black Rock Canal	CSO-010	Construction	3/1/2022	2/25/2025	8/26/2025	1/31/2029
CSO053_14 SPP175, SPP176, SPP177 Modification (Michigan Ave)	Weirs will be raised in three SPPs along Michigan Avenue. The weir SPP175 at Dodge Street and Michigan Ave will be raised to 56.10 ft (City datum). The weir at SPP176 at Michigan Avenue and Riley Street and SPP177 at Michigan Avenue and Glenwood Avenue will both be raised to 52.85 ft (City datum).	Unchanged	Scajaquada Creek	CSO-053	Construction	3/2/2024	12/31/2025	6/30/2026	12/31/2027

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO053_1.5 SPP336B Modification (Humboldt Pkwy)	Modifications to SPP336B include removing the underflow orifice plate and raising the weir by 2.7'.	Modified	Scajaquada Creek	CSO-053	Construction	3/2/2024	12/31/2025	6/30/2026	12/31/2027
CSO053_8 SPP341A Modification (Genesee)	SPP341A is located on Genesee Street east of Kerns Avenue. This project includes the installation of a new vortex-style drop shaft to the Scajaquada Tunnel to accommodate a peak flow of 26.4 MGD.	Modified	Scajaquada Creek	CSO-053	Preconstruction	3/2/2024	12/31/2025	12/31/2026	12/31/2028
CSO053_2.5 SPP337 Modification (Colorado)	A new vortex-style drop shaft will be constructed to connect to the Scajaquada Tunnel to accommodate a peak flow of 48 MGD.	Modified	Scajaquada Creek	CSO-053	Preconstruction	3/2/2024	6/30/2026	12/31/2026	12/31/2028
GI - Park Package 1	Installation of an underground, stormwater detention area at Hennepin Park and the separation of stormwater and sanitary sewer piping contributing to the stormwater management practice. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, pavement, curbing, sidewalk, signage, the basketball court pavement, installation of an underdrain from the playground area, and any disturbed vegetated areas. The total impervious area managed is estimated at 13.1 acres.	Modified	Buffalo River	CSO-033	Preconstruction	9/27/2024	9/9/2026	12/22/2026	3/14/2028

Table 4-5: 2026 Amended LTCP Projects in Design

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO053_11 Canisius RTC and Ventilation Facility	A tunnel will be constructed beneath Spillman Place to connect existing flows from SPP333 to the Scajaquada Tunnel Interceptor. A new RTC and Ventilation Facility near Canisius College will be constructed to further optimize flow conditions within the Scajaquada Tunnel.	Modified	Scajaquada Creek	CSO-053	Advanced Design	3/24/2022	1/31/2028	1/8/2029	3/31/2034
CSO053_5.2 Roosevelt Park OLS	A 1.7 MG tank will be constructed in Roosevelt Park to storage flow diverted from the Edison Avenue trunk sewer. The tank will dewater via pumping back to the Edison Avenue trunk sewer.	Modified	Scajaquada Creek	CSO-053	Advanced Design	3/2/2024	8/31/2027	2/28/2028	7/4/2031
CSO053_1.4 Sidney Street Sewer Improvement Project	Modifications to SPP336B include upsizing the underflow pipe to 4' diameter pipe and adding a gate with dynamic controls to the underflow pipe to throttle flow during large events to reduce the frequency of high HGLs in the ST.	Modified	Scajaquada Creek	CSO-053	Advanced Design	3/2/2024	6/30/2027	12/31/2027	12/31/2032
NFA_3A NFA Phase III A	Two new 130-ft diameter final settling tanks and one new chlorine contact tank will be constructed to expand the capacity of the secondary treatment system at Bird Island WWTP. Work will also include stormwater modifications, partial relocation of the west side FE conduit, and misc. site improvements.	Unchanged	Niagara River	CSO-055	Advanced Design	3/29/2024	9/30/2027	3/31/2028	12/31/2032
GI - Park Package 2	Installation of green infrastructure practices at four Buffalo Parks including Martin Luther King Park, Genesee Gateway Triangle, Lincoln Park, and Eddie Dawson Park including underground storage, stormwater trenches, stormwater planters and the planting of additional trees. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 5.5 acres	Modified	Buffalo River	CSO-026	Advanced Design	11/1/2024	4/7/2027	8/18/2027	8/23/2028
CSO064_1.1 CSO-064 ILS (Louisiana & Mackinaw)	The existing 24” sewer upstream of SPP137 between South Street and Republic Street along Louisiana Street will be replaced by two 60” diameter sewers to provide in-line storage volume to help reduce overflows at SPP137.	Unchanged	Buffalo River	CSO-064	Preliminary Design	3/3/2025	12/31/2026	6/30/2027	6/30/2029
CSO064_1.2 SPP137 Modification (Louisiana & Republic)	The overflow weir in SPP137 will be raised to 0.50 ft (City datum) and the underflow orifice plate removed. These modifications will reduce overflows at CSO-064 and will be implemented in conjunction with the CSO-064 ILS project.	Unchanged	Buffalo River	CSO-064	Preliminary Design	3/3/2025	12/31/2026	6/30/2027	6/30/2029

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
System_2_3 SPP339 Modification (Texas & Kerns)	Modify SPP339 by increasing the diameter of the underflow pipe to 48" through the installation of a new drop shaft and raising the elevation of the overflow weir to 52.71 ft (City datum).	Unchanged	Scajaquada Creek	CSO-053	Preliminary Design	3/3/2025	6/30/2028	12/31/2028	6/30/2031
System_2_4 SPP340 Modification (Hagen & Kerns)	Modifications to SPP340 include increasing the diameter of the underflow orifice to 24" and addition a flap gate to prevent backflow from the Scajaquada Drain.	Unchanged	Scajaquada Creek	CSO-053	Preliminary Design	3/3/2025	6/30/2028	12/31/2028	6/30/2031
GI – ROW Package 1	Right-of-Way Package 1 consists of 22 green infrastructure systems, all of which are stormwater tree/infiltration trenches. The total impervious area managed is estimated at 10.9 acres..	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	3/31/2027	8/11/2027	8/9/2028
GI – ROW Package 2	Right-of-Way Package 2 consists of 17 green infrastructure systems, including 16 stormwater tree trenches and 1 rain garden. The total impervious area managed is estimated at 4.2 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	3/31/2027	8/11/2027	8/9/2028
GI – ROW Package 3	Right-of-Way Package 3 consists of 58 green infrastructure systems- all of which are stormwater tree trenches. The total drainage area managed is estimated at 15.6 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	5/12/2027	9/22/2027	10/4/2028
GI – ROW Package 4	Right-of-Way Package 4 consists of 26 green infrastructure systems all of which are stormwater trenches. The total impervious area managed is estimated at 8.1 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	4/7/2027	7/13/2027	7/12/2028
GI – ROW Package 5	Right-of-Way Package 5 consists of 43 green infrastructure systems, all of which are stormwater tree trenches. The total drainage area managed is estimated at 9.7 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	4/14/2027	8/25/2027	9/16/2028
GI – ROW Package 6	Right-of-Way Package 6 consists of 48 green infrastructure systems, including 43 stormwater tree trenches and 5 stormwater planters. The total drainage area managed is estimated at 15.5 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	5/28/2025	4/28/2027	9/8/2027	7/19/2028
GI – ROW Package 7	Right-of-Way Package 7 consists of 41 green infrastructure systems, including 39 stormwater tree trenches and 2 bump outs. The total drainage area managed is estimated at 9.7 acres.	Modified	Buffalo River	CSO-026, CSO-033	Advanced Design	5/28/2025	5/5/2027	8/10/2027	8/30/2028
GI – ROW Package 8	Right-of-Way Package 8 consists of 28 green infrastructure systems – all of which are stormwater tree trenches. The total impervious area managed is estimated at 8.4 acres.	Modified	Buffalo River	CSO-026	Advanced Design	5/28/2025	4/21/2027	7/21/2027	7/14/2028

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
GI – ROW Package 9	Right-of-Way Package 9 consists of 25 green infrastructure systems, including stormwater tree trenches and infiltration trenches. The total impervious area managed is estimated at 8.9 acres.	Modified	Buffalo River	CSO-026, CSO-027, CSO-033	Advanced Design	5/28/2025	6/9/2027	9/15/2027	9/10/2028
GI - Park Package 3	Installation of green infrastructure practices at four Buffalo Parks including Schiller Park, Hank Nowak Park, and Mary Jean Sloan Park including underground storage and stormwater tree trenches within park property and along the public right-of-way. Site improvements will also include the replacement of existing, disturbed features in kind, including basketball courts, parking areas, curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 4.1 acres.	Modified	Scajaquada Creek, Buffalo River	CSO-053, CSO-033	Advanced Design	5/28/2025	4/14/2027	8/25/2027	8/27/2028
GI - Buffalo Public Schools Package	The Buffalo Public Schools package consists of 16 school sites with a combination of both on-site work and work within the surrounding public right-of-way. The 60% design includes stormwater tree trenches, infiltration trenches, underground storage systems, stormwater planters, and bioretention areas. The total impervious area managed is estimated at 34.8 acres.	Modified	Scajaquada Creek, Buffalo River	CSO-053, CSO-026	Advanced Design	6/10/2025	3/31/2027	7/7/2027	9/13/2028
GI – Buffalo Municipal Housing Authority Package	Installation of green infrastructure practices at two Buffalo Municipal Housing Authority sites (Ferry Grider and Langfield/ Kenfield) including underground storage within parking areas, stormwater tree trenches along the public right-of-way, and the planting of additional trees. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 41.6 acres.	Modified	Scajaquada Creek	CSO-053	Advanced Design	6/10/2025	8/4/2027	11/10/2027	11/8/2028
CSO017_8 SPP326A Construction (Oak & Swan)	A new regulating structure (SPP326A) will be constructed near SPP327.	Modified	Buffalo River	CSO-017	Preliminary Design	3/3/2026	12/31/2028	6/30/2029	12/31/2030
CSO013_1 SPP304 Modification (Virginia & Busti)	Modifications to SPP304 include removal of the underflow orifice plate.	Unchanged	Black Rock Canal	CSO-013	Preliminary Design	3/3/2026	12/31/2027	6/30/2028	12/31/2029
NFA_3B NFA Phase III B	Work includes modifications to the coarse bubble diffused air supply system, modifications to the six Final Control Buildings' infrastructure, upgrades to the existing final settling tanks, rehabilitation and retrofit of the existing Final Effluent Building including new chemical storage and handling room, new personnel spaces, and new code compliant electrical spaces.	Unchanged	Niagara River	CSO-055	Preliminary Design	9/1/2026	12/31/2027	1/1/2029	12/31/2034

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO012_1.2 SPP023 Modification (Niagara Thruway & Albany St)	A new SPP023 will be constructed upstream of the existing and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor.	Modified	Black Rock Canal	CSO-012	Preliminary Design	3/3/2027	2/28/2031	10/31/2031	12/31/2033
CSO012_2.1 SPP296 Modification (Niagara Thruway & Albany St)	A new SPP296 will be constructed upstream of the existing and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor.	Modified	Black Rock Canal	CSO-012	Preliminary Design	3/3/2027	2/28/2031	10/31/2031	12/31/2033

Table 4-6: 2026 Amended LTCP Planned Projects

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
System_1A Sewer Interceptor System Preliminary Design	Development of Basis of Design for North and South Interceptor Projects. As part of Basis of Design, project packaging and schedule will be developed.	New	All	All	Not Started	6/30/2026	6/30/2028	N/A	N/A
CSO027_2 Babcock PS Weir Modification	Babcock Pump Station operates as an RTC facility to store flows in an upstream 11 ft by 11 ft box culvert during wet weather. The CSO027_2 modification project redirects flow from a 48" sewer to the box culvert instead of the sewer downstream of the pump station. This increases the in-line storage utilization and reduces the flow sent to the Swan Trunk in wet weather.	Unchanged	Buffalo River	CSO-027	Not Started	3/3/2027	4/30/2029	12/31/2029	12/31/2031
CSO016_1 Charles Street Weir Modification	Modify the weir in the Charles Street regulating structure by lowering the weir by 2 ft, while the length and height will be maintained at 9.5 ft and 6.5 ft, respectively.	New	Erie Basin Marina	CSO-016	Not Started	3/3/2027	4/30/2029	12/31/2029	12/31/2031
CSO027_1 SPP317 Modification (Fillmore & Clinton)	Lower the overflow weir in SPP317 to 7.25 ft (City datum). Lowering the weir will result in increased flows directed to the Smith Street ILS facility, while lowering flows in the Swan Trunk.	Unchanged	Buffalo River	CSO-027	Not Started	3/3/2027	12/31/2028	6/30/2029	12/31/2030
System_1B Sewer Interceptor Pump Station	The new North and South Sewer Interceptors will be dewatered to the WWTF during and after wet weather events via a new dewatering pump station. This project is required as the interceptors are unable to drain by gravity.	New	All	All	Not Started	06/30/2028	2/1/2031	10/31/2031	10/31/2034
System_1 North Sewer Interceptor	The North Sewer Interceptor is designed to create more conveyance capacity to the WWTF, supplement capacity in the North Interceptor, and increase the ability of the system to store wet-weather flows.	Modified	All	All	Not Started	3/1/2028	7/30/2030	4/1/2031	11/30/2034
CSO027_3 SPP097 Modification	SPP097 is located on Babcock Street, 555 ft north of the Buffalo River. The underflow pipe at SPP097 will be upsized to 42 inches.	Modified	Buffalo River	CSO-027	Not Started	3/1/2028	10/31/2030	6/30/2031	6/30/2033
System_2_2 Schiller Park Ventilation Facility	A new ventilation facility will be built within Schiller Park to mitigate air releases caused by rapid filling and peak flows in the ST. This project is recommended due to the SPP modifications that occur downstream optimizing use of the ST.	Modified	Scajaquada Creek	CSO-053	Not Started	3/3/2028	4/30/2030	12/31/2030	12/31/2033

Project Name & Tag	2026 Project Description	Status Compared to 2024 LTCP	Receiving Waterbody	Most Impacted CSO	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO006_3 Delavan Drain Weir Raising & RTC	There is an existing sluice gate near the end of the Delavan Drain that connects the Delavan Drain to the North Interceptor at the intersection of West Delavan Ave. and Niagara St. The sluice gate is currently closed all the time. The Delavan Drain RTC project converts this connection to a dynamically controlled gate that opens when the North Interceptor has available capacity and closes when there is no risk of overflow at CSO-006. This project would require adjustments to the connectivity between the Delavan Drain and the Scajaquada Drain, which sends a large amount of creek flow to the Delavan Drain during most storm events.	Unchanged	Black Rock Canal	CSO-006	Not Started	3/3/2029	10/31/2031	6/30/2032	12/31/2035
System_2 South Sewer Interceptor	The South Sewer Interceptor is designed to create more conveyance capacity to the WWTF, supplement capacity in the North Interceptor, and increase the ability of the system to store wet-weather flows.	New	All	All	Not Started	3/1/2031	2/1/2034	10/31/2034	12/31/2040
CSO028_1 Hopkins & Osage OLS	The Hopkins and Osage OLS will store flow from the Hopkins Street sewer in a 0.95 MG tank at the eastern end of Osage Street. The storage tank will be dewatered via a pump station when there is available capacity in the South Park Avenue sewer and no risk of overflow at the downstream SPPs 125 and 126. This project also includes raising the weir at SPP123A to 2.40 ft (City datum) to send flow to the downstream off-line storage.	Unchanged	Buffalo River	CSO-028	Not Started	3/3/2031	10/31/2034	6/30/2035	9/30/2039
GI – 100 acres: Buffalo River	Green infrastructure projects would be constructed within the Buffalo River Basin sufficient to control runoff from 20% of the impervious area within the basin (100 acres managed). The exact list of projects to be implemented would be determined during the design phase.	Modified	Buffalo River	CSO-017, CSO-026	Not Started	3/2/2032	3/1/2035	3/1/2036	3/2/2039
GI – 280 acres: Niagara River	Green infrastructure projects would be constructed within the Niagara River Basin sufficient to control runoff from 20% of the impervious area within the basin (280 acres managed). The exact list of projects to be implemented would be determined during the design phase.	Modified	Niagara River	CSO-011, CSO-055	Not Started	3/2/2032	3/1/2036	3/1/2037	3/1/2040
CSO064_2 Perry Street Sanitary Sewer	This project will replace an existing sewer partially built into Hamburg Drain. The new sewer will start on Scott St near Illinois St to Louisiana St, then continue along Perry St to the Hamburg St. Pump Station.	Unchanged	Buffalo River	CSO-064	Not Started	3/3/2033	10/31/2035	6/30/2036	12/31/2038
CSO017_1.1 SPP054 Sewer Separation	The sewer upstream of SPP054 will be converted to a storm sewer and disconnected from the combined system and eliminate SPP054 as an SPP.	Unchanged	Buffalo River	CSO-017	Not Started	3/3/2033	10/31/2035	6/30/2036	12/31/2038

4.4 2026 Amended LTCP Schedule

The 2026 Amended LTCP Schedule can be found in **Appendix D**. The projects are planned to be completed by December 31, 2040, in accordance with the Consent Judgment.

4.5 2026 Amended LTCP Costs

Table 4-7 summarizes the 2026 Amended LTCP costs. Active projects include projects that are currently in the design phase or construction phase. Planned projects include projects that have not entered design. A table displaying the capital cost estimate for each project is included in **Appendix E**.

Table 4-7: 2026 Amended LTCP Cost Estimates

Projects	Cost Estimate *
Active Projects under 2026 Amended LTCP	$572,350,000
Planned Projects under 2026 Amended LTCP	$1,468,898,000
Total 2026 Amended LTCP Cost	$2,041,248,000

*Year 2026 dollars. Project costs rounded to the third significant figure. This estimate includes capital costs for projects that have yet to be encumbered by BSA. Some projects include construction contingency only, some include construction, engineering, administrative, and legal contingencies. Detailed information can be found in Appendix E.

4.6 2026 Amended LTCP Public Participation Plan

In accordance with NYSDEC Commissioner Policy 29, Environmental Justice and Permitting, and the requirements of the 2025 Consent Judgment, BSA completed a comprehensive Public Participation Plan (PPP) process in support of the 2024 LTCP. The approved PPP was implemented between October 1, 2024, and October 1, 2025, and included extensive stakeholder engagement, environmental justice outreach, public meetings, digital engagement, and project-specific coordination activities.

As part of the completed PPP process, BSA established a Stakeholder Advisory Committee (SAC) comprised of representatives from community organizations, advocacy groups, local government agencies, and environmental justice stakeholders to ensure that community perspectives were integrated into the planning and evaluation of LTCP control projects. The SAC met monthly beginning in January 2025 and provided ongoing feedback regarding project impacts, public communications, and opportunities to minimize community disruption.

BSA also conducted a broad public outreach campaign throughout Buffalo's nine council districts, including:

- Public participation forums
- Virtual public meetings
- Community block club meetings
- Stakeholder workshops
- Environmental review hearings
- Attendance at more than 100 community events
- Distribution of educational materials and multilingual outreach resources
- Development of online engagement platforms and interactive project mapping tools

Importantly, the public participation process directly influenced the development of the 2026 Amended LTCP. Feedback received from residents, public agencies, and community organizations identified concerns regarding:

- Long-term park closures
- Traffic disruption
- Property acquisition
- Construction duration
- Impacts to residential neighborhoods
- Utility disruptions
- Operation and maintenance burdens associated with numerous OLS facilities

These concerns informed the 2025 LTCP Projects Validation initiative and contributed to the refinement of alternatives that ultimately led to selection of the revised interceptor-based approach.

On November 30, 2025, BSA submitted the PPP Summary Report (**Appendix F**) and a Letter of Intent to NYSDEC documenting completion of the PPP process and notifying NYSDEC of BSA's intent to submit the Revised Bridging Document and Revised Control Project Schedule constituting the 2026 Amended LTCP.

While the initial PPP process has been completed, BSA recognizes that continued public participation will be necessary as the 2026 Amended LTCP advances through further design development, environmental review, and implementation. Accordingly, BSA will develop an updated and expanded Public Participation Plan to complement the Revised Bridging Document and support implementation of the 2026 Amended LTCP. The updated PPP will be submitted as part of the 2026 Amended LTCP after the Revised Bridging Document and Post Construction Monitoring Plan have been approved by DEC.

The updated PPP will build upon the outreach framework established during the 2024–2025 engagement process and will focus specifically on communicating the revised LTCP strategy, including:

- The transition from multiple OLS facilities to the interceptor-based conveyance approach
- Refinements to project scopes and schedules
- Construction sequencing and anticipated impacts
- Tunnel and shaft siting considerations
- Environmental review milestones
- Community mitigation strategies
- Ongoing environmental justice coordination

The updated PPP is anticipated to include:

- Continued operation of the SAC
- Project-specific community advisory groups
- Additional public meetings and workshops
- Digital engagement tools and updated project websites
- Regular publication of construction and schedule updates
- Multilingual outreach materials

- Coordination with neighborhood organizations, elected officials, public agencies, and environmental justice stakeholders
- Enhanced project-specific outreach during design and construction phases

The revised public participation effort will also support future SEQR and permitting activities associated with individual projects included in the 2026 Amended LTCP.

APPENDIX A: Consent Judgment

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF ERIE

AMANDA LEFTON, as Commissioner of the New York State Department of Environmental Conservation, and the NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, Plaintiffs, - against - THE BUFFALO SEWER AUTHORITY, Defendant.	Index No. 816176/2025 **[PROPOSED] CONSENT JUDGMENT**

TABLE OF CONTENTS

I. JURISDICTION AND VENUE 11

II. APPLICABILITY 11

III. OBJECTIVES 12

IV. DEFINITIONS 12

V. COMPLIANCE REQUIREMENTS 20

VI. REPORTING REQUIREMENTS 29

VII. CIVIL PENALTY 34

VIII. ENVIRONMENTAL BENEFIT PROJECT 34

IX. STIPULATED PENALTIES 36

X. FORCE MAJEURE 40

XI. DISPUTE RESOLUTION 42

XII. INFORMATION COLLECTION AND RETENTION 46

XIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS 48

XIV. COSTS 50

XV. NOTICES 50

XVI. EFFECTIVE DATE 52

XVII. RETENTION OF JURISDICTION 53

XVII. MODIFICATION 53

XVIII. TERMINATION 54

XIX. PUBLIC PARTICIPATION 51

XX. SIGNATORIES/SERVICE 55

XXI. INTEGRATION 56

XXII. HEADINGS 56

XXIII. FINAL JUDGMENT 56

XXIV. APPENDICES 56

WHEREAS, plaintiffs Amanda Lefton, as Commissioner of the New York State Department of Environmental Conservation (DEC) and the DEC (together "DEC"), have filed a verified complaint ((the "Complaint") in this action concurrently with this Consent Judgment seeking civil penalties and injunctive relief relating to the municipal wastewater treatment facilities and combined sewer system operated by defendant the Buffalo Sewer Authority ("BSA"). The Complaint alleges that BSA violated Article 17 of the New York State Environmental Conservation Law (ECL), ECL § 17-0801, *et seq*., by failing to comply with its approved combined sewer overflow ("CSO") long-term control plan ("LTCP") implementation schedule, as required by the administrative compliance order issued by the Environmental Protection Agency (EPA), and its DEC-issued State Pollutant Discharge Elimination System ("SPDES") permit no. NY0028410 (the "Permit"). The Complaint additionally alleges that in 2024 BSA violated effluent discharge limits and bypass operation and reporting requirements of the Permit.

WHEREAS, the primary purpose of this Consent Judgment is to specify the requirements for BSA to submit and, upon DEC approval, implement an amended LTCP ("Amended LTCP") to reduce the number of CSO discharges to waters of New York and the United States and achieve the Typical Year CSO activation limits, as defined below, by receiving waterbody, as specified in its previous 2014 LTCP. The Amended LTCP will update and supersede the previously approved 2014 LTCP. The terms of this Consent Judgment require that all capital control projects

outlined in the approved Amended LTCP be completed no later than December 31, 2040.

WHEREAS, BSA owns and operates a publicly owned treatment works ("POTW"), as defined at 40 C.F.R. § 403.3, consisting of its Bird Island Wastewater Treatment Facility ("Bird Island WWTF") located at 90 West Ferry Street, Buffalo, New York 14213, and its Combined Sewer System, located in the City of Buffalo (collectively the "Facility"), pursuant to the Permit.

WHEREAS, the Permit authorizes BSA to discharge sanitary wastewater and stormwater runoff from three Bird Island WWTF outfalls and 52 CSO outfalls into the Receiving Waters, as defined below, in accordance with requirements and conditions contained in the Permit.

WHEREAS, EPA's "Combined Sewer Overflow Control Policy," 59 Fed. Reg. 18,688 (April 19, 1994), 33 U.S.C. § 1342(q), ("EPA's CSO Policy") directs CSO permittees to develop and submit an LTCP that addresses the following nine minimum core elements: (i) characterization, monitoring, and modeling; (ii) public participation; (iii) consideration of sensitive areas; (iv) evaluation of alternatives; (v) cost/performance considerations; (vi) operational plan; (vii) maximization of treatment at the existing POTW treatment plant; (viii) implementation schedule; and (ix) post construction monitoring program.

WHEREAS, EPA's CSO Policy indicates that states and EPA should coordinate review and appropriate revision of water quality standards and

implementation procedures with development of the LTCP to ensure that long-term controls will be sufficient to meet water quality standards.

WHEREAS, BSA developed and submitted a draft LTCP on January 13, 2014 to DEC and EPA, that complied with EPA's CSO Policy.

WHEREAS, BSA's draft LTCP included a schedule for various construction and collection system projects to be implemented over a 20-year period to substantially reduce CSO discharges from BSA's Combined Sewer System. The 20-year implementation schedule was associated with a significant decrease in Typical Year CSO activations. The 20-year implementation schedule was predicted to reduce the number of CSO activations from approximately 65 CSO discharge events per year to 0-9 CSO discharge events in a Typical Year at BSA's CSO outfalls.

WHEREAS, EPA and DEC approved BSA's draft LTCP on March 18, 2014 (the "2014 LTCP").

WHEREAS, EPA, thereafter, issued an Administrative Compliance Order, CWA-02-2014-3033, on April 11, 2014 (the "2014 EPA Order"), which required BSA to implement the 2014 LTCP in accordance with the 20-year implementation schedule. The 2014 EPA Order required BSA to complete implementation of all 2014 LTCP projects by no later than March 18, 2034.

WHEREAS, DEC thereafter amended the Permit to require BSA to implement the 2014 LTCP in accordance with the 2014 Order.

WHEREAS, the below facts outline BSA's compliance and alleged noncompliance with its Permit and the 2014 EPA Order and support the approval of

this Consent Judgment;

- To date BSA has completed construction of more than 33 of the projects included in the 2014 LTCP and the 2014 EPA Order and has managed over 670 acres of impervious surface through Green Infrastructure projects. Five more LTCP projects are currently in construction and 12 are in various stages of design.

- Since 2014, BSA alleges that it has invested over $158 million dollars in plant and collection system improvements, resulting in significant reductions in CSO discharges, system-wide activations, and total activations.

- One of the major construction projects set forth in the 2014 LTCP is the No Feasible Alternative Project ("NFA Project"), and it is designed to improve treatment at the WWTF. The NFA Project will increase the secondary treatment capacity of the WWTF, minimizing the amount of wastewater that bypasses secondary treatment.

- The NFA Project is being conducted in three phases, with Phase I (WWTF Secondary System Rehabilitation and Upgrade Project) currently under construction. The engineering report for Phase II (WWTF Primary Treatment Renovation) was approved by DEC on June 8, 2023, and BSA's bidding process for the award of contracts for construction services is in progress. BSA approved the engineering design contract for Phase III on January 26, 2024.

- The Permit and 2014 EPA Order required BSA to (i) start engineering on the NFA Project by March 18, 2015, (ii) issue a notice to proceed by March 18, 2017, (iii) complete engineering on the NFA Project by March 18, 2019, and (iv) substantially complete the NFA Project by March 18, 2022, in accordance with the 2014 LTCP.

- On September 1, 2015, BSA notified DEC and EPA that the design engineering of the NFA Project was delayed due to the unexpected need to, as part of the NFA Project, remove extensive quantities of grit that had accumulated in the WWTF system, and that these issues had to be rectified to allow for accurate measurements necessary to complete design engineering of the NFA Project.

- EPA issued BSA a Notice of Violation, dated November 8, 2018, alleging that BSA failed to start engineering on the NFA Project by the March 18, 2015 date, precluding BSA from completing the engineering

on the NFA Project by the March 18, 2019 deadline, in violation of the Permit and 2014 EPA Order. To account for delays caused by the cleaning/grit removal work, BSA requested extensions through September 2021 for the start of NFA Project engineering and through November 2024 for the completion of the NFA Project engineering.

- In a letter dated November 28, 2018 to DEC and EPA, BSA provided an update on the cleaning/grit removal work remaining, with a schedule for completion of the remaining work, and, based on the work remaining, requested an extension to submit the engineering for the NFA Project design to September 2021.

- Based on communications with EPA related to the delays caused by the cleaning/grit removal work, on April 11, 2019 BSA submitted a request to extend the NFA Project schedule.

- Due to the estimated costs associated with removing grit from the aeration tanks in the secondary system, BSA determined that it would replace the entire aeration system as part of the NFA Project.

- In response to BSA's request for an extension of the NFA Project schedule, DEC requested additional information, including a financial capability analysis. BSA retained an expert consultant, and submitted the financial capability analysis on December 31, 2020.

- Although BSA started preliminary engineering activities for Phase I of the NFA Project by March 18, 2015, given unexpected interruptions in the implementation of the NFA Project, BSA issued a request for proposal on July 23, 2019 and started design engineering on Phase I on November 25, 2019; and, issued the request for proposal for Phase II on May 20, 2020 and started design engineering on October 28, 2020.

- On January 28, 2020, BSA submitted the NFA Project Phase I engineering report to DEC and EPA for approval, which was approved on September 29, 2021. The Phase I design engineering was completed on June 13, 2021, and the notice to proceed was issued on October 19, 2022.

- On October 29, 2021, BSA submitted an NFA Project Phase II engineering report to DEC and EPA, and a revised engineering report was submitted by BSA on May 31, 2022 responding to DEC's February 8, 2022 comments, which was approved on June 8, 2023.

- Throughout the cleaning/grit removal process, BSA provided semi-annual updates to DEC and EPA on the status of the cleaning/grit removal and the anticipated schedule for the NFA Project.

- BSA has not issued a notice to proceed for Phases II or III, or achieved substantial completion for Phase I, Phase II or Phase III of the NFA Project to date.

- BSA conducted a collection system model recalibration in 2019.

- On October 6, 2021, DEC and EPA approved BSA's Collection System Model – Model Update Report ("2021 Approved Recalibrated Model"), which BSA used to analyze the physical and financial feasibility and efficacy of projects included in the 2014 LTCP.

- Based on the 2021 Approved Recalibrated Model, it was determined that certain collection system projects included in the 2014 LTCP were not feasible or would not be able to achieve the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP.

- BSA conducted an optimization process and identified new opportunities to improve utilization of existing system capacity and add conveyance and storage capacity where needed most to address activations.

- BSA alleges that starting in March 2020, the COVID-19 pandemic and the associated shutdowns across the economy, hyper-inflation, and supply chain problems caused delays and hindered BSA's ability to complete the NFA Project and related activities.

- Technical staff from DEC, EPA, and BSA have met on several occasions between 2018 and 2023 to resolve the alleged CWA and State violations relating to the Permit and 2014 EPA Order.

- In mid-2023, DEC, EPA, and BSA agreed that BSA would submit a proposed amended LTCP to comply with the terms of its Permit and achieve the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP.

WHEREAS, the Amended LTCP should assess all core elements in

accordance with EPA's CSO Policy and provide that BSA may satisfy these elements with multiple documents and submissions.

WHEREAS, the below facts support the content of the Proposed Amended LTCP and approval of this Consent Judgment;

- BSA prepared and submitted an LTCP Optimization Selected Alternative memo on December 22, 2023 and a revised LTCP Optimization Selected Alternative memo on July 12, 2024 (the "2024 LTCP Selected Alternative memo") (Appendix A) that provides a set of alternative capital control projects that would replace or otherwise modify some of the projects set forth in the 2014 LTCP and a technical explanation of how those alternative projects would achieve the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP.

- BSA prepared an initial LTCP Optimization Bridging Document on July 6, 2023, to memorialize EPA, DEC, and BSA's technical discussions, consensus, and their mutual decision to develop a proposed amended LTCP to modify, remove, and add projects and establish updated schedules. On December 22, 2023, BSA submitted a revised LTCP Optimization Bridging Document, and on July 12, 2024, BSA submitted a further revised LTCP Optimization Bridging Document (the "2024 Bridging Document") (Appendix B).

- The 2024 Bridging Document provides a detailed overview of the disposition of the projects in the 2014 LTCP and the alternative projects proposed in the 2024 LTCP Selected Alternative memo. The 2024 Bridging Document provides a detailed proposal of projects from the 2014 LTCP that have not been completed and should be carried over to a proposed amended LTCP and alternative projects proposed in the 2024 LTCP Selected Alternative memo (collectively the "Control Projects"). The Control Projects are intended to achieve the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP. The Control Projects include the NFA Project and 52 updated collection system projects ("Collection System Projects").

- The 2024 Bridging Document includes each Control Project's schedule, estimated cost, water quality goals and limits, and other site-specific considerations.

- On December 22, 2023, BSA submitted an updated schedule for all the Control Projects, and on July 12, 2024 and again on December 31, 2024, BSA submitted a revised schedule for the Control Projects (the "2024 Control Project Schedule") (Appendix C). The 2024 Control Project Schedule establishes each Control Project's (i) Design Start Date; (ii) Design Completion Date; (iii) Notice to Proceed Date; and (iv) Complete Construction Date. The 2024 Control Project Schedule requires all projects to be completed no later than December 31, 2040 (the "Date of Achievement of Complete Construction for Control Projects").

- DEC agrees that the Control Projects set forth in the 2024 Bridging Document and the schedules set forth in the 2024 Control Project Schedule represent a fair and reasonable proposed amended LTCP schedule that affords BSA appropriate time to perform necessary repairs to its Combined Sewer Systems while ensuring that BSA effectively controls CSO discharges to waters of the state, and United States and, otherwise, comports with its Permit obligations.

- On September 25, 2024, BSA submitted a Public Participation Plan which lays out procedures and a schedule to inform the public about actions and projects outlined in the 2024 Bridging Document (Appendix B) and the schedules set forth in the 2024 Control Project Schedule (Appendix C), which the Parties agree make up the Proposed Amended LTCP. The Public Participation Plan also provides opportunities for the public to have their views heard and considered concerning the actions required by this Consent Judgment throughout its implementation.

- DEC approved the Public Participation Plan on October 1, 2024 (Appendix D).

- BSA agrees to complete the public participation process on the Proposed Amended LTCP within 12 Months of receiving DEC's approval of the Public Participation Plan.

- BSA agrees to comply with the deadlines set forth in the 2024 Control Project Schedule (Appendix C) to the best of its ability until the Consent Judgment is entered whereupon BSA agrees to comply with the obligations set forth in the Consent Judgment.

- DEC agrees that the 2014 LTCP, the 2024 LTCP Selected Alternative memo (Appendix A), the 2024 Bridging Document (Appendix B), 2024 Control Project Schedule (Appendix C), and Public Participation Plan

(Appendix D) together are submitted by BSA to satisfy the first, second, third, fourth, fifth, sixth, seventh, and eighth elements of EPA's CSO Policy for an Amended LTCP.

- DEC and BSA agree that a Post Construction Compliance Monitoring Plan is required to satisfy the ninth element of EPA's CSO Policy for an Amended LTCP and that such a plan will be developed under this Consent Judgment.

WHEREAS, DEC has alleged that, in addition to its Permit violations arising from failure to timely implement a compliant LTCP, BSA violated various effluent limit, bypass and reporting provisions of the Permit in 2024 (the "2024 Permit Violations"). More particularly, BSA's Monthly Discharge Monitoring Reports (DMRs) between June 1, 2024 and August 31, 2024 demonstrated that it exceeded the daily maximum effluent limit for settleable solids at Outfall 002 (0.3 mL/L) by 500% during the reporting period for June 2024, and 1,233% during the reporting period for August 2024.

WHEREAS, BSA experienced 11 dry weather bypasses from BSA's outfall 001 in August 2024 and December 2024 in violation of 6 NYCRR 750-2.8(b). BSA is not authorized to discharge from Outfall 001 under dry-weather conditions. The dates and parameters of those 11 violations are set forth below.

Date of Bypass	Duration (Hr)	Average Influent (MGD)	Peak Flow (MGD)	001 Discharge (MG)
8/22/2024	10.47	93	145	17
8/23/2024	13.41	79	124	23
8/24/2024	8.93	65	110	19
8/25/2024	12.77	71	117	17
8/26/2024	18	67	118	27
8/27/2024	13.6	71	114	12
8/28/2024	24	74	120	25

Date of Bypass	Duration (Hr)	Average Influent (MGD)	Peak Flow (MGD)	001 Discharge (MG)
8/29/2024	13.62	73	127	20
8/30/2024	6.68	86	111	11
12/6/2024	7.22	102	165	28
12/7/2024	23.22	98	152	78

WHEREAS, BSA did not submit to DEC the requisite bypass reports or reports of anticipated non-compliance for the above bypasses in violation of 6 NYCRR 750-2.7 and 750-2.8(b). DEC and BSA wish to resolve BSA's liability for these alleged violations by BSA paying civil statutory penalties and funding an environmental benefit project pursuant to this Consent Judgment.

WHEREAS, by entering into this Consent Judgment BSA neither admits nor denies any liability to the State arising out of the transactions or occurrences alleged in the Complaint.

WHEREAS, DEC and BSA (together the "Parties") recognize, and the Court, by entering this Consent Judgment, finds, that this Consent Judgment has been negotiated by the Parties in good faith, will avoid litigation between the Parties, and is fair, reasonable, and in the public interest.

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

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action pursuant to Judiciary Law § 140-b and ECL § 71-2727.

2. Venue is proper in Erie County pursuant to CPLR § 503 because BSA resides in Erie County and the alleged violations at issue occurred there.

3. For purposes of this Consent Judgment, or any action to enforce it, BSA consents to the Court's jurisdiction over this Consent Judgment and any such action over BSA and consents to venue in this county.

4. For purposes of this Consent Judgment, BSA agrees that the Complaint states claims upon which relief may be granted pursuant to CPLR § 3211.

II. APPLICABILITY

5. The obligations of this Consent Judgment apply to and are binding upon the DEC, and upon BSA, and any successors, assigns, or other entities or persons otherwise bound by law.

6. No transfer of ownership or operation of BSA's Facility, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve BSA of its obligation to ensure that the terms of the Judgment are implemented. At least 30 Days prior to such transfer, BSA shall provide a copy of this Consent Judgment to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement, to DEC in accordance with Section XV (Notices). Any attempt to transfer ownership

or operation of the Facility without complying with this Paragraph constitutes a violation of this Judgment.

7. BSA shall provide a copy of this Consent Judgment to all officers, employees, and agents whose duties might reasonably include compliance with any of its provisions, as well as to any contractor retained to perform any required work. BSA may provide a copy of this Consent Judgment in electronic format to meet this requirement. BSA shall condition any such contract upon performance of the work in conformity with the terms of this Consent Judgment.

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

III. OBJECTIVES

9. It is the express purpose of the Parties in entering into this Consent Judgment to require BSA, through implementation of its LTCP, to take all measures necessary to fulfill the objectives of the Clean Water Act ("CWA"), to achieve and maintain compliance with ECL Article 17, its Permit (including, to the extent incorporated therein, the 2014 EPA Order), and any applicable Federal and State regulations, including, but not limited to, the reduction of discharges from the CSO outfalls listed in the Permit.

IV. DEFINITIONS

10. Terms used in this Consent Judgment that are defined in either ECL Article 17 or the Clean Water Act, or in regulations promulgated thereunder have

the meanings assigned to them in those laws or regulations, unless otherwise provided in this Judgment. Whenever the terms set forth below are used in this Consent Judgment, the following definitions apply:

"2014 EPA Order" shall mean the Amended Administrative Compliance Order, CWA-02-2014-3033, EPA issued BSA on April 11, 2014;

"2014 LTCP" shall mean BSA's LTCP that was jointly approved by DEC and EPA on March 18, 2014;

"2024 Bridging Document" shall mean the document set forth in Appendix B produced by BSA on July 12, 2024, memorializing the Control Projects and estimated costs;

"2024 LTCP Selected Alternative memo" shall mean the document set forth in Appendix A produced by BSA on July 12, 2024, outlining the projects that would modify or otherwise replace the 2014 LTCP projects that would no longer be sufficient to achieve the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP;

"2024 Control Project Schedule" shall mean the document set forth in Appendix C submitted by BSA on December 31, 2024, establishing each Control Project's (i) Design Start Date; (ii) Design Completion Date; (iii) Notice to Proceed Date; and (iv) Complete Construction Date;

"Amended LTCP" shall mean the Long Term Control Plan that BSA must submit for approval pursuant to Paragraphs 17-18 and thereafter implement pursuant to Paragraphs 19-20;

"Approvable," to be considered Approvable any plan which is required to be submitted to DEC must be approvable by DEC upon submission or with only "minimal revision" in response to DEC comments. Consistent with 6 NYCRR Section 750-1-2(8), "minimal revision" shall mean the facility plan can be revised and resubmitted to DEC within 60 Days of notification by DEC that the revisions are necessary;

"Bird Island WWTF" shall mean BSA's Bird Island Wastewater Treatment Facility located at 90 West Ferry Street, Buffalo, NY 14213;

"Bird Island WWTF Outfalls" shall mean Outfall No. 001, Outfall No. 01A, and Outfall No. 002 located at the Bird Island WWTF, and described more particularly in the Permit.

"BSA" shall mean Defendant the Buffalo Sewer Authority;

"Building/Private Property Backup" shall mean a release of municipal sewage into a building or onto private property that is caused in whole or in part by blockages, flow conditions, or other conditions in the Combined Sewer System;

"Collection System Project" shall mean a project designed to reduce discharges within BSA's combined sewer collection system, from CSO outfalls during wet weather events;

"Combined Sewer Overflow" or "CSO" shall mean any discharge from the BSA's Combined Sewer System through a permitted CSO outfall prior to treatment at its Bird Island WWTF. The term shall include any discharge from the CSO outfalls described more particularly in the Permit;

"Clean Water Act," or "Act" shall mean the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§ 1251 *et seq.*;

"Combined Sewer System" or "CSS" shall mean the wastewater collection and conveyance system, as defined in 40 C.F.R. § 122.2, owned and/or operated by BSA;

"Complaint" shall mean the verified complaint filed by the DEC in this action;

"Consent Judgment" or "Judgment" shall mean this Consent Judgment and Appendices attached hereto (listed in Section XXIV). In the event of a conflict between this Consent Judgment and any Appendix or any approved plan, report, or other item or deliverable, this Consent Judgment shall control;

"Control Projects" shall mean the projects set forth in the 2024 Bridging Document. Control Projects can be divided into two broad categories: (i) 52 Collection System Projects and (ii) the NFA Project;

"Date of Achievement of Complete Construction for Control Projects" shall mean December 31, 2040, the date by which BSA must complete construction for all Control Projects as set forth in the 2024 Control Project Schedule or a Revised Control Project Schedule;

"Day" shall mean a calendar day unless expressly stated to be a business day. In computing any period of time for a deadline under this Consent Judgment, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next business day;

"DEC" shall mean the New York State Department of Environmental Conservation and any of its successor departments or agencies;

"DEC Commissioner's Policy 29" shall mean DEC's guidance for incorporating environmental justice concerns into DEC's permit review process. The DEC Commissioner's Policy 29 can be accessed at https://dec.ny.gov/regulatory/guidance-and-policy-documents/commissioner-policy-29-environmental-justice-and-permitting.

"Effective Date" shall mean the definition provided in Section XVI (Effective Date);

"EPA" shall mean the United States Environmental Protection Agency and any of its successor departments or agencies;

"EPA's CSO LTCP Guidance" shall mean EPA's "Combined Sewer Overflows Guidance for Long-Term Control Plan," which was issued on August 31, 1995 (EPA 832-B-95-002);

"EPA's CSO Policy" shall mean EPA's "Combined Sewer Overflow Policy," which was published in the Federal Register on April 19, 1994 (59 Fed. Reg. 18,688);

"Facility" shall mean BSA's POTW, consisting of its Bird Island WWTF and its Combined Sewer System. Any changes to the BSA's Bird Island WWTF and its Combined Sewer System after the Effective Date of this Judgment shall also be included in the definition of Facility, and subject to the terms of this Judgment;

"Green Infrastructure" or "GI" shall mean systems and practices that use or mimic natural processes to infiltrate, evapotranspire, and/or harvest stormwater on or near the site where it is generated. Green Infrastructure may include, but is not limited to, green roofs, downspout disconnection, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, permeable pavements, reforestation, and protection and enhancement of riparian buffers and floodplains;

"In-Line Storage" or "ILS" shall mean methods to utilize the existing storage capacity within Combined Sewer Systems for later conveyance for treatment to a WWTF instead of discharging from CSO outfalls;

"Integrated Plan" shall mean a plan developed in accordance with the Integrated Municipal Stormwater and Wastewater Planning Approach Framework ("EPA IP Framework"), issued by EPA and dated June 5, 2012, pursuant to Section 402(s) of the Act, 33 U.S.C. § 1342(s). The EPA IP Framework can be accessed at https://www3.epa.gov/npdes/pubs/integrated_planning_framework.pdf.

"No Feasible Alternative Project" or "NFA Project" shall mean the multi-phase project designed to improve treatment of wastewater discharges from WWTF Outfalls during wet weather events;

"Non-NFA WWTF Improvements" shall mean projects which, while supportive of the overall NFA project, are both not part of the originally approved NFA project and which can also be categorized as typical WWTF operation and maintenance ("O&M") activities/upgrades;

"Off-line Storage" or "OLS" shall mean construction and utilization of a means to capture and hold CSS flows outside of a CSS such that the held volume is conveyed to the Bird Island WWTF for treatment after a rain event instead of discharging from CSO outfalls;

"Paragraph" shall mean a portion of this Judgment identified by an Arabic numeral;

"Parties" shall mean the DEC Commissioner DEC, and BSA;

"Permit" shall mean the SPDES Permit No. NY0028410, issued to BSA pursuant to ECL Article 17, Title 8 for the Facility. This term shall include any future extended, modified, or reissued permit therefore;

"Plaintiffs" shall mean the DEC Commissioner and the DEC;

"Post Construction Compliance Monitoring Plan" shall mean a water quality monitoring program adequate to verify compliance with water quality standards (after agency review and appropriate revision, if necessary) and protection of designated uses as well as to ascertain the effectiveness of CSO controls;

"Proposed Amended LTCP" shall mean the set of Control Projects and schedules, outlined in the 2024 Bridging Document (Appendix B) and the 2024 Control Project Schedule (Appendix C), that will be subject to the Public Participation Plan);

"Public Participation Plan" shall mean the outreach and engagement plan set forth in Appendix D for the Proposed Amended LTCP submitted by BSA which includes a description of actions and timeframes to inform the public of actions

required by this Consent Judgment and provides opportunities for the public to have their views heard and considered concerning the actions required by this Consent Judgment;

"Real-Time Control" or "RTC" shall mean a system that performs control actions (e.g., movement of gates, turning pumps on/off) in real time. RTC adjusts the operation of facilities in response to on-line measurements in the field;

"Receiving Waters" shall mean the Niagara River, Black Rock Canal, Erie Basin, Buffalo River, Scajaquada Creek, and Cazenovia Creek;

"Revised Bridging Document" shall mean the updated document BSA must submit pursuant to Paragraph 14, should the results of the Public Participation Plan necessitate changes to the suite of Control Projects set forth in the 2024 Bridging Document;

"Revised Control Project Schedule" shall mean the updated document BSA must submit pursuant to Paragraph 14, should the results of the Public Participation Plan necessitate changes to the 2024 Control Project Schedule;

"Section" shall mean a portion of this Judgment identified by a Roman numeral;

"Sewage Backup" shall mean any overflow, spill, diversion, or release of municipal sewage from BSA's Combined Sewer System, except for CSOs, that are caused in whole or in part by blockages, flow conditions, or other conditions in the Combined Sewer System;

"State" shall mean the State of New York, acting on behalf of DEC;

"Typical Year" shall mean the selected precipitation hyetograph, a statistical plot of the average rainfall intensity against the time interval, used for LTCP modeling. Here, BSA's calibrated sewer model utilizes the modified 1993 hyetograph, as detailed in Appendix 2-1 of the 2014 approved LTCP, to estimate the frequency of activation of CSOs within the Buffalo sewer system and to estimate the annual volume of combined sewage discharged from the Combined Sewer Systems during the "Typical Year."

V. COMPLIANCE REQUIREMENTS

11. BSA shall comply with (i) the terms and conditions of its Permit, including compliance with effluent limits and monitoring requirements therein; (ii) ECL § 17-0801 *et seq*., and the rules promulgated thereunder; and (iii) the compliance measures and schedules set forth below and in any Appendices.

12. Public Participation Plan. BSA shall comply with the Public Participation Plan (Appendix D) and the schedule set forth therein, which requires, among other things, that BSA complete the public participation process associated with the Proposed Amended LTCP within 12 Months of receiving DEC's approval of the Public Participation Plan, which BSA received on October 1, 2024.

13. Public Participation on the Proposed Amended LTCP: Not later than 60 Days after completing the public participation process on the Proposed Amended LTCP under the Public Participation Plan, if BSA determines that the results of the public participation process do not warrant any changes to the design, engineering, or operation of any Control Projects or the dates set forth in the 2024 Control

Project Schedule, BSA shall resubmit the 2024 Bridging Document and the 2024 Control Project Schedule, for review and approval by DEC, in consultation with EPA, and in accordance with the review procedures detailed in Paragraphs 25-29.

14. Not later than 60 Days after completing the public participation process on the Proposed Amended LTCP under the Public Participation Plan, if BSA determines that the results of the public participation process warrant any changes to the design, engineering, or operation of any Control Projects, Control Project selection, or the dates set forth in the 2024 Control Project Schedule, BSA shall notify DEC that it intends to submit a Revised Bridging Document and a Revised Control Project Schedule in accordance with the results of the public participation process under the Public Participation Plan. Within six Months of notifying DEC, BSA shall submit a Revised Bridging Document and a Revised Control Project Schedule for review and approval by DEC, in accordance with the review procedures detailed in Paragraphs 25-29.

a. Like the 2024 Bridging Document and the 2024 LTCP Selected Alternative memo, the Revised Bridging Document shall justify the proposed revisions to the Control Project(s) and identify the technical measures BSA will take to ensure any revised and/or alternative Control Project(s) achieve the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP. To that end, the Revised Bridging Document shall:

(1) Provide the justification(s) for keeping, modifying, removing, or replacing the Control Project(s) outlined in the

2024 Bridging Document, presented in terms of cost, schedule, water quality goals, and other site-specific considerations;

(2) Provide a detailed project description for each of the Control Project(s) outlined in the 2024 Bridging Document and each of the proposed revised and/or alternative Control Project(s), such as sewer infrastructure rehabilitation, number of inflow source disconnections or storage capacity, the volume of storage or scope of sewer separation activities, and the anticipated discharge volume reduction or level of service; and

(3) Demonstrate that any revised and/or alternative Control Project(s) will achieve equal or better environmental benefits, as demonstrated by meeting the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP.

b. The Revised Control Project Schedule may change and/or establish new interim design, engineering, and construction deadlines for any applicable Control Projects. BSA shall provide the justification(s) for any changes to interim design, engineering, and construction deadlines. The Revised Control Project Schedule shall not delay the Date of Achievement of Complete Construction for Control Projects set forth in the 2024 Control Project Schedule.

15. Post Construction Compliance Monitoring Plan. No more than 60 Days after DEC's approval of the resubmitted 2024 Bridging Document and

resubmitted 2024 Control Project Schedule or the Revised Bridging Document and a Revised Control Project Schedule, BSA shall submit a Post Construction Compliance Monitoring Plan for review and approval by DEC, in accordance with the review procedures detailed in Paragraphs 25-29.

16. The Post Construction Compliance Monitoring Plan shall follow EPA's "CSO Post Construction Compliance Monitoring Guidance," EPA- 833-K-11-00, (May 2012) and provide data sufficient for DEC to (1) evaluate the effectiveness of CSO controls in meeting performance goals; and (2) assess compliance with water quality standards.

17. Submission and Approval of an Amended LTCP. No later than 30 Days after receiving DEC's approval of all of the applicable documents referenced in Paragraphs 13-15, BSA shall submit an approvable Amended LTCP for review and approval by DEC, and in accordance with the review procedures detailed in Paragraphs 25-29.

18. The Amended LTCP shall consist of:

a. The 2014 LTCP;

b. Either the resubmitted 2024 Bridging Document pursuant to Paragraph 13 or the Revised Bridging Document pursuant to Paragraph 14, whichever is applicable;

c. Either the resubmitted 2024 Control Project Schedule pursuant to Paragraph 13 or the Revised Control Project Schedule pursuant to Paragraph 14, whichever is applicable;

d. The 2024 LTCP Selected Alternative memo (Appendix A), but only if BSA resubmits the 2024 Bridging Document pursuant to Paragraph 13;

e. The Public Participation Plan (Appendix D); and

f. The Post Construction Compliance Monitoring Plan.

19. Implementation of the Amended LTCP. BSA shall begin implementing the Amended LTCP upon DEC's approval under Paragraph 17 and in accordance with the schedule set forth in the Amended LTCP.

20. BSA shall perform the activities and construct and operate the Control Projects in accordance with the resubmitted 2024 Bridging Document, or, if applicable, the Revised Bridging Document, and by each of the interim and final completion dates set forth in the resubmitted 2024 Control Project Schedule, or, if applicable, the Revised Control Project Schedule. BSA shall ensure that all Control Projects are designed and operated in accordance with sound engineering practices, approved plans and specifications, and engineering reports, to ensure the applicable activation limits will be achieved.

21. Program Manager. BSA shall contract a Program Manager whose primary functions shall include coordinating and overseeing the implementation of the Public Participation Plan, developing a plan to implement the Amended LTCP, and serving any additional roles set forth in BSA's August 2023 Capital Projects Program Management, Request for Proposal. BSA shall use best efforts to retain a Program Manager for the life of the Consent Judgment. BSA shall provide DEC

with the name and contact information for the Program Manager primary contact person, and provide notice within 10 Days in the event the Program Manager or primary contact is changed.

22. Proposal for Revised and/or Alternative Control Projects. No less than 12 Months prior to the Date of issuing a Notice to Proceed to Construction for any given Control Project, BSA may submit a proposal for review and approval by DEC, to revise and/or provide alternative Control Project(s), including to incorporate an Integrated Plan. Each proposal for a revised and/or alternative Control Project(s) shall:

a. Provide detailed project information such as sewer infrastructure rehabilitation, number of inflow source disconnections or storage capacity, the volume of storage or scope of sewer separation activities, and the anticipated discharge volume reduction or level of service.

b. Include an implementation schedule for completion of any revised/resubmitted and/or alternative Control Project(s). The proposed implementation schedules shall not be extended or postponed by more than six months past the complete construction date for the specific Control Project(s) BSA requests to revise and/or provide alternative Control Project(s) for. The proposed implementation schedules shall not extend or postpone the Date of Achievement of Complete Construction for Control Projects (although nothing in this Paragraph precludes BSA from requesting longer extensions in accordance with the procedures in Section XVIII (Modification));

c. Demonstrate that any revised and/or alternative Control Project(s) will achieve equal or better environmental benefits, as demonstrated by meeting the Typical Year CSO activation limits, by receiving waterbody, associated with the 2014 LTCP; and

d. Include a description of the public engagement process concerning the revised and/or alternative Control Project(s).

23. DEC's disapproval of a request under Paragraph 22 is subject to Section X (Dispute Resolution) of this Consent Judgment under the standard of review set forth in Subparagraph 77.a (Disputes Concerning Matters Accorded Record Review). For purposes of this Consent Judgment, DEC's approval of proposed revised and/or alternative Control Project(s) consistent with the criteria identified in subparagraphs 22.a) through (22.d) above shall be considered a non-material modification pursuant to Section XVIII of the Judgment.

24. Interim Effluent Limits. For the duration of this Consent Judgment, BSA shall comply with the interim limits for flow set forth in Appendix E.

a. For any additional interim effluent limits, such as BOD5 or TSS, not set forth in Appendix E on the Date of Filing of this Consent Judgment, BSA shall submit a request for such interim limits to DEC 60 Days prior to the need for those limits to go into effect.

b. Upon approval by DEC, such interim limits shall be incorporated into, and become an enforceable part of Appendix E.

25. Approval of Deliverables by DEC. After review of any plan, report, or other item that is required to be submitted for approval by DEC, DEC shall, in writing: (a) approve the submission; (b) approve the submission upon specified conditions; (c) approve part of the submission and disapprove the remainder; or (d) disapprove the submission.

26. If the submission is approved pursuant to Paragraph 25(a), BSA shall take all actions required by the plan, report, or other document, in accordance with the schedules and requirements of the plan, report, or other document, as approved. If the submission is conditionally approved or approved only in part pursuant to Paragraph 25(b) or (c), BSA shall, upon written direction from DEC, take all actions required by the approved plan, report, or other item that DEC determines are technically severable from any disapproved portions.

27. If the submission is disapproved in whole or in part pursuant to Paragraph 25(c) or (d), DEC shall specify in its written notification the reasons for its disapproval and the requested corrective action and BSA shall, within 60 Days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval, in accordance with the preceding Paragraphs. If the resubmission is approved in whole or in part, BSA shall proceed in accordance with the preceding Paragraph.

28. If a resubmitted plan, report, or other item, or portion thereof, is disapproved in whole or in part, DEC may again require BSA to correct any

deficiencies, in accordance with the preceding Paragraphs, or may itself correct any deficiencies.

29. DEC shall make a good faith effort to review and respond to each of the submittals BSA makes pursuant to this Judgment within 90 Days of their receipt. In the event DEC does not respond to BSA within that 90 Day period, BSA shall be entitled to an extension of any affected milestone date for an equal time period, commencing from the end of the 90 Days.

30. If BSA elects to invoke Dispute Resolution as set forth in Section XI (Dispute Resolution) concerning a decision by DEC to disapprove, approve on specified conditions, or modify a deliverable, BSA shall do so by sending a Notice of Dispute in accordance with Paragraph 72 within 30 Days (or such other time as the Parties agree to in writing) after receipt of the applicable decision.

31. All work plans, reports, and other materials required to be submitted to DEC under this Consent Judgment shall, upon approval, be enforceable under this Consent Judgment.

32. BSA shall post on its public-facing website all deliverables that have been approved within seven Days of approval by DEC, except to the extent that any such deliverable contains information that is exempted from public disclosure under state or federal law. Each submission shall remain on the public-facing website for a minimum of three years.

33. Permits. Where any compliance obligation under this Section requires BSA to obtain a federal, state, or local permit or approval, BSA shall submit timely

and Approvable applications and take all other actions necessary to obtain all such permits or approvals. Any delay in the performance of any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, if BSA has submitted timely and Approvable applications and has taken all other actions necessary to obtain all such permits or approvals within the timeframes required by the issuing agency, may be considered a Force Majeure event pursuant to Section X.

VI. REPORTING REQUIREMENTS

34. Quarterly Progress Report. Upon the Effective Date until termination of this Judgment pursuant to Section XIX (Termination), BSA shall submit, by electronic mail to DEC at the addresses set forth in Section XV (Notices), quarterly reports by May 15 (covering the period January 1 through March 31), August 15 (covering the period April 1 through June 30), November 15 (covering the period July 1 through September 30) and February 15 (covering the period October 1 through December 31) of each year. If after the Effective Date, there is only 45 Days or less before the due date, the quarterly report shall not be required, and the information will be included in the next quarterly report.

35. The quarterly report shall include BSA's activities with regard to Section V (Compliance Requirements), along with all pertinent deliverables required to be submitted under this Consent Judgment, that occurred during the quarterly reporting period, and, at a minimum, shall set forth:

a. The specific activities undertaken by BSA relating to completion

of work required under the compliance schedules specified in this Consent Judgment and identification of those requirements which have been accomplished since the previous quarterly report;

b. Any impediments encountered or anticipated by BSA in meeting the compliance schedules under this Consent Judgment, the steps that have been taken by BSA to overcome such impediments or proposed solutions, including the anticipated dates by which such steps will be taken to prevent future non-compliance;

c. The status of Bird Island WWTF and CSO outfall operations and maintenance, based on monthly facility operations reports, when CSO outfalls were operated, and CSO outfall maintenance activity logs;

d. If applicable, a list of Sewage Backups and Building/Private Property Backups with the following information:

(1) approximate location, date, time, and volume of the release; CSO tributary area;

(2) cause(s) or suspected cause(s) (e.g. pipe failure, blockage, wet weather, etc.); and

(3) steps taken or planned by BSA to minimize recurrence of and mitigate the impact of the release;

e. The status of permit applications necessary for implementation of LTCP projects;

f. Reference to all the deliverables that have already been

submitted to EPA and DEC, if any, and those deliverables' dates of submission; and

g. A summary of costs incurred in implementing the LTCP since the previous quarterly report.

36. The quarterly report shall also include a description of any non-compliance with the requirements of this Consent Judgment and an explanation of the likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such non-compliance. If BSA violates, or has reason to believe that it may violate, any requirement of this Consent Judgment, BSA shall notify DEC of such violation and its likely duration, in writing, within 10 business Days of the Day BSA first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, BSA shall so state in the report. BSA shall investigate the cause of the violation and shall then submit an amendment to the report, including a full explanation of the cause of the violation, within 30 Days of the Day BSA becomes aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves BSA of its obligation to provide the notice required by Section X (Force Majeure). If notice is made by BSA under Section X (Force Majeure), such notice shall also be deemed to have met the notice required by this Paragraph.

37. BSA shall post on its public-facing website all quarterly reports submitted to DEC within seven Days of submission, except to the extent that any

such report contains information that is exempted from public disclosure under state or federal law. Each submission shall remain on the public-facing website for a minimum of three years.

38. BSA may provide progress reports on a semi-annual basis instead of a quarterly basis upon written agreement by DEC and BSA.

39. Whenever any violation of this Consent Judgment or of any applicable permits or any other event affecting BSA's performance hereunder may pose an immediate threat to the public health or welfare or the environment, BSA shall notify DEC's Chief of the Compliance Assurance Section, Bureau of Water Compliance, and DEC's Regional Water Engineer, or such other person as later identified pursuant to Paragraph 96, via telephone and email in accordance with Section XV (Notices), as soon as possible, but no later than 24 hours after BSA first knew of the violation or event. This procedure is in addition to the requirements set forth in the preceding Paragraph.

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

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

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

42. The reporting requirements of this Consent Judgment do not relieve BSA of any reporting obligations required by the ECL or any other federal, state, or local law, regulation, permit, or other requirement.

43. Any information provided pursuant to this Consent Judgment may be used by DEC in any proceeding to enforce the provisions of this Consent Judgment and as otherwise permitted by law.

44. Semi-annual Progress Meetings. Representatives of DEC and BSA shall convene informally, including by remote videoconference, at least on a semi-annual basis pursuant to a mutually agreed-upon schedule to discuss BSA's ongoing progress under the Consent Judgment. The meeting should cover at least the following subjects:

a. Progress in the implementation of the actions required by this Consent Judgment;

b. Potential problems that may adversely affect progress in implementing the actions required by this Consent Judgment; and

c. Where applicable, measures that BSA intends to take to correct problems and deficiencies encountered by BSA or found by DEC in its inspections.

VII. CIVIL PENALTY

45. In resolution of BSA's penalty liability for its violations set forth herein as of the Effective Date, both those concerning its failure to timely implement the LTCP and the 2024 Permit violations, BSA shall pay a statutory civil penalty and fund an Environmental Benefit Project ("EBP"), as set forth in Section VIII below. Within 30 Days after the Effective Date, BSA shall pay the sum of $20,000 as a civil penalty to DEC. BSA shall send a check in that amount, via certified mail, return receipt requested, to:

Christopher Gore
Assistant Attorney General
Environmental Protection Bureau
NYS Office of the Attorney General
Main Place Tower, Suite 300A
350 Main Street
Buffalo, New York 14202
Christopher.Gore@ag.ny.gov

or such other recipient as the State shall designate.

VIII. ENVIRONMENTAL BENEFIT PROJECT

46. In addition to the Civil Penalty set forth in Paragraph 45 above, BSA shall expend at least $100,000 ("EBP Funds") to perform the Environmental Benefit Project (EBP). Such project shall contribute to citizen engagement or education, or other benefits.

47. As more fully described in Appendix F, the EBP shall be to purchase and install playground equipment at Roosevelt Park in the City of Buffalo. The project(s) shall be carried out by the City of Buffalo Department of Public Works-

Parks Division ("Buffalo DPW"), who shall retain a contractor to install the equipment. Buffalo DPW shall review and approve the specifications and design for the equipment.

48. EBP funds may also be used for the purchase of educational materials regarding the hydrological history of the park area to increase public awareness of the interconnectedness with local waterways and ways that residents can prevent pollution of those waterways.

49. The EBP shall be performed consistent with DEC's EBP Policy, Policy 37 - Environmental Benefit Projects.

50. The playground equipment shall be purchased and installed no later than June 30, 2026.

51. If BSA expends less than $100,000 in performing the EBP set forth in Appendix F, BSA shall pay, upon written demand by the State, the remaining funds to DEC as a civil penalty by check made payable to the order of the "New York State Department of Environmental Conservation," and sent via certified mail, return receipt requested to Assistant Attorney General Gore, at the address specified in paragraph 45 above, or such other recipient as the State shall designate.

52. BSA hereby certifies that:

a. BSA is not required to perform or develop the listed EBP by any law, regulation, or other legally binding obligation;

b. BSA is not required to perform or develop the listed EBP as injunctive relief in this or any other case;

c. BSA has not received, is not presently negotiating to receive, and will not seek in the future to receive, credit in any other enforcement action or legal proceeding based upon undertaking the listed EBP;

d. BSA has not obtained and will not obtain any grant funds based upon performance of the listed EBP; and

e. BSA was not required to perform the listed EBP, or any element thereof, at the time the violations were detected.

53. The EBP funds required by this section must be fully spent by no later June 30, 2026. In the event BSA fails to expend the funds by this timeframe any remaining unspent EBP amounts shall be paid as a civil penalty no later than two years and 50 Days after the Effective Date according to the terms of Paragraph 51 above.

IX. STIPULATED PENALTIES

54. BSA shall be liable for stipulated penalties to the DEC for violations of this Consent Judgment as specified below, unless excused under Section X (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Judgment, including any work plan or schedule approved hereunder, according to all applicable requirements and within the specified time schedules established by or approved hereunder.

55. Late Payment of Civil Penalty. If BSA fails to pay the civil penalty required to be paid under Section VII (Civil Penalty) when due, BSA shall pay a stipulated penalty of $1,000.00 per Day for each Day that the payment is late.

56. Compliance Milestones.

a. The following stipulated penalties shall accrue per violation per Day for each violation of the compliance requirements set forth in Paragraphs 12-23:

Penalty Per Violation Per Day	Period of Noncompliance
$250.00	1st through 30th Day
$ 1,000.00	31st Day and beyond

b. Interim Effluent Limits. The following stipulated penalties shall accrue per violation per Day for each violation of a requirement of Appendix E: or for each violation of any effluent limit requirement of BSA's permit specified below:

Penalty Per Violation Per Day	Period of Noncompliance
$250.00	1st through 30th Day
$ 1,000.00	31st Day and beyond

c. Reporting Requirements. The following stipulated penalties shall accrue per violation per Day for each violation of the reporting requirements of Section VI (Reporting Requirements):

Penalty Per Violation Per Day	Period of Noncompliance
$250.00	1st through 30th Day
$ 1,000.00	31st Day and beyond

d. EBP Compliance. The following stipulated penalties shall accrue for each Day BSA fails to comply with the timelines set forth in Paragraphs 53:

Penalty Per Violation Per Day	Period of Noncompliance
$250.00	1st through 30th Day
$500.00	31st Day and beyond

57. Stipulated penalties under this Section shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Judgment.

58. BSA shall pay stipulated penalties to DEC within 30 Days of written demand made pursuant to Paragraph 92.

59. DEC may in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due it under this Consent Judgment.

60. Stipulated penalties shall continue to accrue as provided in Paragraph 57, during any Dispute Resolution, and need not be paid until the following:

a. If the dispute is resolved by agreement of the Parties or by a decision of DEC that is not appealed to the Court, BSA shall pay accrued penalties determined to be owing, together with interest, to DEC within 30 Days of the effective date of the agreement or the receipt of DEC's decision or order.

b. If the dispute is appealed to the Court and DEC prevails in whole or in part, BSA shall pay all accrued penalties determined by the Court to be owing, together with interest, within 60 Days of receiving the Court's

decision or order, except as provided in subparagraph c, below.

c. If any Party appeals this Court's decision, BSA shall pay all accrued penalties determined to be owing, together with interest, within 60 Days of receiving the final appellate court decision.

61. BSA shall pay stipulated penalties owing to the State, to the attention of Assistant Attorney General Gore, at the address specified in paragraph 45 above, or such other recipient as the State shall designate.

62. If BSA fails to pay stipulated penalties according to the terms of this Consent Judgment, BSA shall be liable for interest on such penalties, as provided for in CPLR § 5004, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit DEC from seeking any remedy otherwise provided by law for BSA's failure to pay any stipulated penalties.

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

64. Non-Exclusivity of Remedy. Stipulated penalties are not DEC's exclusive remedy for violations of this Consent Judgment. Subject to the provisions of Section XIII (Effect of Settlement/Reservation of Rights), DEC expressly reserves the right to seek any other relief it deems appropriate for BSA's violation of this Judgment or applicable law, including but not limited to an action against BSA for statutory penalties, additional injunctive relief, mitigation or offset measures, and/or contempt. However, the amount of any statutory penalty assessed for a

violation of this Consent Judgment shall be reduced by an amount equal to the amount of any stipulated penalty assessed and paid pursuant to this Consent Judgment.

X. FORCE MAJEURE

65. "Force majeure," for purposes of this Consent Judgment, means any event arising from causes beyond the control of BSA, of any entity controlled by BSA, or of BSA's contractors, vendors, or suppliers, that delays or prevents the performance of any obligation under this Consent Judgment despite BSA's best efforts to fulfill the obligation. Given the need to protect public health and welfare and the environment, the requirement that BSA exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure, such that any delay or non-performance is, and any adverse effects of the delay or non-performance are, minimized to the greatest extent possible. Subject to the Modification provisions in Section XVIII, "force majeure" does not include financial inability to perform any obligation under this Consent Judgment.

66. If any event occurs for which BSA will or may claim a force majeure, BSA shall provide notice by telephone or email to DEC in accordance with Section XV (Notices). The deadline for the initial notice is 15 Days after BSA first knew or should have known that the event would likely delay or prevent performance. BSA

shall be deemed to know of any circumstance of which any contractor of, subcontractor of, or entity controlled by BSA knew or should have known.

67. Regardless of whether BSA seeks to assert a claim of force majeure concerning the event, within seven Days after the notice under Paragraph 66, BSA shall submit a further notice by mail or email to DEC in accordance with Section XV (Notices), that includes (a) an explanation and description of the event and its effect on BSA's completion of the requirements of the Consent Judgment; (b) a description and schedule of all actions taken or to be taken to prevent or minimize the delay and/or other adverse effects of the event; (c) if applicable, the proposed extension of time for BSA to complete the requirements of the Consent Judgment; (d) BSA's rationale for attributing such delay to a force majeure if it intends to assert such a claim; (e) a statement as to whether, in the opinion of BSA, such event may cause or contribute to an endangerment to public health or welfare or the environment; and (f) all available proof supporting any claim that the delay was attributable to a force majeure.

68. Failure to submit a timely or complete notice or claim under Paragraph 66 or 67 regarding an event precludes BSA from asserting any claim of force majeure regarding that event, provided, however, that DEC may, in its unreviewable discretion, excuse such failure if it is able to assess to its satisfaction whether the event is a force majeure, and whether BSA has exercised its best efforts, under Paragraph 65.

69. After receipt of any claim of force majeure, DEC shall notify BSA of its determination whether BSA is entitled to relief under Paragraph 65, and, if so, the excuse of or the extension of time for performance of the obligations affected by the force majeure. An excuse of, or extension of the time for performance of, the obligations affected by the force majeure does not, of itself, excuse or extend the time for performance of any other obligation.

70. If BSA elects to invoke the dispute resolution procedures set forth in Section XI (Dispute Resolution) which shall be subject to the standard of review set forth in Subparagraph 77.a (Disputes Concerning Matters Accorded Record Review), it shall do so no later than 15 Days after receipt of DEC's notice. In any such proceeding, BSA has the burden of proving that it is entitled to relief under Paragraph 65, that its proposed excuse or extension was or will be warranted under the circumstances, and that it complied with the requirements of Paragraphs 65 - 70. If BSA carries this burden, the delay or non-performance at issue shall be deemed not to be a violation by BSA of the affected obligation of this Consent Judgment identified to DEC and the Court.

XI. DISPUTE RESOLUTION

71. Unless otherwise expressly provided for in this Consent Judgment, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Judgment. BSA's failure to seek resolution of a dispute under this Section concerning an issue of which it had notice and an opportunity to dispute under this Section prior to an

action by DEC to enforce any obligation of BSA arising under this Judgment precludes BSA from raising any such issue as a defense to any such enforcement action.

72. Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Consent Judgment shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when BSA sends DEC 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. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by DEC shall be considered binding unless, within 30 Days after the conclusion of the informal negotiation period, BSA invokes formal dispute resolution procedures as set forth below.

73. Formal Dispute Resolution. BSA shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by sending DEC 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 BSA's position and any supporting documentation relied upon by BSA.

74. DEC shall send BSA its Statement of Position within 45 Days of receipt of BSA's Statement of Position. DEC's Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that

position and any supporting documentation relied upon by DEC. DEC's Statement of Position is binding on BSA, unless BSA files a motion for judicial review of the dispute in accordance with the following Paragraph.

75. Judicial Dispute Resolution. BSA may seek judicial review of the dispute by filing with the Court and serving on DEC in accordance with Section XV (Notices), a motion requesting judicial resolution of the dispute. The motion (a) must be filed within 30 Days of receipt of DEC's Statement of Position pursuant to the preceding Paragraph; (b) may not raise any issue not raised in informal dispute resolution pursuant to Paragraph 72, unless the Plaintiffs raise a new issue of law or fact in the Statement of Position; (c) shall contain a written statement of BSA's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and (d) shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Judgment.

76. DEC shall respond to BSA's motion within the 30 Days. BSA may file a reply memorandum within seven Days of receipt of DEC's response. The Parties' submissions shall not exceed the allowable page limits under the CPLR and Uniform Rules for the Supreme Court.

77. Standard of Review

a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Judgment, in any dispute brought under Paragraph 72 pertaining to the (i) adequacy or appropriateness of

submissions, plans, procedures to implement plans, schedules or any other items requiring approval by DEC; (ii) the adequacy of the performance of work undertaken pursuant to this Consent Judgment; and (iii) all other disputes that are accorded review on the administrative record under applicable principles of administrative law, BSA shall have the burden of demonstrating, based on the administrative record, that DEC's position is arbitrary and capricious or otherwise not in accordance with law.

b. Other Disputes. Except as otherwise provided in this Consent Judgment, in any other dispute brought under Paragraph 72, BSA shall bear the burden of demonstrating that its position complies with this Judgment and better furthers its Objectives.

78. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of BSA under this Consent Judgment, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, but BSA's obligation to pay shall be stayed pending resolution of the dispute as provided in Paragraph 60. If BSA does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section IX (Stipulated Penalties).

XII. INFORMATION COLLECTION AND RETENTION

79. DEC and its representatives, including attorneys, contractors, and consultants, shall have the right of entry into any facility covered by this Consent Judgment, at all reasonable times, upon presentation of credentials, to:

a. monitor the progress of required activities;

b. verify any data or information submitted pursuant to this Consent Judgment;

c. obtain samples and, upon request, splits of any samples taken by BSA or its representatives, contractors, or consultants;

d. obtain documentary evidence, including photographs and similar data; and

e. assess BSA's compliance with this Consent Judgment.

80. Upon request, BSA shall provide DEC, or its authorized representatives, splits or duplicates of any samples taken by BSA. Upon request, DEC shall provide BSA splits or duplicates of any samples taken by DEC.

81. Until five years after the termination of this Consent Judgment, BSA shall retain and preserve, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to BSA's performance of its obligations under this Consent Judgment. 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 DEC, BSA shall provide DEC with copies of any documents, records, or other information required to be maintained under this Paragraph. Notwithstanding any other provision herein, BSA and any of its contractors may retain any documents, records or other information solely in electronic or digital form, and destroy any paper or other hard form thereof.

82. At the conclusion of the information-retention period provided in the preceding Paragraph, BSA shall notify DEC 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 DEC shall deliver any such documents, records, or other information to DEC. BSA may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege recognized by New York law. If BSA asserts such a privilege, it shall provide the following: (a) the title of the document, record, or information; (b) the date of the document, record, or information; (c) the name and title of each author of the document, record, or information; (d) the name and title of each addressee and recipient; (e) a description of the subject of the document, record, or information; and (f) the privilege asserted by BSA. However, no documents, records, or other information created or generated pursuant to the requirements of this Consent Judgment shall be withheld on grounds of privilege.

83. BSA may also assert that information required to be provided under this Section is protected as Confidential Information under New York's Freedom of Information Law ("FOIL"). As to any information that BSA seeks to protect as Confidential Information, BSA shall follow the procedures set forth in 6 NYCRR Part 616.

84. This Consent Judgment in no way limits or affects any right of entry and inspection, or any right to obtain information, held by DEC to applicable state laws, regulations, or permits, nor does it limit or affect any duty or obligation of BSA to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

85. This Consent Judgment resolves only the civil claims of DEC and the State of New York for the violations alleged in the Complaint filed in this action through the Date of Filing.

86. DEC reserves all legal and equitable remedies available to enforce the provisions of this Consent Judgment. This Consent Judgment shall not be construed to limit the rights of DEC or the State of New York to obtain penalties or injunctive relief under ECL Article 17 or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in Paragraph 88. DEC reserves all legal and equitable remedies to address any conditions if there is or may be an imminent and substantial endangerment to the

public health or welfare or the environment arising at, or posed by, BSA's Facility, whether related to the violations addressed in this Consent Judgment or otherwise.

87. In any subsequent administrative or judicial proceeding initiated by DEC for injunctive relief, civil penalties, other appropriate relief relating to the Facility or BSA's violations, BSA shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, claim preclusion (res judicata), issue preclusion (collateral estoppel), claim-splitting, or other defenses based upon any contention that the claims raised by DEC in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 85.

88. This Consent Judgment is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. BSA is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and BSA's compliance with this Consent Judgment shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. DEC does not by its consent to the entry of this Consent Judgment warrant or aver in any manner that BSA's compliance with any aspect of this Consent Judgment will result in compliance with any other provisions of federal, State, or local laws, regulations, or permits.

89. This Consent Judgment does not limit or affect the rights of BSA or of DEC against any third parties not party to this Consent Judgment, nor does it limit

the rights of third parties not party hereto, except as otherwise provided by applicable law.

90. This Consent Judgment shall not be construed to create rights in, or grant any cause of action to, any third party not party hereto.

XIV. COSTS

91. The Parties shall bear their own costs of this action, including attorneys' fees, except that DEC 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 BSA.

XV. NOTICES

92. Unless otherwise specified in this Judgment, whenever notifications, submissions, or communications are required by this Consent Judgment, they shall be made in writing and sent by mail or email, with a preference for email, addressed as follows:

As to the State by email: Andrew.Gershon@ag.ny.gov
Christopher.Gore@ag.ny.gov

As to the State by mail:

Christopher C. Gore
Assistant Attorney General
Environmental Protection Bureau
New York Office of the Attorney General
350 Main Street, Suite 300A
Buffalo, NY 14202

As to the DEC by email: Ryan.Waldron@dec.ny.gov; and
Damianos.Skaros@dec.ny.gov

	Teresa.Mucha@dec.ny.gov
As to the DEC by telephone:	Ryan Waldron, P.E. Chief, Compliance Assurance Section (518) 402-8244 AND Damianos Skaros Regional Water Engineer, Region 9 (716) 851-7070
As to the DEC by mail:	Ryan Waldron, P.E. Chief, Compliance Assurance Section Division of Water New York State Department of Environmental Conservation 625 Broadway, 4th Floor Albany, NY 12233 AND Teresa Mucha, Esq. Regional Attorney DEC Region 9 700 Delaware Avenue Buffalo, NY 14029
As to BSA by email:	criley@buffalosewer.org rnogle@buffalosewer.org
As to BSA by telephone:	Rosaleen Nogle, P.E. Principal Sanitary Engineer (716) 851-4664
As to BSA by mail:	Rosaleen Nogle, P.E. Principal Sanitary Engineer Buffalo Sewer Authority 1038 City Hall 65 Niagara Square

Buffalo, New York 14202

Charles Riley
Executive Secretary
Buffalo Sewer Authority
1038 City Hall
65 Niagara Square
Buffalo, New York 14202

Cheryl Colston
General Counsel
Buffalo Sewer Authority
65 Niagara Square
Buffalo, New York 14202

AND

Cavette A. Chambers, Esq.
Corporation Counsel
Department of Law
1101 City Hall
65 Niagara Square
Buffalo, New York 14202

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

94. Notices submitted pursuant to this Section shall be deemed submitted upon transmission by email, unless otherwise provided in this Consent Judgment or by mutual agreement of the Parties in writing.

XVI. EFFECTIVE DATE

95. The Effective Date of this Consent Judgment shall be the date upon which it is so ordered by the Court, as recorded on the Court's docket; provided, however, that BSA hereby agrees that it shall be bound to perform duties scheduled

to occur prior to the Effective Date. In the event DEC withdraws or withholds consent to this Consent Judgment before entry, or the Court declines to enter it, then the preceding requirement to perform duties scheduled to occur before the Effective Date shall terminate.

XVII. RETENTION OF JURISDICTION

96. The Court shall retain jurisdiction over this case until termination of this Consent Judgment, for the purpose of resolving disputes arising hereunder or entering modification orders, pursuant to Sections XI (Dispute Resolution) and XVIII (Modification), or effectuating or enforcing compliance with its terms.

XVIII. MODIFICATION

97. The terms of this Consent Judgment, including any attached appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Judgment, it shall be effective only upon approval by the Court. Material modifications include, but are not limited to, changes that would extend or postpone the Date of Achievement of Complete Construction for Control Projects. Non-material modifications shall be enforceable as part of this Consent Judgment and filed with the Court and posted on BSA's website, within five Days of the Parties' final signature agreeing to the modification. Non-material modifications may include, but are not limited to, changes to the interim project deadlines set forth in the Amended LTCP, reprioritization of approved Control Projects, and approved revised and alternative Control Projects pursuant to Paragraphs 22 and 23.

98. BSA shall make all modification requests in writing within 20 Days after becoming aware of the potential for the need to modify a compliance requirement under Section V, and in any event no later than 60 Days prior to the applicable compliance deadline. Any such modification requests shall include the justification for the modification.

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

100. DEC shall not unreasonably deny, suspend, withhold or delay any modification request by BSA based on the termination, suspension, withholding or denial of any federal or state funding that was expected to be available, approved, or granted to BSA, provided BSA takes all required and reasonable steps to obtain said funding.

101. Any disputes concerning modification of this Consent Judgment shall be resolved pursuant to Section XI (Dispute Resolution) provided, however, that, instead of the burden of proof provided by Paragraph 77, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with CPLR § 5015.

XIX. TERMINATION

102. After BSA has completed the requirements of Section V (Compliance Requirements), has complied with all other requirements of this Consent Judgment,

and has paid the civil penalty and any accrued stipulated penalties as required hereunder, BSA may serve DEC with a Request for Termination, stating that BSA has satisfied those requirements, together with all necessary supporting documentation.

103. Following DEC's receipt of BSA's Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may have as to whether BSA has satisfactorily complied with the requirements for termination. If DEC agrees that the Judgment may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating it, together with a stipulation of discontinuance with prejudice.

104. If DEC does not agree that the Judgment may be terminated, BSA may invoke Dispute Resolution under Section XI. However, BSA shall not seek Dispute Resolution of any dispute regarding termination until 60 Days after service of its Request for Termination.

XX. SIGNATORIES/SERVICE

105. Each undersigned representative of BSA, and of DEC identified on the signature pages below, certifies that that person is fully authorized to enter into the terms and conditions of this Consent Judgment and to execute and legally bind the Party that person represents to this document.

106. This Consent Judgment may be signed in counterparts, and its validity shall not be challenged on that basis. BSA agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Judgment

and to waive the formal service requirements set forth in CPLR Article 3, including, but not limited to, service of a summons. BSA need not file an answer to the Complaint unless or until the Court expressly declines to enter this Consent Judgment.

XXI. INTEGRATION

107. This Consent Judgment and all its attachments and appendices, including deliverables that are subsequently approved pursuant to this Judgment, constitutes the entire agreement among the Parties regarding its subject matter and supersedes all prior representations, agreements and understandings, whether oral or written, concerning its subject matter.

XXII. HEADINGS

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

XXIII. FINAL JUDGMENT

109. Upon approval and entry of this Consent Judgment by the Court, this Consent Judgment shall constitute a final judgment of the Court as to the DEC and BSA.

XXIV. APPENDICES

110. The following Appendices are attached to and part of this Consent Judgment:

"Appendix A" is LTCP Selected Alternative memo;

"Appendix B" is the 2024 Bridging Document;

"Appendix C" is the 2024 Control Project Schedule;

"Appendix D" is the Public Participation Plan;

"Appendix E" is the Interim Effluent Limits; and

"Appendix F" is the EBP

FOR THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION COMMISSIONER and NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION:

LETITIA JAMES
Attorney General of New York

Dated: September 19, 2025

Christopher Gore

CHRISTOPHER GORE
Assistant Attorney General
Environmental Protection Bureau
NYS Office of the Attorney General
Main Place Tower, Suite 300A
350 Main Street
Buffalo, New York 14202
(716) 852-6295

FOR BUFFALO SEWER AUTHORITY:

Dated: August 19, 2025

ROSALEEN NOGLE, P.E.
Principal Sanitary Engineer
Buffalo Sewer Authority
1038 City Hall
65 Niagara Square
Buffalo, New York 14202

Dated: August 18, 2025

CHARLES RILEY
Executive Secretary
Buffalo Sewer Authority
1038 City Hall
65 Niagara Square
Buffalo, New York 14202

Dated: August 18, 2025

CHERYL COLSTON, ESQ.
General Counsel
Buffalo Sewer Authority
65 Niagara Square
Buffalo, New York 14202

SO ORDERED:

Xylem, Inc.
121 S. Niles Ave., Suite 22,
South Bend, IN 46617
574.855.1012
www.xylem.com

Technical Memorandum

LTCP Optimization Selected Alternative

July 3, 2024

Buffalo Sewer Authority
Wet Weather Operational Optimization

Project Number 299

Table of Contents

Introduction 1
Objective 1
Updated Understanding of Baseline Projects 1
Optimization Approach 6
Overview of Projects in Selected Alternative 8
Selected Alternative Model Results 24
Cost Estimate for Selected Alternative 25
Property Requirements for Selected Alternative 29
Draft Implementation Schedule 30
Conclusion & Next Steps 34
References 35

List of Attachments

A	LTCP BASELINE PROJECTS
B	UPDATED BASELINE PROJECT COSTS
C	PROJECTS CONSIDERED FOR OPTIMIZATION
D	SELECTED ALTERNATIVE PROJECT DETAILS
E	SWMM RESULTS
F	COST ESTIMATES FOR SELECTED ALTERNATIVE PROJECTS
G	DISADVANTAGE RANKING FOR SELECTED ALTERNATIVE PROJECTS
H	PRELIMINARY IMPLEMENTATION SCHEDULE

List of Abbreviations

BSA	Buffalo Sewer Authority
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CCI	Construction Cost Index
CSO	Combined Sewer Overflow
EJ	Environmental Justice
ENR	Engineering News Record
GCCS	Globally Coordinated Control Strategy
GI	Green Infrastructure
ILS	In-line Storage
LTCP	Long Term Control Plan
MBO	Market Based Optimization
NYSDEC	New York State Department of Environmental Conservation
OLS	Off-line Storage
OPCC	Opinions of Probable Construction Cost
RTC	Real-Time Control
SPP	Sewer Patrol Point
SWMM	Stormwater Management Model
TBM	Tunnel Boring Machine
USEPA	United States Environmental Protection Agency

Introduction

The most recent revision of Buffalo Sewer Authority's (BSA's) Long Term Control Plan (LTCP) was completed and approved in 2014 by the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA). The approved document outlined a multi-year plan for implementing projects to reduce overflows in the BSA sewer collection system to target levels. Potential projects included a mix of in-line storage (ILS), off-line storage (OLS), real time control (RTC), and green infrastructure (GI). The collection system hydraulic model used in the LTCP was updated after completion of the first phase of LTCP projects. Simulations from the updated LTCP model suggest that some projects envisioned in the LTCP are no longer feasible and that other planned projects can be further optimized to meet targets. BSA has contracted the Xylem team to devise an updated plan of cost-effective projects that is anticipated to meet LTCP goals.

The project team has worked collaboratively with BSA to compile a revised list of potential projects to be considered. The list included both new projects and those projects from the 2014 LTCP preferred alternative which have not since been ruled infeasible or unnecessary. An optimization process was then leveraged to evaluate the impacts of implementing different variations and combinations of these projects with the goal of minimizing both CSO activations and construction costs. The project team also optimized the distributed control scheme to find the optimal combination of control set points that maximize the system's conveyance and storage capacity. The result of these activities is a new set of recommended projects (the Selected Alternative) for achieving LTCP compliance. This process and the Selected Alternative are further described herein.

Objective

This technical memorandum has two main objectives. First, it documents an updated understanding of the projects included in the recommended alternative from the 2014 LTCP, referred to as baseline projects. A summary is provided of further information on the baseline projects gathered since 2014. This includes updated modeling results, discussion of construction feasibility, and updated cost estimates. This summary demonstrates that implementation of the baseline projects would be more challenging and costly than originally anticipated, and furthermore would not achieve the required level of control.

Second, this memorandum provides an overview of the optimization process carried out by the project team in order to select a revised set of projects for achieving LTCP compliance. The resulting set of projects (the Selected Alternative) is presented herein. The results from a Typical Year model simulation are summarized to demonstrate performance of the Selected Alternative with respect to LTCP compliance. A description and estimated cost are provided for each project in the Selected Alternative.

Updated Understanding of Baseline Projects

2014 LTCP Projects Updated Model Results

Over the past 5 years, BSA's collection system model has been calibrated and updated to reflect current system conditions. To determine the ability of projects to mitigate SPP activations, the newly calibrated PC-SWMM model was populated with the LTCP projects implemented to date,

as well as the remaining planned LTCP projects. The objective was to determine if the 2014 LTCP plan would still achieve compliance. It was expected that the use of the new calibrated PC-SWMM model would result in more refined results than the XP-SWMM model used in the 2014 LTCP because:

- The new PC-SWMM model incorporated additional nodes and links not incorporated in the original XP-SWMM model.
- The recent calibration utilized flow data that should reflect more current conditions.
- More subbasins were defined, allowing for more representative parameters for a given area.

The calibrated PC-SWMM model with the 2014 LTCP plan projects is referred to in this memo as the "LTCP baseline projects model" or the "baseline plan".

Compliance is defined by the number of activations allowed in the typical year for the SPPs receiving waterbody (Table 1). The following sections describe the performance of various CSOs and SPPs under the typical year baseline projects model simulation. This allows for a baseline to be set moving forward with a focus on areas not expected to meet their targeted activations. The projects included in the LTCP Baseline Projects model scenario and the remaining out of compliance SPP activation volumes are provided in Attachment A. The largest out of compliance activation is referred to as the "X+1" activation, with X representing the maximum number of activations in a typical year. Activation events are sorted from largest to smallest volume to determine which event is the "X+1" event.

Table 1. Target number of activations in the Typical Year by receiving waterbody

Receiving Waterbody	Target Number of Activations in Typical Year
Black Rock Canal	0-4
Buffalo River	0-6
Cazenovia Creek- B	0
Cazenovia Creek- C	0-6
Erie Basin	0-2
Niagara River	0-9
Scajaquada Creek	0-4

Hertel District

The Hertel District has six CSOs that discharge to either the Niagara River, Black Rock Canal, or Scajaquada Creek. Per the results using typical year rainfall, the following CSO in the Hertel District is still projected to exceed its targeted activations if the remaining projects as defined in the LTCP are implemented:

- CSO-055 (SPP001) – Niagara River. The updated LTCP model estimates 31 activations in the typical year with 14 projected when the baseline projects are implemented. The target number of activations is nine.

Scajaquada District

The Scajaquada District has 12 CSOs that discharge to either Black Rock Canal or Scajaquada Creek. Per the results using typical year rainfall, the following CSOs in the Scajaquada District are still projected to exceed their targeted activations if the remaining projects as defined in the baseline plan are implemented:

- CSO-053 (SPPs 229A, 175, 165B, 340, 338, 337, 339, and 336B) - It is expected that the eight SPPs identified will exceed the target of four activations at the end of the LTCP period. The model currently estimates between five and 37 activations at each of these SPPs in the typical year. At the end of the LTCP period, between five and 26 activations are projected at these SPPs. Most notable is the increase in activations projected at SPP340 because of a recently discovered cross connection between the SPP339 and SPP340 basins. However, significant reductions in activations are projected to be achieved at SPPs 337, 339, and 336B, if the remaining LTCP projects are implemented as sized in the baseline plan. The remaining 30 SPPs associated with this CSO have been determined to already meet compliance in the baseline plan model.
- CSO-004 (SPP013) - The model currently estimates five activations in the typical year. Six activations are projected at the end of the baseline plan period due to the impact of the SPP 331 flow redirection project as envisioned in the baseline plan.
- CSO-006 (SPPs 179, 180, 331) - Seven activations are still projected for SPP180 and 15 for SPP179 at the end of the baseline plan period. However, while flow redirection, supplemental capacity, and orifice modifications were proposed in the baseline plan to bring SPP331 into compliance with targeted activations, other projects are likely to be considered as part of the optimization process as flow redirection in this area has more recently been removed from consideration.

South Central District

This district is by far the largest district with 34 CSOs, with discharges to Buffalo River, Niagara River, Black Rock Canal, Erie Basin, and Cazenovia Creek. Per the baseline results using typical year rainfall, the following CSOs in the South Central District are still projected to exceed their targeted activations if the remaining projects as defined in the baseline plan are implemented:

- CSO-026 (Smith St. ILS) - The model results show that the targeted number of activations of six to the Buffalo River will almost be achieved with seven activations projected at the completion of the baseline plan. It is also noted that these activations are not projected to occur at the individual SPPs but are consolidated at the Smith Street ILS structure.
- CSO-017 (SPPs 059, 056, 058, 065, 128, 067, 055, 326) - While significant reductions in activations are estimated (from the projected maximum activations of 20 during the typical year to 10 - 12 activations at the end of the baseline plan), it is expected that the target of six activations will not be met. Similar to the consolidation of overflows for CSO-026 at the Smith Street RTC, overflows for SPPs 056, 058, 067 and 055 will be consolidated at the Mill Race RTC structure, currently in design.
- CSO-027 (SPP097) - Eleven activations are projected at this SPP and CSO upon the completion of the baseline plan, while the target number of activations is six.
- CSO-029 (SPP126) - Twelve activations are projected at this location upon the completion of the baseline plan, while the target is six.
- CSO-037 (SPP122) - Nine activations are projected upon the completion of the baseline plan, while the target number for Cazenovia Creek- C is six.
- CSO-033 (SPP104) - Fifteen activations are projected upon the completion of the baseline plan, with a targeted number of six.

Summary

Four projects originally proposed in the baseline plan were deemed to no longer be necessary when running the updated PC-SWMM model using the typical year rainfall because their downstream SPPs were in compliance:

- CSO-052 Off-Line Storage
- SPP019 Underflow Upsizing
- SPP330 Underflow Upsizing
- SPP336A Underflow Upsizing

The LTCP optimization efforts will focus on the ten CSOs mentioned above and the optimization of project configuration and size. Remaining projects proposed in the baseline plan will be optimized, and new projects will be identified to meet the target activations at those CSOs not projected to be compliance. As a result, it is expected that some of the projects identified in the baseline plan that have not been implemented will be modified from how they were originally proposed, based on the results of the optimization work.

Baseline Projects Feasibility Constraints

The baseline plan projects generally fall under two categories: off-line storage and storage tunnels. Both overflow control strategies are effective but are difficult to implement in the City of Buffalo. Key factors that need to be considered during the planning phase of each project include land acquisition, environmental justice, operations costs, and depth to bedrock.

Storage structures require a significant footprint to hold millions of gallons of combined wastewater. These structures can be centralized so that a single point collects the target volume, decentralized with many smaller storage facilities, or a combination of both. The City of Buffalo is fully developed, and the public right-of-way is crowded with existing utilities. To build these structures and enable BSA to operate them in perpetuity, permanent easements would need to be acquired or land would need to be purchased. Alternatively, these structures can be constructed in existing public lands, such as parks.

Land acquisition for structures also requires BSA to be cognizant of environmental justice within the city. Much of the City of Buffalo, particularly the East Buffalo and the West Side neighborhoods, have been historically underserved and have large minority populations. Past public projects, like construction of the Kensington Expressway, divided neighborhoods and displaced families. Implementation of CSO control projects must be aware of these past injustices and find a way to meet the goals of the LTCP while improving the lives of residents. Environmental Justice was not a factor in site selection during the baseline plan conceptualization. Some areas like the Scajaquada district have baseline projects that need to be re-sited to minimize adverse effects on quality-of-life.

Another constraint that needs to be considered is operations costs. Off-line storage tanks have traditionally been installed so that the hydraulic grade line in the tank is lower than the target overflow HGL and pumped back to the system or pumped to an elevated tank for release by gravity at a later time. Both configurations require a significant amount of energy and manpower to operate and clean the equipment installed in these structures. Selected storage and tunnel configurations should attempt to minimize operations costs by minimizing the use of mechanical equipment. Selected off-line storage sites should utilize existing grade changes within the system to fill and/or drain by gravity to the maximum extent possible. Structure hydraulics should also be optimized for self-cleaning.

Bedrock is a significant constraint when configuring any underground structures. Most of the City was constructed on Onondaga Limestone, which separates shale formations that formed north and south of the City. It is a hard bedrock that forms outcrops along Lake Erie and in Ontario and is shallow throughout most of the city. Record drawings from previous sewer projects show that bedrock was a concern during construction of the interceptors and tunnels. New storage structures will require considerable effort to build within the rock. Planning for the work should consider rock removal methods and their relation to construction costs, construction timelines, and residents' quality of life.

Proper project planning is required to ensure that these constraints are addressed. The intent of re-evaluating these projects is to determine which ones are feasible as originally intended and to modify projects with identified constraints that prevent implementation as originally intended. This could help minimize the cost burden on rate payers while maximizing residents' quality of life in relation to their construction and subsequent operation and maintenance. Baseline project implementation will select sites that address these concerns as best as practical while ensuring that stakeholders are included in planning so that their concerns are addressed.

Baseline Projects Updated Cost Estimates

Planning level cost estimates for the LTCP Preferred Alternative projects were first prepared in 2011. To establish updated baseline costs for the pending optimization work, the original cost curves, as well as the itemized cost estimates specific to each project, were updated to reflect pricing through the end of 2022. The procedures used to update both the cost curves and project specific estimates are described below.

Four individual cost curves were originally developed for the baseline plan: storage, high-rate treatment, conveyance piping, and sewer separation. To update these cost curves, the Engineering News Record (ENR) Cost Construction Index (CCI) was utilized. The ratio between the 2022 and 2011 ENR CCI values was applied to the 2011 cost curves, and these curves were then compared to known costs from previous BSA projects. The 20-city average CCI was used except when city-specific data had been the basis of the 2011 values. The 20-city average was selected for two reasons: 1) to obtain consistency, since these indices were used in the previous versions of the spreadsheets, and 2) because ENR suggests using the 20-city average when city-specific data is not available. It should also be noted that based on a review of the BSA's construction projects to date, including real time control structures and underflow projects, site-specific constraints (such as shallow bedrock) had a significant effect on construction costs, which makes it difficult to fit this data to a standard cost versus size-type curve.

The itemized, project-specific construction cost estimates were updated in magnitude as well as scope. A first set of cost revisions was made using NYSDOT pricing, both statewide and regional. When these prices were not available for a specific line item, the increase in ENR CCI values was applied to the 2011 costs in the same manner as was described above for the cost curves. For pumps in particular, a manufacturer's representative was able to provide current budgetary pricing estimates for likely design points. A second revision was then made to incorporate additional line items not represented in the 2011 estimate, but likely necessary based on BSA's experience implementing other LTCP projects. Prices for these items were developed from the Schedule of Values for representative LTCP projects and engineering judgment. In addition, high-level site-specific layouts were developed for each project and used to evaluate potential site constraints that could affect construction pricing. The updated cost estimates can be found in Attachment B. The estimated cost for the Preferred Alternative projects was $258,600,000 in the 2014 LTCP.

With the revisions described, the total remaining Preferred Alternative project cost is now estimated to be $702,585,744.

A separate Financial Capability Assessment (FCA) Update, prepared by Greeley and Hansen on behalf of BSA and dated December 31, 2020, showed that the BSA continues to face a heavy financial burden with the current baseline plan implementation schedule. Baseline plan costs were escalated in the FCA effort using ENR CCI values; however, this work was done based on 2019 dollars, prior to the effects of the COVID-19 pandemic becoming evident on the construction industry, and the costs for the baseline projects presented in Figure 3-20 of the FCA are significantly less than the current estimates developed.

Optimization Approach

Considering the costs, feasibility constraints, and anticipated non-compliance of the 2014 LTCP Preferred Alternative, an iterative optimization process was conducted to identify new opportunities to improve utilization of existing system capacity and add conveyance and storage capacity where needed most to address SPP activations.

Globally Coordinated Control Strategy

Before beginning the optimization process for new projects, a globally coordinated control strategy (GCCS) was developed for existing and planned RTC sites. This strategy ensures that the RTC sites would work together to prevent overflows and reduce peak flows regardless of local conditions at an individual site. Five of the eight operational RTC sites only consider local conditions to decide when to begin and end storage. The GCCS would involve adding a new Auto-Remote mode to these sites to look at remote monitoring locations and/or other RTC sites to determine when storage is needed to prevent overflows.

For example, rather than only looking at its own upstream level to determine when to enter wet weather mode, North Bailey RTC can look at its downstream SPP level as well as the available capacity at the WWTP to determine the optimal time to begin storage. Smith St. and Mill Race RTCs will compete for capacity in the South Interceptor. Therefore, a Market-Based Optimization (MBO) control method can be implemented to balance the risk for overflow at each structure with the available conveyance capacity in the interceptor. The MBO method is a type of GCCS and is implemented whenever two or more control sites want to use the same downstream capacity. This capacity is dynamically allocated to the control sites based on which sites are at the greatest risk of overflow at that time. With this approach, the downstream capacity is always maximized while minimizing risk upstream.

This is a cost-effective way to improve water quality with the infrastructure that BSA already has in their collection system. The GCCS will continue to be evaluated as projects are implemented to optimize system performance in real life conditions. While benefit is shown in the typical year uniform rainfall SWMM simulation, the GCCS is expected to significantly increase storage utilization in distributed rainfall scenarios due to the larger variance in local conditions.

System Evaluation

The optimization process began with a system evaluation, which included identifying projects to be considered. This was a collaborative effort between the BSA and the project team, and ideas were added or removed from the project list based on a variety of factors including:

- Property ownership
- Underground contamination concerns
- Ability to utilize gravity flow rather than pumping when possible
- Impact on SPPs with low target activations and high overflow volume in the LTCP baseline
- Potential coordination with other construction projects

The full list of 77 projects considered during the optimization, including ILS, OLS, green infrastructure, sewer separation, and SPP modification projects, can be found in Attachment C. Each project was initially identified as a general concept, with sizing and configuration specifics modified through the optimization process. Projects from the baseline plan were considered as part of this process, with those projects determined to be infeasible removed from the list.

The updated cost curves (as described under Baseline Projects Updated Cost Estimates) were used to estimate the effect of adjusting project sizes on the total cost. For projects without cost curves, such as RTC projects, the average BSA implementation cost for that type of project was used. These cost curves did not account for site specific constraints such as depth to bedrock, which is included in the detailed cost estimate for the Selected Alternative.

Optimization

From there, the project team began the process of selecting an optimal set of projects to achieve LTCP compliance while minimizing cost. An optimization of this scale becomes complex due to the sheer number of variables under consideration. The project team leveraged several advanced computing tools and techniques, including the use of cloud computing. The overall process was iterative but can be grouped into the three main steps described below.

Optimization Round 1

The objective of Round 1 was to narrow down the set of project alternatives per SPP. Component models were developed for out of compliance SPPs that included branches upstream of the SPP of interest and the critical interceptors downstream of the SPP. Test events were established for each component model as a proxy for the typical year. These events varied according to the SPP's activations in the baseline model typical year. The activations were ordered from largest to smallest overflow volume, and the following events were used for testing, where X represents the number of target activations:

- X-1 event – second smallest volume in compliance activation
- X event – smallest volume in compliance activation
- X+1 event – largest volume out of compliance activation
- X+2 event – second largest volume out of compliance activation

Projects were added to and removed from the component models to determine which projects were most cost effective for removing out-of-compliance activations. Projects were removed from consideration after Round 1 if they did not have a significant impact on the number of activations.

Optimization Round 2

For Round 2, the scope of the optimization expanded to the full system with the objective of achieving compliance at all SPPs. Instead of component models, a skeletonized, full system model was used. The skeletonized model replaced some branches of the model that did not contain projects under consideration with inflow timeseries at new boundary junctions. A new set of test events was selected to include activations at all SPPs that were out of compliance in the baseline. Along with the model adjustments, using test events allowed more project implementation scenarios to be evaluated efficiently. These scenarios included different combinations of the projects to be implemented, structure sizing, and real-time control timing. The optimization parameters included:

- Binary parameters to turn projects “on” or “off” in the model
- OLS size parameters to adjust storage tank footprint/total volume
- OLS inlet weir height parameters to shift the timing of storage
- Control curve parameters to adjust gate settings
- ILS/Conveyance/Tunnel diameter and length parameters
- SPP Modification underflow diameter and weir height parameters

The results of the Round 2 optimization informed what size ranges and configurations would be included in the next round.

Optimization Round 3

The objective of Round 3 was to minimize the project cost while still achieving compliance. The refined project configurations from Round 2 were applied to the skeletonized, full system model. The upper and lower bounds for the optimization parameters were adjusted based on the outcomes of Round 2, and cost was included in the multi-objective optimization along with the volume of untreated flow and the number of out of compliance activations for the optimization test event group.

The project set from Round 3 that minimized the number of out of compliance activations in the skeletonized model test events for the lowest cost was incorporated into the full model for the official Typical Year simulation. The first simulation showed 8 SPPs still out of compliance in the typical year (v2.1.0-ltcp). To achieve compliance and generate reasonable detailed cost estimates, the project configurations were updated. The resulting set of projects is the Selected Alternative. Project details and typical year results for the Selected Alternative are included in the following sections.

Overview of Projects in Selected Alternative

The project team collaborated with BSA to identify 77 projects for consideration during the LTCP optimization process. A tagging system was developed to identify the project impact area as well as the alternatives that could be combined or substituted for each other. For example, project CSO014_1.1, impacting CSO-014, is in the first alternative group, and is the first alternative within that group. All 77 projects considered are documented in Attachment C.

Of these 77 projects, 51 projects were ultimately included in the Selected Alternative. A figure showing these projects is included in Attachment D. High-level descriptions for the conceptual

project designs are provided below. More detailed figures and design considerations for the OLS projects are also included in Attachment D.

Systemwide Impact Projects

The following Selected Alternative projects may impact multiple CSOs by increasing available conveyance and storage capacity in the collection system. Additional projects with systemwide impacts considered during the optimization process included pump station RTC, different tunnel locations, and off-line storage.

Northern Relief Tunnel (System_1)

PRIMARY CSO IMPACTED: 011, 012, 055
PROJECT TYPE: Tunnel
2014 LTCP PROJECT: Yes
The Northern Relief Tunnel is designed to create more conveyance capacity to the WWTP, supplement capacity in the North and South Interceptors, and increase the ability of the system to store wet-weather flows. It is anticipated that the tunnel will have an inside diameter of 12-feet based on the most recent system simulations. This is subject to change if alternate RTC sites are constructed as the LTCP evolves. This tunnel system is anticipated to have three parts, North of Scajaquada Creek, South of Scajaquada Creek, and the Southern Relief Tunnel.

North of Scajaquada Creek is anticipated to be constructed as a potential replacement for the Military Road OLS project. The anticipated route for the tunnel will be to start at Tonawanda Street and head south. The launch shaft will also be needed for open cut connections to the large parallel sewers that connect to SPP 1 from Hertel Avenue. Provisions will need to be installed in the drop shaft to dissipate energy from high flows and reduce entrained air that might be generated from a waterfall.

This section of the tunnel is currently under development as multiple alignment options are being investigated. The alignment is required to pick up flow from the north, near Arthur St. or Hertel Ave., and extend to the southern end towards Breckenridge St. at the Breckenridge Siphons. These siphons would then connect the new system to the Bird Island Treatment Facility. The entire length of tunnel is estimated to be approximately 2.3 miles and would be constructed in multiple sections using a Tunnel Boring Machine (TBM).

Based on the alignment optioneering, a probable alignment was selected to best connect the northern and southern tie-in locations. The first Launch Shaft compound is feasible at the corner of Arthur and Tonawanda St., with the tunnelling drive extending approximately 0.6 miles to an Exit Shaft location near Arthur St. and Tonawanda St. This Exit Shaft compound will serve as the Exit Shaft for a second tunnel drive, which will begin at the second planned Launch Shaft, located at the Buffalo Impound Lot at Dart St. and Letchworth St. This central tunnel drive is approximately 0.5 miles and will need to be planned carefully to access the required lands for the shaft compound, and to travel below the existing Scajaquada Expressway, below the Scajaquada creek, and below the existing train line, likely owned by CSX or Amtrak. The final tunnel drive will travel from the central Launch Shaft in a south-west direction and navigate a curved alignment to tunnel below Niagara St. to the southern connection point at the siphon tie-in at Niagara St. and Breckenridge St. This will be the longest tunnel drive at approximately 1.2 miles and will require careful planning to navigate the existing supports of the Scajaquada Expressway, existing utilities,

and mixed face ground conditions. This alignment is not finalized and has been considered at this stage of the design based on the overall feasibility and the available lands for shaft compounds. The Southern Relief Tunnel is anticipated to start at Albany Street and connect to the proposed junction chamber near the Breckenridge Siphons. The general route for this sewer will be to flow North on the western Side of Niagara Street. The current Swan Trunk connection and associated sewers will need to be reconfigured at this area to relieve the South Interceptor and convey flow to the WWTP. The approximate length of this section is 700 feet.

The anticipated tunnel operation is to flow by gravity into the siphons. To operate this way, the tunnel invert will need to be higher than the existing Breckenridge Siphons. This places the tunnel in a position where the northern tunnel will be installed below the water table and mixed rock/soft material conditions. This type of construction will likely require use of soft ground TBM, which is an appropriate tool for mixed conditions but is ideal for soft, wet ground. It may be possible to install the entire tunnel below bedrock if the tunnel can be dewatered by pumping. Next steps for tunnel design include bedrock and soils characterization along anticipated routes, an engineering evaluation to optimize the tunnel alignment, and acquisition of easements and property to construct access shafts.

Schiller Park OLS (System_2)

PRIMARY CSO IMPACTED: 012, 055
PROJECT TYPE: OLS
2014 LTCP PROJECT: No
The Schiller Park OLS project is an offline storage project that would divert inflows from Cheektowaga to an 8.00 MG storage facility during wet weather until the BSA collection system has capacity to receive and treat it. This project would help buffer peak flows to the Bird Island Treatment Facility and reduce overflows at SPPs along the North and South Interceptor, including SPP001 and SPP024. The OLS is currently configured as a gravity-driven storage with dynamically controlled inlet and outlet gates.

SPP339 Modification (System_2_3)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP339 is located north of the intersection of Kerns Avenue and Texas Street. For this project, SPP339 would be modified by increasing the diameter of the underflow pipe to 48”, and by raising the elevation of the overflow weir to 52.71 ft (City datum). These modifications would reduce CSO-053 overflows, and would benefit from the implementation of Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel

SPP340 Modification (System_2_4)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP340 is located north of the intersection of Kerns Avenue and Hagen Street. For this project, SPP340 would be modified by increasing the diameter of the underflow orifice to 24”. A flap gate would also be applied to prevent backflow from the Scajaquada Drain. This modification would

reduce CSO-053 overflows, and would benefit from the implementation of Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel

CSO-006 Projects

CSO-006 is a Scajaquada District CSO located at the end of the Delavan Drain on the Black Rock Canal, which is a high priority waterbody for water quality improvements (four target activations in the typical year). One additional RTC project was considered in this area but was not included in the Selected Alternative because the other projects were able to achieve compliance for a lower cost.

Gates Circle RTC (CSO006_2)

PRIMARY CSO IMPACTED: 006
PROJECT TYPE: RTC
2014 LTCP PROJECT: No
The Gates Circle RTC project would divert flow from the Bird Trunk to the Scajaquada Tunnel via a controlled connection at SPP332. The site would relieve the Bird Trunk and Black Rock Canal SPPs by sending more flow to the Scajaquada Tunnel when it has available capacity. The gate would close when the Scajaquada Tunnel does not have capacity, sending more flow to the Bird Trunk. This project includes adding instrumentation at the Niagara Metering Station (SPP330) to inform the gate control.

Delavan Drain RTC (CSO006_3)

PRIMARY CSO IMPACTED: 006
PROJECT TYPE: RTC
2014 LTCP PROJECT: No
There is an existing sluice gate near the end of the Delavan Drain that connects the Delavan Drain to the North Interceptor at the intersection of West Delavan Ave. and Niagara St. The sluice gate is currently kept closed all the time. The Delavan Drain RTC project converts this connection to a dynamically controlled gate that opens when the North Interceptor has available capacity and closes when there is no risk for overflow at CSO-006.

This project would require adjustments to the connectivity between the Delavan Drain and the Scajaquada Drain, which sends a large amount of creek flow to the Delavan Drain during most storm events. In the Selected Alternative model, the SPP170A structure was modified to only send flow from the Scajaquada Drain to the Delavan Drain in extreme storm events to prevent flooding.

Since the Delavan Drain RTC project is downstream of the CSO-006 SPPs, it would provide another opportunity to capture out-of-compliance activations before they become CSO-006 overflows. This project would also benefit from the additional conveyance capacity created by the Northern Relief Tunnel project.

20% GI Implementation (CSO006_5)

PRIMARY CSO IMPACTED: 006
PROJECT TYPE: GI
2014 LTCP PROJECT: Yes
Green infrastructure projects would be constructed within the basin sufficient to control runoff from 20% of the impervious area within the basin (52.5 acres managed). The exact list of projects to be implemented would be determined during the design phase, but would likely consist of some combination of the following project types, as originally defined in the BSA's Green Infrastructure Implementation Plan:

- Street permeable pavement
- Parking lot permeable pavement
- Rain Gardens
- Bioswales
- Downspout disconnections

For this evaluation, street permeable pavement was applied as the representative GI project.

CSO-010 Projects

CSO-010 is a Scajaquada District CSO that overflows to the Black Rock Canal (target of four activations) near the siphon to the Bird Island Treatment Facility at Breckenridge St. Only one project was considered in this area.

Breckenridge Niagara RTC (CSO010_1)

PRIMARY CSO IMPACTED: 010
PROJECT TYPE: Diversion/RTC
2014 LTCP PROJECT: No
The Breckenridge Niagara RTC project is being proposed as an alternative to the CSO-061, 008, and 010 underflow upsizing project in the LTCP baseline plan. Since the target activations are already met in the baseline model at CSO-008 and CSO-061, the project only needs to address activations at CSO-010. The site would be configured similar to the Smith St. and Mill Race RTC projects, with a static weir in the 36" diameter pipe upstream of SPP021 diverting flow to a new controlled connection to the North Interceptor. This project also has the potential to reduce overflows at CSO-011 (SPP024) and CSO-055 (SPP001).

CSO-011 Projects

CSO-011 discharges to the Niagara River, with a target of nine activations in the typical year. Both projects considered for this basin were included in the Selected Alternative.

20% GI Implementation (CSO011_1.1)

PRIMARY CSO IMPACTED: 011
PROJECT TYPE: GI
2014 LTCP PROJECT: Yes
Green infrastructure projects would be constructed within the basin sufficient to control runoff from 20% of the impervious area within the basin (19.9 acres managed). See CSO006_5 for details.

SPP024 Modification (CSO011_1.2)

PRIMARY CSO IMPACTED: 011
PROJECT TYPE: SPP
2014 LTCP PROJECT: Yes
For this project, SPP024 (CSO-011) would be modified by enlarging the underflow opening to 4.8 ft, which would send more flow to South Interceptor and reduce overflows at CSO-011. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.

CSO-012 Projects

CSO-012 is a Scajaquada District CSO that discharges to the Black Rock Canal. Seven projects in this area were considered during the optimization to meet the target of four activations in the typical year. SPP modifications were selected as the most cost-effective solution.

SPP023 Modification (CSO012_1.2)

PRIMARY CSO IMPACTED: 012
PROJECT TYPE: SPP
2014 LTCP PROJECT: Yes
For this project, SPP023 (CSO-012, Albany St. and Niagara St.) would be modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum). These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.

SPP296 Modification (CSO012_2.1)

PRIMARY CSO IMPACTED: 012
PROJECT TYPE: SPP
2014 LTCP PROJECT: Yes
For this project, SPP296 (CSO-012, Albany St. and Niagara St.) would be modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum). These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would be implemented after or in parallel with the SPP023 modification since it is directly upstream of the SPP023 underflow.

CSO-013 Projects

CSO-013 discharges to the Black Rock Canal at LaSalle Park. Only one project was considered in this area.

SPP304 Modification (CSO013_1)

PRIMARY CSO IMPACTED: 013
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
For this project, SPP304 (CSO-013, Virginia St. & Busti Ave.) would be modified by removing the underflow orifice plate, reducing overflows at CSO-013. Since this project sends more flow to the Swan Trunk, it would benefit from the implementation of OLS projects in the South Central District.

CSO-014 Projects

CSO-014 is a South Central District outfall in Erie Basin Marina, which is the Buffalo waterbody with the lowest number of target activations – two in the typical year. Both projects considered in this area were implemented in the Selected Alternative to achieve compliance.

SPP206A&B ILS Optimization/206 A&B RTC (CSO014_1.1)

PRIMARY CSO IMPACTED: 014
PROJECT TYPE: RTC
2014 LTCP PROJECT: No
There is an existing static control ILS project at SPP206A&B that was completed as part of the Swan Trunk Improvements project. The storage relieves the Swan Trunk (reducing overflows at SPP206A&B) and gradually dewaters to the South Interceptor. The proposed RTC project adds a 24” dewatering gate and connection to the South Interceptor. The gate would open to send more flow to the South Interceptor when it has available capacity, and close when it is near full capacity. This would further reduce overflows at SPP206A&B and could provide additional benefit downstream at SPP024 (CSO-011).

Erie Basin Marina OLS (CSO14_1.2)

PRIMARY CSO IMPACTED: 014
PROJECT TYPE: OLS
2014 LTCP PROJECT: Yes
To address CSO-014 overflows, flow from Swan Trunk would be diverted to the proposed Erie Basin Marina OLS. The OLS would consist of a 5.55 MG tank north of the intersection of Trenton Road and Fourth Street. The storage would dewater when there is available capacity in the Swan trunk sewer. The current OLS configuration requires a pump station for dewatering. The inlet for this storage is near SPP206A&B, so it would be beneficial to implement the OLS in conjunction with the SPP206A&B RTC project.

CSO-017 Projects

There are multiple projects planned to prevent overflows at CSO-017 on the Buffalo River (South Central district). The potential impact of these projects would be affected by the performance of the planned Mill Race and Broadway Oak RTC projects as well as the proposed CSO-026 projects. Two OLS projects (Mill Race OLS and 594 Exchange OLS) that were initially considered in this area were not included in the Selected Alternative to reduce costs and consolidate where construction would need to occur.

SPP054 Sewer Separation (CSO017_1.1)

PRIMARY CSO IMPACTED: 017
PROJECT TYPE: Sewer Separation
2014 LTCP PROJECT: No
SPP054 is located near Exchange Street between Hamburg Street and Larkin Street. For this project, the sewer upstream of SPP054 would be converted to a storm sewer and disconnected from the combined system. This would eliminate SPP054 as an SPP.

20% GI Implementation (CSO017_4)

PRIMARY CSO IMPACTED: 017
PROJECT TYPE: GI
2014 LTCP PROJECT: Yes
The CSO-017 basin would have green infrastructure managing 37.5 acres of impervious area. See CSO006_5 description for details.

Bass Alley OLS (CSO017_6)

PRIMARY CSO IMPACTED: 017
PROJECT TYPE: OLS
2014 LTCP PROJECT: No
To address CSO-017 overflows, the Bass Alley OLS would store flow from the Swan Trunk in a 3.60 MG tank in open areas near Seymour St. and Bass Alley. The storage would dewater when there is available capacity in the Swan Trunk. The current configuration of the OLS requires a pump station for dewatering.

SPP326 Modification (CSO017_8)

PRIMARY CSO IMPACTED: 017
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP326 is located south of the intersection of Swan Street and Oak Street. For this project, the SPP326 underflow pipe would be upsized to 36". This modification would reduce overflows at CSO-017. Since this modification sends more flow to the Swan Trunk, it would benefit from the implementation of the Erie Basin OLS project.

SPP059 Modification (CSO017_9)

PRIMARY CSO IMPACTED: 017
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP059 is located near the intersection of Hamburg Street and Seneca Street. For this project, the SPP059 underflow pipe would be upsized to 24", and the overflow weir would be raised to 3.25 ft (City datum). These modifications would reduce overflows at CSO-017. Since this project increases flow to the South Interceptor, it would benefit from the implementation of the Clinton St OLS (CSO033_2) project.

SPP051 Modification (CSO017_10)

PRIMARY CSO IMPACTED: 017
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP051 is located south of the intersection of Exchange Street and Chicago Street. For this project, the SPP051 orifice plate would be removed, and the overflow weir would be raised to –1.35 ft (City datum). These modifications would reduce overflows at CSO-017. Similar to the SPP059 modification, it would benefit from the implementation of the Clinton St OLS (CSO033_2) project.

CSO-026 Projects

Overflows at CSO-026 (Buffalo River, South Central district) are currently being addressed by the Smith Perry RTC project and would be further reduced by the Smith Eagle RTC project commissioned in 2022. Two CSO-026 OLS projects and 1 ILS project considered during the optimization were not included in the Selected Alternative to reduce costs.

Collins Park OLS (CSO026_1.3)

PRIMARY CSO IMPACTED: 026
PROJECT TYPE: OLS
2014 LTCP PROJECT: No
The proposed Collins Park OLS project would consist of a 2.56 MG tank at the Collins Park Field between Smith Street and Clifford Street that would serve as an extension of the Smith Street ILS storage. The storage would dewater via gravity when there is available capacity in the downstream sewer and no risk of overflow at the Smith Street ILS facility.

20% GI Implementation (CSO026_4)

PRIMARY CSO IMPACTED: 026
PROJECT TYPE: GI
2014 LTCP PROJECT: Yes
The CSO-026 basin would have green infrastructure managing 125.5 acres of impervious area. See CSO006_5 description for details.

CSO-027 Projects

CSO-027 has one SPP, SPP097, that overflows to the Buffalo River. Overflows in this area are impacted by available capacity in the Swan Trunk and South Interceptor. All the projects considered in this area were implemented in the Selected Alternative.

SPP 317 Modification (CSO027_1)

PRIMARY CSO IMPACTED: 027
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP317 is located north of the intersection of Clinton Street and Fillmore Avenue. For this project, the SPP317 overflow weir would be lowered to 7.25 ft (City datum). Lowering the weir would result in increased flows being directed to the Smith Street ILS facility, while lowering the flows in

the Swan Trunk. The lowered flows in the Swan Trunk results in a reduction in overflows at CSO-027. This project would benefit from the additional downstream storage capacity provided by the Collins Park OLS facility.

Babcock PS Weir Modification (CSO027_2)

PRIMARY CSO IMPACTED: 027
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
Babcock Pump Station operates as an RTC facility to store flows in an upstream 11 ft by 11 ft box culvert during wet weather. The CSO027_2 modification project redirects flow from a 48" sewer to the box culvert instead of the sewer downstream of the pump station. This increases the in-line storage utilization and reduces the flow sent to the Swan Trunk in wet weather.

SPP097 Modification (CSO027_3)

PRIMARY CSO IMPACTED: 027
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP097 is located on Babcock Street, 555 ft north of the Buffalo River. In the currently proposed version of this project, the SPP097 underflow pipe would be upsized to 48 inches. The overflow weir would be raised to 0.82 ft (City datum) with an associated length increase to 100 ft. Upstream diversion alternatives that achieve the same impact as the SPP097 modification are also being considered in this area.

CSO-028 Projects

CSO-028 receives flow from multiple SPPs in the South Central district and overflows to the Buffalo River. Most CSO-028 SPPs are in compliance in the LTCP model. Only one project was considered in this area.

Hopkins & Osage OLS (CSO028_1)

PRIMARY CSO IMPACTED: 028
PROJECT TYPE: OLS, SPP
2014 LTCP PROJECT: Yes
This project represents a modified version of the project originally proposed in the LTCP to address CSO-028, CSO-044, and CSO-047. The LTCP model results showed that storage was no longer needed to achieve compliance for CSO-044 and CSO-047. To address CSO-028 overflows, the Hopkins and Osage OLS would store flow from the Hopkins Street sewer in a 0.95 MG tank at the eastern end of Osage Street. The storage would dewater when there is available capacity in the South Park Avenue sewer and no risk of overflow at the downstream SPPs 125 and 126. The current OLS configuration requires a pump station for dewatering. This project also includes raising the weir at SPP123A to 2.40 ft (City datum) to send flow to the downstream off-line storage and further reduce CSO-028 overflows.

CSO-033 Projects

CSO-033 overflows to the Buffalo River at the southern end of Bailey Avenue (South Central district). Additional off-line storage projects were selected for this area to handle increased inflow from ECSD#4 and get CSO-033 into compliance.

Bailey & Regent OLS (CSO033_1)

PRIMARY CSO IMPACTED: 033
PROJECT TYPE: OLS
2014 LTCP PROJECT: No
To address CSO-033 overflows, the proposed Bailey & Regent OLS project would store flow from the Bailey Avenue trunk sewer in a 4.50 MG tank at Moreland Field between Regent Street and Moreland Street along Bailey Avenue. The storage would dewater when there is available capacity in the downstream sewer and no risk of overflow at the downstream SPP 104. The current OLS configuration requires a pump station for dewatering.

Clinton St. OLS RTC (CSO033_2)

PRIMARY CSO IMPACTED: 033
PROJECT TYPE: OLS
2014 LTCP PROJECT: No
The Clinton St. OLS project includes adding a new 60” diameter sewer that starts on Clinton Street near Kelburn Street and routes wet weather flow through Houghton Park to a 21.72 MG storage tank. An orifice plate and weir would be added at the intersection of Bailey Avenue and Clinton Street to route more flow to the tank via Clinton Street. An automatically controlled gate at the downstream end of the tank would close to store flow when SPP104 (CSO-033) is at risk for overflow and would open to prevent basement backups upstream. ECSD#4 would get priority in sending flows for treatment, and the storage tank would drain via gravity when there is conveyance capacity available downstream.

SPP104 Modification (CSO033_3)

PRIMARY CSO IMPACTED: 033
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP104 is located on Bailey Avenue, north of Littell Avenue. For this project, the SPP104 overflow weir would be raised to 6.85 ft (City datum), and the length increased to 40’. These modifications would reduce overflows at CSO-017. Since this project is near the Clinton St. OLS, it would be beneficial to implement the SPP104 modification in parallel or after the OLS is constructed.

CSO-053 Projects

The following projects are upstream of SPPs that overflow to CSO-053 on Scajaquada Creek. The operational North Bailey RTC project would be impacted by these new projects and would have its control setpoints adjusted accordingly. Three projects considered upstream of SPP337 were not included in the Selected Alternative because SPP modification was more cost-effective. An additional RTC project upstream of SPP338 was not needed to achieve compliance for that

SPP. One additional OLS site was considered upstream of SPP340 but was not included in the Selected Alternative to consolidate the project area.

SPP336B Sidney Street OLS (CSO053_1.4)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: OLS
2014 LTCP PROJECT: No
To reduce flows at SPP336B, the Sidney Street OLS would store flow diverted from the sewer along Humboldt Parkway in a 3.26 MG tank at the corner of Sidney Street and Lark Street. The storage would dewater via gravity when there is sufficient available capacity in the Scajaquada Tunnel Interceptor.

SPP336B Modification (CSO053_1.5)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP336B is located in the Kensington Expressway, north of Hamlin Road. For this project, SPP336B would be modified by removing the underflow orifice plate, reducing overflows at CSO-053. It would be beneficial to implement this modification after or in parallel with the Sidney OLS project.

SPP337 Modification (CSO053_2.5)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP337 is located near the intersection of Scajaquada Street and Colorado Avenue. For this project, SPP337 would be modified by incorporating an additional 30” diameter underflow pipe. This modification would reduce overflows at CSO-053, and would benefit from the implementation of the Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.

SPP338 Modification (CSO053_3.1)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP338 is located south of the intersection of Scajaquada Street and Bailey Avenue. For this project, the SPP338 underflow orifice would be enlarged. The overflow weir would be raised to 55.24 ft (City datum), and the length increased to 30’. To prevent construction in the intersection, another version of this project is under consideration that diverts flow upstream of the SPP at Bailey Avenue and Northland Avenue along public open land to tie in to the Scajaquada Tunnel at Scajaquada Street. Either version of this project would reduce overflows at CSO-053 and would benefit from the implementation of the Schiller Park OLS or Sidney OLS.

Bailey & Amherst, Amherst Quarry PS RTC (CSO053_3.2)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: RTC/OLS
2014 LTCP PROJECT: Yes
This RTC project includes adding RTC at SPP255 (Bailey Avenue and East Amherst Street) as well as improving the efficiency of Amherst Quarry dewatering operations to reduce overflows. The SPP255 RTC component was not part of the 2014 LTCP. RTC at this location would send more flow from the North Bailey sewer to the Amherst Quarry when it has available storage capacity, and the Amherst Quarry pump station would dewater the quarry when there is no risk for overflow at Scajaquada SPPs. This project includes updating sensors at Amherst Quarry and adding instrumentation at SPP338 (Bailey Ave & Kerns Ave).

SPP254 Modification (CSO053_3.3)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
For this project, the overflow weir at SPP254 (located at the intersection of Minnesota Avenue and Bailey Avenue) would be replaced. The new weir elevation would be 82.90 ft (City datum), which is slightly lower than the weir elevation in the LTCP model. Lowering the weir results in more flow being routed to the Amherst Quarry PS storage.

Edison Martha OLS (CSO053_5.2)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: OLS
2014 LTCP PROJECT: No
To address CSO-053 overflows, the proposed Martha and Edison OLS project would store flow diverted from the Edison Avenue trunk sewer in a 2.61 MG tank at the northwest corner of Edison Avenue and Kensington Expressway. The storage would dewater via gravity when there is available capacity in the Edison Avenue trunk sewer.

SPP341A Modification (CSO053_8)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: Yes
SPP341A is located on Genesee Street east of Kerns Avenue. For this project, SPP341A would be modified by incorporating an additional 18” diameter underflow pipe and raising the overflow weir to 55.60 ft (City datum), reducing overflows at CSO-053. This modification would benefit from the implementation of the Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.

20% GI Implementation (CSO053_9)

PRIMARY CSO IMPACTED: 011
PROJECT TYPE: GI
2014 LTCP PROJECT: Yes
The CSO-053 basin would have green infrastructure managing 16.7 acres of impervious area. See CSO006_5 description for details.

SPP229A RTC / Jefferson Florida (CSO053_10)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: RTC
2014 LTCP PROJECT: No
SPP229A is located near the intersection of Florida Street and Jefferson Avenue. For this project, SPP229A would be modified by incorporating an additional 24" diameter underflow pipe downstream of a 24" dynamically controlled gate. The gate would open when there is available capacity in the Scajaquada Tunnel or there is a risk for overflow at SPP229A.

Canisius OLS / Jefferson Delavan OLS (CSO053_11)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: OLS
2014 LTCP PROJECT: Yes
This was a planned LTCP project, but there is a new opportunity to move the tank location North and utilize an existing parking garage area at Jefferson and Delavan proposed to be demolished for the construction of a new surface parking lot. In the updated configuration and location, flow at SPP333 is routed to a 1.5 MG offline storage tank. The storage would dewater via gravity when there is capacity available in the Scajaquada Tunnel. Rock is present at shallow depths in this area which would impact construction costs and scheduling.

Jefferson Ave GI (CSO053_12.1)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: Green Infrastructure
2014 LTCP PROJECT: Yes
Phis project would manage 2.3 acres of impervious area upstream of SPP333 using green infrastructure.

Jefferson Ave GI (CSO053_12.2)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: Green Infrastructure
2014 LTCP PROJECT: Yes
This project would manage 7.6 acres of impervious area upstream of SPP229A using green infrastructure.

SPP165B Modification (CSO053_13)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP165B is located at the intersection of East Delavan Avenue and Humboldt Parkway. For this project, the SPP165B underflow orifice would be upsized to 24" and underflow pipe to 36". The overflow weir would also be raised to 54.81 ft (City datum). These modifications would reduce overflows at CSO-053. This project would benefit from the implementation of the Sidney OLS project to make more capacity available in the Scajaquada Tunnel.

SPP175, 176, & 177 Modifications (CSO053_14)

PRIMARY CSO IMPACTED: 053
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
For this project, multiple SPP weirs along Michigan Avenue would be modified to reduce overflows at CSO-053. SPP175 at Dodge Street and Michigan Ave would be raised to 56.10 ft (City datum). SPP176 at Michigan Avenue and Riley Street and SPP177 at Michigan Avenue and Glenwood Avenue would both be raised to 52.85 ft (City datum). These modifications are upstream of the Gates Circle RTC project.

CSO-055 Projects

The following projects impact SPP001 (CSO-055, Niagara River). The controls at the operational Hertel at Deer RTC structure would be adjusted when the upstream projects are implemented. Additional ILS and OLS projects upstream of SPP001 were not included in the Selected Alternative because they did not have a significant impact on overflow volume.

Hertel North East / Hertel Delaware ILS (CSO055_1.1)

PRIMARY CSO IMPACTED: 055
PROJECT TYPE: RTC
2014 LTCP PROJECT: Yes
The Hertel North East ILS is designed to take advantage of additional storage capacity available on Hertel Avenue North barrel upstream of the existing Hertel at Deer RTC structure. Since there is a short travel time between the two locations, the preliminary control strategy would start storage when the depth upstream of the Hertel North East ILS structure indicates wet weather.

Military Rd OLS/Hertel OLS (CSO055_1.5)

PRIMARY CSO IMPACTED: 055
PROJECT TYPE: OLS
2014 LTCP PROJECT: Yes
The Military Road OLS project is a 11.55 MG tank that stores flow diverted from the Hertel Avenue South barrel at the intersection of Hertel Avenue and Military Road. The currently proposed location for the storage tank is the parking lot for West Hertel Academy at 245 Hertel. The inlet of the offline storage is directly upstream of the existing Hertel at Deer RTC structure and would store when the Hertel at Deer ILS is full. The storage would dewater via a pump station when there is no risk of overflow at SPP001. Note that this OLS may not be implemented as it is currently

configured if the North of Scajaquada Creek section of the Northern Relief Tunnel is constructed. Compliance in this area will be further evaluated during the Northern Relief Tunnel detailed design phase, and the Military OLS project will be adjusted as needed to minimize overall program costs while still achieving compliance.

20% GI Implementation (CSO055_3)

PRIMARY CSO IMPACTED: 055
PROJECT TYPE: Green Infrastructure
2014 LTCP PROJECT: Yes
The CSO-055 basin would have green infrastructure managing 260.2 acres of impervious area. See CSO006_5 description for details.

CSO-064 Projects

CSO-064 is a Buffalo River outfall with seven upstream SPPs. One SPP modification project under consideration was not implemented in the Selected Alternative because that SPP was already in compliance.

CSO-064 ILS (CSO064_1.1)

PRIMARY CSO IMPACTED: 064
PROJECT TYPE: ILS
2014 LTCP PROJECT: No
For this project, the existing 24” sewer upstream of SPP137 between South Street and Republic Street along Louisiana Street would be replaced by two 60” diameter sewers. These sewers would provide in-line storage volume to help reduce overflows at SPP137.

SPP 137 Modification (CSO064_1.2)

PRIMARY CSO IMPACTED: 064
PROJECT TYPE: SPP
2014 LTCP PROJECT: No
SPP137 is located at the intersection of Louisiana Street and Republic Street. For this project, the SPP137 overflow weir would be raised to 0.50 ft (City datum). In addition, the underflow orifice plate would be removed. These modifications would reduce overflows at CSO-064 and would be implemented in conjunction with the CSO-064 ILS (CSO064_1.1) project.

Perry Street Sanitary Sewer (CSO064_2)

PRIMARY CSO IMPACTED: 064
PROJECT TYPE: Sewer Replacement
2014 LTCP PROJECT: No
This project would replace an existing sewer partially built into Hamburg Drain. The new sewer would start on Scott St near Illinois St to Louisiana St, then continue along Perry St to the Hamburg St. Pump Station. The total length of new sewer would be 6,417 ft, with the largest pipe diameter being 42”. This project is not anticipated to have a significant impact on CSO-064 overflows.

Selected Alternative Model Results

The following results are from a SWMM simulation of the Selected Alternative with the typical year rainfall input. In addition to including the Selected Alternative projects, this model scenario included updated inflow timeseries for Erie County Sewer Districts 1 and 4 (ECSD#1 and ECSD#4). The inflow update increased the average ECSD#4 inflow from 4.1 mgd to 14.4 mgd over the typical year, while the average ECSD#1 inflow increased from 3.9 mgd to 5.9 mgd.

Hertel District

The Selected Alternative is projected to achieve compliance in the Hertel District, with nine activations at CSO-055 in the typical year.

Scajaquada District

The Selected Alternative is projected to achieve compliance in the Scajaquada District in the typical year:

- CSO-006 (SPPs 179, 180, 331) - The Delavan Drain RTC project (CSO006_3) downstream of the CSO-006 SPPs had one activation in the typical year in the Selected Alternative simulation.
- CSO-004 (SPP013) - SPP013 is in compliance in the Selected Alternative typical year run with only two activations.
- CSO-053 (SPPs 229A, 175, 165B, 338, 336B, 337, 339, 340) - The Selected Alternative achieves compliance for all of the CSO-053 SPPs that were out of compliance in the baseline plan model.

South Central District

The Selected Alternative is projected to achieve compliance for the following CSOs exceeding their target activations in the baseline plan model:

- CSO-029 (SPP126) - CSO-029 has four activations in the Selected Alternative typical year simulation. This is a third of the number of activations expected in the baseline plan model.
- CSO-037 (SPP122) - CSO-037 has five activations in the Selected Alternative model run, which falls under the maximum target of six activations for Cazenovia Creek - C. This is an improvement over the nine activations projected in the baseline plan model.
- CSO-033 (SPP104) - The Selected Alternative is below the target activations with only two activations for this CSO.
- CSO-026 (Smith St. ILS) – CSO-026 is projected to meet the target of six activations in the Selected Alternative typical year.
- CSO-017 (Mill Race ILS) – CSO-017 is projected to fall below the Buffalo River target activations with only four activations in the Selected Alternative scenario.
- CSO-027 (SPP097) – Similar to nearby CSOs, CSO-027 is projected to have only four activations in the Selected Alternative scenario.

Similar to the baseline projects LTCP model, the Selected Alternative is projected to maintain compliance at CSO-014 (SPP 206A&B).

Selected Alternative without GI Comparison

To quantify the impact of GI projects on the Selected Alternative typical year outcomes, a scenario was run without the six 20% GI Implementation projects included. A comparison between the Selected Alternative without GI and the full Selected Alternative with GI is provided in Table 2. CSO-026 is one activation above the target activations for the Buffalo River and CSO-055 is two activations above the target activations for the Niagara River in the Selected Alternative without GI scenario. These out of compliance activations are removed in the Selective Alternative with GI (v3.4.0-ltcp). GI has some systemwide impact on CSOs that did not have GI directly implemented in their sewershed, such as CSO-003, 004, 014, 027, and 061. Overall, including GI in the Selected Alternative reduces systemwide overflow volume by 26.64 MG in the typical year compared to the Selected Alternative without GI.

Table 2. CSO volume and activations comparison between Selected Alternative Without GI and with GI (v3.4.0-ltcp) for CSOs that have a volume reduction > 0.1 MG with GI included.

CSO	Selected Alternative Without GI Typical Year OF Vol. (MG)	Selected Alternative Without GI Typical Year OF Activations	Overflow Volume Reduction with GI, MG	Overflow Volume Reduction with GI, %	Activations Reduction with GI	GI Impervious acres managed	Overflow MG reduced/ impervious acre managed
003	2.28	4	0.13	6%	0		
004	4.74	3	0.82	17%	1		
006	1.62	1	0.61	38%	0	52.5	0.012
011	23.71	4	1.22	5%	0	19.9	0.061
014	6.08	2	0.37	6%	0		
017	42.78	5	4.94	12%	1	37.5	0.132
026	58.91	7	12.77	22%	1	125.5	0.102
027	43.88	5	1.73	4%	1		
053	27.33	4	0.28	1%	0	530	0.001
055	363.77	11	42.97	12%	2	260	0.165
061	9.99	2	0.55	6%	0		

Selected Alternative Typical Year Summary

The Selected Alternative is projected to achieve compliance for all CSOs in the typical year, showing a significant improvement over the LTCP baseline projects model that had 10 CSOs out of compliance. The total residual overflow volume in the Selected Alternative typical year is 551.64 MG, a 66% reduction compared to the updated LTCP model overflow volume of 1618.42 MG. Detailed SWMM results for different model scenarios are provided in Attachment E.

Cost Estimate for Selected Alternative

Detailed planning level opinions of probable construction cost (OPCC) were developed for each of the projects included in the selected alternative. The detailed cost estimates are included in Attachment F. The total capital cost for the Selected Alternative was determined to be $853,763,905.

Methodology & Assumptions

The unit prices and estimate format established during the baseline cost estimate updates were used as the basis for the new projects that were added during this optimization process. To give greater detail in each project's OPCC than was possible using cost curves, site-specific property acquisition requirements and depth to bedrock were determined for each project under consideration, as discussed in the following sections. For locations for which this information was unavailable, placeholder values were used to ensure that the OPCC was not unreasonably low-priced.

Each project's proposed geometry was used to develop its corresponding OPCC, especially in the case of OLS projects. A figure was developed for each OLS project to depict a proposed tank configuration and corresponding influent and effluent sewers that met the dimensional requirements of the model, but also appropriately fit the constraints of each site. These figures are provided in Attachment D. The geometry of each proposed OLS tank generated by the model determined OPCC elements such as the volume of concrete needed for the tank floor, walls, and roof, assuming thicknesses of two feet for these elements. The plan area of the tank was used to determine the number of structural columns and the corresponding volume of concrete required with the assumption of a tributary area of 400 square feet per column. The tank's plan area was increased by 25 percent to determine the amount of site clearing required, and in turn the site clearing area provided the basis for determining the area of pavement or grass restoration required, with the assumption that existing conditions would be restored. Costs for betterment projects associated with site restoration, such as improved park facilities, were not included at this time but may be a consideration as these projects move into detailed design. This site restoration area was also the basis of the property acquisition cost calculation in each OPCC, if the project site was not already publicly owned.

Costs for items such as excavation, sheeting and bracing, and backfill were determined using the proposed tank geometry as well as the depth of existing sewers to which the storage projects would connect. In the case of excavation, the estimated depth to bedrock was compared against the necessary invert for the storage project to determine whether rock excavation was necessary.

The OPCC for each OLS project incorporated conveyance to and from the storage tank and whether pumping was required. These pump costs were obtained from manufacturers' representatives for several design points. Pumps were sized with the assumption that the entire tank storage volume would be dewatered over 24 hours, with two pumps each capable of providing the necessary flowrate for redundancy. OLS tanks involving pumping had line items for pump station buildings, fittings, valves, and gates. Any projects that were modeled with RTC components also incorporated inlet and outlet gates as applicable in their respective OPCC.

The proposed tank invert was the basis for OPCC conveyance calculations involving the necessary depths for excavation, sheeting and bracing, and backfill. The project team collectively reviewed each project and determined the likely connection points to the existing collection system, which in turn determined the lengths of conveyance required for each proposed OLS project.

Following meetings with BSA and the project team, OPCC calculations for projects that did not fall within the OLS category were developed with the following assumptions:

- Green infrastructure projects were estimated to cost $200,000 per acre.
- RTC/ILS projects were given a placeholder cost of $4 million each based on projects completed to date. For the RTC/ILS projects that have progressed into detailed design, the most recent design cost estimates were used.
- SPP modifications were given a placeholder cost of $50,000 each.
- Detailed OPCCs were prepared for each sewer separation project based on the assumption that new storm sewers and catch basins would be installed on the designated streets. Pipe sizes and lengths used in the estimate were based on modeled conditions.

Each project's OPCC included percentage-based add-on costs as shown in the table below (Table 3).

Table 3. Percentage-based add-on costs for individual projects

Item	Amount
Electrical, Controls, and Instrumentation	15% of OPCC subtotal
Utility Relocation / Coordination	5% of OPCC subtotal
Maintenance and Protection of Traffic (MPT)	5% of OPCC subtotal
General Conditions, Bonds & Insurance	5% of OPCC subtotal + three items above

The OPCC was then summed for each Selected Alternative project and a contingency percentage reflective of the project's design stage was added to the subtotal to determine each project's anticipated capital cost. A contingency of 40% was used for the OLS tanks and sewer separation projects; 20% was applied to the SPP modifications; and no additional contingency was added to the green infrastructure or RTC/ILS project estimates.

Detailed OPCCs and the overall cost summary sheet for the selected alternative are provided in Attachment F.

Project-specific life cycle costs have also been developed. In general, these estimates are based on each projects' anticipated operation and maintenance (O&M) requirements and the labor rates relevant to each O&M activity, the present and future cost of replacement equipment and maintenance supplies, and any expected electricity and water usage at the project site. The cost of initial spare parts was assumed to be included in the project's construction costs. The life cycle costs were developed for a fifty-year period using an annual interest rate of 5% and an annual inflation rate of 4.5% to determine their total present value.

The cost items included in each project's life cycle cost analysis varied by project type. Specifically, OLS tanks with pump stations incorporated the following elements:

- Operator monitoring of tank at one hour per week
- Electrical usage by dewatering pumps based on anticipated number of activations from the typical year model
- Water usage by cleaning equipment
- Communication plans for instrumentation and controls and building alarms
- Weekly maintenance checks performed by millwrights and instrument techs
- Bi-weekly maintenance checks performed by a yard and ground maintenance crew
- Quarterly maintenance activities by millwrights and laborers

- Annual maintenance activities including tank cleaning and force main pigging by BSA Sewer Maintenance crews
- Annual property maintenance costs, such as fence or landscaping repairs
- Prorated costs for crews, trucks, combination sewer cleaning vehicles, and skid steers
- Minor pump rehabilitation every two years
- Major pump rehabilitation every five years
- Instrumentation and electrical upgrades and replacement every five years
- Pump station building and HVAC equipment upgrades every ten years
- Cleaning equipment replacement every twenty years
- Mid-lifespan engineering evaluation
- Pump and metal replacement at year 25
- MCC cabinet replacement and major pump station building improvements at year 30

Life cycle costs for OLS tanks dewatered by gravity were based on the following items:

- Operator monitoring of tank at one hour per week
- Water usage by cleaning equipment
- Communication plan for instrumentation and controls
- Weekly maintenance checks performed by millwrights and instrument techs
- Annual maintenance activities including tank cleaning and force main pigging by BSA Sewer Maintenance crews
- Prorated costs for crews, trucks, combination sewer cleaning vehicles, and skid steers
- Instrumentation and electrical upgrades and replacement every five years
- Cleaning equipment replacement every twenty years
- Mid-lifespan engineering evaluation
- Metal replacement at year 25

Life cycle costs for RTS/ILS projects are based on BSA's experience with their existing facilities, including:

- Operator monitoring of tank at one hour per week
- Electrical usage by the gate actuators
- Communication plan for instrumentation and controls
- Weekly maintenance checks performed by instrument techs
- Quarterly maintenance activities by millwrights and laborers
- Annual maintenance and cleaning activities by BSA Sewer Maintenance crews
- Prorated costs for a crew trucks and combination sewer cleaning vehicle
- Minor actuator service every two years
- Major actuator service every five years
- Instrumentation and electrical upgrades and replacement every five years
- Control panel component parts replacement every ten years
- Mid-lifespan engineering evaluation
- Actuator and metal replacement at year 25

Sewer separation project life cycle costs were determined for the anticipated O&M needs of the new storm sewer; specifically:

- Annual allocation for sewer repairs
- Jet cleaning and CCTV every five years
- Minor manhole and catch basin maintenance at year 10
- Major manhole and catch basin maintenance at year 25

Life cycle costs for green infrastructure projects were determined for the anticipated O&M needs of permeable pavement; specifically:

- Purchase of pavement vacuum
- Weekly fuel for pavement vacuum
- Debris disposal
- Labor for pavement vacuum operator
- Pavement repair or replacement every ten years

Since BSA already owns and maintains their sewer patrol points, modifications to these structures would only have a minor impact on their expected life cycle costs. An additional hour has been allocated bi-weekly for a crew of two inspectors to monitor the SPPs that will be modified.

The Northern Relief Tunnel is expected to operate hydraulically, similar to BSA's existing interceptors. Life cycle costs for this tunnel were determined based on the following anticipated O&M needs:

- Operator monitoring of tunnel at one hour per week
- Communication plan for instrumentation and controls
- Instrumentation upgrades and/or replacement every five years
- Inspection, cleaning and routine maintenance by an outside contractor every five years

Property Requirements for Selected Alternative

The proposed GI and OLS projects can be located on either City-owned property or on private property. Obtaining permission to use City-owned property would not require purchasing land but the owning agency would need to give permission for the proposed use. Projects located on private property would require an easement or a land purchase to construct. The projects that are not anticipated to require property purchase can be seen in Table 4, as the proposed locations are already owned by the City of Buffalo or related agencies.

Table 4. Projects that do not require property acquisition

Project	City Property
CSO014_1.2 Erie Basin Marina OLS	95 4th St, Buffalo, NY 14202
CSO017 Bass Alley OLS	22 Seymour Street
CSO026_1.3 Collins Park OLS	317 Smith St, Buffalo, NY 14210
CSO028_1 Hopkins & Osage OLS	Park at Hopkins and Osage St. (Durant Park)
CSO033_1 Bailey & Regent OLS (Moreland Park)	1351 Bailey Ave, Buffalo, NY 14210
CSO053_1.4 SPP336B OLS (Sidney OLS)	28 Sidney St, Buffalo, NY 14211
CSO053_12.1 Jefferson Ave GI	Jefferson Ave from Main St to Beverly Rd
CSO053_12.2 Jefferson Ave GI	Jefferson Ave from Best St to Beverly Rd
CSO055_1.5 Military Rd OLS	489 Hertel Ave, Buffalo, NY 14207
System_2 Schiller Park OLS	2057 Genesee St, Buffalo, NY 14211

Most Off-line Storage (OLS) tanks are planned to be located under City parks, which appear to be good sites for OLS projects because of their open land and ability to be returned to park space after an underground tank is constructed. Constructing an OLS tank would require coordination with the City of Buffalo Parks Department.

GI implementation along Jefferson Ave is envisioned to be permeable pavement using similar construction to what was done on William Street, Kenmore Ave, and Ohio St. The permeable pavement will be within the public right of way and the design will need to be coordinated with City of Buffalo Engineering. The rest of the GI projects are envisioned to be impervious area management projects, primarily permeable pavement within the public right of way to expedite implementation and ensure compliance with deadlines set forth by regulators and with funding mechanisms and lower long-term maintenance costs. Other methodologies including rain gardens, road diets, green and blue roofs, bioswales, and downspout disconnections will be considered as opportunities present themselves to work in conjunction with other entities in this space. The specific locations for GI implementation projects (CSO006_5, CSO011_1.1, CSO017_4, CSO026_4, and CSO055_3) will be determined as private and public opportunities present themselves and in conformance with the GI Master Plan and Rain Check 1.0 and 2.0 Reports. Implementation will require coordination with the City of Buffalo.

Projects that will likely require property acquisition can be seen in Table 5. Most projects have multiple options for siting on either private or public property. Private property installations would require land purchase or easement which experience has shown is frequently an extended process and a significant cause for delay in the implementation of mandated work. Use of City-owned property would also require coordination with the City but might be easier to arrange.

Table 5. Projects that may require property acquisition and/or BSA easements

Project	City Option	Private Option
CSO053_11 Canisius OLS	N/A	Canisius College
CSO053_5.2 Edison Martha OLS	430 Edison Ave, Buffalo, NY 14215	154 City Line, Buffalo, NY 14215
Northern Relief Tunnel (System_1)	166 Dart Street, Buffalo, NY 14213 Tonawanda at Arthur	Railroad Easement near Tonawanda and Austin, Rich Products Parking Lot,

Draft Implementation Schedule

Project Priority Evaluation

The objective of the draft implementation schedule for the Selected Alternative is to present a reasonable timeline that provides the most benefit to Buffalo communities. A scoring matrix has been developed to help meet this objective by prioritizing the construction schedule. The scoring matrix includes the factors listed in Table 6. The SPP associated with each project is based on the SPP that is closest downstream or is expected to have the largest volume/activations reduction when the project is implemented. The Waterbody Rank was weighted higher than the other factors to prioritize implementing projects that reduce overflows to high priority waterbodies. The projects with the lowest combined score should be implemented earlier in the schedule where possible.

Table 6. Project Ranking System

No.	Factor	Score Conditions		
		1	2	3
1	SPP Overflow Volume Rank	Baseline typical year SPP overflow volume > 5 MG	Baseline typical year SPP overflow between 1 and 5 MG	Baseline typical year SPP overflow volume < 1 MG
2	Waterbody Rank	Black Rock Canal and Scajaquada Creek SPPs	Buffalo River SPPs	Erie Basin and Niagara River SPPs
3	SPP Project Rank	Highest priority project upstream of a particular SPP based on cost effectiveness	2nd Highest priority project upstream of a particular SPP based on cost effectiveness	3rd highest priority project upstream of a particular SPP based on cost effectiveness
4	Construction Priority	Construction planned/occurring soon	Normal priority	Avoiding construction in this area due to concerns such as contaminated soil, high traffic, etc.
5	CSO Cost Effectiveness	Combined cost effectiveness of projects in CSO basin $/gal reduction < $1	Combined cost effectiveness of projects in CSO basin $/gal reduction > $1 and < $2	Combined cost effectiveness of projects in CSO basin $/gal reduction > $3
6	Environmental Justice (EJ)	Disadvantage ranking > 4	Disadvantage ranking > 2 and ≤ 4	Disadvantage ranking ≤ 2

The Environmental Justice (EJ) factor has a more complex set of inputs than the other factors to represent a range of factors related to socioeconomic disadvantage and vulnerability, exposure to environmental risks, and access to environmental amenities that can then be used to determine equity voids. To determine a project's priority in terms of Environmental Justice, the Climate and Economic Justice Screening Tool (CEJST) developed by the Council on Environmental Quality (CEQ) was used to identify disadvantaged communities in the City of Buffalo. The CEJST tool is also used by the Justice40 Initiative, a federal government approach to ensure that 40% of the overall benefits of federal investment flow to disadvantaged communities (The White House). Hence, using the same screening tool as the Justice40 Initiative will ensure that projects in disadvantaged neighborhoods are prioritized and BSA's goal of advancing environmental justice is met.

CEJST uses datasets of burden indicators. These burdens are organized into eight categories (Table 7). A community is highlighted as disadvantaged on the map if it is in a census tract that is at or above the threshold for one or more environmental, climate, or other burdens, and at or above the threshold for an associated socioeconomic burden. In addition, a census tract surrounded by disadvantaged communities and at or above the 50% percentile for low-income is also considered disadvantaged (Council on Environmental Quality, 2022).

Table 7. CEJST Categories of Burdens Evaluated for Selected Alternative Projects (Council on Environmental Quality, 2022).

No.	Category	Threshold for Environmental, climate, or other burdens	Threshold for Socioeconomic Burden
1	Climate change	At or above the 90th percentile for expected agriculture loss rate, expected building loss rate, expected population loss rate, projected flood risk, or projected wildfire risk	At or above the 65th percentile for low income
2	Energy	At or above the 90th percentile for energy cost or PM2.5 in the air	At or above the 65th percentile for low income
3	Health	At or above the 90th percentile for asthma, diabetes, heart disease, or low life expectancy	At or above the 65th percentile for low income
4	Housing	Experienced historic underinvestment or are at or above the 90th percentile for the housing cost, lack of green space, lack of indoor plumbing, or lead paint	At or above the 65th percentile for low income
5	Legacy pollution	Have at least one abandoned mine land or Formerly Used Defense Sites or are at or above the 90th percentile for proximity to hazardous waste facilities, proximity to Superfund sites (National Priorities List (NPL)), or proximity to Risk Management Plan (RMP) facilities	At or above the 65th percentile for low income
6	Transportation	At or above the 90th percentile for diesel particulate matter exposure, transportation barriers, or traffic proximity and volume	At or above the 65th percentile for low income
7	Water and wastewater	At or above the 90th percentile for underground storage tanks and releases or wastewater discharge	At or above the 65th percentile for low income
8	Workforce development	At or above the 90th percentile for linguistic isolation, low median income, poverty, or unemployment	Fewer than 10% of people ages 25 or older have a high school education (i.e., graduated with a high school diploma)

The Selected Alternative Projects & Disadvantaged Communities map (Attachment G) was created based on these CEJST categories of burdens. Even though there are 8 CEJST categories of burdens, the highest disadvantage ranking observed in the City of Buffalo was 6, meaning a census tract was highlighted as disadvantaged in 6 categories of burdens. Conversely, the lowest disadvantage ranking observed in the City was 0, meaning the census tract was not

disadvantaged in any categories of burdens evaluated. Subsequently, the Selected Alternative projects were plotted over the disadvantaged community map to determine the disadvantage raking for each project.

There were two approaches to calculating the disadvantage ranking for each project based on project type:

- GI Projects: The overall project disadvantage ranking was calculated using the weighted average of the disadvantage rankings for the census tracts where GI was applied in the sewershed.
- All other projects (OLS, RTC, ILS, and SPP Modifications): A quarter-mile radius buffer zone was drawn around each of these projects to estimate each project's area of influence, and the census tract's highest disadvantage score within that project's radius became the project's disadvantage ranking.

Out of the 51 Selected Alternative projects, 67% of the projects have a disadvantage ranking of greater than 4 and are primarily located towards the south of the City, 24% of the projects have a disadvantage ranking of less or equal to 4 but greater than 2, and 9% of the projects have a disadvantage ranking of less or equal to 2 (Attachment G). These percentages indicate that most proposed projects are located in more vulnerable neighborhoods.

These resources provide a visual way for BSA and stakeholders to better understand the citywide distribution of need, deprivation, and risk. Since BSA seeks to engage communities equitably, the disadvantaged community evaluation will also help inform the community engagement plan for each project.

Project Dependencies

In addition to individual project priorities, dependencies need to be taken account during project scheduling. Some projects that are in near proximity to each other, such as the SPP336B Modification (CSO053_1.5) and SPP336B OLS (Sidney OLS, CSO053_1.4), would make most sense to implement in parallel or in short succession to make construction coordination easier and maximize the project benefits. Many SPP modification projects send more flow to downstream interceptors, so their implementation is dependent on the construction of projects upstream that help reduce interceptor peak flows. An example of this dependency is the Schiller Park OLS and Sidney OLS projects making more capacity available in the Scajaquada Tunnel that could be used by multiple SPP modification projects.

There may also be other project dependencies outside the scope of the Selected Alternative projects to ease coordination with other public and private entities. For example, implementation of some projects in park spaces make be dependent on the Buffalo parks department's future budget and construction plans. These dependencies will be taken into account as the schedule is further refined.

Project Timelines

The timeline for each type of project was established with assumptions of how long it would take to complete project phases including Environmental Finance Center (EFC) engineering reports, site surveys and inspections, Basis of Design reports, detailed design, bidding, and construction. More complex (major) projects such as off-line storage tanks and the Northern Relief Tunnel are

expected to take longer than typical RTC projects. For the draft implementation schedule, it was assumed that BSA could have 5 major and 7 minor projects in construction simultaneously.

Development of the schedule included assumptions for how long it would take to complete a project based on typical constraints to BSA and projects within Buffalo, and construction times for similar projects. Based on this information, the following general task times were used in construction of the schedule (Table 8). Larger or smaller projects like the Northern Relief Tunnel were given custom times to reflect the complexity of the project.

Table 8. General Task Durations Applied in Schedule Development

Task	Duration by Project Type (months)					
	Real-Time Control	Off-Line Storage	In-Line Storage	SPP Modification	Green Infrastructure	Tunnel
Engineering Report	4	6	6	4	6	12
Site Investigation	2	3	3	2	1	24
Basis of Design Report	2	2	2	2	N/A	12
Detailed Design	12	12	12	3	9	24
City Coordination/ Land Acquisition	N/A	12	N/A	N/A	N/A	24
Bidding	6	6	6	6	6	9
City Review Time Before Contract Award	2	2	2	2	2	2
Construction	24	36	24	4	12	48

An estimated timeline for the design and construction of the projects included in the Selected Alternative is presented in Attachment H. Estimated engineering start and construction finish dates are summarized in Table C.1 (Attachment C).

Conclusion & Next Steps

The projects described herein as the Selected Alternative represent an updated proposal for capital improvements to meet the LTCP requirements. This set of projects makes significant progress towards compliance and improved water quality. BSA will continue to optimize the effectiveness of these projects as a globally coordinated control strategy is implemented, collection system monitoring continues, and additional system improvements are made. While the overall Selected Alternative cost is anticipated to be higher than the cost of the original LTCP plan, the projects included in the Selected Alternative will achieve the target level of control for all waterbodies. The preliminary schedule for phasing of the Selected Alternative has a target completion date of 2040.

References

Council on Environmental Quality. (2022, November 22). *Methodology*. Climate and Economic Justice Screening Tool. https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5

The White House. (n.d.) *Justice40*. https://www.whitehouse.gov/environmentaljustice/justice40/

Attachment A

LTCP BASELINE PROJECTS

Project Number 299



Legend

- Sewer Patrol Point
- Preferred Alt - Satellite Storage
- Baseline Project
- ≤0.158 MGal
- Out of Compliance Sewer Patrol Points
- ≤21.4 MGal

Paper Size ARCH D

0 0.5 1 1.5

Miles

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD83 New York West flUS

N

xylem Let's Solve Water

ARCADIS

GHD

BUFFALO SEWER AUTHORITY
WET WEATHER OPERATIONS OPTIMIZATION
CSO LTCP PROJECTS OPTIMIZATION

LTCP BASELINE PROJECTS

Project No. **11225587**
Date **02/18/2022**

FIGURE 1

Attachment B

UPDATED BASELINE PROJECT COSTS

Project Number 299

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST FOR PROJECTS NOT STARTED

Work Area	January 2014 Future Cost [1,2,3]	01/24/2023 Updated Baseline Costs
CSO 013 (300,000 gallons)	$ 3,000,000	$ 7,700,000
CSO 014/015 (800,000 gallons)	$ 6,700,000	$ 16,600,000
CSO 028/044/047 (2,300,000 gallons)	$ 12,200,000	$ 29,200,000
CSO 052 (600,000 gallons)	$ 3,900,000	$ 9,900,000
CSO 055 (7,500,000 gallons)	$ 18,500,000	$ 45,200,000
CSO 064 (100,000 gallons)	$ 2,000,000	$ 5,500,000
Jefferson & Florida (SPP 170B) (2,600,000 gallons)	$ 9,500,000	$ 23,800,000
SPP 336 a/b (SPP165A, SPP165B, SPP 336A, SPP336B) (4,200,000 gallons)	$ 11,500,000	$ 31,200,000
SPP 337	$ 4,000,000	$ 10,000,000
North Relief Sewer	$ 36,000,000	$ 72,810,744
Underflow Upsizing (CSO 008/010, 061, 004)	$ 500,000	$ 675,000
Subtotal	*$ 107,800,000*	$ 252,585,744
Contingency (20%)	$ 21,500,000	$ 50,500,000
Probable Construction Cost	*$ 129,300,000*	$ 303,085,744
Administrative and Legal (5%)	$ 6,500,000	$ 15,000,000
Engineering (20%)	$ 26,000,000	$ 60,500,000
Total Recommended Plan Cost	**$ 161,800,000**	**$ 378,585,744**
Revised Foundation Plan	$ 85,000,000	
Green Infrastructure	$ 92,600,000	$ 324,000,000
Total Preferred Alternative Cost	**$ 339,400,000**	**$ 702,585,744**

(1) Year 2012 dollars.
(2) All Costs Rounded.
(3) Planning Level Estimate

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

CSO 013
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	No. Units	Material Per Unit	Material Subtotal	Per Unit	Subtotal	Installation [1] Per Unit	Installation [1] Subtotal	Per Unit	Subtotal	Total Cost [2]	Total Cost [2]	Source of Unit Price
Satellite Storage (0.3 MG)													
Land Acquisition	Acres	1	$ 25,000	$ 25,000	$ 100,000	$ 100,000	$ -	$ -			$ 25,000	$ 100,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Survey & Stake-out	LS	1	$ 27,000	$ 27,000	$ 36,450	$ 36,450	$ -	$ -		$ -	$ 27,000	$ 36,450	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Site Clearing	SF	4,203	$ 2	$ 8,406	$ 2.70	$ 11,348	$ -	$ -		$ -	$ 8,406	$ 11,348	see 2021 Unit Cost Backup tab
Excavation	CY	3,623	$ 40	$ 144,900	$ 40	$ 144,900	$ -	$ -		$ -	$ 144,900	$ 144,900	see 2021 Unit Cost Backup tab
Rock Excavation	CY	3,623			$ 200	$ 724,500						$ 724,500	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 500,000	$ 500,000						$ 500,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	223	$ 50	$ 11,150	$ 77	$ 17,171	$ -	$ -		$ -	$ 11,150	$ 17,171	see 2021 Unit Cost Backup tab
Concrete	CY	772	$ 1,000	$ 772,000	$ 1,600	$ 1,235,200	$ -	$ -		$ -	$ 772,000	$ 1,235,200	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -		$ -	$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	12,760	$ 15	$ 191,400	$ 46	$ 586,960	$ -	$ -		$ -	$ 191,400	$ 586,960	see 2021 Unit Cost Backup tab
Backfill	CY	4,900	$ 10	$ 49,000	$ 44	$ 215,600	$ -	$ -		$ -	$ 49,000	$ 215,600	see 2021 Unit Cost Backup tab
Hauling	CY	2,346	$ 10	$ 23,460	$ 14	$ 31,671	$ -	$ -		$ -	$ 23,460	$ 31,671	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cleaning Equipment	LS	1	$ 90,000	$ 90,000	$ 121,500	$ 121,500	$ 45,000	$ 45,000	$ 60,750	$ 60,750	$ 135,000	$ 182,250	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -		$ -	$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Grass Restoration	SY	2,500	$ 6	$ 15,000	$ 9	$ 22,500	$ -	$ -		$ -	$ 15,000	$ 22,500	see 2021 Unit Cost Backup tab; tank = 457 SY, site = 0.5 acre = 2500 SY
Satellite Storage Conveyance													
Excavation	CY	543	$ 40	$ 21,720	$ 40	$ 21,720	$ -	$ -			$ 21,720	$ 21,720	see 2021 Unit Cost Backup tab
Bedding	CY	82	$ 50	$ 4,100	$ 77	$ 6,314	$ -	$ -			$ 4,100	$ 6,314	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	4,888	$ 15	$ 73,320	$ 46	$ 224,848	$ -	$ -			$ 73,320	$ 224,848	see 2021 Unit Cost Backup tab
Backfill	CY	418	$ 10	$ 4,180	$ 44	$ 18,392	$ -	$ -			$ 4,180	$ 18,392	see 2021 Unit Cost Backup tab
Hauling	CY	125	$ 10	$ 1,250	$ 14	$ 1,688	$ -	$ -			$ 1,250	$ 1,688	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
4 ft Concrete Pipe	LF	94	$ 350	$ 32,900	$ 473	$ 44,415	$ -	$ -			$ 32,900	$ 44,415	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	EA	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	0	$ 2,500	$ -	$ 3,100	$ -	$ -	$ -			$ -	$ -	see 2021 Unit Cost Backup tab
Satellite Storage Force Main													
Excavation	CY	233	$ 40	$ 9,320	$ 40	$ 9,320	$ -	$ -			$ 9,320	$ 9,320	see 2021 Unit Cost Backup tab
Bedding	CY	73	$ 50	$ 3,650	$ 77	$ 5,621	$ -	$ -			$ 3,650	$ 5,621	see 2021 Unit Cost Backup tab
Backfill	CY	159	$ 10	$ 1,590	$ 44	$ 6,996	$ -	$ -			$ 1,590	$ 6,996	see 2021 Unit Cost Backup tab
Hauling	CY	74	$ 10	$ 740	$ 14	$ 999	$ -	$ -			$ 740	$ 999	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	EA	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
4" ID pipe	LF	368	$ 10	$ 3,680	$ 17	$ 6,072	$ -	$ -			$ 3,680	$ 6,072	see 2021 Unit Cost Backup tab
Satellite Storage Pump Station													
Pumps	EA	2	$ 15,000	$ 30,000	$ 20,250	$ 40,500	$ 7,500	$ 15,000	$ 10,125	$ 20,250	$ 45,000	$ 60,750	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -			$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (Including Bends)	LF	100	$ 150	$ 15,000	$ 203	$ 20,250	$ -	$ -			$ 15,000	$ 20,250	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Check Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Gate Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc.)	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -			$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
Start-up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
												$ 5,787,235	
						Subtotal					$ 2,400,000	$ 5,800,000	
						Electrical, Controls and Instrumentation (15%)					$ 400,000	$ 900,000	
						Utility Relocation / Coordination (5%)						$ 300,000	
						MPT (5%)						$ 300,000	
						General Conditions, Bonds & Insurance (5% of Subtotal)					$ 100,000	$ 400,000	
						Total Probable Construction Cost (Rounded)					$ 2,900,000	$ 7,700,000	

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

CSO 014, 15
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Installation [1] Per Unit	Installation [1] Subtotal	Per Unit	Subtotal	Total Cost [2]	Total Cost [2]	Source of Unit Price
Satellite Storage (0.8 MG)											
Land Acquisition	Acres	1	$ 25,000	$ 25,000	$ 100,000	$ 100,000	$ -	$ -		$ 25,000	$ 100,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience
Survey & Stake-out	LS	1	$ 27,000	$ 27,000	$ 36,450	$ 36,450	$ -	$ -		$ 27,000	$ 36,450	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Site Clearing	SF	23,053	$ 2	$ 43,800	$ 2.70	$ 62,242	$ -	$ -		$ 43,800	$ 62,242	see 2021 Unit Cost Backup tab
Excavation	CY	5,590	$ 40	$ 223,580	$ 40	$ 223,580	$ -	$ -		$ 223,580	$ 223,580	see 2021 Unit Cost Backup tab
Rock Excavation	CY	5,590			$ 200	$ 1,117,900					$ 1,117,900	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 500,000	$ 500,000					$ 500,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	416	$ 50	$ 20,800	$ 77	$ 32,032	$ -	$ -		$ 20,800	$ 32,032	see 2021 Unit Cost Backup tab
Concrete	CY	1,415	$ 1,000	$ 1,415,000	$ 1,600	$ 2,264,000	$ -	$ -		$ 1,415,000	$ 2,264,000	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	15,600	$ 15	$ 234,000	$ 46	$ 717,600	$ -	$ -		$ 234,000	$ 717,600	see 2021 Unit Cost Backup tab
Backfill	CY	5,771	$ 10	$ 57,710	$ 44	$ 253,924	$ -	$ -		$ 57,710	$ 253,924	see 2021 Unit Cost Backup tab
Hauling	CY	1,297	$ 10	$ 12,970	$ 14	$ 17,510	$ -	$ -		$ 12,970	$ 17,510	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cleaning Equipment	LS	1	$ 90,000	$ 90,000	$ 121,500	$ 121,500	$ 40,500	$ 40,500	$ 54,675	$ 130,500	$ 176,175	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -		$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000					$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Pavement Restoration	SF	23,053	$ 10	$ 230,525	$ 11	$ 253,578	$ -	$ -		$ 230,525	$ 253,578	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance 1												
Excavation	CY	8,664	$ 40	$ 346,560	$ 40	$ 346,560	$ -	$ -		$ 346,560	$ 346,560	see 2021 Unit Cost Backup tab
Bedding	CY	1,151	$ 50	$ 57,550	$ 77	$ 88,627	$ -	$ -		$ 57,550	$ 88,627	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	71,980	$ 15	$ 1,079,700	$ 46	$ 3,311,080	$ -	$ -		$ 1,079,700	$ 3,311,080	see 2021 Unit Cost Backup tab
Backfill	CY	6,818	$ 10	$ 68,180	$ 44	$ 299,992	$ -	$ -		$ 68,180	$ 299,992	see 2021 Unit Cost Backup tab
Hauling	CY	1,846	$ 10	$ 18,460	$ 14	$ 24,921	$ -	$ -		$ 18,460	$ 24,921	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
4.5 ft Concrete Pipe	LF	1,180	$ 200	$ 236,000	$ 270	$ 318,600	$ -	$ -		$ 236,000	$ 318,600	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -		$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	5	$ 2,500	$ 11,800	$ 3,100	$ 15,500	$ -	$ -		$ 11,800	$ 15,500	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance 2												
Excavation	CY	306	$ 40	$ 12,240	$ 40	$ 12,240	$ -	$ -		$ 12,240	$ 12,240	see 2021 Unit Cost Backup tab
Bedding	CY	39	$ 50	$ 1,950	$ 77	$ 3,003	$ -	$ -		$ 1,950	$ 3,003	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	3,009	$ 15	$ 45,135	$ 46	$ 138,414	$ -	$ -		$ 45,135	$ 138,414	see 2021 Unit Cost Backup tab
Backfill	CY	249	$ 10	$ 2,490	$ 44	$ 10,956	$ -	$ -		$ 2,490	$ 10,956	see 2021 Unit Cost Backup tab
Hauling	CY	57	$ 10	$ 570	$ 14	$ 770	$ -	$ -		$ 570	$ 770	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
3.5 ft Concrete Pipe	LF	51	$ 200	$ 10,200	$ 270	$ 13,770	$ -	$ -		$ 10,200	$ 13,770	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	EA	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -		$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	0	$ 2,500	$ -	$ 3,100	$ -	$ -	$ -		$ -	$ -	see 2021 Unit Cost Backup tab
Satellite Storage Force Main												
Excavation	CY	400	$ 40	$ 16,000	$ 40	$ 16,000	$ -	$ -		$ 16,000	$ 16,000	see 2021 Unit Cost Backup tab
Bedding	CY	132	$ 50	$ 6,600	$ 77	$ 10,164	$ -	$ -		$ 6,600	$ 10,164	see 2021 Unit Cost Backup tab
Backfill	CY	261	$ 10	$ 2,610	$ 44	$ 11,484	$ -	$ -		$ 2,610	$ 11,484	see 2021 Unit Cost Backup tab
Hauling	CY	139	$ 10	$ 1,390	$ 14	$ 1,877	$ -	$ -		$ 1,390	$ 1,877	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	EA	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -		$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000					$ 20,000	
8" ID Pipe	LF	528	$ 30	$ 15,840	$ 30	$ 15,840	$ -	$ -		$ 15,840	$ 15,840	see 2021 Unit Cost Backup tab
Satellite Storage Pump Station												
Pumps	EA	2	$ 20,000	$ 40,000	$ 27,000	$ 54,000	$ 10,000	$ 20,000	$ 13,500	$ 60,000	$ 81,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -		$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000					$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (Including Bends)	LF	100	$ 150	$ 15,000	$ 203	$ 20,250	$ -	$ -		$ 15,000	$ 20,250	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Check Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Gate Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc.)	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -		$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
Start-up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -		$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
											$ 12,182,337	
						Subtotal				$ 5,300,000	$ 12,200,000	
						Electrical, Controls and Instrumentation (15%)				$ 800,000	$ 1,800,000	
						Utility Relocation / Coordination (5%)					$ 600,000	
						Environmental Remediation (5%)					$ 600,000	
						MPT (5%)					$ 600,000	
						General Conditions, Bonds & Insurance (5% of Subtotal)				$ 300,000	$ 800,000	
						Total Probable Construction Cost (Rounded)				$ 6,400,000	$ 16,600,000	

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

CSO 028,044,047
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Material Per Unit	Material Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Total Cost (2)	Total Cost (2)	Source of Unit Price
Satellite Storage (2.3 MG)													
Land Acquisition	Acres	2	$ 25,000	$ 50,000	$ 500,000	$ 1,000,000	$ -	$ -			$ 50,000	$ 1,000,000	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Survey & Stake-out	LS	1	$ 27,000	$ 27,000	$ 36,450	$ 36,450	$ -	$ -			$ 27,000	$ 36,450	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Site Clearing	SF	29,620	$ 2	$ 56,277	$ 2.70	$ 79,973	$ -	$ -			$ 56,277	$ 79,973	see 2021 Unit Cost Backup tab
Excavation	CY	6,080	$ 40	$ 243,180	$ 40	$ 243,180	$ -	$ -			$ 243,180	$ 243,180	see 2021 Unit Cost Backup tab
Rock Excavation	CY	6,080			$ 200	$ 1,215,900						$ 1,215,900	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 1,000,000	$ 1,000,000						$ 1,000,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	2,339	$ 50	$ 116,950	$ 77	$ 180,103	$ -	$ -			$ 116,950	$ 180,103	see 2021 Unit Cost Backup tab
Concrete	CY	2,799	$ 1,000	$ 2,799,000	$ 1,600	$ 4,478,400	$ -	$ -			$ 2,799,000	$ 4,478,400	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Sheeting/Bracing	SF	28,080	$ 15	$ 421,200	$ 46	$ 1,291,680	$ -	$ -			$ 421,200	$ 1,291,680	see 2021 Unit Cost Backup tab
Hauling	CY	14,280	$ 10	$ 142,800	$ 14	$ 192,780	$ -	$ -			$ 142,800	$ 192,780	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Backfill	CY	12,097	$ 10	$ 120,970	$ 44	$ 532,268	$ -	$ -			$ 120,970	$ 532,268	see 2021 Unit Cost Backup tab
Cleaning Equipment	LS	1	$ 90,000	$ 90,000	$ 121,500	$ 121,500	$ 45,000	$ 45,000	$ 60,750	$ 60,750	$ 135,000	$ 182,250	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -			$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Grass Restoration	SY	194	$ 6	$ 1,161	$ 9	$ 1,742	$ -	$ -			$ 1,161	$ 1,742	see 2021 Unit Cost Backup tab
Pavement Restoration	SF	11,311	$ 10	$ 113,105	$ 11	$ 124,416	$ -	$ -			$ 113,105	$ 124,416	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance 1													
Site Clearing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Excavation	CY	12,159	$ 40	$ 486,360	$ 40	$ 486,360	$ -	$ -			$ 486,360	$ 486,360	see 2021 Unit Cost Backup tab
Bedding	CY	2,339	$ 50	$ 116,950	$ 77	$ 180,103	$ -	$ -			$ 116,950	$ 180,103	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 100,000	$ 100,000	$ 135,000	$ 135,000	$ 100,000	$ 135,000	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Sheeting/Bracing	CY	119,379	$ 15	$ 1,790,685	$ 46	$ 5,491,434	$ -	$ -			$ 1,790,685	$ 5,491,434	see 2021 Unit Cost Backup tab
Backfill	CY	8,730	$ 10	$ 87,300	$ 44	$ 384,120	$ -	$ -			$ 87,300	$ 384,120	see 2021 Unit Cost Backup tab
Hauling	CY	3,429	$ 10	$ 34,290	$ 14	$ 46,292	$ -	$ -				$ 46,292	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
3.5' RCP Pipe	LF	3,061	$ 200	$ 612,200	$ 270	$ 826,470	$ -	$ -			$ 612,200	$ 826,470	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Manholes	EA	12	$ 2,500	$ 30,610	$ 3,100	$ 37,200	$ -	$ -			$ 30,610	$ 37,200	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance 2													
Site Clearing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Excavation	CY	1,898	$ 40	$ 75,920	$ 40	$ 75,920	$ -	$ -			$ 75,920	$ 75,920	see 2021 Unit Cost Backup tab
Bedding	CY	388	$ 50	$ 19,400	$ 77	$ 29,876	$ -	$ -			$ 19,400	$ 29,876	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 100,000	$ 100,000	$ 121,060	$ 121,060	$ 100,000	$ 121,060	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Sheeting/Bracing	CY	12,060	$ 15	$ 180,900	$ 46	$ 554,760	$ -	$ -			$ 180,900	$ 554,760	see 2021 Unit Cost Backup tab
Backfill	LF	1,181	$ 10	$ 11,810	$ 44	$ 51,964	$ -	$ -			$ 11,810	$ 51,964	see 2021 Unit Cost Backup tab
Hauling	CY	717	$ 10	$ 7,170	$ 14	$ 9,680	$ -	$ -			$ 7,170	$ 9,680	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
6.5' RCP Pipe	LF	268	$ 600	$ 160,800	$ 810	$ 217,080	$ -	$ -			$ 160,800	$ 217,080	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	EA	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Manholes	EA	5	$ 2,500	$ 12,500	$ 3,100	$ 15,500	$ -	$ -			$ 12,500	$ 15,500	see 2021 Unit Cost Backup tab
Force Main													
Site Clearing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Excavation	CY	531	$ 40	$ 21,240	$ 40	$ 21,240	$ -	$ -			$ 21,240	$ 21,240	see 2021 Unit Cost Backup tab
Bedding	CY	182	$ 50	$ 9,100	$ 77	$ 14,014	$ -	$ -			$ 9,100	$ 14,014	see 2021 Unit Cost Backup tab
Hauling	CY	199	$ 10	$ 1,990	$ 14	$ 2,687	$ -	$ -			$ 1,990	$ 2,687	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Backfill	CY	332	$ 10	$ 3,320	$ 44	$ 14,608	$ -	$ -			$ 3,320	$ 14,608	see 2021 Unit Cost Backup tab
Cut Access into Main Interceptor	EA	1	$ 12,500	$ 12,500	$ 16,875	$ 16,875	$ -	$ -			$ 12,500	$ 16,875	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
12 in ID Pipe	LF	597	$ 30	$ 17,910	$ 95	$ 56,715	$ -	$ -			$ 17,910	$ 56,715	see 2021 Unit Cost Backup tab
Satellite Storage Pumping													
Pumps	EA	2	$ 40,000	$ 80,000	$ 54,000	$ 108,000	$ 20,000	$ 40,000	$ 27,000	$ 54,000	$ 120,000	$ 162,000	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -			$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (inc. Bends)	LF	50	$ 150	$ 7,500	$ 203	$ 10,125	$ -	$ -			$ 7,500	$ 10,125	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Check Valves	EA	2	$ 25,000	$ 50,000	$ 33,750	$ 67,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 70,000	$ 94,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Gate Valves	EA	2	$ 25,000	$ 50,000	$ 33,750	$ 67,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 70,000	$ 94,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 50,000	$ 100,000	$ 67,500	$ 135,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 120,000	$ 162,000	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc.)	LS	1	$ 750,000	$ 750,000	$ 1,012,500	$ 1,012,500	$ -	$ -			$ 750,000	$ 1,012,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
Start-up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg. CCI Data tab)
												$ 22,177,023	
								Subtotal			$ 9,900,000	$ 22,200,000	
								Electrical, Controls and Instrumentation (15%)			$ 1,500,000	$ 3,300,000	
								Utility Relocation / Coordination (5%)				$ 1,100,000	
								MPT (5%)				$ 1,100,000	
								General Conditions, Bonds & Insurance (5% of Subtotal)			$ 600,000	$ 1,400,000	
								Legal Costs Associated with Private Land Acquisition and Restortation (10%)				$ 122,616	
								Total Probable Construction Cost (Rounded)			$ 12,000,000	$ 29,200,000	

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

CSO 052
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Per Unit	Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Per Unit	Subtotal	Total Cost (2)	Total Cost (2)	Source of Unit Price
Satellite Storage (0.6 MG)													
Land Acquisition	Acres	1	$ 25,000	$ 25,000	$ 500,000	$ 500,000	$ -	$ -			$ 25,000	$ 500,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Survey & Stake-out	LS	1	$ 27,000	$ 27,000	$ 36,450	$ 36,450	$ -	$ -			$ 27,000	$ 36,450	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Site Clearing	SF	4,708	$ 2	$ 9,416	$ 2.70	$ 12,712	$ -	$ -			$ 9,416	$ 12,712	see 2021 Unit Cost Backup tab
Excavation	CY	4,477	$ 40	$ 179,060	$ 40	$ 179,060	$ -	$ -			$ 179,060	$ 179,060	see 2021 Unit Cost Backup tab
Rock Excavation	CY	4,477			$ 200	$ 895,300						$ 895,300	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 500,000	$ 500,000						$ 500,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	312	$ 50	$ 15,600	$ 77	$ 24,024	$ -	$ -			$ 15,600	$ 24,024	see 2021 Unit Cost Backup tab
Concrete	CY	1,149	$ 1,000	$ 1,149,000	$ 1,600	$ 1,838,400	$ -	$ -			$ 1,149,000	$ 1,838,400	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	13,940	$ 15	$ 209,100	$ 46	$ 641,240	$ -	$ -			$ 209,100	$ 641,240	see 2021 Unit Cost Backup tab
Backfill	CY	4,737	$ 10	$ 47,370	$ 44	$ 208,428	$ -	$ -			$ 47,370	$ 208,428	see 2021 Unit Cost Backup tab
Hauling	CY	4,216	$ 10	$ 42,160	$ 14	$ 56,916	$ -	$ -			$ 42,160	$ 56,916	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cleaning Equipment	LS	1	$ 90,000	$ 90,000	$ 121,500	$ 121,500	$ 45,000	$ 45,000	$ 60,750	$ 60,750	$ 135,000	$ 182,250	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -			$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Pavement Restoration	SF	49	$ 10	$ 489	$ 11	$ 538	$ -	$ -			$ 489	$ 538	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Grass Restoration	SY	2,500	$ 6	$ 15,000	$ 9	$ 22,500	$ -	$ -		$ -	$ 15,000	$ 22,500	see 2021 Unit Cost Backup tab; tank = 668 SY, site = 0.5 acre = 2500 SY
Satellite Storage Conveyance													
Excavation	CY	601	$ 40	$ 24,040	$ 40	$ 24,040	$ -	$ -			$ 24,040	$ 24,040	see 2021 Unit Cost Backup tab
Bedding	CY	100	$ 50	$ 5,000	$ 77	$ 7,700	$ -	$ -			$ 5,000	$ 7,700	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	7,216	$ 15	$ 108,240	$ 46	$ 331,936	$ -	$ -			$ 108,240	$ 331,936	see 2021 Unit Cost Backup tab
Backfill	CY	469	$ 10	$ 4,690	$ 44	$ 20,636	$ -	$ -			$ 4,690	$ 20,636	see 2021 Unit Cost Backup tab
Hauling	CY	132	$ 10	$ 1,320	$ 14	$ 1,782	$ -	$ -			$ 1,320	$ 1,782	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
2.5 ft Concrete Pipe	LF	176	$ 250	$ 44,000	$ 338	$ 59,400	$ -	$ -			$ 44,000	$ 59,400	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	0	$ 2,500	$ -	$ 3,100	$ -	$ -	$ -			$ -	$ -	see 2021 Unit Cost Backup tab
Satellite Storage Force Main													
Excavation	CY	928	$ 40	$ 37,120	$ 40	$ 37,120	$ -	$ -			$ 37,120	$ 37,120	see 2021 Unit Cost Backup tab
Bedding	CY	300	$ 50	$ 15,000	$ 77	$ 23,100	$ -	$ -			$ 15,000	$ 23,100	see 2021 Unit Cost Backup tab
Backfill	CY	619	$ 10	$ 6,190	$ 44	$ 27,236	$ -	$ -			$ 6,190	$ 27,236	see 2021 Unit Cost Backup tab
Hauling	CY	309	$ 10	$ 3,090	$ 14	$ 4,172	$ -	$ -			$ 3,090	$ 4,172	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
6" ID Pipe	LF	1,336	$ 15	$ 20,040	$ 23	$ 31,062	$ -	$ -			$ 20,040	$ 31,062	see 2021 Unit Cost Backup tab
Satellite Storage Pump Station													
Pumps	EA	2	$ 20,000	$ 40,000	$ 27,000	$ 54,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 60,000	$ 81,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -			$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (Including Bends)	LF	350	$ 150	$ 52,500	$ 203	$ 70,875	$ -	$ -			$ 52,500	$ 70,875	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Check Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Gate Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc.)	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -			$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
Start-up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
												$ 7,369,176	
						Subtotal					$ 3,000,000	$ 7,400,000	
						Electrical, Controls and Instrumentation (15%)					$ 500,000	$ 1,100,000	
						Utility Relocation / Coordination (5%)						$ 400,000	
						MPT (5%)						$ 400,000	
						General Conditions, Bonds & Insurance (5% of Subtotal)					$ 200,000	$ 500,000	
						Legal Costs Associated with Private Land Acquisition and Restortation (10%)						$ 62,304	
						Total Probable Construction Cost (Rounded)					$ 3,700,000	$ 9,900,000	

(1) For items without installation cost, installation cost is included in material price.

(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

CSO 055
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Material Per Unit	Material Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Total Cost (2)	Total Cost (2)	Source of Unit Price
Satellite Storage (7.5 MG)													
Land Acquisition	Acres	3	$ 25,000	$ 75,000	$ 100,000	$ 300,000	$ -	$ -			$ 75,000	$ 300,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Site Clearing	SF	20,867	$ 2	$ 41,733	$ 2.70	$ 56,340	$ -	$ -			$ 41,733	$ 56,340	see 2021 Unit Cost Backup tab
Survey & Stake-out	LS	1	$ 27,000	$ 27,000	$ 36,450	$ 36,450	$ -	$ -			$ 27,000	$ 36,450	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Excavation	CY	44,574	$ 40	$ 1,782,960	$ 40	$ 1,782,960	$ -	$ -			$ 1,782,960	$ 1,782,960	see 2021 Unit Cost Backup tab
Rock Excavation	CY	44,574			$ 200	$ 8,914,800						$ 8,914,800	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 2,000,000	$ 2,000,000						$ 2,000,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	3,112	$ 50	$ 155,600	$ 77	$ 239,624	$ -	$ -			$ 155,600	$ 239,624	see 2021 Unit Cost Backup tab
Concrete	CY	8,091	$ 1,000	$ 8,091,000	$ 1,600	$ 12,945,600	$ -	$ -			$ 8,091,000	$ 12,945,600	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	53,040	$ 15	$ 795,600	$ 46	$ 2,439,840	$ -	$ -			$ 795,600	$ 2,439,840	see 2021 Unit Cost Backup tab
Backfill	CY	44,020	$ 10	$ 440,200	$ 44	$ 1,936,880	$ -	$ -			$ 440,200	$ 1,936,880	see 2021 Unit Cost Backup tab
Hauling	CY	45,128	$ 10	$ 451,280	$ 14	$ 609,228	$ -	$ -			$ 451,280	$ 609,228	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -			$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Pavement Restoration	SF	23,200	$ 10	$ 232,000	$ 11	$ 255,200	$ -	$ -			$ 232,000	$ 255,200	see 2021 Unit Cost Backup tab
Cleaning Equipment	LS	1	$ 135,000	$ 135,000	$ 182,250	$ 182,250	$ 67,500	$ 67,500	$ 91,125	$ 91,125	$ 202,500	$ 273,375	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Start-up and testing	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Grass Restoration	SY	2,319	$ 6	$ 13,911	$ 9	$ 20,857	$ -	$ -			$ 13,911	$ 20,857	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance													
Excavation	CY	800	$ 40	$ 32,000	$ 40	$ 32,000	$ -	$ -			$ 32,000	$ 32,000	see 2021 Unit Cost Backup tab
Bedding	CY	132	$ 50	$ 6,600	$ 77	$ 10,164	$ -	$ -			$ 6,600	$ 10,164	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	5,400	$ 15	$ 81,000	$ 46	$ 248,400	$ -	$ -			$ 81,000	$ 248,400	see 2021 Unit Cost Backup tab
Backfill	CY	563	$ 10	$ 5,630	$ 44	$ 24,772	$ -	$ -			$ 5,630	$ 24,772	see 2021 Unit Cost Backup tab
Hauling	CY	237	$ 10	$ 2,370	$ 14	$ 3,200	$ -	$ -			$ 2,370	$ 3,200	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
6 ft Concrete Pipe	LF	100	$ 500	$ 50,000	$ 675	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	0	$ 2,500	$ -	$ 3,100	$ -	$ -	$ -			$ -	$ -	see 2021 Unit Cost Backup tab
Satellite Storage Force Main													
Excavation	CY	471	$ 40	$ 18,840	$ 40	$ 18,840	$ -	$ -			$ 18,840	$ 18,840	see 2021 Unit Cost Backup tab
Bedding	CY	167	$ 50	$ 8,350	$ 77	$ 12,859	$ -	$ -			$ 8,350	$ 12,859	see 2021 Unit Cost Backup tab
Backfill	CY	272	$ 10	$ 2,720	$ 44	$ 11,968	$ -	$ -			$ 2,720	$ 11,968	see 2021 Unit Cost Backup tab
Hauling	CY	199	$ 10	$ 1,990	$ 14	$ 2,687	$ -	$ -			$ 1,990	$ 2,687	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	LS	1	$ 15,000	$ 15,000	$ 20,250	$ 20,250	$ -	$ -			$ 15,000	$ 20,250	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
20" ID Pipe	LF	400	$ 50	$ 20,000	$ 380	$ 152,000	$ -	$ -			$ 20,000	$ 152,000	see 2021 Unit Cost Backup tab
Satellite Storage Pump Station													
Pumps	EA	2	$ 80,000	$ 160,000	$ 108,000	$ 216,000	$ 40,000	$ 80,000	$ 54,000	$ 108,000	$ 240,000	$ 324,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -			$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (Including Bends)	LF	75	$ 150	$ 11,250	$ 203	$ 15,188	$ -	$ -			$ 11,250	$ 15,188	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Check Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Gate Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -			$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
Start-up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
												$ 34,360,290	
						Subtotal					$ 13,600,000	$ 34,400,000	
						Electrical, Controls and Instrumentation (15%)					$ 2,000,000	$ 5,200,000	
						Utility Relocation / Coordination (5%)						$ 1,700,000	
						MPT (5%)						$ 1,700,000	
						General Conditions, Bonds & Insurance (5% of Subtotal)					$ 800,000	$ 2,200,000	
						Total Probable Construction Cost (Rounded)					$ 16,400,000	$ 45,200,000	

(1) For items without installation cost, installation cost is included in material price.

(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

CSO 064
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Material Per Unit	Material Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Total Cost (2)	Total Cost (2)	Source of Unit Price
Satellite Storage (0.1 MG)													
Land Acquisition	Acres	1	$ 25,000	$ 25,000	$ 100,000	$ 100,000	$ -	$ -			$ 25,000	$ 100,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Survey & Stake-out	LS	1	$ 27,000	$ 27,000	$ 36,450	$ 36,450	$ -	$ -			$ 27,000	$ 36,450	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Site Clearing	SF	1,910	$ 2	$ 3,820	$ 2.70	$ 5,157	$ -	$ -			$ 3,820	$ 5,157	see 2021 Unit Cost Backup tab
Excavation	CY	1,431	$ 40	$ 57,220	$ 40	$ 57,220	$ -	$ -			$ 57,220	$ 57,220	see 2021 Unit Cost Backup tab
Rock Excavation	CY	1,431			$ 200	$ 286,100						$ 286,100	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 500,000	$ 500,000						$ 500,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	90	$ 50	$ 4,500	$ 77	$ 6,930	$ -	$ -			$ 4,500	$ 6,930	see 2021 Unit Cost Backup tab
Concrete	CY	356	$ 1,000	$ 356,000	$ 1,600	$ 569,600	$ -	$ -			$ 356,000	$ 569,600	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	6,840	$ 15	$ 102,600	$ 46	$ 314,640	$ -	$ -			$ 102,600	$ 314,640	see 2021 Unit Cost Backup tab
Backfill	CY	2,006	$ 10	$ 20,060	$ 44	$ 88,264	$ -	$ -			$ 20,060	$ 88,264	see 2021 Unit Cost Backup tab
Hauling	CY	856	$ 10	$ 8,560	$ 14	$ 11,556	$ -	$ -			$ 8,560	$ 11,556	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cleaning Equipment	LS	1	$ 45,000	$ 45,000	$ 60,750	$ 60,750	$ 22,500	$ 22,500	$ 30,375	$ 30,375	$ 67,500	$ 91,125	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -			$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Pavement Restoration	SF	1,010	$ 10	$ 10,100	$ 11	$ 11,110	$ -	$ -			$ 10,100	$ 11,110	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Grass Restoration	SY	2,500	$ 6	$ 15,000	$ 9	$ 22,500	$ -	$ -		$ -	$ 15,000	$ 22,500	see 2021 Unit Cost Backup tab; tank = 100 SY, site = 0.5 acre = 2500 SY
Satellite Storage Conveyance													
Excavation	CY	238	$ 40	$ 9,520	$ 40	$ 9,520	$ -	$ -			$ 9,520	$ 9,520	see 2021 Unit Cost Backup tab
Bedding	CY	46	$ 50	$ 2,300	$ 77	$ 3,542	$ -	$ -			$ 2,300	$ 3,542	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	2,340	$ 15	$ 35,100	$ 46	$ 107,640	$ -	$ -			$ 35,100	$ 107,640	see 2021 Unit Cost Backup tab
Backfill	CY	171	$ 10	$ 1,710	$ 44	$ 7,524	$ -	$ -			$ 1,710	$ 7,524	see 2021 Unit Cost Backup tab
Hauling	CY	67	$ 10	$ 670	$ 14	$ 905	$ -	$ -			$ 670	$ 905	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
4.5 ft Concrete Pipe	LF	60	$ 200	$ 12,000	$ 270	$ 16,200	$ -	$ -			$ 12,000	$ 16,200	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	0	$ 2,500	$ -	$ 3,100	$ -	$ -	$ -			$ -	$ -	see 2021 Unit Cost Backup tab
Satellite Storage Force Main													
Excavation	CY	2,133	$ 40	$ 85,320	$ 40	$ 85,320	$ -	$ -			$ 85,320	$ 85,320	see 2021 Unit Cost Backup tab
Bedding	CY	730	$ 50	$ 36,500	$ 77	$ 56,210	$ -	$ -			$ 36,500	$ 56,210	see 2021 Unit Cost Backup tab
Backfill	CY	1,333	$ 10	$ 13,330	$ 44	$ 58,652	$ -	$ -			$ 13,330	$ 58,652	see 2021 Unit Cost Backup tab
Hauling	CY	800	$ 10	$ 8,000	$ 14	$ 10,800	$ -	$ -			$ 8,000	$ 10,800	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
4" ID Pipe	LF	2,400	$ 15	$ 36,000	$ 17	$ 39,600	$ -	$ -			$ 36,000	$ 39,600	see 2021 Unit Cost Backup tab
Satellite Storage Pump Station													
Pumps	EA	2	$ 15,000	$ 30,000	$ 20,250	$ 40,500	$ 7,500	$ 15,000	$ 10,125	$ 20,250	$ 45,000	$ 60,750	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -			$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (Including Bends)	LF	75	$ 150	$ 11,250	$ 203	$ 15,188	$ -	$ -			$ 11,250	$ 15,188	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Check Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Gate Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -			$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
Start up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
												$ 4,123,802	
						Subtotal					$ 1,800,000	$ 4,200,000	
						Electrical, Controls and Instrumentation (15%)					$ 300,000	$ 600,000	
						Utility Relocation / Coordination (5%)						$ 200,000	
						MPT (5%)						$ 200,000	
						General Conditions, Bonds & Insurance (5% of Subtotal)					$ 100,000	$ 300,000	
						Total Probable Construction Cost (Rounded)					$ 2,200,000	$ 5,500,000	

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

DRAFT

Jefferson and Rordia
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Per Unit	Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Per Unit	Subtotal	Total Cost (2)	Total Cost (2)	Source of Unit Price
Satellite Storage (2.6 MG)													
Land Acquisition	Acres	1	$ 25,000	$ 25,000	$ 500,000	$ 500,000	$ -	$ -			$ 25,000	$ 500,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Survey & Stake-out	LS	1	$ 27,000	$ 27,000	$ 36,450	$ 36,450	$ -	$ -			$ 27,000	$ 36,450	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Site Clearing	SF	15,410	$ 2	$ 30,820	$ 2.70	$ 41,607	$ -	$ -			$ 30,820	$ 41,607	see 2021 Unit Cost Backup tab
Excavation	CY	13,823	$ 40	$ 552,920	$ 40	$ 552,920	$ -	$ -			$ 552,920	$ 552,920	see 2021 Unit Cost Backup tab
Rock Excavation	CY	13,823			$ 200	$ 2,764,600					$ -	$ 2,764,600	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 1,000,000	$ 1,000,000					$ -	$ 1,000,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	816	$ 50	$ 40,800	$ 77	$ 62,832	$ -	$ -			$ 40,800	$ 62,832	see 2021 Unit Cost Backup tab
Concrete	CY	2,949	$ 1,000	$ 2,949,000	$ 1,600	$ 4,718,400	$ -	$ -			$ 2,949,000	$ 4,718,400	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	48,060	$ 15	$ 720,900	$ 46	$ 2,210,760	$ -	$ -			$ 720,900	$ 2,210,760	see 2021 Unit Cost Backup tab
Backfill	CY	11,734	$ 10	$ 117,340	$ 44	$ 516,296	$ -	$ -			$ 117,340	$ 516,296	see 2021 Unit Cost Backup tab
Hauling	CY	15,912	$ 10	$ 159,120	$ 14	$ 214,812	$ -	$ -			$ 159,120	$ 214,812	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cleaning Equipment	LS	1	$ 95,000	$ 95,000	$ 128,250	$ 128,250	$ 47,500	$ 47,500	$ 64,125	$ 64,125	$ 142,500	$ 192,375	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -			$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Pavement Restoration	SF	15,410	$ 10	$ 154,100	$ 11	$ 169,510	$ -	$ -			$ 154,100	$ 169,510	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance													
Excavation	CY	5,103	$ 40	$ 204,120	$ 40	$ 204,120	$ -	$ -			$ 204,120	$ 204,120	see 2021 Unit Cost Backup tab
Bedding	CY	1,127	$ 50	$ 56,350	$ 77	$ 86,779	$ -	$ -			$ 56,350	$ 86,779	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	39,368	$ 15	$ 590,520	$ 46	$ 1,810,928	$ -	$ -			$ 590,520	$ 1,810,928	see 2021 Unit Cost Backup tab
Backfill	CY	3,223	$ 10	$ 32,230	$ 44	$ 141,812	$ -	$ -			$ 32,230	$ 141,812	see 2021 Unit Cost Backup tab
Hauling	CY	1,880	$ 10	$ 18,800	$ 14	$ 25,380	$ -	$ -			$ 18,800	$ 25,380	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
5 ft Concrete Pipe	LF	1,036	$ 250	$ 259,000	$ 338	$ 349,650	$ -	$ -			$ 259,000	$ 349,650	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	4	$ 2,500	$ 10,360	$ 3,100	$ 12,846	$ -	$ -			$ 10,360	$ 12,846	see 2021 Unit Cost Backup tab
Satellite Storage Dewatering													
Excavation	CY	1,407	$ 40	$ 56,280	$ 40	$ 56,280	$ -	$ -			$ 56,280	$ 56,280	see 2021 Unit Cost Backup tab
Bedding	CY	76	$ 50	$ 3,800	$ 77	$ 5,852	$ -	$ -			$ 3,800	$ 5,852	see 2021 Unit Cost Backup tab
Sheeting/Bracing	SF	23,997	$ 15	$ 359,955	$ 46	$ 1,103,862	$ -	$ -			$ 359,955	$ 1,103,862	see 2021 Unit Cost Backup tab
Backfill	CY	1,322	$ 10	$ 13,220	$ 44	$ 58,168	$ -	$ -			$ 13,220	$ 58,168	see 2021 Unit Cost Backup tab
Hauling	CY	85	$ 10	$ 850	$ 14	$ 1,148	$ -	$ -			$ 850	$ 1,148	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	LS	1	$ 12,500	$ 12,500	$ 16,875	$ 16,875	$ -	$ -			$ 12,500	$ 16,875	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
12" ID Pipe	LF	230	$ 35	$ 8,050	$ 95	$ 21,850	$ -	$ -			$ 8,050	$ 21,850	see 2021 Unit Cost Backup tab
Satellite Storage Monitoring													
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -			$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
												$ 18,019,412	
						Subtotal					$ 7,200,000	$ 18,100,000	
						Electrical, Controls and Instrumentation (15%)					$ 1,100,000	$ 2,700,000	
						Utility Relocation / Coordination (5%)						$ 900,000	
						MPT (5%)						$ 900,000	
						General Conditions, Bonds & Insurance (5% of Subtotal)					$ 400,000	$ 1,100,000	
						Legal Costs Associated with Private Land Acquisition and Restortation (10%)						$ 76,951	
						Total Probable Construction Cost (Rounded)					$ 8,700,000	$ 23,800,000	

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

DRAFT

SPP 336 a&b
4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Per Unit	Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Per Unit	Subtotal	Total Cost (2)	Total Cost (2)	Source of Unit Price
Satellite Storage (4.2 MG)													
Land Acquisition	Acres	2	$ 25,000	$ 50,000	$ 100,000	$ 200,000	$ -	$ -			$ 50,000	$ 200,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Site Clearing	SF	26,017	$ 2	$ 52,033	$ 2.70	$ 70,245	$ -	$ -			$ 52,033	$ 70,245	see 2021 Unit Cost Backup tab
Excavation	CY	23,651	$ 40	$ 946,020	$ 40	$ 946,020	$ -	$ -			$ 946,020	$ 946,020	see 2021 Unit Cost Backup tab
Rock Excavation	CY	23,651			$ 200	$ 4,730,100						$ 4,730,100	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 1,500,000	$ 1,500,000						$ 1,500,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	1,349	$ 50	$ 67,450	$ 77	$ 103,873	$ -	$ -			$ 67,450	$ 103,873	see 2021 Unit Cost Backup tab
Concrete	CY	4,307	$ 1,000	$ 4,307,000	$ 1,200	$ 5,168,400	$ -	$ -			$ 4,307,000	$ 5,168,400	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	40,710	$ 15	$ 610,650	$ 46	$ 1,872,660	$ -	$ -			$ 610,650	$ 1,872,660	see 2021 Unit Cost Backup tab
Backfill	CY	22,338	$ 10	$ 223,380	$ 44	$ 982,872	$ -	$ -			$ 223,380	$ 982,872	see 2021 Unit Cost Backup tab
Hauling	CY	24,963	$ 10	$ 249,630	$ 14	$ 337,001	$ -	$ -			$ 249,630	$ 337,001	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cleaning Equipment	LS	1	$ 95,000	$ 95,000	$ 128,250	$ 128,250	$ 47,500	$ 47,500	$ 64,125	$ 64,125	$ 142,500	$ 192,375	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -			$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Pavement Restoration	SF	9,000	$ 10	$ 90,000	$ 11	$ 99,000	$ -	$ -			$ 90,000	$ 99,000	see 2021 Unit Cost Backup tab
Grass Restoration	SY	1,891	$ 6	$ 11,344	$ 9	$ 17,017	$ -	$ -			$ 11,344	$ 17,017	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance													
Excavation	CY	9,800	$ 40	$ 392,000	$ 40	$ 392,000	$ -	$ -			$ 392,000	$ 392,000	see 2021 Unit Cost Backup tab
Bedding	CY	1,958	$ 50	$ 97,900	$ 77	$ 150,766	$ -	$ -			$ 97,900	$ 150,766	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	75,600	$ 15	$ 1,134,000	$ 46	$ 3,477,600	$ -	$ -			$ 1,134,000	$ 3,477,600	see 2021 Unit Cost Backup tab
Backfill	CY	6,533	$ 20	$ 130,660	$ 44	$ 287,452	$ -	$ -			$ 130,660	$ 287,452	see 2021 Unit Cost Backup tab
Hauling	CY	3,267	$ 10	$ 32,670	$ 14	$ 44,105	$ -	$ -			$ 32,670	$ 44,105	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
5 ft Concrete Pipe	LF	1,800	$ 500	$ 900,000	$ 675	$ 1,215,000	$ -	$ -			$ 900,000	$ 1,215,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	7	$ 2,500	$ 18,000	$ 3,100	$ 22,320	$ -	$ -			$ 18,000	$ 22,320	see 2021 Unit Cost Backup tab
Satellite Storage Force Main													
Excavation	CY	96	$ 40	$ 3,840	$ 40	$ 3,840	$ -	$ -			$ 3,840	$ 3,840	see 2021 Unit Cost Backup tab
Bedding	CY	33	$ 50	$ 1,650	$ 77	$ 2,541	$ -	$ -			$ 1,650	$ 2,541	see 2021 Unit Cost Backup tab
Backfill	CY	59	$ 10	$ 590	$ 44	$ 2,596	$ -	$ -			$ 590	$ 2,596	see 2021 Unit Cost Backup tab
Hauling	CY	37	$ 10	$ 370	$ 14	$ 500	$ -	$ -			$ 370	$ 500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
4" ID Pipe	LF	100	$ 15	$ 1,500	$ 17	$ 1,650	$ -	$ -			$ 1,500	$ 1,650	see 2021 Unit Cost Backup tab
Satellite Storage Pump Station													
Pumps	EA	2	$ 40,000	$ 80,000	$ 65,000	$ 130,000	$ 20,000	$ 40,000	$ 27,000	$ 54,000	$ 120,000	$ 184,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab); vendor supplied pump cost
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -			$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (Including Bends)	LF	250	$ 150	$ 37,500	$ 203	$ 50,625	$ -	$ -			$ 37,500	$ 50,625	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Check Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Gate Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -			$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
Start-up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
												$ 23,605,856	
						Subtotal					$ 10,400,000	$ 23,700,000	
						Electrical, Controls and Instrumentation (15%)					$ 1,600,000	$ 3,600,000	
						Utility Relocation / Coordination (5%)						$ 1,200,000	
						MPT (5%)						$ 1,200,000	
						General Conditions, Bonds & Insurance (5% of Subtotal)					$ 600,000	$ 1,500,000	
						Total Probable Construction Cost (Rounded)					$ 12,600,000	$ 31,200,000	

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

DRAFT

SPP 337

4/5/2012 (Unit costs in blue updated February 2022)

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Per Unit	Subtotal	Installation (1) Per Unit	Installation (1) Subtotal	Per Unit	Subtotal	Total Cost (2)	Total Cost (2)	Source of Unit Price
Satellite Storage (0.7 MG)													
Land Acquisition	Acres	1	$ 25,000	$ 25,000	$ 500,000	$ 500,000	$ -	$ -			$ 25,000	$ 500,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab) = $33,750; increased based on local experience, including consultant fees
Site Clearing	SF	3,786	$ 2	$ 7,571	$ 2.70	$ 10,221	$ -	$ -			$ 7,571	$ 10,221	see 2021 Unit Cost Backup tab
Excavation	CY	5,787	$ 40	$ 231,480	$ 40	$ 231,480	$ -	$ -			$ 231,480	$ 231,480	see 2021 Unit Cost Backup tab
Rock Excavation	CY	5,787			$ 200	$ 1,157,400						$ 1,157,400	assume half of excavation quantity will be rock; see 2021 Unit Cost Backup tab
Piles / Foundation	LS	1			$ 500,000	$ 500,000						$ 500,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Bedding	CY	312	$ 50	$ 15,600	$ 77	$ 24,024	$ -	$ -			$ 15,600	$ 24,024	see 2021 Unit Cost Backup tab
Concrete	CY	1,218	$ 1,000	$ 1,218,000	$ 1,600	$ 1,948,800	$ -	$ -			$ 1,218,000	$ 1,948,800	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 500,000	$ 500,000	$ 675,000	$ 675,000	$ 500,000	$ 675,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	18,020	$ 15	$ 270,300	$ 46	$ 828,920	$ -	$ -			$ 270,300	$ 828,920	see 2021 Unit Cost Backup tab
Backfill	CY	6,889	$ 10	$ 68,890	$ 44	$ 303,116	$ -	$ -			$ 68,890	$ 303,116	see 2021 Unit Cost Backup tab
Hauling	CY	4,684	$ 10	$ 46,840	$ 14	$ 63,234	$ -	$ -			$ 46,840	$ 63,234	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cleaning Equipment	LS	1	$ 45,000	$ 45,000	$ 60,750	$ 60,750	$ 22,500	$ 22,500	$ 30,375	$ 30,375	$ 67,500	$ 91,125	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Access Manholes	EA	3	$ 2,500	$ 7,500	$ 3,100	$ 9,300	$ -	$ -			$ 7,500	$ 9,300	see 2021 Unit Cost Backup tab
Miscellaneous Site Restoration	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on local experience; to repair staging areas, misc. damage to site
Grass Restoration	SY	3,786	$ 6	$ 22,713	$ 9	$ 34,070	$ -	$ -			$ 22,713	$ 34,070	see 2021 Unit Cost Backup tab
Satellite Storage Conveyance													
Excavation	CY	179	$ 40	$ 7,160	$ 40	$ 7,160	$ -	$ -			$ 7,160	$ 7,160	see 2021 Unit Cost Backup tab
Bedding	CY	27	$ 50	$ 1,350	$ 77	$ 2,079	$ -	$ -			$ 1,350	$ 2,079	see 2021 Unit Cost Backup tab
Site Dewatering and Erosion Control	LS	1	$ -	$ -			$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Sheeting/Bracing	SF	1,484	$ 15	$ 22,260	$ 46	$ 68,264	$ -	$ -			$ 22,260	$ 68,264	see 2021 Unit Cost Backup tab
Backfill	CY	135	$ 10	$ 1,350	$ 44	$ 5,940	$ -	$ -			$ 1,350	$ 5,940	see 2021 Unit Cost Backup tab
Hauling	CY	44	$ 10	$ 440	$ 14	$ 594	$ -	$ -			$ 440	$ 594	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
4.5 ft Concrete Pipe	LF	28	$ 250	$ 7,000	$ 338	$ 9,450	$ -	$ -			$ 7,000	$ 9,450	1.35 inflation markup (see ENR 20 City Avg CCI Data tab). Requested cost from Forterra.
Cut Access into Main Interceptor	LS	1	$ 50,000	$ 50,000	$ 67,500	$ 67,500	$ -	$ -			$ 50,000	$ 67,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Manholes	EA	0	$ 2,500	$ -	$ 3,100	$ -	$ -	$ -			$ -	$ -	see 2021 Unit Cost Backup tab
Satellite Storage Force Main													
Excavation	CY	83	$ 40	$ 3,320	$ 40	$ 3,320	$ -	$ -			$ 3,320	$ 3,320	see 2021 Unit Cost Backup tab
Bedding	CY	27	$ 50	$ 1,350	$ 77	$ 2,079	$ -	$ -			$ 1,350	$ 2,079	see 2021 Unit Cost Backup tab
Backfill	CY	55	$ 10	$ 550	$ 44	$ 2,420	$ -	$ -			$ 550	$ 2,420	see 2021 Unit Cost Backup tab
Hauling	CY	28	$ 10	$ 280	$ 14	$ 378	$ -	$ -			$ 280	$ 378	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Cut Access into Main Interceptor	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Pig Launcher	LS	1			$ 20,000	$ 20,000						$ 20,000	
6" ID Pipe	LF	119	$ 30	$ 3,570	$ 23	$ 2,767	$ -	$ -			$ 3,570	$ 2,767	see 2021 Unit Cost Backup tab
Satellite Storage Pump Station													
Pumps	EA	2	$ 15,000	$ 30,000	$ 35,000	$ 70,000	$ 7,500	$ 15,000	$ 10,125	$ 20,250	$ 45,000	$ 90,250	1.35 inflation markup (see ENR 20 City Avg CCI Data tab); vendor supplied pump cost
Pump Station Building	SF	100	$ 200	$ 20,000	$ 2,000	$ 200,000	$ -	$ -			$ 20,000	$ 200,000	based on Babcock PS RTC work
Piles / Foundation	LS	1			$ 100,000	$ 100,000						$ 100,000	Based on JMD LeRoy WWTP 12/2021 estimates and CSO 026 Smith Street RTC
Piping in Tank (Including Bends)	LF	75	$ 150	$ 11,250	$ 203	$ 15,188	$ -	$ -			$ 11,250	$ 15,188	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Check Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Gate Valves	EA	2	$ 5,000	$ 10,000	$ 6,750	$ 13,500	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 30,000	$ 40,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Wet Well Isolation Gates	EA	2	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 10,000	$ 20,000	$ 13,500	$ 27,000	$ 40,000	$ 54,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Misc Metals (Grating, Handrail, Monorails, Etc	LS	1	$ 50,000	$ 50,000	$ 150,000	$ 150,000	$ -	$ -			$ 50,000	$ 150,000	1.35 inflation markup = $67,500; use $150,000 based on Babcock PS RTC plus market increase; includes trash rack, hatches
Start-up and testing	LS	1	$ 10,000	$ 10,000	$ 13,500	$ 13,500	$ -	$ -			$ 10,000	$ 13,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
												$ 7,453,578	
							Subtotal				$ 2,900,000	$ 7,500,000	
							Electrical, Controls and Instrumentation (15%)				$ 400,000	$ 1,100,000	
							Utility Relocation / Coordination (5%)					$ 400,000	
							MPT (5%)					$ 400,000	
							General Conditions, Bonds & Insurance (5% of Subtotal)				$ 200,000	$ 500,000	
							Legal Costs Associated with Private Land Acquisition and Restortation (10%)					$ 60,000	
							Total Probable Construction Cost (Rounded)				$ 3,500,000	$ 10,000,000	

(1) For items without installation cost, installation cost is included in material price.

(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN PREFERRED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Northern Interceptor Improvements

4/5/2012 (Unit costs in blue updated February 2022)

Description	Material						Installation [1]				Total Cost [2]	Total Cost [2]	Source of Unit Price
	Basis	No. Units	Per Unit	Subtotal	Per Unit	Subtotal	Per Unit	Subtotal	Per Unit	Subtotal			
Satellite Storage (2.6 MG)													
TBM Excavation	LS	1	$ 3,790,000	$ 3,790,000	$ 5,116,500	$ 5,116,500	$ -	$ -			$ 3,790,000	$ 5,116,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Shafts	EA	4	$ 1,262,500	$ 5,050,000	$ 1,704,375	$ 6,817,500	$ -	$ -			$ 5,050,000	$ 6,817,500	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
TBM Concrete Lining	LF	6,000	$ 1,250	$ 7,500,000	$ 1,688	$ 10,125,000	$ -	$ -			$ 7,500,000	$ 10,125,000	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
Site Setup	LS	1	$ 5,025,000	$ 5,025,000	$ 6,783,750	$ 6,783,750	$ -	$ -			$ 5,025,000	$ 6,783,750	1.35 inflation markup (see ENR 20 City Avg CCI Data tab)
												$ 28,842,750	
								Subtotal			**$ 21,400,000**	**$ 28,900,000**	
								Indirect Cost (40%)			**$ 8,600,000**	**$ 11,600,000**	
								OH&P (20%)			**$ 6,000,000**	**$ 8,100,000**	
								Total Probable Construction Cost (Rounded)			**$ 36,000,000**	$ 48,600,000	see updated cost below

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2012 dollars. Does not include engineering, administrative, and legal costs or contingency.
(3) Costs provided by Kiewet Construction

Attachment C

PROJECTS CONSIDERED FOR OPTIMIZATION

Table C.1 Projects Considered for Optimization

Tag	Project	Project Type	Included in the Original 2014 LTCP (Y/N)	Proposed to be Included in Updated LTCP (Y/N)	Most Impacted CSO	Most Impacted SPP	Most Impacted Water Body	Reduction in Activations of Most Impacted CSO (v3.4.0-ltcp vs. 2020 LTCP Model) *	Current Estimated Capital Cost**	Current Estimated Present Worth of Operations & Maintenance Costs**	Current Estimated Total Present Worth Cost**	Proposed Engineering Start	Proposed Construction Completion
CSO006_1	Jefferson Ferry RTC	RTC	N	N	006	179	Black Rock Canal	N/A	N/A	N/A	N/A	N/A	N/A
CSO006_2	Gates Circle RTC	RTC	N	Y	006	179	Black Rock Canal	14	$ 2,835,287	$ 1,292,820	$ 4,128,107	Mar 2022	May 2028
CSO006_3	Delavan Drain Weir Raising & RTC	RTC	N	Y	006	179	Black Rock Canal	14	$ 4,000,000	$ 1,292,820	$ 5,292,820	Mar 2030	Apr 2036
CSO006_5	20% GI Implementation	GI	Y	Y	006	331	Black Rock Canal	14	$ 10,506,000	$ 2,560,043	$ 13,066,043	Mar 2031	Mar 2037
CSO010_1	Breckenridge Niagara RTC	RTC	N	Y	010	021	Black Rock Canal	0	$ 3,636,617	$ 1,292,820	$ 4,929,437	Mar 2022	Jan 2029
CSO011_1.1	20% GI Implementation	GI	Y	Y	011	024	Niagara River	1	$ 3,982,000	$ 970,378	$ 4,952,378	Mar 2032	Mar 2040
CSO011_1.2	SPP024 Modification	SPP Modification	Y	Y	011	024	Niagara River	1	$ 60,000	$ 115,380	$ 175,380	Mar 2026	Nov 2029
CSO012_1.1	Albany Plymouth ILS	RTC	N	N	012	023	Black Rock Canal	N/A	N/A	N/A	N/A	N/A	N/A
CSO012_1.2	SPP023 Modification	SPP Modification	Y	Y	012	023	Black Rock Canal	-3	$ 60,000	$ 115,380	$ 175,380	Mar 2026	Nov 2029
CSO012_2.1	SPP296 Modification	SPP Modification	Y	Y	012	296	Black Rock Canal	-3	$ 60,000	$ 115,380	$ 175,380	Mar 2026	Nov 2029
CSO012_2.2	Albany Tunnel ILS West	RTC	N	N	012	296	Black Rock Canal	N/A	N/A	N/A	N/A	N/A	N/A
CSO012_2.3	Albany Tunnel ILS East	RTC	N	N	012	296	Black Rock Canal	N/A	N/A	N/A	N/A	N/A	N/A
CSO012_2.4	Baynes Relief Sewer	Diversion	N	N	012	023	Black Rock Canal	N/A	N/A	N/A	N/A	N/A	N/A
CSO012_2.5	Norwood Relief Sewer	Diversion	N	N	012	296	Black Rock Canal	N/A	N/A	N/A	N/A	N/A	N/A
CSO013_1	SPP304 Modification	SPP Modification	N	Y	013	304	Black Rock Canal	-4	$ 60,000	$ 115,380	$ 175,380	Mar 2026	Nov 2029
CSO014_1.1	SPP206A&B RTC	RTC	N	Y	014	206A&B	Erie Basin Marina	0	$ 4,000,000	$ 1,292,820	$ 5,292,820	Mar 2025	Feb 2030
CSO014_1.2	Erie Basin Marina OLS	OLS	Y	Y	014	206A&B	Erie Basin Marina	0	$ 62,440,000	$ 6,575,770	$ 69,015,770	Mar 2026	Mar 2034
CSO017_1.1	SPP054 Sewer Separation	Sewer Separation	N	Y	017	Mill Race ILS	Buffalo River	8	$ 700,000	$ 422,000	$ 1,122,000	Mar 2033	Jun 2038
CSO017_1.2	594 Exchange OLS	OLS	N	N	017	Mill Race ILS	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A

*v3.4.0-ltcp includes all projects in Selected Alternative, therefore the reduction in activations for the most impacted CSO could be influenced by multiple projects. A negative reduction indicates an increase in activations, but the total number of activations is within the maximum target number for every water body in v3.4.0-ltcp.
**Detailed cost estimates were not developed for projects that are not in the Selected Alternative

Table C.1 Projects Considered for Optimization

Tag	Project	Project Type	Included in the Original 2014 LTCP (Y/N)	Proposed to be Included in Updated LTCP (Y/N)	Most Impacted CSO	Most Impacted SPP	Most Impacted Water Body	Reduction in Activations of Most Impacted CSO (v3.4.0-ltcp vs. 2020 LTCP Model) *	Current Estimated Capital Cost**	Current Estimated Present Worth of Operations & Maintenance Costs**	Current Estimated Total Present Worth Cost**	Proposed Engineering Start	Proposed Construction Completion
CSO017_10	SPP051 modification	SPP Modification	N	Y	017	051	Buffalo River	8	$ 60,000	$ 115,380	$ 175,380	Mar 2029	Nov 2032
CSO017_4	20% GI Implementation	GI	Y	Y	017	326	Buffalo River	8	$ 7,490,000	$ 1,828,602	$ 9,318,602	Mar 2032	Mar 2039
CSO017_6	Bass Alley & Emslie St. OLS	OLS	N	Y	017	Mill Race ILS	Buffalo River	8	$ 32,620,000	$ 5,096,160	$ 37,716,160	Mar2031	Mar 2039
CSO017_7	Mill Race OLS	OLS	N	N	017	Mill Race ILS	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
CSO017_8	SPP326 modification	SPP Modification	N	Y	017	326	Buffalo River	8	$ 60,000	$ 115,380	$ 175,380	Mar2026	Nov 2027
CSO017_9	SPP059 modification	SPP Modification	N	Y	017	059	Buffalo River	8	$ 60,000	$ 115,380	$ 175,380	Mar 2029	Nov 2032
CSO026_1.1	Gibson ILS	RTC	Y	N	026	Smith Street ILS	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
CSO026_1.2	Lord St./Tyler Likos Park OLS	OLS	N	N	026	Smith Street ILS	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
CSO026_1.3	Collins Park OLS	OLS	N	Y	026	Smith Street ILS	Buffalo River	1	$ 30,100,000	$ 2,871,770	$ 32,971,770	Mar 2027	May 2035
CSO026_1.4	S4246 (Eagle) OLS	OLS	N	N	026	Smith Street ILS	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
CSO026_4	20% GI Implementation	GI	Y	Y	026	Smith Street ILS	Buffalo River	1	$ 25,104,000	$ 6,119,721	$ 31,223,721	Mar 2033	Mar 2039
CSO027_1	SPP 317 modification	SPP Modification	N	Y	027	097	Buffalo River	7	$ 60,000	$ 115,380	$ 175,380	Mar2027	Nov 2030
CSO027_2	Babcock PS Weir Modification	SPP Modification	N	Y	027	097	Buffalo River	7	$ 60,000	$ 115,380	$ 175,380	Mar2027	Apr 2031
CSO027_3	SPP97 modification	SPP Modification	N	Y	027	097	Buffalo River	7	$ 60,000	$ 115,380	$ 175,380	Mar 2029	Nov 2032
CSO027_4	SPP067 modification	SPP Modification	N	N	027	097	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
CSO028_1	Hopkins & Osage OLS	OLS	Y	Y	028	123A	Buffalo River	0	$ 17,640,000	$ 5,097,750	$ 22,737,750	Mar 2031	Mar 2039
CSO029_1.2	Re-route to Hopkins & Osage OLS	OLS	N	N	029	126	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
CSO033_1	Bailey & Regent OLS (Moreland Park)	OLS	N	Y	033	104	Buffalo River	13	$ 53,620,000	$ 6,517,920	$ 60,137,920	Mar 2032	Mar 2040
CSO033_2	Clinton St OLS	OLS	N	Y	033	104	Buffalo River	13	$ 163,800,000	$ 4,653,580	$ 168,453,580	Mar 2029	Mar 2036

*v3.4.0-ltcp includes all projects in Selected Alternative, therefore the reduction in activations for the most impacted CSO could be influenced by multiple projects. A negative reduction indicates an increase in activations, but the total number of activations is within the maximum target number for every water body in v3.4.0-ltcp.
**Detailed cost estimates were not developed for projects that are not in the Selected Alternative

Table C.1 Projects Considered for Optimization

Tag	Project	Project Type	Included in the Original 2014 LTCP (Y/N)	Proposed to be Included in Updated LTCP (Y/N)	Most Impacted CSO	Most Impacted SPP	Most Impacted Water Body	Reduction in Activations of Most Impacted CSO (v3.4.0-ltcp vs. 2020 LTCP Model) *	Current Estimated Capital Cost**	Current Estimated Present Worth of Operations & Maintenance Costs**	Current Estimated Total Present Worth Cost**	Proposed Engineering Start	Proposed Construction Completion
CSO033_3	SPP104 modification	SPP Modification	N	Y	033	104	Buffalo River	13	$ 60,000	$ 115,380	$ 175,380	Mar 2029	Nov 2032
CSO037_1	Morgan Road OLS	OLS	N	N	037	122	Cazenovia Creek - C	N/A	N/A	N/A	N/A	N/A	N/A
CSO053_1.4	SPP336B OLS (Sidney OLS)	OLS	N	Y	053	336B	Scajaquada Creek	22	$ 27,720,000	$ 3,214,370	$ 30,934,370	Mar 2024	May 2032
CSO053_1.5	Schiller Park OLS SPP336B Modification	SPP Modification	N	Y	053	336B	Scajaquada Creek	22	$ 60,000	$ 115,380	$ 175,380	Mar 2024	Nov 2027
CSO053_10	SPP229A (Jefferson Florida) RTC	RTC	N	Y	053	229A	Scajaquada Creek	22	$ 3,000,000	$ 115,380	$ 3,115,380	Mar 2022	Jul 2026
CSO053_11	Canisius OLS	OLS	Y	Y	053	333	Scajaquada Creek	22	$ 30,000,000	$ 2,824,460	$ 32,824,460	Dec 2021	Apr 2029
CSO053_12.1	Jefferson Ave GI	GI	Y	Y	053	333	Scajaquada Creek	22	$ 460,000	$ 112,154	$ 572,154	Mar 2022	Jun 2028
CSO053_12.2	Jefferson Ave GI	GI	Y	Y	053	229A	Scajaquada Creek	22	$ 1,520,000	$ 368,159	$ 1,888,159	Mar 2022	Jun 2028
CSO053_13	SPP165B Modification	SPP Modification	N	Y	053	165B	Scajaquada Creek	22	$ 60,000	$ 115,380	$ 175,380	Mar 2024	Nov 2027
CSO053_14	SPP175 Modification	SPP Modification	N	Y	053	179	Scajaquada Creek	22	$ 60,000	$ 115,380	$ 175,380	Mar 2024	Nov 2027
CSO053_2.1	Colorado DUC	DUC	N	N	053	337	Scajaquada Creek	N/A	N/A	N/A	N/A	N/A	N/A
CSO053_2.2	Delavan & Moselle OLS	OLS	N	N	053	337	Scajaquada Creek	N/A	N/A	N/A	N/A	N/A	N/A
CSO053_2.4	William Gaiter Relief Sewer to Amherst Quarry	Diversion	N	N	053	337	Scajaquada Creek	N/A	N/A	N/A	N/A	N/A	N/A
CSO053_2.5	SPP337 Modification	SPP Modification	N	Y	053	337	Scajaquada Creek	22	$ 60,000	$ 115,380	$ 175,380	Mar 2024	Nov 2027
CSO053_3.1	SPP338 Modification	SPP Modification	N	Y	053	338	Scajaquada Creek	22	$ 4,000,000	$ 1,292,820	$ 5,292,820	Mar 2024	Jun 2030
CSO053_3.2	Amherst & Bailey RTC	RTC	Y	Y	053	338	Scajaquada Creek	22	$ 2,150,872	$ 1,292,820	$ 3,443,692	Dec 2021	Jul 2028
CSO053_3.3	Bailey & Minnesota SPP254 Modification	SPP Modification	N	Y	053	338	Scajaquada Creek	22	$ 232,385	$ 115,380	$ 347,765	Mar 2022	Jul 2026

*v3.4.0-ltcp includes all projects in Selected Alternative, therefore the reduction in activations for the most impacted CSO could be influenced by multiple projects. A negative reduction indicates an increase in activations, but the total number of activations is within the maximum target number for every water body in v3.4.0-ltcp.
**Detailed cost estimates were not developed for projects that are not in the Selected Alternative

Table C.1 Projects Considered for Optimization

Tag	Project	Project Type	Included in the Original 2014 LTCP (Y/N)	Proposed to be Included in Updated LTCP (Y/N)	Most Impacted CSO	Most Impacted SPP	Most Impacted Water Body	Reduction in Activations of Most Impacted CSO (v3.4.0-ltcp vs. 2020 LTCP Model) *	Current Estimated Capital Cost**	Current Estimated Present Worth of Operations & Maintenance Costs**	Current Estimated Total Present Worth Cost**	Proposed Engineering Start	Proposed Construction Completion
CSO053_3.4	Kensington & Poultney RTC	RTC	N	N	053	338	Scajaquada Creek	N/A	N/A	N/A	N/A	N/A	N/A
CSO053_5.1	Lang Weber OLS	OLS	N	N	053	340	Scajaquada Creek	N/A	N/A	N/A	N/A	N/A	N/A
CSO053_5.2	Edison Martha OLS	OLS	N	Y	053	340	Scajaquada Creek	22	$ 37,240,000	$ 3,243,860	$ 40,483,860	Mar 2023	Apr 2033
CSO053_8	SPP341A Modification	SPP Modification	Y	Y	053	341A	Scajaquada Creek	22	$ 60,000	$ 115,380	$ 175,380	Mar 2023	Nov 2027
CSO053_9	20% GI Implementation	GI	Y	Y	053	341A	Scajaquada Creek	22	$ 3,344,000	$ 814,337	$ 4,158,337	Mar 2027	Mar 2034
CSO055_1.1	Hertel at Delaware ILS/Hertel North East	RTC	Y	Y	055	001	Niagara River	5	$ 4,000,000	$ 1,292,820	$ 5,292,820	Sep 2033	Jun 2040
CSO055_1.2	Military Road ILS	RTC	N	N	055	001	Niagara River	N/A	N/A	N/A	N/A	N/A	N/A
CSO055_1.5	Military Rd OLS	OLS	Y	Y	055	001	Niagara River	5	$ 96,880,000	$ 5,934,920	$ 102,814,920	Aug 2027	Jan 2037
CSO055_1.6	Shoshone Park OLS	OLS	N	N	055	001	Niagara River	N/A	N/A	N/A	N/A	N/A	N/A
CSO055_3	20% GI Implementation	GI	Y	Y	055	001	Niagara River	5	$ 52,032,000	$ 12,678,306	$ 64,710,306	Mar 2033	Mar 2040
CSO064_1.1	CSO064 ILS	ILS	N	Y	064	137	Buffalo River	2	$ 4,000,000	$ 1,292,820	$ 5,292,820	Mar 2029	Mar 2035
CSO064_1.2	SPP 137 Modification	SPP Modification	N	Y	064	137	Buffalo River	2	$ 60,000	$ 115,380	$ 175,380	Mar 2029	Nov 2033
CSO064_2	Perry Street Sanitary Sewer	Sewer Separation	N	Y	064	137	Buffalo River	2	$ 4,800,000	$ 492,120	$ 5,292,120	Mar 2032	Jun 2038
CSO064_3	SPP133 modification	SPP Modification	N	N	064	133	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
System_1	Northern Relief Tunnel	Tunnel	Y	Y	011	024	Niagara River	1	$ 72,810,744	$ 2,471,480	$ 75,282,224	Aug 2027	Jun 2040
System_2	Schiller Park OLS	OLS	N	Y	053	341A	Scajaquada Creek	22	$ 85,960,000	$ 4,379,800	$ 90,339,800	Mar 2024	May 2033
System_2_3	Schiller Park OLS SPP339 Modification	SPP Modification	N	Y	053	339	Scajaquada Creek	22	$ 60,000	$ 115,380	$ 175,380	Mar 2024	Nov 2028
System_2_4	Schiller Park OLS SPP340 Modification	SPP Modification	N	Y	053	340	Scajaquada Creek	22	$ 60,000	$ 115,380	$ 175,380	Mar 2024	Apr 2029

*v3.4.0-ltcp includes all projects in Selected Alternative, therefore the reduction in activations for the most impacted CSO could be influenced by multiple projects. A negative reduction indicates an increase in activations, but the total number of activations is within the maximum target number for every water body in v3.4.0-ltcp.
**Detailed cost estimates were not developed for projects that are not in the Selected Alternative

Table C.1 Projects Considered for Optimization

Tag	Project	Project Type	Included in the Original 2014 LTCP (Y/N)	Proposed to be Included in Updated LTCP (Y/N)	Most Impacted CSO	Most Impacted SPP	Most Impacted Water Body	Reduction in Activations of Most Impacted CSO (v3.4.0-ltcp vs. 2020 LTCP Model) *	Current Estimated Capital Cost**	Current Estimated Present Worth of Operations & Maintenance Costs**	Current Estimated Total Present Worth Cost**	Proposed Engineering Start	Proposed Construction Completion
System_5	Hamburg PS RTC	RTC	N	N	064	137	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
System_6	Mineral Springs Rd RTC/OLS	RTC	N	N	017	326	Buffalo River	N/A	N/A	N/A	N/A	N/A	N/A
System_7	Southern Relief Tunnel	Tunnel	N	N	011	024	Niagara River	N/A	N/A	N/A	N/A	N/A	N/A
System_8	Swan Trunk Relief Tunnel	Tunnel	N	N	011	024	Niagara River	N/A	N/A	N/A	N/A	N/A	N/A

*v3.4.0-ltcp includes all projects in Selected Alternative, therefore the reduction in activations for the most impacted CSO could be influenced by multiple projects. A negative reduction indicates an increase in activations, but the total number of activations is within the maximum target number for every water body in v3.4.0-ltcp.
**Detailed cost estimates were not developed for projects that are not in the Selected Alternative



Legend

- Projects Under Consideration
- Sewer Patrol Point
- ≤0.158 MGal
- Out of Compliance Sewer Patrol Points
- ≤21.4 MGal

Paper Size ARCH D

0 2,000 4,000 6,000

Feet

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD83 New York West ftUS

N

xylem Let's Solve Water

ARCADIS

GHD

BUFFALO SEWER AUTHORITY
WET WEATHER OPERATIONS OPTIMIZATION
LTCP OPTIMIZATION SELECTED ALTERNATIVE

Project No. 11225567
Date 10/11/2022

PROJECTS UNDER CONSIDERATION

FIGURE 1

C:\gisdata\Eight\LTCP\Workspaces\MXDT Services\Service Groups\Patrol Service Group\GIS\11225567-GIS\MapsWork\Fig01225567 WSALTCP Projects.aprx - RTC Projects Under Consideration

Attachment D

SELECTED ALTERNATIVE PROJECT DETAILS

Project Number 299



Legend

- Initial Alternative for LTCP Optimization
- Sewer Patrol Point
- ≤0.158 MGal
- Out of Compliance Sewer Patrol Points
- ≤21.4 MGal

Paper Size ARCH D

0 2,000 4,000 6,000

Feet

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD83 New York West ftUS

N

xylem Let's Solve Water

ARCADIS

GHD

BUFFALO SEWER AUTHORITY
WET WEATHER OPERATIONS OPTIMIZATION
LTCP OPTIMIZATION SELECTED ALTERNATIVE

SELECTED PROJECTS

Project No. **11225567**
Date **10/12/2022**

FIGURE 2

I:\gis\mxd\GIS\Planning\General\MOT Semkiw\Service Groups\Spoils\ Service Group\GIS\11225567\GIS\Bkup\Working\11225567 BSA LTCP Projects.aprx - Initial LTCP Projects

Table D.1
Preliminary Design Considerations for Proposed Off-Line Storage (OLS) Tanks

OLS Tank	Advantages of Base Configuration	Disadvantages of Base Configuration	Key Considerations
CSO014_1.2 Erie Basin Marina OLS	• Adequate room for tank construction and vehicle access • Location provides an opportunity to improve existing park land	• Environmental remediation possibly needed at site	• Considerable construction savings possible by re-configuring tank to be deeper with a smaller footprint
CSO026_1.3 Collins Park OLS	• Can dewater by gravity • No bedrock present • Location provides an opportunity to improve existing park land	• Close to the I-190 and utilities that run adjacent to the thruway; would involve NYSTA coordination at minimum • Adjacent to a residential neighborhood	• Expensive to build shallow tank, but adding pumping may be more complex solution than is needed for this area
CSO028_1 Hopkins & Osage OLS	• Adequate room for tank construction and vehicle access • Location provides an opportunity to improve existing park land	• Adjacent to a residential neighborhood and force main will traverse a residential street	• Some construction savings possible by configuring tank to be deeper with a smaller footprint
CSO033_1 Bailey & Regent OLS		• Tight space for construction access, staging, and ramp into excavation • Can excavate without ramp, but construction costs would increase • Adjacent to a residential neighborhood and police station	• A deeper tank with a smaller footprint is recommended • A shaft configuration may be worth consideration
CSO033_2 Clinton St OLS RTC	• Can dewater by gravity • Adequate room for construction access • Acceptable buffer between west side of tank and homes • Location provides an opportunity to improve existing park land	• Extensive formwork will be required for tank installation, especially the roof slab	• Considerable construction savings possible by re-configuring tank to be deeper with a smaller footprint and utilize pumped dewatering
CSO053_1.4 SPP336B OLS	• Can dewater by gravity	• Adjacent to a residential neighborhood and tank footprint close to existing structures • Likely need to close Lark Street next to site for construction access purposes • Tight space for construction	• Can add approximately 10' tank depth and still dewater by gravity to Scajaquada Tunnel • Land on east side of Lark Street could be considered for contractor staging
CSO053_5.2 Edison Martha OLS	• Can dewater by gravity • West side of site could be used for construction access • Location provides an opportunity to improve existing park land	• Adjacent to a school, which may require additional coordination and scheduling constraints	• Long side of tank could be oriented east-west instead of north-south on property • Could be dewatered toward Suffolk, west of tank (SPP 339) • Tank could also be moved further west, away from the school and closer to Roosevelt and Martha Avenues
CSO055_1.5 Military Rd OLS	• Adequate room for construction access	• Adjacent to a school and will consume footprint of school parking lot, which may require additional coordination and scheduling constraints • Work zone traffic control for tank inlet and outlet piping may be challenging on Military Road and Hertel Avenue	• A deeper tank with a smaller footprint is worth further consideration
System_2 Schiller Park OLS	• Good separation from existing structures • Can dewater by gravity • Location provides an opportunity to improve existing park land	• Adjacent to a residential neighborhood	• Considerable construction savings possible by configuring tank to be deeper with a smaller footprint and utilize pumped dewatering
CSO017_6 Bass Alley OLS	• Circular shaft design will fit the available space better than a rectangular structure	• Adjacent to a residential neighborhood and existing homes and structures are relatively close to tank • Railroad coordination and permit may be required	• 20' deeper tank would reduce diameter by about half; would improve construction access and may reduce construction cost

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

CSO014_1.2 ERIE BASIN MARINA OLS

CSO026_1.3 COLLINS PARK OLS

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

CSO028_1 HOPKINS & OSAGE

CSO033_1 BAILEY & REGENT OLS

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

CSO033_2 CLINTON ST OLS RTC

CSO053_1.4 SPP 336B / SIDNEY OLS

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

CSO053_5.2 EDISON MARTHA OLS

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

LEGEND

- Erie County Parcels
- Proposed Manholes
- Proposed OLS Tanks
- Proposed Gravity Sewer
- Proposed Forcemain

SWMM Export Entities

- Links

48" Gravity Sewer
Length 1 = 401.9 ft

335.90 ft

130.00 ft

Tank Area = 43,667 sf
Tank Depth = 8 ft
Rim to Invert Depth = 22.2 ft
Tank Volume = 2.61 MG

24" Gravity Sewer
Length 2 = 327.9 ft

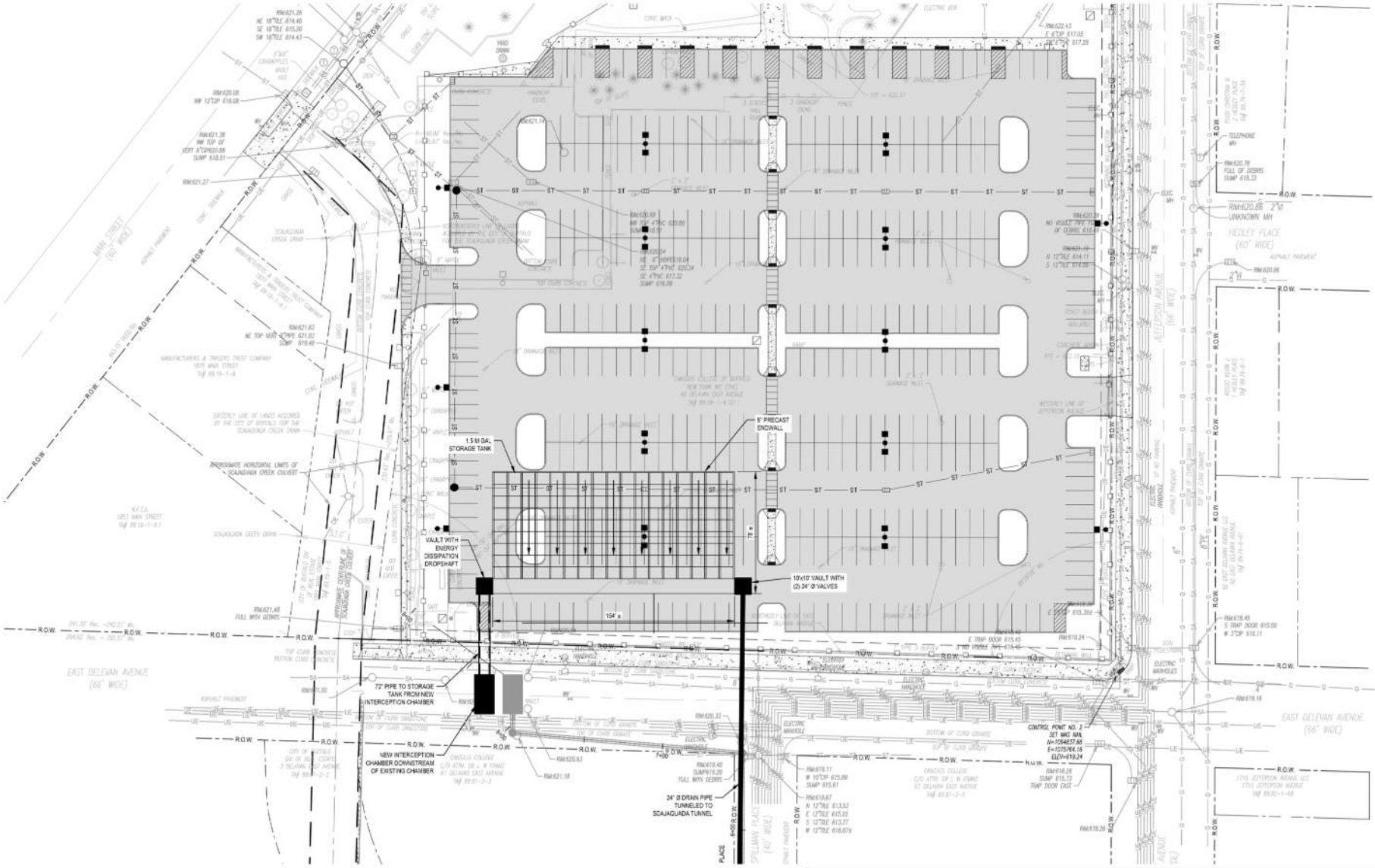
BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION
CS0055_1.5 MILITARY RD OLS
Tank Area = 77,206 sf
Tank Depth = 20 ft
Rim to Invert Depth = 42.95 ft
Tank Volume = 11.55 MG
200.00 ft
386.03 ft
7' Gravity Sewer
Length = 660.43 ft
20" Forcemain
Length = 805.74 ft
LEGEND
Erie County Parcels
Proposed Manholes
Proposed OLS Tanks
Proposed Gravity Sewer
Proposed Forcemain
SWMM Export Entities
Links
0
100
200 ft

SYSTEM_2 SCHILLER PARK OLS

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION

CSO017_6 BASS ALLEY OLS

BUFFALO SEWER AUTHORITY
LONG TERM CONTROL PLAN OPTIMIZATION



NOTES:

1. TOTAL CUT VOLUME: 16,083 CU YDS
2. EXCAVATION SET TO AN ELEVATION OF 7.10' WITH OUTER LIMITS BEING SET TO 4' OUTSIDE OF 1.5 MILLION GALLON ALTERNATIVE CONCRETE STRUCTURE OPTION.

N

0 30' 60'

GHD

BUFFALO SEWER AUTHORITY
JEFFERSON STORAGE TANK

JEFFERSON STORAGE TANK
1.5 MIL GAL PRECAST CONCRETE STRUCTURE ALTERNATIVE - SOUTH

Project No. **12569825**
Report No. **001**
Date **MARCH 2022**

FIGURE 4

Filename: \\AMH-SVR-001\Projects\B-564\12569825\Digital_Design\ACAD 2020\Sheets\Figures\Report 001\12569825-Figure 4.dwg
Plot Date: 10 March 2022 - 11:06 AM

Table D.2
Design Updates for Projects in 2014 LTCP Preferred Alternative

2014 LTCP Preferred Alternative Project		Design Updates in Selected Alternative	Considerations Leading to Design Update
CSO 013 (0.3 MG)		Replaced with SPP304 Modification (CSO013_1)	SPP modification is more cost effective than OLS to address small out of compliance activations in final version of Selected Alternative.
CSO 014/015 (0.8 MG)		Updated to larger tank: 5.55 MG Erie Basin Marina OLS (CSO14_1.2)	1. Remaining out of compliance activations for SPP206A&B were larger than original CSO014/015 tank size 2. ECSD inflow update increase the number of activations at SPP206A&B 3. Additional OLS at this location helps reduce overflows at other SPPs that are influenced by the Swan Trunk level such as SPP024 and SPP097
CSO 028/044/047 (2.3 MG)		Updated to smaller tank: 0.95 MG Hopkins & Osage OLS (CSO028_1)	Preliminary model results showed storage was no longer needed to achieve compliance for CSO-044 and CSO-047
CSO 052 (0.6 MG)		Removed	Deemed to no longer be necessary when running the updated PC-SWMM model using the typical year rainfall because downstream SPP was in compliance.
CSO 055 (7.5 MG)		Updated to larger tank with new location: 11.55 MG Military Rd OLS (CSO055_1.5)	1. Remaining out of compliance activations for SPP001 were larger than original CSO055 tank size 2. ECSD inflow update increased the number of activations and total overflow volume at SPP001 3. New location selected to avoid land acquisition issues Note: Implementation and size of CSO055_1.5 is dependent on outcome of detailed design evaluation for Northern Relief Tunnel
CSO 064 (0.1 MG)		Replaced with CSO064 ILS (CSO064_1.1)	Replaced with more efficient/constructable project to ensure that BSA achieves the water quality goals of the Administrative Order within the anticipated schedule.
Jefferson & Florida (SPP 170B) (2.6 MG)		Replaced by SPP229A/Jefferson Florida RTC (CSO053_10) and 1.5 MG Canisius/Jefferson Delavan OLS (CSO053_11)	New opportunity to move the tank location North and utilize an existing parking garage area at Jefferson and Delavan proposed to be demolished for the construction of a new surface parking lot.
SPP 336 a/b (SPP165A, SPP165B, SPP 336A, SPP336B) (4.2 MG)		Replaced by SPP165B Modification (CSO053_13), 3.26 MG SPP336B Sidney Street OLS (CSO053_1.4), and SPP336B Modification (CSO053_1.5)	1. SPP165A and SPP336A were in compliance in preliminary model results 2. Opportunity to coordinate when to send flows to Scajaquada Tunnel with new projects such as Schiller Park OLS
SPP 337 (0.7 MG)		Replaced by SPP337 Modification (CSO053_2.5)	Replaced with more efficient/constructable project to ensure that BSA achieves the water quality goals of the Administrative Order within the anticipated schedule.
North Relief Sewer		New configuration, tagged as Northern Relief Tunnel (System_1)	Updated configuration with information gathered in more detailed tunnel route evaluation than original LTCP
Underflow Upsizing (CSO 008/010, 061, 004)		Replaced by Breckenridge Niagara RTC (CSO010_1)	Target activations are already met in the baseline model at CSO-008 and CSO-061, so the project only needs to address activations at CSO-010
Revised Foundation Plan	Additional SPP Optimizations	Removed SPP019 Underflow Upsizing, SPP330 Underflow Upsizing, SPP336A Underflow Upsizing. Replaced with multiple SPP Modification projects for SPPs that were out of compliance.	Some SPP Underflow Upsizing projects deemed to no longer be necessary when running the updated PC-SWMM model using the typical year rainfall because their downstream SPPs were in compliance.
	Real Time Control (RTC)	Updated RTC projects based on RTC Re-evaluation and added dynamic control to projects that did not include RTC prior.	1. Some RTC project locations were deemed to be infeasible due to shallow sewers/low-lying connections, contaminated soils, high traffic, etc. 2. Implemented globally coordinated control strategy to optimize performance of existing RTC sites 3. Implemented dynamic control at OLS facilities to optimize the timing of storage and dewatering for maximum CSO reduction
	Hamburg Drain Storage (5 MG)	Replaced by Mill Race RTC and 3.6 MG Bass Alley OLS (CSO017_6)	Replaced with more efficient/constructable projects to ensure that BSA achieves the water quality goals of the Administrative Order within the anticipated schedule.
	Smith Street Storage (0.5 MG)	Updated to larger tank: 2.56 MG Collins Park OLS (CSO026_1.3)	Remaining out of compliance activations for Smith St ILS were larger than original Smith St tank size
	CSO-016 Storage (0.06 MG)	Removed	CSO-016 had no activations in preliminary model testing
Green Infrastructure	Total controlled acreage – 1,315 acres	Updated total controlled acreage for future projects to 522 acres	1. Updated model with GI that has already been implemented 2. Only added GI to control 20% of impervious area upstream of SPPs that were out of compliance in baseline model

Attachment E

SWMM RESULTS

Table E.1 Model Definitions

Model Name	Description
New Model Baseline Condition	2014 Conditions Model (equivalent to Revised Baseline in the 2014 LTCP Report) for the Updated Model
Old Model Baseline Condition	2014 Conditions Model (equivalent to Revised Baseline in the 2014 LTCP Report) for the Old Model (Model available during development of the 2014 LTCP)
New Model Scheduled Projects 3/18/2022	Includes projects scheduled to be completed by 3/18/2022 in the 2014 LTCP (Updated Model)
Old Model Scheduled Projects 3/18/2022	Includes projects scheduled to be completed by 3/18/2022 in the 2014 LTCP (Old Model)
New Model Actual Work 3/18/2022	Includes projects actually completed by 3/18/2022 (Updated Model)
New Model LTCP Completion	Includes all LTCP projects from the 2014 LTCP (Updated Model)
Old Model LTCP Completion	Includes all LTCP projects from the 2014 LTCP (Old Model)
2020 LTCP Model	Updated Model with projects completed to date and remaining 2014 LTCP plan projects (not including CSO-052 Off-Line Storage, SPP019 Underflow Upsizing, SPP330 Underflow Upsizing, and SPP336A Underflow Upsizing), referred to as "LTCP baseline projects model" or the "baseline plan".
Selected Alternative (v3.4.0-ltcp_1b0f735)	Updated model with projects completed to data and selected project set from optimization process

Notes
1. The Quarry is not a CSO, but rather a temporary storage basin that was proposed to be utilized more extensively in the approved LTCP to prevent CSO discharges to Scajaquada Creek and the Black Rock Canal.
2. CSO 003 was listed as discharging to the Niagara River in the original model because it discharges downstream of the Black Rock Canal lock, however it does discharge to the artificial channel of the Black Rock Canal rather than the Niagara River, so it has been reallocated to this waterway
3. The SPPs used for calculating overflow volume have changed between model scenarios due to infrastructure changes in real life and/or the SWMM model, use key below when reviewing SPP overflow volumes in Table E.3

Cell Format Key	
	Upstream of a consolidated SPP structure such as Smith St ILS
N/A	SPP overflow volume not tracked for model scenario
	Upstream of the Proposed Mill Race ILS (Hamburg Drain Storage in original LTCP)
	Upstream of the Smith Street ILS/OLS in Original 2014 LTCP
	Upstream of the CSO 028 OLS structure in Original 2014 LTCP

Table E.2 Typical Year Simulation Results by CSO

CSO	In Original Model	Receiving Water	New Model Baseline Condition		Old Model Baseline Condition		New Model Scheduled Projects 3/18/2022		Old Model Scheduled Projects 3/18/2022		New Model Actual Work 3/18/2022		New Model LTCP Completion		Old Model LTCP Completion		2020 LTCP Model		Selected Alternative (v3.4.0-ltcp_1b0f735)	
			Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations
003	Yes	Black Rock Canal	0.78	4	0.11	6	1.52	4	0	0	1.55	4	1.55	3	0.8	5	1.34	3	2.15	4
004	Yes	Black Rock Canal	4.51	5	11.25	5	5.92	5	0	0	6.2	4	9.8	5	8.7	3	9.41	6	3.92	2
005	Yes	Black Rock Canal	0.00	0	0.08	4	0	0	0	0	0	0	0	0	0.1	4	0	0	0	0
006	Yes	Black Rock Canal	91.52	47	198.92	65	21.91	15	4.19	10	21.93	15	16.53	15	21.7	4	16.46	15	1.01	1
007	No	Black Rock Canal	0.37	2	0.00	0	0.37	2	0	0	0.32	2	0.32	2	0	0	0.32	2	0.31	2
008	Yes	Black Rock Canal	11.71	33	6.11	39	11.72	33	1.28	5	0	0	0	0	0	0	0	0	0	0
009	No	Black Rock Canal	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
010	Yes	Black Rock Canal	8.15	14	11.85	44	8.15	14	0.28	2	8.11	14	0	0	0	1	0	0	0	0
011	Yes	Niagara River	286.46	39	134.29	41	220.65	35	52.53	16	222.33	35	15.61	5	11.7	4	13.76	5	22.49	4
012	Yes	Black Rock Canal	58.34	35	52.48	42	58.09	35	6.97	7	58.26	35	0	0	0.9	2	0	0	1.05	3
013	Yes	Black Rock Canal	4.06	4	6.75	7	3.91	4	0	0	3.9	4	0	0	2.7	4	0	0	2.57	4
014	Yes	Erie Basin Marina	28.34	12	4.19	4	18.06	10	0.18	1	17.8	10	6.37	2	3.1	2	5.86	2	5.71	2
015	Yes	Erie Basin Marina	0.00	0	6.14	12	0	0	0	0	0	0	0	0	0.6	1	0	0	0	0
016	Yes	Erie Basin Marina	0.00	0	0.00	0	0	0	0.26	2	0	0	0	0	0	0	0	0	0	0
017	Yes	Buffalo River	131.83	24	71.26	49	127.79	21	17.07	5	129.06	21	65.72	10	34.8	4	65.21	12	37.84	4
022	Yes	Buffalo River	1.48	6	29.79	49	1.47	6	4.82	16	1.47	6	1.47	6	2	5	1.45	6	0.4	2
023	No	Buffalo River	0.28	2	0.00	0	0.28	2	0	0	0.28	2	0.28	2	0	0	0.28	2	0.26	2
025	Yes	Buffalo River	1.38	4	1.44	11	1.38	4	0.68	3	1.38	4	1.38	4	1.2	6	1.37	4	1.53	4
026	Yes	Buffalo River	77.99	9	124.16	63	70.93	8	121.33	65	70.5	8	54.94	8	29.6	3	53.29	7	46.14	6
027	Yes	Buffalo River	50.67	10	31.67	36	68.42	11	21.33	3	68.59	12	100.25	11	39.1	6	71.37	11	42.15	4
028	Yes	Buffalo River	19.95	33	45.54	69	19.95	33	23.18	29	19.95	33	0.2	1	22.7	6	3.54	4	3.23	4
029	Yes	Buffalo River	2.98	4	0.00	0	3.08	4	0	0	3.08	4	4.74	6	0	0	11.16	12	3.35	4
031	No	Cazenovia Creek - C	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
032	Yes	Buffalo River	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
033	Yes	Buffalo River	88.33	15	37.77	9	92.91	15	26.11	5	94.61	15	91.21	15	31.8	5	77.58	15	2.58	2
035	Yes	Cazenovia Creek - B	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
037	Yes	Cazenovia Creek - C	12.18	10	23.30	13	8.25	6	9.3	6	8.18	5	6.7	5	11.9	6	10.07	9	7.65	5
038	No	Cazenovia Creek - C	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
039	Yes	Cazenovia Creek - C	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
040	No	Cazenovia Creek - C	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
042	No	Cazenovia Creek - C	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
044	Yes	Cazenovia Creek - C	0.47	2	2.32	7	1.1	3	2.22	4	1.21	3	1.05	3	0.7	2	0.53	2	1.02	3
046	Yes	Cazenovia Creek - C	0.00	0	1.31	1	0	0	0	0	0	0	0	0	1.3	0	0	0	0	0
047	Yes	Cazenovia Creek - C	1.66	4	8.65	44	1.86	5	0	0	1.86	5	1.86	5	1.5	3	1.62	4	1.88	5
048	Yes	Cazenovia Creek - C	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
049	Yes	Buffalo River	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
050	Yes	Buffalo River	1.57	5	3.17	14	1.54	5	2.42	5	1.55	5	1.55	5	2.8	5	1.44	4	1.54	5
051	Yes	Buffalo River	0.00	0	1.22	4	0	0	1	3	0	0	0	0	1.2	4	0	0	0	0
052	Yes	Buffalo River	0.00	0	10.87	10	0	0	8.92	6	0	0	0	0	6.3	3	0	0	0	0
053	Yes	Scajaquada Creek	330.11	37	268.00	65	291.32	37	82.19	24	300.84	37	177.25	26	52.1	4	179.84	26	27.05	4
054	Yes	Niagara River	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
055	Yes	Cornelius Creek	722.15	38	601.09	41	621.12	31	169.61	15	632.99	33	425.86	16	206.2	9	401.54	14	320.8	9
056	Yes	Scajaquada Creek	0.00	0	0.04	5	0	0	0	0	0	0	0	0	0	3	0	0	0	0
057	Yes	Scajaquada Creek	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
058	Yes	Scajaquada Creek	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
059	Yes	Scajaquada Creek	4.13	12	0.00	0	0.11	1	0.58	2	0.11	1	0.11	1	0	0	0.11	1	0.1	1
060	Yes	Scajaquada Creek	0.00	0	0.70	5	0	0	3.48	19	0	0	0	0	0	0	0	0	0	0
061	Yes	Black Rock Canal	0.00	0	31.19	10	0	0	0	0	0	0	0	0	1.2	2	0	0	9.44	2
062	No	Black Rock Canal	0.00	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
063	Yes	Black Rock Canal	0.37	3	0.63	13	0.22	2	8.14	9	0.22	2	0.22	2	0.3	4	0.22	2	0.23	2
064	Yes	Buffalo River	9.80	10	21.11	56	8.1	10	1.76	3	8.1	10	6.44	6	6.9	3	6.33	6	3.82	4
066	Yes	Buffalo River	4.64	4	1.72	10	3.72	4	1.76	3	3.89	4	3.11	4	0.4	4	2.97	4	1.42	3
Quarry	*Yes*	*Quarry*	*21.66*	*17*			*21.62*	*17*	*82.55*	*57*	*21.63*	*17*	*21.65*	*17*	*N/A*	*N/A*	*21.63*	*17*	*786.12*	*31*

Table E.3 Typical Year Simulation Results by Receiving Water

		New Model Baseline Condition		Old Model Baseline Condition		New Model Scheduled Projects 3/18/2022		Old Model Scheduled Projects 3/18/2022		New Model Actual Work 3/18/2022		New Model LTCP Completion		Old Model LTCP Completion		2020 LTCP Model		Selected Alternative (v3.4.0-ltcp_1b0f735)	
Receiving Water	LOC	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations
Black Rock Canal	0-4	179.81	47	319.37	65	111.81	35	20.86	10	100.49	35	28.42	15	36.40	5	27.75	15	20.68	4
Buffalo River	0-6	390.90	33	379.73	69	399.57	33	230.38	65	402.46	33	331.29	15	178.80	6	295.99	15	144.26	6
Cazenovia Creek - B	0-0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Cazenovia Creek - C	0-6	14.31	10	35.58	44	11.21	6	11.52	6	11.25	5	9.61	5	15.40	6	12.22	9	10.55	5
Niagara River (Cornelius Creek)	0-9	722.15	38	601.09	41	621.12	31	169.61	15	632.99	33	425.86	16	206.20	9	401.54	14	320.80	9
Erie Basin Marina	0-2	28.34	12	10.33	12	18.06	10	0.44	2	17.80	10	6.37	2	3.70	2	5.86	2	5.71	2
Niagara River	0-9	286.46	39	134.29	41	220.65	35	52.53	16	222.33	35	15.61	5	11.70	4	13.76	5	22.49	4
Quarry	*N/A*	*21.66*	*17*	*0.00*	*0*	*21.62*	*17*	*82.55*	*57*	*21.63*	*17*	*21.65*	*17*	*N/A*	*N/A*	*21.63*	*17*	*786.12*	*31*
Scajaquada Creek	0-4	334.24	37	268.74	65	291.43	37	86.25	24	300.95	37	177.36	26	52.10	4	179.95	26	27.15	4

Table E.4 Typical Year Simulation Results by SPP

				Model Scenario	New Model Baseline Condition		Old Model Baseline Condition		New Model Scheduled Projects 3/18/2022		Old Model Scheduled Projects 3/18/2022		New Model Actual Work 3/18/2022		New Model LTCP Completion		Old Model LTCP Completion			2020 LTCP Model		Selected Alternative (v3.4.0-ltcp_1b0f735)	
CSO	SPP	Location	In Original Model	LTCP Model Link	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	SPP in Old Model LTCP Completion (Original 2014 LTCP) Model	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations	Typical Year OF Vol. (MG)	Typical Year OF Activations
003	003	Hertel Ave 15ft NN Cb, Thruway 45 ft EE Lane	Yes	WEIR#163	0	0	0	0	0	0	0	0	0	0	0.11	1	003	0.28	2	0	0	0.33	2
	004	Farmer St, Ctr. Thruway EE Lane	Yes	WEIR#164	0	0	0	0	0.3	2	0	0	0.31	2	0.27	2	004	0	0	0.26	2	0.29	2
	005	Austing St Ctr. Thruway 40 ft EE Lane	Yes	WEIR#165	0	0	0	0	0.27	2	0	0	0.27	2	0.35	2	005	0.40	3	0.3	2	0.56	2
	007	Hamilton St, 5ft S. N.cb, Thruway 25 ft EE Lane	Yes	WEIR#166	0	0	0	0	0	0	0	0	0	0	0	0	007	0.01	0	0	0	0	0
	008	Amherst St, Ctr Thruway, 55 ft EE Lane	Yes	WEIR#167	0	0	0	0	0	0	0	0	0	0	0	0	008	0	0	0	0	0	0
	009	Bridge St, NS Thryway, 30 ft, EE Lane	Yes	WEIR#168	0	0	0	0	0	0	0	0	0	0	0	0	009	0	0	0	0	0	0
	010	Parish St, Opp Ctr Thruway, 45 ft EE Lane	Yes	WEIR#169	0.78	4	0	0	0.95	4	0	0	0.97	4	0.82	3	010	0	0	0.78	3	0.97	4
	011	Wayne St Ctr, 100' W of W cb of Niagara St	Yes	WEIR#170	0	0	0.10	6	0	0	0	0	0	0	0	0	011	0.09	0	0	0	0	0
	184	Hamilton St Ctr, East 50 ft EE Cb	No	SPP184_w	0	0	N/A	N/A	0	0	N/A	N/A	0	0	0	0	184	N/A	N/A	0	0	0	0
	185	Austin St, Ctr Gurnsey St, Ctr	Yes	WEIR#171	0	0	0	0	0	0	0	0	0	0	0	0	185	0	0	0	0	0	0
	186	Farmer St Ctr Gurnsey St, 40 ft EE cb	Yes	WEIR#172	0	0	0	0	0	0	0	0	0	0	0	0	186	0	0	0	0	0	0
004	013	Bird Ave, Ctr Niagara St, 35 ft WW cb	Yes	SPP13w	4.51	5	11.22	18	5.92	5	0	0	6.2	4	9.8	5	013	8.73	3	9.41	6	3.92	2
005	014A	Potomac Ave, Ctr Niagara St20 ft WW cb	Yes	E_5882_1	0	0	0	0	0	0	0	0	0	0	0	0	014A	0	0	0	0	0	0
006	179	Harvard Pl Ctr, Lafayette St, 11 ft SS Cb	Yes	WEIR#96	13.11	15	5.67	6	14.96	15	0.18	1	14.96	15	13.5	15	179	4.05	4	13.44	15	11.72	12
	180	Delaware Ave 15ft EW Cb, Delavan Ave 5 ft NN cb	Yes	WEIR#95	74.73	47	21.91	44	3.28	7	0.16	1	3.29	7	2.92	7	180	1.86	3	2.91	7	1.02	3
	243	W Delavan Ave S Side 20' W of W Cb of Herkimer	No	SPP243_w	0	0	N/A	N/A	0	0	N/A	N/A	0	0	0	0	243	N/A	N/A	0	0	0	0
	331	Elmwood Ave Ctr W Delavan Centerline	Yes	WEIR#121	3.68	8	9.91	38	3.67	8	3.85	10	3.68	8	0.11	1	331	0.74	4	0.11	1	2.86	6
	Delavan Drain ILS				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.01	1
007	018	Delavan Ave, on S Cb Line Thruway, 10 ft E of W L	No	E_16877	0.37	2	N/A	N/A	0.37	2	N/A	N/A	0.32	2	0.32	2	018	N/A	N/A	0.32	2	0.31	2
008	019	Brace St Ctr, NYC RR East	Yes	5910	11.71	33	6.10	39	11.72	33	1.28	5	0	0	0	0	019	0	0	0	0	0	0
009	020	Auburn Ave, Ctr Mason 20 ft WW Cb	No	SPP020w	0	0	N/A	N/A	0	0	N/A	N/A	0	0	0	0	020	N/A	N/A	0	0	0	0
010	021	Breckenridge St, Ctr Thruway W edge W Lane	Yes	5555	8.15	14	11.85	44	8.15	14	0.28	2	8.11	14	0	0	021	0	0	0	0	0	0
011	024	Swan Trunk, 20 SCL Thruway, W Lane	Yes	SPP24w	286.46	39	134.29	41	220.65	35	52.53	16	222.33	35	15.61	5	024	11.65	4	13.76	5	22.49	4
012	023	Albany St, 15 ft SCL Thruway E Lane	Yes	SPP23w	11.74	12	10.11	18	11.71	12	0.81	3	11.73	12	0	0	023	0.27	2	0	0	0.11	1
	296	Albany St, 17 ft S of N line of Niagara St, 342 ft WW	Yes	SPP296w	46.6	35	42.37	44	46.38	35	6.16	7	46.53	35	0	0	296	0.65	2	0	0	0.94	3
013	304	Virginia St, 4 ft SN Cb, Busti Ave, 33 ft WW Cb	Yes	WEIR#34	4.06	4	6.75	7	3.91	4	0	0	3.9	4	0	0	304	4.14	4	0	0	2.57	4
014	206A&B	4th St 7 Ft EW Cb, Georgia St, 13 ft NN Cb	Yes	E_L9201_6	28.34	12	4.19	4	18.06	10	0.18	1	17.8	10	6.37	2	206A&B	4.00	2	5.86	2	5.71	2
015	035	Genesee St SN Cb, Up Terrace 35 ft WW Cb	Yes	WEIR2	0	0	5.41	10	0	0	0	0	0	0	0	0	035	3.11	1	0	0	0	0
	036	Church St, Ctr, 20' W of W Cb of Upper Terrace	Yes	WEIR1	0	0	0.74	13	0	0	0	0	0	0	0	0	036	0.06	0	0	0	0	0
016	042A	Charles and Bingham Street Intersection	Yes	SPP042A_w	0	0	0	0	0	0	0.26	2	0	0	0	0	042A	0	0	0	0	0	0
017	045A	Pearl St, 4 ft WE Cb, Lower Terrace, 18 ft NS Cb	No	E_7555	0	0	N/A	N/A	0	0	N/A	N/A	0	0	0	0	045A	N/A	N/A	0	0	0	0
	047	Main St ES, Quay SS	No	E_23083	0	0	N/A	N/A	0	0	N/A	N/A	0	0	0.21	1	047	N/A	N/A	0.2	1	0.37	2
	048	Washington St, WS Quay SS	Yes	WEIR#2	0	0	0.12	0	0	0	0	0	0	0	0	0	048	0	0	0	0	0	0
	050	Michigan St, Ctr, Exchange St, 12 ft SS Cb	Yes	WEIR#3	0	0	0.25	2	0	0	0.1	1	0	0	0.63	2	050	0.97	2	0.54	2	0.82	2
	051	Chicago St, Ctr, Exchange St, SS Cb	Yes	WEIR#4	1.1	4	0.13	3	1.55	6	0.6	2	1.54	6	3.4	9	051			2.59	6	2.21	3
	052	Louisiana St Ctr, Exchange St SS Cb	No	W1	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0.42	2	052	N/A	N/A	0.34	2	0.53	2
	053	Alabama St, Exchange St	Yes	WEIR#5	0	0	0.76	4	0.16	1	1.76	3	0.15	1	0.87	3	053			0.7	2	0.92	2
				WEIR#6	0.15	1	0.67	5	0.42	2	0	0	0.4	2	1.49	4	N/A			1.25	4	1.34	2
	054	Jefferson Ave, ES Exchange St SS Cb	No	W2	0.11	1	N/A	N/A	N/A	N/A	N/A	N/A	0.27	1	1.61	4	054	N/A	N/A	1.38	4	0	0
	055	Van Rensselaer St, Ctr, Exchange St NS Cb	Yes	WEIR#8	0	0	0.32	3	0	0	1.31	4	0	0			055					0	0
	056	Larkin St, EE Cb, Roseville St, 135 NN Cb	No	W3	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0.16	1			056	N/A	N/A			0.38	2
	058	Van Rensselaer St Ctr Roseville St NN Cb	No	W4	1.22	4	N/A	N/A	1.22	4	N/A	N/A	1.22	4			058	N/A	N/A			1.18	4
	059	Seneca St SN Cb, Hamburg St, W Cb	No	SPP059_w	2.69	10	N/A	N/A	2.42	9	N/A	N/A	2.43	9	2.14	8	059	N/A	N/A	2.03	8	0	0
	065	Swan St,Ctr, Hamburg St, WE Cb	Yes	6842w	10.17	12	0.06	2	9.66	11	1.21	2	9.76	11	7.93	9	065			7.36	7	5.91	6
	067	Hydraulic St ES 2 MH, Seneca St, 40 ft SS Cb	Yes	WEIR#9	83.79	24	52.76	18	80.24	21	5.15	4	81.53	21			067					29.74	7
	128	Hamburg St, 18 ft WE Cb, Perry St SNL	Yes	SPP128_w	0	0	0.29	5	0	0	0	0	0	0	0	0	128			2.38	12	0	0
	130	Chicago St, Ctr, Perry St Ctr	Yes	W16	0	0	2.85	49	0	0	1.26	5	0	0	0	0	130			0	0	0	0
	146	Scott St, 8 ft NS Cb W Market St, 25 ft EE Cb	No	W17	0.11	1	N/A	N/A	N/A	N/A	N/A	N/A	0.11	1	0.11	1	146	N/A	N/A	0.1	1	0	0
	281	Swan St 3 ft SS Cb, Pine Ave, 50 ft W E Cb	Yes	WEIR#33	1.67	4	13.05	14	0.87	2	5.68	4	0.87	2	0.95	2	281	9.55	4	0.93	2	0.91	2
	282	Chicago St 15 ft WE Cb, Swan St 10 ft SS Cb	Yes	SPP282w	0	0	0	0	0	0	0	0	0	0	0	0	282	0	0	0	0	0	0
	326	Oak St, Swan St Ctr	Yes	WEIR#38	30.82	15	2.65	4	30.59	15	0	0	30.62	15	23.78	9	326	2.54	2	23.44	8	5.59	4
	327	Exchange St, W of Wells	No	SPP327_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0.89	2	327	N/A	N/A	0.68	2	1.07	2
	Mill Race ILS		No	MillRaceWeir	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21.29	10	Mill Race RTC	24.8	4	21.29	10	18.17	4
022	051A	Exchange St, 16' N of S Cb, 445' W W Cb of Chica	No	E_19663	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	051A	N/A	N/A	0	0	0	0
	138	S Park Ave, 15 ft NS Cb, Baltimore St 45 ft EW Cb	Yes	SPP138_w	0	0	0.56	12	0	0	1.19	5	0	0	0	0	138	0.49	3	0	0	0	0
	145	Perry St, 12 ft SN Cb, Baltimore St, W edge, Frt Hs	Yes	E_4934	1.48	6	1.20	15	1.47	6	3.63	16	1.47	6	1.47	6	145	1.11	5	1.45	6	0.4	2
023	279	Chicago St, Ctr, Ohio St (2) 10 ft WE Cb	No	W23	0.28	2	N/A	N/A	0.28	2	N/A	N/A	0.28	2	0.28	2	279	N/A	N/A	0.28	2	0.26	2
025	209	Hamburg St Ctr, South St Ctr	Yes	WEIR#27	1.38	4	1.44	11	1.38	4	0.68	3	1.38	4	1.38	4	209	1.23	6	1.37	4	1.53	4
				W24	0	0	N/A	N/A	0	0	N/A	N/A	0	0	0	0		N/A	N/A	0	0	0	0
	068	S Division St Ctr, WW Cb Smith St	Yes	SPP068_w	0	0	0.10	5	0	0	0	0	0	0			068					0	0
	069	Smith St EE Cb, So Division St Ctr	Yes	W5	0	0	0.63	20	0	0	0.31	2	0	0			069					0	0
	070	Smith St EE Cb, Cornelia St Ctr	No	E_10986	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0			070	N/A	N/A			0	0
	072	Smith St Ctr, Perry St 200 ft NN Cb	No	SPP072_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	072	N/A	N/A	0	0	0	0
	073	Smith St, 16 ft WW Cb, Perry St Ctr	No	E_26898	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0.35	2	073	N/A	N/A	0.59	2	0.41	2
	074	Smith St 3 ft WW Cb, Perry St 10 ft SS Cb	Yes	W6	0	0	0.02	3	0	0	0	0	0	0	0.14	1	074			0	0	0.19	1
	075	Smith St EBl, Perry St Ctr	Yes	SPP075_w	0	0	3.26	63	0	0	0.28	2	0	0	0.48	2	075			0.14	1	0.61	2
	077	Smith St WW Cb, Fulton St Ctr	Yes	W7	0.25	2	0.19	4	0.28	2	0	0	0.28	2	0.36	2	077			0.38	2	0.38	2
	078	Smith St WW Cb, Elk St NN Cb	Yes	SPP078_w	0	0	0.08	4	0	0	0	0	0	0	0	0	078			0	0	0	0
	079	Smith St WW Cb, Elk St SS Cb	Yes	SPP079_w	0	0	0.18	5	0	0	0	0	0	0	0	0	079			0	0	0	0
	080	Smith St 4 ft WE Cb, Elk St Ctr	Yes	SPP080_w	0	0	0.10	5	0	0	0	0	0	0	0	0	080			0	0	0	0
	081	Smith St 3 ft WE Cb, Elk St 130 ft SS Cb	Yes	W8	0	0	0.04	2	0.12	1	0	0	0.1	1	0.13	1	081			0.12	1	0.11	1

Table E.4 Typical Year Simulation Results by SPP

	082	Smith St 3 ft WW Cb, Prenatt St 166 ft NN Cb	Yes	SPP082_w	0	0	0.03	2	0	0	0	0	0	0	0	0	082			0	0	0	0
	084	Smith St 5 ft WW Cb, Prenatt St NS Cb	Yes	W9	0	0	0.21	7	0	0	0	0	0	0	0	0	084			0	0	0	0
	085	Smith St 3 ft EE Cb, Prenatt St 35 ft NN Cb	Yes	SPP085_w	0.3	2	0.08	2	0.53	3	0	0	0.33	2	0.79	4	085			0.44	2	0.45	2
	086	Prenatt St Ctr, Smith St 15 ft EE Cb	No	E_21473	0	0	N/A	N/A	0	0	N/A	N/A	0	0	0	0	086	N/A	N/A	0	0	0	0
	087	Smith St 5 ft WW Cb, S Park 1 ft SN Cb	Yes	W10	0	0	0.29	5	0	0	0	0	0	0	0	0	087			0	0	0	0
	088	Smith St 5 ft WW Cb, S Park SS Cb	Yes	W11	0.92	4	0.60	9	1.18	5	0.27	2	0.19	1	0.59	4	088			0.33	2	0.39	2
	089	Smith St 10 ft EE Cb, S Park 2 ft SN Cb	Yes	W12	0.11	1	0.52	5	0.15	1	0	0	0.3	2	0.82	5	089			0.48	3	0.59	3
	090	Smith St 3 ft EE Cb, S Park 2 ft SS Cb	Yes	SPP090_w	0	0	0.40	12	0	0	0.11	1	0	0	0	0	090			0	0	0	0
	091	Smith St ES Cb, S Park 50 ft SS Cb	Yes	SPP091_w	0.9	4	0.26	4	1.21	5	0	0	0.55	3	1.05	5	091			0.72	4	0.76	3
	092	Smith St WS Cb, S Park 50 ft SS Cb	Yes	SPP092_w	1.64	6	0.25	5	2.31	8	0	0	1.27	5	2.16	8	092			1.39	5	1.62	5
	094	Smith St 10 ft WW Cb, St Stephens St 2 ft NN Cb	Yes	W13	0	0	0.05	3	0	0	0	0	0	0	0	0	094			0	0	0	0
026	148	Peckham St 5 ft SN Cb, Gibson St 22 ft E Cb, 14 ft	Yes	WEIR#15	1.95	6	0.14	4	1.9	6	0	0	1.94	6			148					1.59	6
	149	Paderewski St 17 ft NS Cb, Gibson 28 ft EE Cb, Ctr	Yes	WEIR#16	2.39	6	1.01	2	2.37	6	0	0	2.37	6			149					1.62	3
	150	Broadway Ctr, Gibson St 40 ft E Cb	Yes	WEIR#18	0.52	3	0.02	2	0.5	3	0	0	0.52	3			150					0.15	1
	151	Sycamore Ctr, Mills 16 ft EE Cb, ctr, to ft WW Cb	Yes	WEIR#19	0	0	0	0	0	0	0	0	0	0			151					0	0
	152	Genesee St Ctr, Mills St Ctr	Yes	12752	2.72	10	0	0	2.72	10	0	0	2.72	10			152					2.37	10
	198B	Broadway, west of Sears St	Yes	WEIR#23	4.31	7	4.14	8	4.04	7	6.7	8	4.31	7			198B					3.3	6
	199A	Woltz Ave Ctr, Sycamore 12 ft NN Cb	Yes	WEIR#24	0.41	2	0.68	6	0.4	2	24.11	30	0.41	2			199A					0.31	2
	199B	Woltz Ave Ctr, Sycamore 6 ft SN Cb	Yes	WEIR#25	15.67	13	3.32	8	15.09	13	1.47	3	15.59	13			199B					12.51	11
	217	Emslie St Ctr, Eagle St 10 ft SS Cb	Yes	WEIR#28	21.01	16	30.21	38	14.34	13	15.28	18	15.22	13			217					11.73	13
	218	Lord Ave 10 ft EW Cb, Howard St 1 ft SS Cb	Yes	WEIR#29	5.35	8	1.86	10	4.91	8	14.11	15	5.26	8			218					4.13	7
	248	Fillmore Ave 20 ft ee Cb, Stanislaus 6 ft NN Cb	Yes	WEIR#30	1.91	5	0.05	1	1.88	5	0	0	1.91	5			248					1.45	4
	249	Genesee St 5 ft NS Cb, E Parade St 12 ft WE Cb	Yes	WEIR#31	1.07	4	0	0	1.08	4	7.99	7	1.08	4			249					0.78	3
	277	Fillmore Ave 18 ft EE Cb, Sienkewitz St 5 ft NN Cb	Yes	WEIR#32	2.53	4	0	0	2.5	4	0	0	2.52	4			277					1.84	4
	314	Eagle St 16 ft SN Cb, Smith St 8 ft EE Cbq	Yes	SPP314_w	0	0	2.17	48	0	0	0.86	4	0	0			314					0	0
	315	Eagle St 18 ft MS Cb, Montgomery St 12 ft WE Cb	No	SPP315_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0			315	N/A	N/A			0	0
	316	Eagle St Ctr, Clare St 10 ft EW Cb	No	SPP316_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0			316	N/A	N/A			0	0
	317	Fillmore Ave E Cb, Clinton St 43 ft NN Cb	Yes	WEIR#35	35.84	14	23.62	13	34.77	14	24.82	14	35.53	14			317					101.68	40
	318	Clinton St 18 ft NS Cb, Fillmore Ave 42 ft EE Cb	Yes	WEIR#36	3.94	10	2.58	16	2.25	7	0	0	2.31	7			318					1.04	4
	319	Clinton St 127 ft MS Cb, Metcalfe Ave 10 ft EW Cb	Yes	WEIR#37	0.12	1	0.05	2	0	0	0	0	0	0			319					0	0
	320	Clinton St16 ft NS Cb, Lewis St 10 ft WW cb	No	SPP320_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0			320					0	0
	Lewis and Clinton	Lewis St, north of Clinton St	No	Lewis_and_Clinton_w	2.79	8	N/A	N/A	N/A	N/A	N/A	N/A	2.79	8			Lewis and Clinton	N/A	N/A			2.42	8
	Smith Street ILS		No	SmithStILSWeir	73.87	9	N/A	N/A	65.15	8	120.67	65	67.48	8	48.07	6	Smith Street ILS/OLS	29.5	3	48.7	7	40.63	6
027	097	Babcock St EW Cb, Prenatt St SNL	Yes	WEIR#10	50.67	10	30.95	7	68.42	11	21.33	3	68.59	12	100.25	11	097	39.10	6	71.37	11	42.15	4
	123A	Amber St 5 ft SN Cb, Hopkins St 10 Ft EE Cb	Yes	WEIR#64	19.07	33	7.09	13	19.07	33	2.34	4	19.07	33			123A			2.55	4	1.09	2
	123B	Amber St 17 ft SS Cb, Hopkins St 2 ft WE Cb	Yes	SPP123bw	0.88	2	17.91	71	0.88	2	13	29	0.88	2			123B			0.99	2	1.79	4
	123C	Hopkins St W Stide Opposide S Cb of Amber St	Yes	SPP123C	0	0	4.70	55	0	0	2.81	9	0	0			123C			0	0	0	0
028	123ABC OLS		No	E_7638	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	CSO 028 OLS	22.7	6	0	0	N/A	N/A
	124	Intersection of Hopkins St and Pembina St	Yes	WEIR#65	0	0	15.78	16	0	0	5.03	7	0	0	0.2	1	124			0	0	0.35	2
	125	S Park Ave 2 ft NS Cb, Boone St 2 ft WE Cb	Yes	WEIR#66	0	0	0	0	0	0	0	0	0	0	0	0	125			0	0	0	0
	125A	S Park 336.5 ; W of Inter, SW Cor So Park & Hopki	Yes	SPP125Aw	0	0	0	0	0	0	0	0	0	0	0	0	125A			0	0	0	0
	208	Mystic Ctr, Germania St 2 ft WW Cb	Yes	W19	0	0	0.03	4	0	0	0	0	0	0	0	0	208			0	0	0	0
029	126	S Park Ave 15 ft NN Cb, Boone St 30 ft WW Cb	Yes	WEIR#67	2.98	4	0	0	3.08	4	0	0	3.08	4	4.74	6	126	0	0	11.16	12	3.35	4
031	115	Kimmel St Ctr, Cazenovia Cr 24 ft SS Channel	No	W14	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	115	N/A	N/A	0	0	0	0
032	120	Buffalo River N&S side of Bailey Ave 200 ft WW Cb	Yes	WEIR#59	0	0	0	0	0	0	0	0	0	0	0	0	120	0	0	0	0	0	0
	099	Bailey Ave 4 ft EE Cb, Elk St 5 ft NN Cb	No	SPP099_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	099	N/A	N/A	0	0	0	0
	100	Bailey Ave 15 ft EE Cb, Seneca St 3 ft NS Cb	No	E_22467	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	100	N/A	N/A	0	0	0	0
033	101	Bailey Ave 15 ft EE Cb, Seneca St 3 ft NN Cb	No	E_22466	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	101	N/A	N/A	0	0	0	0
	103	Bailey Ave 15 ft EE Cb, Littel St Ctr	No	SPP103_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	103	N/A	N/A	0	0	0	0
	104	Bailey Ave Ctr, Littell St 150 ft NN Cb	Yes	WEIR#53	88.33	15	23.50	9	92.91	15	26.11	5	94.61	15	91.21	15	104	31.80	5	77.58	15	2.58	2
035	107	Cazenovia Cr @ Beyer St 750 SS Cb	Yes	SPP107w	0	0	0.94	5	0	0	0	0	0	0	0	0	107	0	0	0	0	0	0
	107A	Seneca St @ Durstein St	Yes	WEIR#60	0	0	0	0	0	0	0	0	0	0	0	0	107A	0	0	0	0	0	0
037	122	S Legion Dr Ctr, Meriden 185 ft WW Cb	Yes	WEIR#63	12.18	10	23.30	13	8.25	6	9.3	6	8.18	5	6.7	5	122	11.90	6	10.07	9	7.65	5
	226	Seneca St 3 ft SN Cb, Kingston St 3 ft WE Cb	No	SPP226_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	226	N/A	N/A	0	0	0	0
038	227	Seneca St 5 ft SS Cb, Kingston St 3 ft WE Cb	No	SPP227_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	227	N/A	N/A	0	0	0	0
	227A	Kingston Pl Ctr, 400 ft S Seneca St	No	SPP227A_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	227A	N/A	N/A	0	0	0	0
039	311	Tamarack St 5 ft WE Cb, Cumberland Ctr	Yes	WEIR#71	0	0	0	0	0	0	0	0	0	0	0	0	311	0	0	0	0	0	0
	223	Seneca St 4 ft SS Cb, Yale St 4 ft EE Cb	No	SPP223_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	223	N/A	N/A	0	0	0	0
040	224	Seneca St 3 ft SN Cb, Kamper St 3 ft WE Cb	No	SPP224_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	224	N/A	N/A	0	0	0	0
	225	Seneca St 2 ft NS Cb, Princeton Ctr	No	SPP225_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	225	N/A	N/A	0	0	0	0
	109	N Legion Dr 5 ft NN Cb, S Ryan St Ctr	No	E_18376	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	109	N/A	N/A	0	0	0	0
042	220	Seneca St 5 ft SN Cb, Ryan St 5 ft WE Cb	No	SPP220_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	220	N/A	N/A	0	0	0	0
	221	Seneca St 5 ft SS Cb, S Ryan 5 ft WE Cb	No	SPP221_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	221	N/A	N/A	0	0	0	0
	222	S Ryan St Ctr, Seneca St 500 ft SS Cb	No	W21	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	222	N/A	N/A	0	0	0	0
044	121	Mumford St Ctr, Cumberland 20 ft NN Cb	Yes	WEIR#62	0.47	2	2.32	7	1.1	3	2.22	4	1.21	3	1.05	3	121	0.70	2	0.53	2	1.02	3
	308	Unger St 1 ft WE Cb, N Legion Dr, 5 ft NN Cb	Yes	WEIR#73	0	0	0	0	0	0	0	0	0	0	0	0	308	0	0	0	0	0	0
	308A	Unger St Ctr between Seneca and N Legion	No	SPP308A_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	308A	N/A	N/A	0	0	0	0
046	308B	Unger St Ctr between Seneca and N Legion	No	SPP308B_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	308B	N/A	N/A	0	0	0	0
	309	Unger St 10 ft WE Cb, Seneca St 6 ft SS Cb	Yes	WEIR#69	0	0	0	0	0	0	0	0	0	0	0	0	309	0	0	0	0	0	0
	310	Unger St 24 ft WE Cb, Seneca St 2 ft NN Cb	Yes	WEIR#70	0	0	0	0	0	0	0	0	0	0	0	0	310	0	0	0	0	0	0
047	113	Southside Pkwy 2 ft WW Cb, S Legion Dr 3 ft NN C	Yes	WEIR#57	0	0	0	0	0	0	0	0	0	0	0	0	113	0	0	0	0	0	0
	114	Southside Pkwy 12 ft EW Cb, S Legion Dr 10 ft NN	Yes	SPP114w	1.66	4	8.65	44	1.86	5	0	0	1.86	5	1.86	5	114	1.46	3	1.62	4	1.88	5
048	118	Cazenovia Crk SS, Kimmel 110 ft EW Cb	Yes	WEIR#58	0	0	0	0	0	0	0	0	0	0	0	0	118	N/A	N/A	0	0	0	0
049	119	Cazenovia Crk NS Bailey Ave 110 ft EW Cb	Yes	WEIR#61	0	0	0	0	0	0	0	0	0	0	0	0	119	0	0	0	0	0	0
050	105	Seneca St S Cb, Pomeroy 100 ft WW Cb	Yes	WEIR#55	1.57	5	3.17	14	1.54	5	2.42	5	1.55	5	1.55	5	105	2.78	5	1.44	4	1.54	5
051	307	Mineral Spring Rd 7 ft NS Cb, Frank Ave 97 Ft WW	Yes	WEIR#68	0	0	1.22	4	0	0	1	3	0	0	0	0	307	1.21	4	0	0	0	0
052	106	S Ogden St 9 ft W of Ctr, Mineral Springs Rd 35 ft N	Yes	7751	0	0	10.86	10	0	0	8.92	6	0	0	0	0	106	6.30	3	0	0	0	0

Table E.4 Typical Year Simulation Results by SPP

	156	Block St 2' S of N Cb, Theodore St 6 ' E of W Cb	Yes	WEIR#131	0	0	0	0	0	0	0	0	0	0	0	0	156	0	0	0	0	0	0
	156A	Newburgh Ave 13' EW Cb, 130' NN Cb Genesee At	No	SPP156A_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	156A	N/A	N/A	0	0	0	0
	156B	Newburgh Ave 13 ' E W Cb, Newburgh 289' SS Cb	No	W18	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	156B	N/A	N/A	0	0	0	0
	157	Haven St 10.5' W of E Cb, 314 NN CB Genesee Ald	Yes	4419	0.1	1	0.34	5	0.11	1	0	0	0.1	1	0.11	1	157	0	0	0.11	1	0.1	1
	163	Fillmore at Northland, 4.5 ' WE Cb Fillmore, 19' SS	Yes	WEIR#108.1	2.38	8	5.02	28	0	0	0.28	1	0	0	0	0	163	1.60	4	0	0	0	0
	164	Fillmore at Delavan, 6' WE CB Fillmore at Ctr Delav	Yes	WEIR#107	0	0	0.41	5	0	0	0	0	0	0	0	0	164	0.41	3	0	0	0	0
	165	Fillmore at Delavan 6' WE Cb Fillmore, 20' NN Cb I	Yes	WEIR#106	0	0	3.00	28	0	0	0	0	0	0	0	0	165	0.34	2	0	0	0	0
	165A	Fillmore at Kensington at SE Cb Intersection	Yes	WEIR#118	0.6	3	1.92	16	0	0	0	0	0	0	0	0	165A	0.30	4	0	0	0	0
	165B	E Delavan and N bound Humbolt Pkwy Service Rd	Yes	WEIR#105	1.59	5	20.64	56	1.6	5	7.64	16	1.6	5	1.58	5	165B	15.79	4	1.58	5	0	0
	166	Pansy Pl Ctr, Delavan Ave Ctr	Yes	WEIR#104	0	0	0.07	4	0	0	0	0	0	0	0	0	166	0.06	0	0	0	0	0
	175	Michigan Ave 7 ft EW Cb, Dodge St Ctr	Yes	WEIR#99	1.31	5	2.46	13	1.31	5	0.12	1	1.31	5	1.13	5	175	1.42	4	1.13	5	0	0
	176	Michigan Ave Ctr, Riley St 5 ft SS Cb	Yes	WEIR#100	0	0	0.22	6	0	0	0	0	0	0	0	0	176	0.07	0	0	0	0	0
	177	Michigan Ave Ctr, Glenwood Ave 6 ft SS Cb	Yes	WEIR#98	0	0	0.44	6	0	0	0	0	0	0	0	0	177	0.15	1	0	0	0	0
	178	Masten Ave E of Ctr, Northland Ave 23 ft NN Cb	Yes	WEIR#97	1.03	4	2.34	16	0	0	0	0	0	0	0	0	178	0.54	3	0	0	0	0
	200A	E Ferry St 10 ft NN Cb, Leslie St 12 ft EE Cb	Yes	WEIR#127	0.31	2	0.81	5	0.36	2	0	0	0.3	2	0.34	2	200A	0.55	4	0.34	2	0.3	2
	200B	E Ferry St Ctr, Leslie St 18' EE Cb	Yes	WEIR#126	0	0	0	0	0	0	0	0	0	0	0	0	200B	0	0	0	0	0	0
	201	E Ferry St Ctr, Cornwall St 9 ft EE Cb	Yes	WEIR#124	0	0	0.12	3	0	0	0	0	0	0	0	0	201	0.09	0	0	0	0	0
	202	E Ferry St Ctr, Moselle St Ctr	Yes	WEIR#123	0	0	0.93	4	0.1	1	0	0	0	0	0.11	1	202	1.34	4	0.12	1	0	0
053	203	E Ferry St Ctr, Dutton St E Line	Yes	WEIR#115	1.71	4	3.46	8	0	0	0.21	2	1.7	4	0	0	203	1.17	4	0	0	1.72	4
	204	E Ferry St Ctr, Fillmore E Cb	Yes	WEIR#114	1.77	4	1.70	10	0	0	0	0	1.76	4	0	0	204	0.61	4	0	0	1.79	4
	229	Jefferson Ave 10 ft EE Cb, Beverly 8 ft NN Cb	No	SPP229_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	229	N/A	N/A	0	0	0	0
	229A	Jefferson & Florida at NW Cb intersection	Yes	WEIR#102	2.32	6	2.67	4	2.3	6	0	0	2.3	6	2.23	6	229A	1.65	3	2.31	6	0.39	3
	247	Florida St 3 ft SN Cb, Pansey Pl 13 ft EE Cb	No	E_23908	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	247	N/A	N/A	0	0	0	0
	333	E Delavan Ave W of Spillman St	No	3397	24.8	24	59.17	65	25.25	24	14.4	24	25.25	24	4.19	2	333	5.95	2	4.2	2	6.62	4
	334A	Florida St NS of Pleasant Pl	No	SPP334A_w	0.11	1	N/A	N/A	N/A	N/A	N/A	N/A	0.11	1	0.11	1	334A	N/A	N/A	0.11	1	0.21	2
	334B	Florida St SS of Pleasant Pl	No	W20	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	334B	N/A	N/A	0	0	0	0
	335A	Hager St N Side of Florida St	Yes	WEIR#111	0	0	0.05	4	0	0	0	0	0	0	0	0	335A	0.03	0	0	0	0	0
	335B	Hager St S of Florida St	Yes	WEIR#112	2.42	6	0.96	11	1.8	4	0	0	1.85	4	1.83	4	335B	0.27	3	1.78	4	1.81	4
	336A	Humbolt Pkwy Service Rd N of Drain	Yes	WEIR#109	6.63	13	9.20	38	0.54	3	3.33	7	0.55	3	0	0	336A	0.25	1	0.55	3	0.13	1
	336B	Humbolt Pkwy Service Rd S of Drain	Yes	4400	92.49	36	94.20	45	91.58	33	33.67	17	92.26	36	33.57	8	336B	17.77	4	33.84	8	5.26	2
	337	Colorado St N of Scajaquada St	Yes	8213	26.24	19	34.98	34	26.01	20	2.02	5	26.2	19	12.12	8	337	5.61	3	11.94	8	1.76	4
	338	Bailey Ave N of Scajaquada St	Yes	WEIR#128	40.18	27	23.90	15	33.69	19	0	0	33.69	19	31.25	18	338	3.89	2	31.77	19	0	0
	339	Texas St N of Kerns Ave	Yes	WEIR#129	57.86	37	9.06	5	57.86	37	16.32	22	57.84	37	26.84	17	339	3.95	3	26.77	17	0.19	1
	340	Hagen St N of Kerns Ave	Yes	WEIR#130	54.12	23	110.00	61	46.83	16	3.53	8	41.8	16	60.45	26	340	8.60	3	61.91	26	5.48	2
	341A	Genesee St E of Kerns Ave	Yes	WEIR#132	10.95	14	18.55	60	0.51	3	0.67	3	10.96	14	0.14	1	341A	1.34	4	0.14	1	0	0
	342A	Sprenger St btw Doat and Heminway	Yes	WEIR#135	0	0	0.06	6	0	0	0	0	0	0	0	0	342A	0	0	0	0	0	0
	342B	Sprenger St btw Doat and Heminway	Yes	WEIR#134	0.83	4	0.38	8	0.84	4	0	0	0.84	4	0.84	4	342B	0	0	0.83	4	0.87	4
	345	Main St SS East of Jefferson	Yes	WEIR#103	0.36	2	0.29	5	0.52	3	0	0	0.42	2	0.41	2	345	0	0	0.41	2	0.42	2
	187	Ontario St Ctr, Crowley Ave 40 ft NN Cb	Yes	WEIR#157	0	0	0	0	0	0	0	0	0	0	0	0	187	0	0	0	0	0	0
	188	Esser St Ctr, Skillen St 20 ft SS line	Yes	WEIR#158	0	0	0	0	0	0	0	0	0	0	0	0	188	0	0	0	0	0	0
	189	Esser St Ctr, Argus St 22 ft SS Cb	Yes	WEIR#159	0	0	0	0	0	0	0	0	0	0	0	0	189	0	0	0	0	0	0
054	190	Roesch Ave 8 ft WE Cb, Argus St 10 ft SN Cb	Yes	WEIR#160	0	0	0	0	0	0	0	0	0	0	0	0	190	0	0	0	0	0	0
	191	Tonawanda St 5 ft EE Cb, Crowley Ave 5 ft SN Cb	Yes	WEIR#162	0	0	0	0	0	0	0	0	0	0	0	0	191	0	0	0	0	0	0
	193	Niagara St 10 ft EE Cb, Crowley Ave 48 ft NN Cb	No	SPP193_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	193	N/A	N/A	0	0	0	0
	280	Chadduck Ave Ctr, 12' WW Cb of Oregon Pl	No	SPP280_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	280	N/A	N/A	0	0	0	0
055	001	Cornelius Creek, SS Thruway E Lane	Yes	WEIR#156	722.15	38	601.09	41	621.12	31	169.61	15	632.99	33	425.86	16	001	206.20	9	401.54	14	320.8	9
056	244	Nottingham Ter 25 ft NN Cb, Medow Rd 10 ft EE Cl	Yes	N21	0	0	0	0	0	0	0	0	0	0	0	0	244	0	0	0	0	0	0
	245	Nottingham Ter 15' NN Cb, Easmt. 620 ft E of Linco	Yes	N22	0	0	0.03	5	0	0	0	0	0	0	0	0	245	0	0	0	0	0	0
057	195	Niagara St SS Cb, Tonawanda St 5 ft EE Cb	Yes	WEIR#174	0	0	0	0	0	0	0	0	0	0	0	0	195	0	0	0	0	0	0
	213	Tonawanda St EE Cb, West Ave Ctr	Yes	WEIR#173	0	0	0.16	7	0	0	0	0	0	0	0	0	213	0	0	0	0	0	0
058	214	Tonawanda St EE Cb, West AVe 500 ft N	No	SPP214_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	214	N/A	N/A	0	0	0	0
	215	Tonawanda St 7 ft EE Cb, Watt St NS	No	SPP215_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	215	N/A	N/A	0	0	0	0
	181	Bradley St N Side 50' WW Cb of Grant	Yes	WEIR#82	0	0	0.48	4	0.11	1	0.22	1	0.11	1	0.11	1	181	0	0	0.11	1	0.1	1
059	182	Bradley St N Side 30' WW Cb of Dart St	Yes	WEIR#83	0	0	0.61	6	0	0	0.36	2	0	0	0	0	182	0	0	0	0	0	0
	183	Bradley St NN Cb, Dewitt St Ctr	Yes	WEIR#84	4.13	12	1.06	11	0	0	0	0	0	0	0	0	183	0	0	0	0	0	0
	230	Forest Ave 3 ft SS Cb, Parkdale Ave 6 ft EE Cb	Yes	WEIR#85	0	0	0.05	3	0	0	3.38	19	0	0	0	0	230	0	0	0	0	0	0
	231	Forest Ave 6 ft SS Cb, Baynes Ave 9 ft WW Cb	Yes	WEIR#86	0	0	0.01	1	0	0	0	0	0	0	0	0	231	0	0	0	0	0	0
	232	Forest Ave 5 ft S Cb, Tremont Ave 40 ft WW Cb	Yes	WEIR#87	0	0	0.01	1	0	0	0	0	0	0	0	0	232	0	0	0	0	0	0
	233	Forest Ave 5 ft SS Cb, Claremont Ave 80 ft WW Cb	Yes	WEIR#88	0	0	0	0	0	0	0	0	0	0	0	0	233	0	0	0	0	0	0
	234	Forest Ave 3 ft SS Cb, Elmwood Ave 35 ft WW Cb	Yes	WEIR#89	0	0	0	0	0	0	0	0	0	0	0	0	234	0	0	0	0	0	0
060	235	Forest Ave 4 ft SS Cb, Lincoln Pkwy 17 ft WW Cb	Yes	WEIR#120	0	0	0.05	4	0	0	0	0	0	0	0	0	235	0	0	0	0	0	0
	236	Forest Ave 18 ft SS Cb, Windsor Ave 30 ft WW Cb	Yes	WEIR#92	0	0	0	0	0	0	0	0	0	0	0	0	236	0	0	0	0	0	0
	237	Forest Ave 13 ft SS Cb, Berkley Pl 32 ft WW Cb	Yes	WEIR#94	0	0	0.04	4	0	0	0	0	0	0	0	0	237	0	0	0	0	0	0
	238	Forest Ave 20 ft SS Cb, Windsor Ave 30 ft WW Cb	Yes	WEIR#93	0	0	0.02	2	0	0	0	0	0	0	0	0	238	0	0	0	0	0	0
	239	Forest Ave 38 ft NN Cb, Lincoln Pkwy 70 ft WW Cb	Yes	WEIR#91	0	0	0.03	3	0	0	0	0	0	0	0	0	239	0	0	0	0	0	0
	240	Forest Ave 23 ft NN Cb, Elmwood Ave 53 ft EE Cb	Yes	WEIR#90	0	0	0.44	6	0	0	0.1	1	0	0	0	0	240	0	0	0	0	0	0
	241	Forest Ave 40 ft NN Cb, Elmwood Ave 25 ft EE Cb	No	SPP241_w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	241	N/A	N/A	0	0	0	0
061	330	Niagara St at Metering Station	Yes	WEIR#80	0	0	31.18	10	0	0	0	0	0	0	0	0	330	1.23	2	0	0	9.44	2
062	022	W Ferry St 20 ft NN Cb, BR Harbor 11 ft East	No	W1_SPP022	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	022	N/A	N/A	0	0	0	0
063	283	Sheridan Terr Swan Trunk 8 ft East	Yes	SPP283w1	0.37	3	0.63	13	0.22	2	0	0	0.22	2	0.22	2	283	0.33	4	0.22	2	0.23	2
	129	Perry St 15 ft NS Cb, Ohio Drain 190 ft WW Cb	Yes	W15	0	0	1.29	40	0	0	0.49	3	0	0	0	0	129	0.91	3	0	0	0	0
	131	Fulton St 7 ft SS Cb, Ohio Drain 190 ft WW Cb	Yes	WEIR#11	2.72	6	1.62	4	2.49	6	4.45	9	2.49	6	2.56	6	131	1.73	3	2.48	6	1.27	2
	132	S Park Ave Ctr, Ohio Drain 30 ft E of CL	Yes	WEIR#12	0	0	0.07	1	0	0	0	0	0	0	0	0	132	0.04	0	0	0	0	0
064	133	S Park Ave Ctr, Chicago St 10 ft WW Cb	Yes	WEIR#13	1.62	6	1.02	12	1.62	6	1.1	4	1.62	6	1.61	6	133	0.89	3	1.61	6	1.02	4
	135A	Louisiana St Ctr, Machinaw St 10 ft NS Cb	Yes	SPP135a_w	2.11	8	4.52	56	0.92	4	2.1	8	0.91	4	0.87	4	135A	3.21	3	0.86	4	0.85	3
	136A	Louisiana St 12 ft WW Oconnell St Ctr	No	SPP136A_w	0.42	2	N/A	N/A	N/A	N/A	N/A	N/A	0.4	2	0.39	2	136A	N/A	N/A	0.39	2	0.56	2
	137	Louisiana St W of Wall, Republic St Ctr	No	E_11889	2.93	10	N/A	N/A	N/A	N/A	N/A	N/A	2.68	10	1.01	4	137	N/A	N/A	0.99	4	0.12	1
				SPP137_w2	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0		N/A	N/A	0	0	0	0
	211	CLINTON ST., 5' S.S. CB., SO. OGDEN ST., 15' E.	Yes	16115	2.51	4	1.34	12	1.61	4	1.46	3	1.68	4	1.32	3	211	0.23	2	1.25	3	0.37	1
	212	CLINTON ST., 5' S.S. CB., SO. OGDEN ST., 15' E.	Yes	16112	1.99	4	0.14	1	1.99	4	0.3	1	2.06	4	1.79	4	212	0.01	0	1.72	4	1.05	3

Table E.4 Typical Year Simulation Results by SPP

	291	Casimir St N Side 4 ' EW Cb Fenton St	Yes	SPP291_w	0	0	0.15	5	0	0	0	0	0	0	0	0	291	0.15	0	0	0	0	0
	292	Casimir St N Side and Ctr Holly St	Yes	SPP292_w	0	0	0.01	3	0	0	0	0	0	0	0	0	292	0.01	0	0	0	0	0
066	293	Casimir St N Side and Ctr Willett St	Yes	SPP293_w	0	0	0.03	4	0	0	0	0	0	0	0	0	293	0.03	0	0	0	0	0
	294	Casimir St N Side and Ctr Pontiac St	Yes	SPP294_w	0	0	0	0	0	0	0	0	0	0	0	0	294	0	0	0	0	0	0
	295	Casimir St N Side and Ctr Pierce St	Yes	SPP295_w	0	0	0	0	0	0	0	0	0	0	0	0	295	0	0	0	0	0	0
	322	William St 23 ft SN Cb, Gold St 38 ft WW Cb	Yes	12997W	0.14	1	0.06	1	0.12	1	0	0	0.15	1	0	0	322	0	0	0	0	0	0
	329	S Ogden St at Seward St	Yes	SPP329_of	0	0	0	0	0	0	0	0	0	0	0	0	329	0	0	0	0	0	0
	254	Intersection of Minnesota Ave and Bailey Ave	Yes	WEIR#152	12.98	17	21.48	55	12.96	17	16.93	37	12.97	17	12.97	17	254	21.47	38	12.96	17	19.67	31
	255	Intersection of E. Amherst St and Bailey Ave	Yes	WEIR#147	4.17	6	1.82	6	4.17	6	62.21	57	4.17	6	4.19	6	255	123.78	5	4.18	6	761.96	1
				WEIR#148	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0		N/A	N/A	0	0	0	0
	257	Near Intersection of E. Amherst St and Comstock Ave	Yes	WEIR#151	0	0	N/A	N/A	0	0	0	0	0	0	0	0	257	0	0	0	0	0	0
	258	Southwest corner of E. Amherst St and Parkridge Ave	No	SPP258w	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	258	N/A	N/A	0	0	0	0
	259	Comstock Ave, south of Berkshire Ave	Yes	WEIR#149	0	0	0.00	3	0	0	0	0	0	0	0	0	259	0	0	0	0	0	0
	260	Comstock Ave, south of Stockbridge Ave	Yes	WEIR#150	0	0	0.36	31	0	0	0	0	0	0	0	0	260	0	0	0	0	0	0
	261	Hewitt Ave, west of Comstock Ave	Yes	WEIR#140	0	0	0.15	6	0	0	0	0	0	0	0	0	261	0	0	0	0	0	0
	262	Dunlop Ave, west of Comstock Ave	Yes	WEIR#141	0	0	0.01	5	0	0	0	0	0	0	0	0	262	0	0	0	0	0	0
	263	Intersection of Dartmouth Ave and Comstock Ave	Yes	WEIR#142	0	0	0.02	5	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0
Quarry	264	Intersection of Shirley Ave and Comstock Ave	Yes	WEIR#139	0	0	0	0	0	0	0	0	0	0	0	0	264	0	0	0	0	0	0
	265	Intersection of LaSalle Ave and Comstock Ave	Yes	WEIR#143	0	0	0.01	5	0	0	0	0	0	0	0	0	265	0	0	0	0	0	0
	266	Comstock Ave, south of Minnesota Ave	Yes	W22	0	0			0	0	0	0	0	0	0	0	266	0	0	0	0	0	0
	267	Comstock Ave, north of Minnesota Ave	Yes	WEIR#144	0	0	0.04	8	0	0	0	0	0	0	0	0	267	0	0	0	0	0	0
	268	Intersection of Lisbon Ave and Comstock Ave	Yes	WEIR#138	0	0	0.01	5	0	0	0	0	0	0	0	0	268	0	0	0	0	0	0
	269	East of Comstock Ave, south of Highgate Ave	Yes	SPP269_w	0	0			0	0	0	0	0	0	0	0	269	0	0	0	0	0	0
	270	East of Comstock Ave, north of Highgate Ave	Yes	SPP270_w	0	0	0.05	8	0	0	0	0	0	0	0	0	270	0	0	0	0	0	0
	271	West of Comstock Ave, south of Winspear Ave	Yes	SPP271_w	0	0	0.31	21	0	0	0	0	0	0	0	0	271	0	0	0	0	0	0
	272	West of Comstock Ave, north of Winspear Ave	Yes	SPP272_w	0	0	N/A	N/A	0	0	0	0	0	0	0	0	272	0	0	0	0	0	0
	273	Winspear Ave, west of Parkridge Ave	No	SPP273_w	0.41	2	N/A	N/A	0.41	2	N/A	N/A	0.41	2	0.41	2	273	N/A	N/A	0.41	2	0.4	2
	274	Poultney Ave, north of Kensington Ave	Yes	WEIR#154	4	13	4.38	37	3.98	13	3.41	11	3.98	13	3.98	13	274	4.39	13	3.98	13	3.99	13
	275	Poultney Ave, south of Hutchinson Ave	Yes	WEIR#145	0	0	0.06	8	0	0	0	0	0	0	0	0	275	0	0	0	0	0	0
	276	Parkridge Ave, south of Hutchinson Ave	Yes	WEIR#146	0.1	1	0.14	5	0.1	1	N/A	N/A	0.1	1	0.1	1	276	0	0	0.1	1	0.1	1
	285	Intersection of E. Amherst St and Parkridge Ave	No	WEIR#153	0	0	N/A	N/A	0	0	0	0	0	0	0	0	285	N/A	N/A	0	0	0	0

Attachment F

COST ESTIMATES FOR SELECTED ALTERNATIVE PROJECTS

Final (01/30/2023)

v3.4.0

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST FOR PROJECTS NOT STARTED

Project Tag/Name	Capital Cost Estimate [1,2,3]	PW O&M Cost (50 years)	PW Cost (50 years)	Size	Source
OLS Projects					
CSO014_1.2 Erie Basin Marina OLS	$ 62,440,000	$ 6,575,770	$ 69,015,770	5.55 MG	JMD draft opinion of probable constuction cost
CSO026_1.3 Collins Park OLS	$ 30,100,000	$ 2,871,770	$ 32,971,770	2.56 MG	JMD draft opinion of probable constuction cost
CSO028_1 Hopkins & Osage OLS	$ 17,640,000	$ 5,097,750	$ 22,737,750	0.95 MG	JMD draft opinion of probable constuction cost
CSO033_1 Bailey & Regent OLS	$ 53,620,000	$ 6,517,920	$ 60,137,920	4.5 MG	JMD draft opinion of probable constuction cost
CSO033_2 Clinton St OLS RTC	$ 163,800,000	$ 4,653,580	$ 168,453,580	21.72 MG	JMD draft opinion of probable constuction cost
CSO053_1.4 SPP336B OLS	$ 27,720,000	$ 3,214,370	$ 30,934,370	2.62 MG	JMD draft opinion of probable constuction cost
CSO053_5.2 Edison Martha OLS	$ 37,240,000	$ 3,243,860	$ 40,483,860	2.61 MG	JMD draft opinion of probable constuction cost
CSO053_11 Canisius OLS	$ 30,000,000	$ 2,824,460	$ 32,824,460	1.50 MG	Real Time Control Engineering Report Jefferson at Delavan (March 24, 2022) Alt 5b
CSO055_1.5 Military Rd OLS	$ 96,880,000	$ 5,934,920	$ 102,814,920	11.55 MG	JMD draft opinion of probable constuction cost
System_2 Schiller Park OLS	$ 85,960,000	$ 4,379,800	$ 90,339,800	8.00 MG	JMD draft opinion of probable constuction cost
CSO017_6 Bass Alley OLS	$ 32,620,000	$ 5,096,160	$ 37,716,160	3.60 MG	JMD draft opinion of probable constuction cost
RTC Projects					
CSO006_2 Gates Circle RTC	$ 2,835,287	$ 1,292,820	$ 4,128,107		Scajaquada Creek and Black Rock Canal Smart Sewer Project 75% Design Review Workshop (11/17/22); includes Niagara Metering Station
CSO006_3 Delavan Drain Storage/Delavan Drain Weir Raising & RTC	$ 4,000,000	$ 1,292,820	$ 5,292,820		
CSO010_1 Breckenridge Niagara RTC	$ 3,636,617	$ 1,292,820	$ 4,929,437		Scajaquada Creek and Black Rock Canal Smart Sewer Project 75% Design Review Workshop (11/17/22)
CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC	$ 4,000,000	$ 1,292,820	$ 5,292,820		
CSO053_3.2 Amherst & Bailey RTC	$ 2,150,872	$ 1,292,820	$ 3,443,692		Scajaquada Creek and Black Rock Canal Smart Sewer Project 75% Design Review Workshop (11/17/22); includes Bailey & Kerns and Quarry Pump Station
CSO055_1.1 Hertel at Delaware ILS/Hertel North East	$ 4,000,000	$ 1,292,820	$ 5,292,820		
Sewer Separation Projects					
CSO017_1.1 SPP054 Sewer Separation	$ 700,000	$ 422,000	$ 1,122,000		JMD draft opinion of probable constuction cost
CSO064_2 Perry Street Sanitary Sewer	$ 4,800,000	$ 492,120	$ 5,292,120		JMD draft opinion of probable constuction cost
SPP Modification Projects					
CSO011_1.2 SPP024 Modification	$ 60,000	$ 115,380	$ 175,380		
CSO012_1.2 SPP023 Modification	$ 60,000	$ 115,380	$ 175,380		
CSO012_2.1 SPP296 Modification	$ 60,000	$ 115,380	$ 175,380		
CSO053_1.5 Schiller Park OLS SPP336B Modification	$ 60,000	$ 115,380	$ 175,380		
CSO053_10 SPP229A Orifice Modification (Jefferson Florida)	$ 3,000,000	$ 115,380	$ 3,115,380		Real Time Control Engineering Report Jefferson at Delavan (March 24, 2022) Alt 4
CSO053_13 SPP165B Modification	$ 60,000	$ 115,380	$ 175,380		
CSO053_14 SPP175 Modification	$ 60,000	$ 115,380	$ 175,380		
CSO053_2.5 SPP337 Modification	$ 60,000	$ 115,380	$ 175,380		
CSO053_8 SPP341A Modification	$ 60,000	$ 115,380	$ 175,380		
CSO064_1.2 SPP 137 Modification	$ 60,000	$ 115,380	$ 175,380		
System_2_3 Schiller Park OLS SPP339 Modification	$ 60,000	$ 115,380	$ 175,380		
System_2_4 Schiller Park OLS SPP340 Modification	$ 60,000	$ 115,380	$ 175,380		
CSO013_1 SPP304 Modification	$ 60,000	$ 115,380	$ 175,380		
CSO017_10 SPP051 modification	$ 60,000	$ 115,380	$ 175,380		
CSO017_8 SPP326 modification	$ 60,000	$ 115,380	$ 175,380		
CSO017_9 SPP059 modification (SPP059_w)	$ 60,000	$ 115,380	$ 175,380		
CSO027_1 Weir #35, SPP 317 modification	$ 60,000	$ 115,380	$ 175,380		
CSO027_2 Babcock PS WEIR#42 modification	$ 60,000	$ 115,380	$ 175,380		
CSO027_3 SPP97 modification(WEIR#10)	$ 60,000	$ 115,380	$ 175,380		
CSO033_3 SPP104 modification (WEIR#53)	$ 60,000	$ 115,380	$ 175,380		
CSO053_3.3 SPP254 modification	$ 232,385	$ 115,380	$ 347,765		Scajaquada Creek and Black Rock Canal Smart Sewer Project 75% Design Review Workshop (11/17/22) for Bailey & Minnesota
Other Projects					
CSO053_3.1 South Bailey DUC/ILS	$ 4,000,000	$ 1,292,820	$ 5,292,820		
System_1 Northern Relief Tunnel	$ 72,810,744	$ 2,471,480	$ 75,282,224		01/23/23 OPCC from Ed Bradfuhrer of GHD
CSO064_1.1 CSO-064 ILS	$ 4,000,000	$ 1,292,820	$ 5,292,820		
Subtotal	*$ 749,325,905*	*$ 66,561,500*	*$ 815,887,405*		
Total Selected Alternative without GI Cost	**$ 749,325,905**	**$ 66,561,500**	**$ 815,887,405**		
Green Infrastructure Projects					
CSO006_5 20% GI Implementation	$ 10,506,000	$ 2,560,043	$ 13,066,043	52.5	$200,000 / ac managed
CSO011_1.1 20% GI Implementation	$ 3,982,000	$ 970,378	$ 4,952,378	19.9	$200,000 / ac managed
CSO017_4 20% GI Implementation	$ 7,490,000	$ 1,828,602	$ 9,318,602	37.5	$200,000 / ac managed
CSO026_4 20% GI Implementation	$ 25,104,000	$ 6,119,721	$ 31,223,721	125.5	$200,000 / ac managed
CSO053_9 20% GI Implementation	$ 3,344,000	$ 814,337	$ 4,158,337	16.7	$200,000 / ac managed
CSO053_12.1 Jefferson Ave Main Beverly	$ 460,000	$ 112,154	$ 572,154	2.3	$200,000 / ac managed
CSO053_12.2 Jefferson Ave Best Beverly	$ 1,520,000	$ 368,159	$ 1,888,159	7.6	$200,000 / ac managed
CSO055_3 20% GI Implementation	$ 52,032,000	$ 12,678,306	$ 64,710,306	260	$200,000 / ac managed; life cycle cost for all GI Projects assuming permeable pavement
Total Green Infrastructure Cost	**$ 104,438,000**	**$ 25,451,700**	**$ 129,889,700**	**522**	
Total Selected Alternative Cost	**$ 853,763,905**	**$ 92,013,200**	**$ 945,777,105**		

(1) Year 2022 dollars.

(2) All Costs Rounded.

(3) Estimates include contingencies commensurate with current stage of project.

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Erie Basin Marina OLS

1/16/2023 **v3.4.0** **5.55** **MG**

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Installation [1] Per Unit	Installation [1] Subtotal	Total Cost [2]	Notes
Satellite Storage								
Land Acquisition	Acres	3	$ 100,000	$ 265,983	$ -	$ -	$ 265,983	Located in Waterfront/ Emerson Young Park (COB-owned)
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	115,863	$ 3	$ 312,829	$ -	$ -	$ 312,829	SF of tank + 25%
Excavation	CY	62,437	$ 30	$ 1,873,110	$ -	$ -	$ 1,873,110	
Rock Excavation	CY	0	$ 200	$ -	$ -	$ -	$ -	
Piles / Foundation	LS	1	$ 500,000	$ 500,000	$ -	$ -	$ 500,000	
Bedding	CY	8,582	$ 77	$ 660,845	$ -	$ -	$ 660,845	
Structural Concrete	CY	14,375	$ 1,600	$ 22,999,476	$ -	$ -	$ 22,999,476	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	18,967	$ 46	$ 872,497	$ -	$ -	$ 872,497	
Backfill	CY	34,973	$ 44	$ 1,538,826	$ -	$ -	$ 1,538,826	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	250	$ 4,500	$ 1,125,000	$ -	$ -	$ 1,125,000	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	
Grass Restoration	SY	12,874	$ 9	$ 115,863	$ -	$ -	$ 115,863	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	578	$ 30	$ 17,332	$ -	$ -	$ 17,332	
Bedding	CY	20	$ 77	$ 1,529	$ -	$ -	$ 1,529	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	4,457	$ 46	$ 205,015	$ -	$ -	$ 205,015	
Backfill	CY	578	$ 44	$ 25,420	$ -	$ -	$ 25,420	Assumed to backfill all excavation (ignoring pipe volume)
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
4 ft Concrete Pipe	LF	153	$ 800	$ 122,525	$ -	$ -	$ 122,525	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	1	$ 3,100	$ 3,100	$ -	$ -	$ 3,100	
Inlet and Outlet Gates								
4 ft Inlet Gate	EA	0	$ 100,000	$ -	$ -	$ -	$ -	
		0	$ -	$ -	$ -	$ -	$ -	
Satellite Storage Force Main								
Excavation	CY	677	$ 30	$ 20,320	$ -	$ -	$ 20,320	
Bedding	CY	23	$ 77	$ 1,792	$ -	$ -	$ 1,792	
Backfill	CY	677	$ 44	$ 29,803	$ -	$ -	$ 29,803	Assumed to backfill all excavation (ignoring pipe volume)
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
Cut Access into Main Interceptor	EA	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	
Pig Launcher	EA	1	$ 75,000	$ 75,000	$ -	$ -	$ 75,000	
1.2' ID Pipe	LF	299	$ 174	$ 52,072	$ -	$ -	$ 52,072	
Satellite Storage Pump Station								
Pumps	EA	2	$ 108,000	$ 216,000	$ 27,000	$ 54,000	$ 270,000	5.55 MGD capacity needed
Pump Station Building	SF	100	$ 2,000	$ 200,000		$ -	$ 200,000	
Piles / Foundation	LS	1	$ 100,000	$ 100,000		$ -	$ 100,000	
Piping in Tank (Including Bends)	LF	50	$ 500	$ 25,000		$ -	$ 25,000	
Check Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Gate Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Wet Well Isolation Gates	EA	2	$ 50,000	$ 100,000	$ 13,500	$ 27,000	$ 127,000	
Misc Metals (Grating, Handrail, Monorails, Etc.	LS	1	$ 150,000	$ 150,000	$ -	$ -	$ 150,000	
Start-up and testing	LS	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	

Subtotal	**$**	**32,800,000**
Electrical, Controls and Instrumentation (15%)	**$**	**4,900,000**
Utility Relocation / Coordination (5%)	**$**	**1,600,000**
Environmental Remediation (5%)	**$**	**1,600,000**
MPT (5%)	**$**	**1,600,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	**$**	**2,100,000**
Base Probable Construction Cost (Rounded)	**$**	**44,600,000**
Contingency (40%)	**$**	**17,840,000**
Total Probable Construction Cost	**$**	**62,440,000**
Total Probable Construction Cost per Gallon	**$**	**11.25**

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency.

CSO014_1.2 Erie Basin Marina - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Dewatering Pumps

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Dewatering Pumps					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Electrical Demands					
Dewatering Pumps (assumed 50 HP)	948	kWh	$ 0.14	$ 8,200	Based on activations per year, running 24 hours/activation, ME 85%, ML 90%
					Input kW = HP x Quantity x Motor Load (ML) x 0.746 / Motor Efficiency (ME)
Water for Tipping Buckets	207.20	1000 cft	$ 22.83	$ 4,730	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x LF of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 43.73	$ 4,547	2 instrument techs @ 1 hour per week
Biweekly Yards and Grounds Maintenance	104	hr	$ 33.00	$ 3,432	2 laborers @ 2 hrs biweekly
Quarterly Maintenance	64	hr	$ 43.73	$ 2,798	1 millwright @ 2 days per quarter
	64	hr	$ 37.31	$ 2,388	1 millwright's helper @ 2 days per quarter
	64	hr	$ 33.00	$ 2,112	1 laborer @ 2 days per quarter
Annual Maintenance Labor (clean tank / pigging FM)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
Annual Property Maintenance	1	LS	$ 2,500.00	$ 2,500	Fence repair, landscaping upkeep
ANNUAL LABOR AND UTILITY TOTAL				$ 61,212	
Millwright's Truck	168	hour	$ 20.00	$ 3,360	1 Millwright's Truck ($150,000, 5 year life) @ 168 hours per year (weekly check plus quarterly maintenance) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 1,000.00	$ 1,000	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 12,270	
				Total Cost	
Rehabilitation Expenses					
Minor Pump Rehabilitation Labor (every 2 years)	10	hr	$ 43.73	$ 437	Assumes 5 hours for 2 millwrights
Minor Pump Rehabilitation Parts (every 2 years)	1	LS	$ 1,000.00	$ 1,000	Allowance for seals and other wearing parts.
Major Pump Rehabilitation Labor (every 5 years)	48	hr	$ 43.73	$ 2,099	3 days for 2 millwrights
Major Pump Rehabilitation Parts (every 5 years)	1	LS	$ 7,500.00	$ 7,500	Assumed centrifugal pump. Allowance for bearings, impellers, full pump end work.
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Electrical Replacement Parts (every 5 years)	1	LS	$ 300.00	$ 300	Breakers, relays
Minor Electrical De-Energized Maintenance and IR scans (every 5 years)	16	hr	$ 105.29	$ 1,685	1 day electrical maintenance (assuming breakers can be fully isolated for de-energized maintenance; no generator required). IR Scan 2 people. 1 day @ $105.29/hr.
PS Building Minor Maintenance (every 10 years)	1	LS	$ 5,000.00	$ 5,000	Painting, other property maintenance
PS HVAC Equipment Replacement (every 10 years)	1	LS	$ 100,000.00	$ 100,000	In line with Babcock PS
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 1,125,000.00	$ 1,125,000	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Pump Replacement (at year 25)	1	LS	$ 270,000.00	$ 270,000	Includes motor
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches
MCC Cabinet Replacement (every 30 years)	1	LS	$ 10,000.00	$ 10,000	New buckets
PS Building Rehabilitation (every 30 years)	1	LS	$ 15,000.00	$ 15,000	Roof and window replacement

ME	85%
ML	90%
Activations per year	62
Model dewatering duration per year (hours)	1313

CSO014_1.2 Erie Basin Marina - OLS Tank with Pumped Dewatering

Assumed Interest Rate i = 5.0%

Assumed Inflation Rate I = 4.5%

	Tank and Pump Maintenance												
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Rehab Cost (30 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0													
1	$ 63,966				$ 12,822							$ 76,789	$ 73,132
2	$ 66,845	$ 477			$ 13,399	$ 1,092						$ 81,814	$ 74,207
3	$ 69,853				$ 14,002							$ 83,855	$ 72,437
4	$ 72,996	$ 521			$ 14,633	$ 1,193						$ 89,343	$ 73,502
5	$ 76,281		$ 4,715		$ 15,291		$ 28,413					$ 124,700	$ 97,705
6	$ 79,714	$ 569			$ 15,979	$ 1,302						$ 97,564	$ 72,804
7	$ 83,301				$ 16,698							$ 99,999	$ 71,067
8	$ 87,049	$ 622			$ 17,450	$ 1,422						$ 106,543	$ 72,112
9	$ 90,966				$ 18,235							$ 109,201	$ 70,392
10	$ 95,060	$ 679	$ 5,876		$ 19,055	$ 1,553	$ 35,408	$ 163,062				$ 320,692	$ 196,877
11	$ 99,338				$ 19,913							$ 119,250	$ 69,723
12	$ 103,808	$ 742			$ 20,809	$ 1,696						$ 127,054	$ 70,748
13	$ 108,479				$ 21,745							$ 130,224	$ 69,061
14	$ 113,361	$ 810			$ 22,724	$ 1,852						$ 138,746	$ 70,076
15	$ 118,462		$ 7,322		$ 23,746		$ 44,124					$ 193,655	$ 93,151
16	$ 123,793	$ 884			$ 24,815	$ 2,022						$ 151,514	$ 69,411
17	$ 129,363				$ 25,932							$ 155,295	$ 67,755
18	$ 135,185	$ 966			$ 27,099	$ 2,208						$ 165,458	$ 68,751
19	$ 141,268				$ 28,318							$ 169,586	$ 67,111
20	$ 147,625	$ 1,055	$ 9,125		$ 29,592	$ 2,412	$ 54,987	$ 253,230	$ 2,713,178			$ 3,211,204	$ 1,210,269
21	$ 154,268				$ 30,924							$ 185,192	$ 66,473
22	$ 161,210	$ 1,152			$ 32,316	$ 2,634						$ 197,311	$ 67,451
23	$ 168,465				$ 33,770							$ 202,235	$ 65,842
24	$ 176,046	$ 1,258			$ 35,289	$ 2,876						$ 215,469	$ 66,810
25	$ 183,968		$ 11,371	$ 150,272	$ 36,877		$ 68,524			$ 961,739		$ 1,412,751	$ 417,189
26	$ 192,246	$ 1,373			$ 38,537	$ 3,141						$ 235,297	$ 66,175
27	$ 200,897				$ 40,271							$ 241,169	$ 64,597
28	$ 209,938	$ 1,500			$ 42,083	$ 3,430						$ 256,950	$ 65,546
29	$ 219,385				$ 43,977							$ 263,362	$ 63,983
30	$ 229,257	$ 1,638	$ 14,170		$ 45,956	$ 3,745	$ 85,393	$ 393,258			$ 93,633	$ 867,051	$ 200,616
31	$ 239,574				$ 48,024							$ 287,598	$ 63,375
32	$ 250,355	$ 1,788			$ 50,185	$ 4,090						$ 306,418	$ 64,307
33	$ 261,621				$ 52,443							$ 314,064	$ 62,773
34	$ 273,394	$ 1,953			$ 54,803	$ 4,466						$ 334,616	$ 63,696
35	$ 285,696		$ 17,659		$ 57,270		$ 106,416					$ 467,040	$ 84,670
36	$ 298,553	$ 2,133			$ 59,847	$ 4,877						$ 365,409	$ 63,091
37	$ 311,988				$ 62,540							$ 374,527	$ 61,586
38	$ 326,027	$ 2,329			$ 65,354	$ 5,326						$ 399,036	$ 62,491
39	$ 340,698				$ 68,295							$ 408,993	$ 61,001
40	$ 356,030	$ 2,543	$ 22,006		$ 71,368	$ 5,816	$ 132,613	$ 610,718	$ 6,543,410			$ 7,744,505	$ 1,100,073
41	$ 372,051				$ 74,580							$ 446,631	$ 60,421
42	$ 388,793	$ 2,777			$ 77,936	$ 6,352						$ 475,858	$ 61,309
43	$ 406,289				$ 81,443							$ 487,732	$ 59,847
44	$ 424,572	$ 3,033			$ 85,108	$ 6,936						$ 519,649	$ 60,727
45	$ 443,678		$ 27,423		$ 88,938		$ 165,260					$ 725,299	$ 80,723
46	$ 463,643	$ 3,312			$ 92,940	$ 7,574						$ 567,470	$ 60,150
47	$ 484,507				$ 97,122							$ 581,630	$ 58,715
48	$ 506,310	$ 3,617			$ 101,493	$ 8,271						$ 619,691	$ 59,578
49	$ 529,094				$ 106,060							$ 635,154	$ 58,157
50	$ 552,903	$ 3,950	$ 34,174	$ 451,632	$ 110,833	$ 9,033	$ 205,944	$ 948,427		$ 2,890,444		$ 5,207,339	$ 454,099
													$ 6,575,770

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_0(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = F / (1 + i)^n

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Collins Park OLS

1/16/2022 **v3.4.0** **2.56** **MG**

Description	Material				Installation [1]		Total Cost [2]	Notes
	Basis	No. Units	Per Unit	Subtotal	Per Unit	Subtotal		
Satellite Storage								
Land Acquisition	Acres	1.2	$ 100,000	$ 122,569	$ -	$ -	$ 122,569	Assumed owned by COB; verify
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	53,391	$ 3	$ 144,156	$ -	$ -	$ 144,156	SF of tank + 25%
Excavation	CY	19,775	$ 30	$ 593,236	$ -	$ -	$ 593,236	
Rock Excavation	CY	10,876	$ 200	$ 2,175,199	$ -	$ -	$ 2,175,199	
Piles / Foundation	LS		$ 500,000	$ -	$ -	$ -	$ -	Piles not needed on bedrock
Bedding	CY	3,955	$ 77	$ 304,528	$ -	$ -	$ 304,528	
Structural Concrete	CY	6,803	$ 1,200	$ 8,163,382	$ -	$ -	$ 8,163,382	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	19,123	$ 46	$ 879,673	$ -	$ -	$ 879,673	
Backfill	CY	17,995	$ 44	$ 791,772	$ -	$ -	$ 791,772	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	85	$ 4,500	$ 382,500	$ -	$ -	$ 382,500	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	
Pavement Restoration	SF	53,391	$ 11	$ 587,304	$ -	$ -	$ 587,304	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	719	$ 30	$ 21,555	$ -	$ -	$ 21,555	
Bedding	CY	24	$ 77	$ 1,848	$ -	$ -	$ 1,848	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	6,467	$ 46	$ 297,461	$ -	$ -	$ 297,461	
Backfill	CY	719	$ 44	$ 31,614	$ -	$ -	$ 31,614	Assumed to backfill all excavation (ignoring pipe volume)
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
3 ft Concrete Pipe	LF	209	$ 500	$ 104,299	$ -	$ -	$ 104,299	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	Additional manhole for anticipated 90 deg bend
Satellite Storage Conveyance 2								
Excavation	CY	721	$ 30	$ 21,634	$ -	$ -	$ 21,634	
Bedding	CY	24	$ 77	$ 1,848	$ -	$ -	$ 1,848	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	6,490	$ 46	$ 298,546	$ -	$ -	$ 298,546	
Backfill	CY	721	$ 44	$ 31,730	$ -	$ -	$ 31,730	Assumed to backfill all excavation (ignoring pipe volume)
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
3 ft Concrete Pipe	LF	209	$ 500	$ 104,680	$ -	$ -	$ 104,680	
Cut Access into Main Interceptor	EA	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	Additional manhole for anticipated 90 deg bend
Inlet and Outlet Gates								
Inlet 4' Gate	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	
Outlet 4' Gate	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	

Subtotal	$	**16,400,000**
Electrical, Controls and Instrumentation (15%)	$	**2,500,000**
Utility Relocation / Coordination (5%)	$	**800,000**
MPT (5%)	$	**800,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	$	**1,000,000**
Base Probable Construction Cost (Rounded)	$	**21,500,000**
Contingency (40%)	$	**8,600,000**
Total Probable Construction Cost	$	**30,100,000**
Total Probable Construction Cost per Gallon	$	**11.76**

(1) For items without installation cost, installation cost is included in material price
(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency

CSO026_1.3 Collins Park - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Gravity Dewatering

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Gravity Dewatering					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Water for Tipping Buckets	38.63	1000 cft	$ 22.83	$ 882	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	26	hr	$ 43.73	$ 1,137	2 instrument techs @ 0.25 hour per week
Annual Maintenance Labor (clean tank)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
ANNUAL LABOR AND UTILITY TOTAL				$ 32,523	
Millwright's Truck	104	hour	$ 20.00	$ 2,080	1 Millwright's Truck ($150,000, 5 year life) @ 104 hours per year (weekly check) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 500.00	$ 500	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 10,490	
				Total Cost	
Rehabilitation Expenses					
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 382,500.00	$ 382,500	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches

CSO026_1.3 Collins Park - OLS Tank with Gravity Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank Operation and Maintenance										
Year	Annual Labor and Electrical Cost	Labor Cost	Labor Cost	Labor Cost	Annual Parts Cost	Rehab Cost	Rehab Cost	Rehab Cost	Rehab Cost	Total Annual	PW
(n)	(Prev. maint.)[1,2]	(2 yr. maint.)[1,2]	(5 yr. maint.)[1,2]	(25 yr. maint.)[1,2]	(Prev. maint.)[2]	(2 yr. maint.)[2]	(5 yr. maint.)[2]	(20 yr. maint.)[2]	(25 yr. maint.)[2]	Cost	Cost[3]
0											
1	$ 33,986				$ 10,962					$ 44,949	$ 42,808
2	$ 35,516				$ 11,456					$ 46,971	$ 42,604
3	$ 37,114				$ 11,971					$ 49,085	$ 42,401
4	$ 38,784				$ 12,510					$ 51,294	$ 42,200
5	$ 40,529				$ 13,073		$ 18,693			$ 72,295	$ 56,645
6	$ 42,353				$ 13,661					$ 56,014	$ 41,799
7	$ 44,259				$ 14,276					$ 58,535	$ 41,600
8	$ 46,251				$ 14,918					$ 61,169	$ 41,401
9	$ 48,332				$ 15,590					$ 63,921	$ 41,204
10	$ 50,507				$ 16,291		$ 23,295			$ 90,092	$ 55,309
11	$ 52,780				$ 17,024					$ 69,804	$ 40,813
12	$ 55,155				$ 17,790					$ 72,945	$ 40,619
13	$ 57,637				$ 18,591					$ 76,228	$ 40,425
14	$ 60,230				$ 19,427					$ 79,658	$ 40,233
15	$ 62,941				$ 20,302		$ 29,029			$ 112,272	$ 54,005
16	$ 65,773				$ 21,215					$ 86,988	$ 39,850
17	$ 68,733				$ 22,170					$ 90,903	$ 39,661
18	$ 71,826				$ 23,168					$ 94,993	$ 39,472
19	$ 75,058				$ 24,210					$ 99,268	$ 39,284
20	$ 78,436				$ 25,299		$ 36,176	$ 922,481		$ 1,062,391	$ 400,404
21	$ 81,965				$ 26,438					$ 108,403	$ 38,911
22	$ 85,654				$ 27,628					$ 113,281	$ 38,725
23	$ 89,508				$ 28,871					$ 118,379	$ 38,541
24	$ 93,536				$ 30,170					$ 123,706	$ 38,357
25	$ 97,745			$ 150,272	$ 31,528		$ 45,082		$ 150,272	$ 474,898	$ 140,239
26	$ 102,144				$ 32,947					$ 135,090	$ 37,993
27	$ 106,740				$ 34,429					$ 141,169	$ 37,812
28	$ 111,543				$ 35,978					$ 147,522	$ 37,632
29	$ 116,563				$ 37,597					$ 154,160	$ 37,453
30	$ 121,808				$ 39,289		$ 56,180			$ 217,277	$ 50,273
31	$ 127,290				$ 41,057					$ 168,347	$ 37,097
32	$ 133,018				$ 42,905					$ 175,922	$ 36,920
33	$ 139,003				$ 44,836					$ 183,839	$ 36,744
34	$ 145,258				$ 46,853					$ 192,112	$ 36,569
35	$ 151,795				$ 48,962		$ 70,010			$ 270,767	$ 49,087
36	$ 158,626				$ 51,165					$ 209,791	$ 36,222
37	$ 165,764				$ 53,467					$ 219,231	$ 36,049
38	$ 173,223				$ 55,873					$ 229,097	$ 35,878
39	$ 181,018				$ 58,388					$ 239,406	$ 35,707
40	$ 189,164				$ 61,015		$ 87,245	$ 2,224,759		$ 2,562,184	$ 363,947
41	$ 197,677				$ 63,761					$ 261,438	$ 35,368
42	$ 206,572				$ 66,630					$ 273,202	$ 35,199
43	$ 215,868				$ 69,628					$ 285,496	$ 35,032
44	$ 225,582				$ 72,762					$ 298,344	$ 34,865
45	$ 235,733				$ 76,036		$ 108,724			$ 420,493	$ 46,799
46	$ 246,341				$ 79,458					$ 325,799	$ 34,534
47	$ 257,427				$ 83,033					$ 340,460	$ 34,369
48	$ 269,011				$ 86,770					$ 355,780	$ 34,205
49	$ 281,116				$ 90,674					$ 371,791	$ 34,043
50	$ 293,766			$ 451,632	$ 94,755		$ 135,490		$ 451,632	$ 1,427,274	$ 124,464
											$ 2,871,770

1. Labor Rates are calculated on Life Cycle Costs worksheet
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_n(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate,^{Year} = $F / (1 + i)^n$

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Hopkins & Osage OLS/Osage St. Park OLS

1/17/2022 **v3.4.0** **0.95** **MG**

Description	Material				Installation [1]		Total Cost [2]	Notes
	Basis	No. Units	Per Unit	Subtotal	Per Unit	Subtotal		
Satellite Storage								
Land Acquisition	Acres	0.4	$ 100,000	$ 36,447	$ -	$ -	$ 36,447	Assumed equal to site clearing quantity. COB property/paper street
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	15,876	$ 3	$ 42,866	$ -	$ -	$ 42,866	SF of tank + 25%
Excavation	CY	12,383	$ 30	$ 371,504	$ -	$ -	$ 371,504	
Rock Excavation	CY	0	$ 200	$ -	$ -	$ -	$ -	
Piles / Foundation	LS	1	$ 500,000	$ 500,000	$ -	$ -	$ 500,000	
Bedding	CY	1,176	$ 77	$ 90,553	$ -	$ -	$ 90,553	
Structural Concrete	CY	2,103	$ 1,600	$ 3,364,288	$ -	$ -	$ 3,364,288	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	10,367	$ 46	$ 476,899	$ -	$ -	$ 476,899	
Backfill	CY	7,679	$ 44	$ 337,894	$ -	$ -	$ 337,894	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	85	$ 4,500	$ 382,500	$ -	$ -	$ 382,500	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 200,000	$ 200,000	$ -	$ -	$ 200,000	For misc site and pipe trench restoration
Grass Restoration	SY	1,764	$ 9	$ 15,876	$ -	$ -	$ 15,876	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	1,601	$ 30	$ 48,038	$ -	$ -	$ 48,038	
Bedding	CY	39	$ 77	$ 3,003	$ -	$ -	$ 3,003	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	14,411	$ 46	$ 662,921	$ -	$ -	$ 662,921	
Backfill	CY	14,411	$ 44	$ 634,098	$ -	$ -	$ 634,098	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
3 ft Concrete Pipe	LF	342	$ 500	$ 171,075	$ -	$ -	$ 171,075	Unit price is for 3.5 ft pipe
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	
Inlet and Outlet Gates								
4 ft Inlet RTC Gate	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	Broadway Oak RTC gates $100,000 each
		0	$ -	$ -	$ -	$ -	$ -	
Satellite Storage Force Main								
Excavation	CY	3,068	$ 30	$ 92,047	$ -	$ -	$ 92,047	
Bedding	CY	73	$ 77	$ 5,621	$ -	$ -	$ 5,621	
Backfill	CY	3,068	$ 44	$ 135,003	$ -	$ -	$ 135,003	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
Cut Access into Main Interceptor	EA	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	
Pig Launcher	EA	1	$ 50,000	$ 50,000	$ -	$ -	$ 50,000	
6" ID Pipe	LF	1,124	$ 125	$ 140,487	$ -	$ -	$ 140,487	
Satellite Storage Pump Station								
Pumps	EA	2	$ 54,000	$ 108,000	$ 27,000	$ 54,000	$ 162,000	
Pump Station Building	SF	100	$ 2,000	$ 200,000		$ -	$ 200,000	
Piles / Foundation	LS	1	$ 100,000	$ 100,000		$ -	$ 100,000	
Piping in Tank (Including Bends)	LF	50	$ 500	$ 25,000		$ -	$ 25,000	
Check Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Gate Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Wet Well Isolation Gates	EA	2	$ 50,000	$ 100,000	$ 13,500	$ 27,000	$ 127,000	
Misc Metals (Grating, Handrail, Monorails, Etc.)	LS	1	$ 150,000	$ 150,000	$ -	$ -	$ 150,000	
Start-up and testing	LS	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	
SPP Modifications								
Raise SPP123A Weir	LS	1	$ 50,000	$ 50,000	$ -	$ -	$ 50,000	
		0		$ -	$ -	$ -	$ -	

Subtotal	$	**9,600,000**
Electrical, Controls and Instrumentation (15%)	$	**1,400,000**
Utility Relocation / Coordination (5%)	$	**500,000**
MPT (5%)	$	**500,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	$	**600,000**
Base Probable Construction Cost (Rounded)	$	**12,600,000**
Contingency (40%)	$	**5,040,000**
Total Probable Construction Cost	$	**17,640,000**
Total Probable Construction Cost per Gallon	$	**18.57**

(1) For items without installation cost, installation cost is included in material price.

(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency.

CSO028_1 Hopkins & Osage - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Dewatering Pumps

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Dewatering Pumps					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Electrical Demands					
Dewatering Pumps (assumed 50 HP)	948	kWh	$ 0.14	$ 11,800	Based on activations per year, running 24 hours/activation, ME 85%, ML 90%
					Input kW = HP x Quantity x Motor Load (ML) x 0.746 / Motor Efficiency (ME)
Water for Tipping Buckets	101.13	1000 cft	$ 22.83	$ 2,309	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 43.73	$ 4,547	2 instrument techs @ 1 hour per week
Biweekly Yards and Grounds Maintenance	104	hr	$ 33.00	$ 3,432	2 laborers @ 2 hrs biweekly
Quarterly Maintenance	64	hr	$ 43.73	$ 2,798	1 millwright @ 2 days per quarter
	64	hr	$ 37.31	$ 2,388	1 millwright's helper @ 2 days per quarter
	64	hr	$ 33.00	$ 2,112	1 laborer @ 2 days per quarter
Annual Maintenance Labor (clean tank / pigging FM)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
Annual Property Maintenance	1	LS	$ 2,500.00	$ 2,500	Fence repair, landscaping upkeep
ANNUAL LABOR AND UTILITY TOTAL				$ 62,390	
Millwright's Truck	168	hour	$ 20.00	$ 3,360	1 Millwright's Truck ($150,000, 5 year life) @ 168 hours per year (weekly check plus quarterly maintenance) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 1,000.00	$ 1,000	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 12,270	
				Total Cost	
Rehabilitation Expenses					
Minor Pump Rehabilitation Labor (every 2 years)	10	hr	$ 43.73	$ 437	Assumes 5 hours for 2 millwrights
Minor Pump Rehabilitation Parts (every 2 years)	1	LS	$ 1,000.00	$ 1,000	Allowance for seals and other wearing parts.
Major Pump Rehabilitation Labor (every 5 years)	48	hr	$ 43.73	$ 2,099	3 days for 2 millwrights
Major Pump Rehabilitation Parts (every 5 years)	1	LS	$ 7,500.00	$ 7,500	Assumed centrifugal pump. Allowance for bearings, impellers, full pump end work.
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Electrical Replacement Parts (every 5 years)	1	LS	$ 300.00	$ 300	Breakers, relays
Minor Electrical De-Energized Maintenance and IR scans (every 5 years)	16	hr	$ 105.29	$ 1,685	1 day electrical maintenance (assuming breakers can be fully isolated for de-energized maintenance; no generator required). IR Scan 2 people, 1 day @ $105.29/hr.
PS Building Minor Maintenance (every 10 years)	1	LS	$ 5,000.00	$ 5,000	Painting, other property maintenance
PS HVAC Equipment Replacement (every 10 years)	1	LS	$ 100,000.00	$ 100,000	In line with Babcock PS
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 382,500.00	$ 382,500	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Pump Replacement (at year 25)	1	LS	$ 162,000.00	$ 162,000	Includes motor
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches
MCC Cabinet Replacement (every 30 years)	1	LS	$ 10,000.00	$ 10,000	New buckets
PS Building Rehabilitation (every 30 years)	1	LS	$ 15,000.00	$ 15,000	Roof and window replacement

CSO028_1 Hopkins & Osage - OLS Tank with Pumped Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank and Pump Maintenance												
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Rehab Cost (30 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0													
1	$ 65,198				$ 12,822							$ 78,020	$ 74,305
2	$ 68,131	$ 477			$ 13,399	$ 1,092						$ 83,100	$ 75,375
3	$ 71,197				$ 14,002							$ 85,200	$ 73,599
4	$ 74,401	$ 521			$ 14,633	$ 1,193						$ 90,748	$ 74,658
5	$ 77,749		$ 4,715		$ 15,291		$ 28,413					$ 126,168	$ 98,856
6	$ 81,248	$ 569			$ 15,979	$ 1,302						$ 99,099	$ 73,949
7	$ 84,904				$ 16,698							$ 101,602	$ 72,207
8	$ 88,725	$ 622			$ 17,450	$ 1,422						$ 108,218	$ 73,246
9	$ 92,718				$ 18,235							$ 110,952	$ 71,521
10	$ 96,890	$ 679	$ 5,876		$ 19,055	$ 1,553	$ 35,408	$ 163,062				$ 322,522	$ 198,001
11	$ 101,250				$ 19,913							$ 121,163	$ 70,841
12	$ 105,806	$ 742			$ 20,809	$ 1,696						$ 129,052	$ 71,861
13	$ 110,567				$ 21,745							$ 132,313	$ 70,168
14	$ 115,543	$ 810			$ 22,724	$ 1,852						$ 140,928	$ 71,178
15	$ 120,742		$ 7,322		$ 23,746		$ 44,124					$ 195,935	$ 94,248
16	$ 126,176	$ 884			$ 24,815	$ 2,022						$ 153,897	$ 70,502
17	$ 131,854				$ 25,932							$ 157,785	$ 68,841
18	$ 137,787	$ 966			$ 27,099	$ 2,208						$ 168,060	$ 69,832
19	$ 143,987				$ 28,318							$ 172,305	$ 68,187
20	$ 150,467	$ 1,055	$ 9,125		$ 29,592	$ 2,412	$ 54,987	$ 253,230	$ 922,481			$ 1,423,348	$ 536,445
21	$ 157,238				$ 30,924							$ 188,162	$ 67,539
22	$ 164,314	$ 1,152			$ 32,316	$ 2,634						$ 200,414	$ 68,512
23	$ 171,708				$ 33,770							$ 205,478	$ 66,898
24	$ 179,435	$ 1,258			$ 35,289	$ 2,876						$ 218,858	$ 67,861
25	$ 187,509		$ 11,371	$ 150,272	$ 36,877		$ 68,524			$ 637,152		$ 1,091,705	$ 322,384
26	$ 195,947	$ 1,373			$ 38,537	$ 3,141						$ 238,998	$ 67,216
27	$ 204,765				$ 40,271							$ 245,036	$ 65,632
28	$ 213,979	$ 1,500			$ 42,083	$ 3,430						$ 260,992	$ 66,577
29	$ 223,608				$ 43,977							$ 267,585	$ 65,009
30	$ 233,670	$ 1,638	$ 14,170		$ 45,956	$ 3,745	$ 85,393	$ 393,258			$ 93,633	$ 777,831	$ 179,973
31	$ 244,186				$ 48,024							$ 292,210	$ 64,391
32	$ 255,174	$ 1,788			$ 50,185	$ 4,090						$ 311,237	$ 65,318
33	$ 266,657				$ 52,443							$ 319,100	$ 63,779
34	$ 278,656	$ 1,953			$ 54,803	$ 4,466						$ 339,879	$ 64,698
35	$ 291,196		$ 17,659		$ 57,270		$ 106,416					$ 472,540	$ 85,667
36	$ 304,300	$ 2,133			$ 59,847	$ 4,877						$ 371,156	$ 64,083
37	$ 317,993				$ 62,540							$ 380,533	$ 62,573
38	$ 332,303	$ 2,329			$ 65,354	$ 5,326						$ 405,312	$ 63,474
39	$ 347,257				$ 68,295							$ 415,552	$ 61,979
40	$ 362,883	$ 2,543	$ 22,006		$ 71,368	$ 5,816	$ 132,613	$ 610,718	$ 2,224,759			$ 3,432,708	$ 487,601
41	$ 379,213				$ 74,580							$ 453,793	$ 61,390
42	$ 396,277	$ 2,777			$ 77,936	$ 6,352						$ 483,342	$ 62,274
43	$ 414,110				$ 81,443							$ 495,553	$ 60,807
44	$ 432,745	$ 3,033			$ 85,108	$ 6,936						$ 527,822	$ 61,682
45	$ 452,218		$ 27,423		$ 88,938		$ 165,260					$ 733,840	$ 81,674
46	$ 472,568	$ 3,312			$ 92,940	$ 7,574						$ 576,395	$ 61,096
47	$ 493,834				$ 97,122							$ 590,956	$ 59,657
48	$ 516,056	$ 3,617			$ 101,493	$ 8,271						$ 629,437	$ 60,515
49	$ 539,279				$ 106,060							$ 645,339	$ 59,090
50	$ 563,546	$ 3,950	$ 34,174		$ 110,833	$ 9,033	$ 205,944	$ 948,427		$ 1,914,919		$ 3,790,826	$ 330,574
													$ 5,097,750

1. Labor Rates are calculated on Life Cycle Costs worksheet
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_0(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate,^{Year} = $F / (1 + i)^n$

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Bailey & Regent OLS (Moreland Park)

1/17/2022 **v3.4.0** **4.50** **MG**

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Installation [1] Per Unit	Installation [1] Subtotal	Total Cost [2]	Notes
Satellite Storage								
Land Acquisition	Acres	2	$ 100,000	$ 208,318	$ -	$ -	$ 208,318	Area equal to site clearing area. Property owned by COB police
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	90,744	$ 3	$ 245,008	$ -	$ -	$ 245,008	SF of tank + 25%
Excavation	CY	40,331	$ 30	$ 1,209,917	$ -	$ -	$ 1,209,917	
Rock Excavation	CY	30,752	$ 200	$ 6,150,410	$ -	$ -	$ 6,150,410	
Piles / Foundation	LS	0	$ 500,000	$ -	$ -	$ -	$ -	Piles not required on bedrock
Bedding	CY	6,722	$ 77	$ 517,575	$ -	$ -	$ 517,575	
Structural Concrete	CY	11,126	$ 1,200	$ 13,351,396	$ -	$ -	$ 13,351,396	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	24,094	$ 46	$ 1,108,334	$ -	$ -	$ 1,108,334	
Backfill	CY	48,766	$ 44	$ 2,145,720	$ -	$ -	$ 2,145,720	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	240	$ 4,500	$ 1,080,000	$ -	$ -	$ 1,080,000	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 200,000	$ 200,000	$ -	$ -	$ 200,000	misc site and pipe trench restoration
Grass Restoration	SY	10,083	$ 9	$ 90,744	$ -	$ -	$ 90,744	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	1,179	$ 30	$ 35,365	$ -	$ -	$ 35,365	
Bedding	CY	28	$ 77	$ 2,156	$ -	$ -	$ 2,156	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	7,957	$ 46	$ 366,024	$ -	$ -	$ 366,024	
Backfill	CY	1,179	$ 44	$ 51,868	$ -	$ -	$ 51,868	Assumed equal to excavation quantity
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
5 ft Concrete Pipe	LF	188	$ 900	$ 169,299	$ -	$ -	$ 169,299	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	1	$ 3,100	$ 3,100	$ -	$ -	$ 3,100	
Inlet and Outlet Gates								
6 ft Diameter Inlet Gate	EA	1	$ 150,000	$ 150,000	$ -	$ -	$ 150,000	Broadway Oak RTC gates $100,000 each
			$ -	$ -	$ -	$ -	$ -	
Satellite Storage Force Main								
Excavation	CY	1,350	$ 30	$ 40,508	$ -	$ -	$ 40,508	
Bedding	CY	32	$ 77	$ 2,464	$ -	$ -	$ 2,464	
Backfill	CY	1,350	$ 44	$ 59,412	$ -	$ -	$ 59,412	Assumed equal to excavation quantity
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
Cut Access into Main Interceptor	EA	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	
Pig Launcher	EA	1	$ 75,000	$ 75,000	$ -	$ -	$ 75,000	
14" ID Pipe	LF	414	$ 174	$ 71,984	$ -	$ -	$ 71,984	
Satellite Storage Pump Station								
Pumps	EA	2	$ 65,000	$ 130,000	$ 27,000	$ 54,000	$ 184,000	4.5 MGD dewatering capacity needed
Pump Station Building	SF	100	$ 2,000	$ 200,000		$ -	$ 200,000	
Piles / Foundation	LS	1	$ 100,000	$ 100,000		$ -	$ 100,000	
Piping in Tank (Including Bends)	LF	50	$ 500	$ 25,000		$ -	$ 25,000	
Check Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Gate Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Wet Well Isolation Gates	EA	2	$ 50,000	$ 100,000	$ 13,500	$ 27,000	$ 127,000	
Misc Metals (Grating, Handrail, Monorails, Etc.	LS	1	$ 150,000	$ 150,000	$ -	$ -	$ 150,000	
Start-up and testing	LS	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	

Subtotal	**$ 29,100,000**
Electrical, Controls and Instrumentation (15%)	**$ 4,400,000**
Utility Relocation / Coordination (5%)	**$ 1,500,000**
MPT (5%)	**$ 1,500,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	**$ 1,800,000**
Base Probable Construction Cost (Rounded)	**$ 38,300,000**
Contingency (40%)	**$ 15,320,000**
Total Probable Construction Cost	**$ 53,620,000**
Total Probable Construction Cost per Gallon	**$ 11.92**

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency.

CSO033_1 Bailey & Regent - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Dewatering Pumps

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Dewatering Pumps					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Electrical Demands					
Dewatering Pumps (assumed 50 HP)	948	kWh	$ 0.14	$ 10,700	Based on activations per year, running 24 hours/activation, ME 85%, ML 90%
					Input kW = HP x Quantity x Motor Load (ML) x 0.746 / Motor Efficiency (ME)
Water for Tipping Buckets	259.88	1000 cft	$ 22.83	$ 5,933	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 43.73	$ 4,547	2 instrument techs @ 1 hour per week
Biweekly Yards and Grounds Maintenance	104	hr	$ 33.00	$ 3,432	2 laborers @ 2 hrs biweekly
Quarterly Maintenance	64	hr	$ 43.73	$ 2,798	1 millwright @ 2 days per quarter
	64	hr	$ 37.31	$ 2,388	1 millwright's helper @ 2 days per quarter
	64	hr	$ 33.00	$ 2,112	1 laborer @ 2 days per quarter
Annual Maintenance Labor (clean tank / pigging FM)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
Annual Property Maintenance	1	LS	$ 2,500.00	$ 2,500	Fence repair, landscaping upkeep
ANNUAL LABOR AND UTILITY TOTAL				$ 64,914	
Millwright's Truck	168	hour	$ 20.00	$ 3,360	1 Millwright's Truck ($150,000, 5 year life) @ 168 hours per year (weekly check plus quarterly maintenance) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 1,000.00	$ 1,000	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 12,270	
				Total Cost	
Rehabilitation Expenses					
Minor Pump Rehabilitation Labor (every 2 years)	10	hr	$ 43.73	$ 437	Assumes 5 hours for 2 millwrights
Minor Pump Rehabilitation Parts (every 2 years)	1	LS	$ 1,000.00	$ 1,000	Allowance for seals and other wearing parts.
Major Pump Rehabilitation Labor (every 5 years)	48	hr	$ 43.73	$ 2,099	3 days for 2 millwrights
Major Pump Rehabilitation Parts (every 5 years)	1	LS	$ 7,500.00	$ 7,500	Assumed centrifugal pump. Allowance for bearings, impellers, full pump end work.
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Electrical Replacement Parts (every 5 years)	1	LS	$ 300.00	$ 300	Breakers, relays
Minor Electrical De-Energized Maintenance and IR scans (every 5 years)	16	hr	$ 105.29	$ 1,685	1 day electrical maintenance (assuming breakers can be fully isolated for de-energized maintenance; no generator required). IR Scan 2 people, 1 day @ $105.29/hr.
PS Building Minor Maintenance (every 10 years)	1	LS	$ 5,000.00	$ 5,000	Painting, other property maintenance
PS HVAC Equipment Replacement (every 10 years)	1	LS	$ 100,000.00	$ 100,000	In line with Babcock PS
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 1,080,000.00	$ 1,080,000	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Pump Replacement (at year 25)	1	LS	$ 184,000.00	$ 184,000	Includes motor
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches
MCC Cabinet Replacement (every 30 years)	1	LS	$ 10,000.00	$ 10,000	New buckets
PS Building Rehabilitation (every 30 years)	1	LS	$ 15,000.00	$ 15,000	Roof and window replacement

CSO033_1 Bailey & Regent - OLS Tank with Pumped Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank and Pump Maintenance												
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Rehab Cost (30 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0													
1	$ 67,835				$ 12,822							$ 80,658	$ 76,817
2	$ 70,888	$ 477			$ 13,399	$ 1,092						$ 85,857	$ 77,875
3	$ 74,078				$ 14,002							$ 88,080	$ 76,087
4	$ 77,411	$ 521			$ 14,633	$ 1,193						$ 93,758	$ 77,135
5	$ 80,895		$ 4,715		$ 15,291		$ 28,413					$ 129,314	$ 101,321
6	$ 84,535	$ 569			$ 15,979	$ 1,302						$ 102,386	$ 76,402
7	$ 88,339				$ 16,698							$ 105,037	$ 74,648
8	$ 92,315	$ 622			$ 17,450	$ 1,422						$ 111,808	$ 75,676
9	$ 96,469				$ 18,235							$ 114,703	$ 73,939
10	$ 100,810	$ 679	$ 5,876		$ 19,055	$ 1,553	$ 35,408	$ 163,062				$ 326,442	$ 200,407
11	$ 105,346				$ 19,913							$ 125,259	$ 73,236
12	$ 110,087	$ 742			$ 20,809	$ 1,696						$ 133,333	$ 74,245
13	$ 115,041				$ 21,745							$ 136,786	$ 72,541
14	$ 120,217	$ 810			$ 22,724	$ 1,852						$ 145,603	$ 73,539
15	$ 125,627		$ 7,322		$ 23,746		$ 44,124					$ 200,820	$ 96,598
16	$ 131,281	$ 884			$ 24,815	$ 2,022						$ 159,002	$ 72,841
17	$ 137,188				$ 25,932							$ 163,120	$ 71,169
18	$ 143,362	$ 966			$ 27,099	$ 2,208						$ 173,634	$ 72,149
19	$ 149,813				$ 28,318							$ 178,131	$ 70,492
20	$ 156,554	$ 1,055	$ 9,125		$ 29,592	$ 2,412	$ 54,987	$ 253,230	$ 2,604,651			$ 3,111,606	$ 1,172,732
21	$ 163,599				$ 30,924							$ 194,523	$ 69,823
22	$ 170,961	$ 1,152			$ 32,316	$ 2,634						$ 207,062	$ 70,784
23	$ 178,655				$ 33,770							$ 212,424	$ 69,159
24	$ 186,694	$ 1,258			$ 35,289	$ 2,876						$ 226,117	$ 70,112
25	$ 195,095		$ 11,371	$ 150,272	$ 36,877		$ 68,524			$ 703,272		$ 1,165,411	$ 344,149
26	$ 203,875	$ 1,373			$ 38,537	$ 3,141						$ 246,925	$ 69,446
27	$ 213,049				$ 40,271							$ 253,320	$ 67,851
28	$ 222,636	$ 1,500			$ 42,083	$ 3,430						$ 269,649	$ 68,786
29	$ 232,655				$ 43,977							$ 276,632	$ 67,207
30	$ 243,124	$ 1,638	$ 14,170		$ 45,956	$ 3,745	$ 85,393	$ 393,258			$ 93,633	$ 880,918	$ 203,825
31	$ 254,065				$ 48,024							$ 302,089	$ 66,568
32	$ 265,498	$ 1,788			$ 50,185	$ 4,090						$ 321,561	$ 67,485
33	$ 277,445				$ 52,443							$ 329,889	$ 65,936
34	$ 289,930	$ 1,953			$ 54,803	$ 4,466						$ 351,153	$ 66,844
35	$ 302,977		$ 17,659		$ 57,270		$ 106,416					$ 484,321	$ 87,803
36	$ 316,611	$ 2,133			$ 59,847	$ 4,877						$ 383,468	$ 66,209
37	$ 330,859				$ 62,540							$ 393,398	$ 64,689
38	$ 345,747	$ 2,329			$ 65,354	$ 5,326						$ 418,756	$ 65,579
39	$ 361,306				$ 68,295							$ 429,601	$ 64,074
40	$ 377,565	$ 2,543	$ 22,006		$ 71,368	$ 5,816	$ 132,613	$ 610,718	$ 6,281,674			$ 7,504,303	$ 1,065,954
41	$ 394,555				$ 74,580							$ 469,135	$ 63,465
42	$ 412,310	$ 2,777			$ 77,936	$ 6,352						$ 499,375	$ 64,339
43	$ 430,864				$ 81,443							$ 512,307	$ 62,862
44	$ 450,253	$ 3,033			$ 85,108	$ 6,936						$ 545,330	$ 63,728
45	$ 470,514		$ 27,423		$ 88,938		$ 165,260					$ 752,135	$ 83,710
46	$ 491,687	$ 3,312			$ 92,940	$ 7,574						$ 595,514	$ 63,122
47	$ 513,813				$ 97,122							$ 610,936	$ 61,673
48	$ 536,935	$ 3,617			$ 101,493	$ 8,271						$ 650,316	$ 62,523
49	$ 561,097				$ 106,060							$ 667,157	$ 61,087
50	$ 586,346	$ 3,950	$ 34,174	$ 451,632	$ 110,833	$ 9,033	$ 205,944	$ 948,427		$ 2,113,637		$ 4,463,975	$ 389,275
													$ 6,517,920

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_a(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = F / (1 + i)^n

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Clinton St OLS/RTC

1/12/2022 **v3.4.0** **21.72** **MG capacity**

Description	Material				Installation [1]		Total Cost [2]	Notes
	Basis	No. Units	Per Unit	Subtotal	Per Unit	Subtotal		
Satellite Storage								
Land Acquisition	Acres	10.4	$ 100,000	$ 1,041,631	$ -	$ -	$ 1,041,631	Assumed equal to site clearing area. Parcel is COB-owned
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	453,736	$ 3	$ 1,225,088	$ -	$ -	$ 1,225,088	SF of tank + 25%
Excavation	CY	193,258	$ 30	$ 5,797,741	$ -	$ -	$ 5,797,741	
Rock Excavation	CY	0	$ 200	$ -	$ -	$ -	$ -	
Piles / Foundation	LS	1	$ 1,000,000	$ 1,000,000	$ -	$ -	$ 1,000,000	
Bedding	CY	33,610	$ 77	$ 2,587,977	$ -	$ -	$ 2,587,977	
Structural Concrete	CY	55,747	$ 1,200	$ 66,896,507	$ -	$ -	$ 66,896,507	Floor:wall ratio requires less formwork and lowers unit cost
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	36,466	$ 46	$ 1,677,418	$ -	$ -	$ 1,677,418	
Backfill	CY	85,706	$ 44	$ 3,771,052	$ -	$ -	$ 3,771,052	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	300	$ 4,500	$ 1,350,000	$ -	$ -	$ 1,350,000	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 200,000	$ 200,000	$ -	$ -	$ 200,000	
Grass Restoration	SY	50,415	$ 9	$ 453,736	$ -	$ -	$ 453,736	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	1,450	$ 30	$ 43,512	$ -	$ -	$ 43,512	
Bedding	CY	64	$ 77	$ 4,928	$ -	$ -	$ 4,928	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	8,702	$ 46	$ 400,308	$ -	$ -	$ 400,308	
Backfill	CY	1,450	$ 44	$ 63,817	$ -	$ -	$ 63,817	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
6 ft Concrete Pipe	LF	378	$ 1,000	$ 378,363	$ -	$ -	$ 378,363	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	
Satellite Storage Conveyance 2								
Excavation	CY	1,227	$ 30	$ 36,813	$ -	$ -	$ 36,813	
Bedding	CY	54	$ 77	$ 4,158	$ -	$ -	$ 4,158	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	11,044	$ 46	$ 508,016	$ -	$ -	$ 508,016	
Backfill	CY	1,227	$ 44	$ 53,992	$ -	$ -	$ 53,992	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
3 ft Concrete Pipe	LF	480	$ 500	$ 240,083	$ -	$ -	$ 240,083	
Cut Access into Main Interceptor	EA	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 5,954	$ -	$ -	$ 5,954	
Inlet and Outlet Gates								
6 ft Diameter RTC Gate	EA	1	$ 150,000	$ 150,000	$ -	$ -	$ 150,000	
4 ft Diameter RTC Gate	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	
Inlet Weir	EA	1	$ 50,000	$ 50,000	$ -	$ -	$ 50,000	

Subtotal	$	**89,000,000**
Electrical, Controls and Instrumentation (15%)	$	**13,400,000**
Utility Relocation / Coordination (5%)	$	**4,500,000**
MPT (5%)	$	**4,500,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	$	**5,600,000**
Base Probable Construction Cost (Rounded)	$	**117,000,000**
Contingency (40%)	$	**46,800,000**
Total Probable Construction Cost	$	**163,800,000**
Total Probable Construction Cost per Gallon	$	**7.54**

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency.

CSO033_2 Clinton St - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Gravity Dewatering

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Gravity Dewatering					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Water for Tipping Buckets	140.36	1000 cft	$ 22.83	$ 3,205	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	26	hr	$ 43.73	$ 1,137	2 instrument techs @ 0.25 hour per week
Annual Maintenance Labor (clean tank)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
ANNUAL LABOR AND UTILITY TOTAL				$ 34,845	
Millwright's Truck	104	hour	$ 20.00	$ 2,080	1 Millwright's Truck ($150,000, 5 year life) @ 104 hours per year (weekly check) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 500.00	$ 500	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 10,490	
				Total Cost	
Rehabilitation Expenses					
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 1,350,000.00	$ 1,350,000	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches

CSO033_2 Clinton St - OLS Tank with Gravity Dewatering

Assumed Interest Rate =	i =	5.0%
Assumed Inflation Rate =	I =	4.5%

	Tank Operation and Maintenance									
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (Prev. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0										
1	$ 36,413				$ 10,962				$ 47,376	$ 45,120
2	$ 38,052				$ 11,456				$ 49,508	$ 44,905
3	$ 39,764				$ 11,971				$ 51,735	$ 44,691
4	$ 41,554				$ 12,510				$ 54,063	$ 44,478
5	$ 43,424				$ 13,073	$ 18,693			$ 75,189	$ 58,913
6	$ 45,378				$ 13,661				$ 59,039	$ 44,056
7	$ 47,420				$ 14,276				$ 61,695	$ 43,846
8	$ 49,554				$ 14,918				$ 64,472	$ 43,637
9	$ 51,783				$ 15,590				$ 67,373	$ 43,429
10	$ 54,114				$ 16,291	$ 23,295			$ 93,699	$ 57,523
11	$ 56,549				$ 17,024				$ 73,573	$ 43,017
12	$ 59,093				$ 17,790				$ 76,884	$ 42,812
13	$ 61,753				$ 18,591				$ 80,343	$ 42,608
14	$ 64,532				$ 19,427				$ 83,959	$ 42,405
15	$ 67,435				$ 20,302	$ 29,029			$ 116,766	$ 56,167
16	$ 70,470				$ 21,215				$ 91,685	$ 42,002
17	$ 73,641				$ 22,170				$ 95,811	$ 41,802
18	$ 76,955				$ 23,168				$ 100,123	$ 41,603
19	$ 80,418				$ 24,210				$ 104,628	$ 41,405
20	$ 84,037				$ 25,299	$ 36,176	$ 3,255,814		$ 3,401,326	$ 1,281,924
21	$ 87,819				$ 26,438				$ 114,257	$ 41,012
22	$ 91,770				$ 27,628				$ 119,398	$ 40,816
23	$ 95,900				$ 28,871				$ 124,771	$ 40,622
24	$ 100,216				$ 30,170				$ 130,386	$ 40,428
25	$ 104,725			$ 150,272	$ 31,528	$ 45,082		$ 150,272	$ 481,878	$ 142,300
26	$ 109,438				$ 32,947				$ 142,384	$ 40,044
27	$ 114,363				$ 34,429				$ 148,792	$ 39,854
28	$ 119,509				$ 35,978				$ 155,487	$ 39,664
29	$ 124,887				$ 37,597				$ 162,484	$ 39,475
30	$ 130,507				$ 39,289	$ 56,180			$ 225,976	$ 52,286
31	$ 136,380				$ 41,057				$ 177,437	$ 39,100
32	$ 142,517				$ 42,905				$ 185,422	$ 38,914
33	$ 148,930				$ 44,836				$ 193,766	$ 38,728
34	$ 155,632				$ 46,853				$ 202,485	$ 38,544
35	$ 162,635				$ 48,962	$ 70,010			$ 281,607	$ 51,053
36	$ 169,954				$ 51,165				$ 221,119	$ 38,178
37	$ 177,602				$ 53,467				$ 231,069	$ 37,996
38	$ 185,594				$ 55,873				$ 241,467	$ 37,815
39	$ 193,945				$ 58,388				$ 252,333	$ 37,635
40	$ 202,673				$ 61,015	$ 87,245	$ 7,852,092		$ 8,203,026	$ 1,165,204
41	$ 211,793				$ 63,761				$ 275,554	$ 37,277
42	$ 221,324				$ 66,630				$ 287,954	$ 37,100
43	$ 231,283				$ 69,628				$ 300,912	$ 36,923
44	$ 241,691				$ 72,762				$ 314,453	$ 36,747
45	$ 252,567				$ 76,036	$ 108,724			$ 437,327	$ 48,673
46	$ 263,933				$ 79,458				$ 343,390	$ 36,398
47	$ 275,810				$ 83,033				$ 358,843	$ 36,225
48	$ 288,221				$ 86,770				$ 374,991	$ 36,052
49	$ 301,191				$ 90,674				$ 391,866	$ 35,881
50	$ 314,745			$ 451,632	$ 94,755	$ 135,490		$ 451,632	$ 1,448,253	$ 126,293
										$ 4,653,580

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

SPP 336B OLS (Sidney OLS)

1/17/2022 **v3.4.0** **2.62** **MG**

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Installation [1] Per Unit	Installation [1] Subtotal	Total Cost [2]	Notes
Satellite Storage								
Land Acquisition	Acres	0.5	$ 100,000	$ 50,218	$ -	$ -	$ 50,218	Assumed equal to site clearing quantity. COB perfecting title
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	21,875	$ 3	$ 59,063	$ -	$ -	$ 59,063	SF of tank + 25%
Excavation	CY	8,912	$ 30	$ 267,361	$ -	$ -	$ 267,361	
Rock Excavation	CY	22,280	$ 200	$ 4,456,019	$ -	$ -	$ 4,456,019	
Piles / Foundation	LS		$ 500,000	$ -	$ -	$ -	$ -	Piles not needed on bedrock
Bedding	CY	1,620	$ 77	$ 124,769	$ -	$ -	$ 124,769	
Structural Concrete	CY	2,990	$ 1,200	$ 3,588,016	$ -	$ -	$ 3,588,016	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	21,425	$ 46	$ 985,562	$ -	$ -	$ 985,562	
Backfill	CY	18,229	$ 44	$ 802,083	$ -	$ -	$ 802,083	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	125	$ 4,500	$ 562,500	$ -	$ -	$ 562,500	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 200,000	$ 200,000	$ -	$ -	$ 200,000	Misc site and pipe trench restoration
Grass Restoration	SY	2,431	$ 9	$ 21,875	$ -	$ -	$ 21,875	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	2,073	$ 30	$ 62,203	$ -	$ -	$ 62,203	
Bedding	CY	27	$ 77	$ 2,079	$ -	$ -	$ 2,079	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	15,995	$ 46	$ 735,769	$ -	$ -	$ 735,769	
Backfill	CY	2,073	$ 44	$ 91,231	$ -	$ -	$ 91,231	Equals excavation volume
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed included in excavation costs
4 ft Concrete Pipe	LF	208	$ 800	$ 166,182	$ -	$ -	$ 166,182	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	1	$ 3,100	$ 3,100	$ -	$ -	$ 3,100	
Satellite Storage Conveyance 2 / OLS Effluent to Collection System								
Excavation	CY	2,963	$ 30	$ 88,888	$ -	$ -	$ 88,888	
Bedding	CY	39	$ 77	$ 3,003	$ -	$ -	$ 3,003	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	26,666	$ 46	$ 1,226,658	$ -	$ -	$ 1,226,658	
Backfill	CY	2,963	$ 44	$ 130,369	$ -	$ -	$ 130,369	Equals excavation volume
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed included in excavation costs
3 ft Concrete Pipe	LF	346	$ 500	$ 173,159	$ -	$ -	$ 173,159	
Cut Access into Main Interceptor	EA	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	
Inlet and Outlet Gates								
4 ft Diameter Inlet and Outlet Gate	EA	2	$ 100,000	$ 200,000	$ -	$ -	$ 200,000	Broadway Oak RTC gates $100,000 each
			$ -	$ -	$ -	$ -	$ -	

Subtotal	**$**	**15,000,000**
Electrical, Controls and Instrumentation (15%)	**$**	**2,300,000**
Utility Relocation / Coordination (5%)	**$**	**800,000**
MPT (5%)	**$**	**800,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	**$**	**900,000**
Base Probable Construction Cost (Rounded)	**$**	**19,800,000**
Contingency (40%)	**$**	**7,920,000**
Total Probable Construction Cost	**$**	**27,720,000**
Total Probable Construction Cost per Gallon	**$**	**10.58**

(1) For items without installation cost, installation cost is included in material price

(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency

CSO053_1.4 - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Gravity Dewatering

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Gravity Dewatering					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Water for Tipping Buckets	68.51	1000 cft	$ 22.83	$ 1,564	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	26	hr	$ 43.73	$ 1,137	2 instrument techs @ 0.25 hour per week
Annual Maintenance Labor (clean tank)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
ANNUAL LABOR AND UTILITY TOTAL				$ 33,205	
Millwright's Truck	104	hour	$ 20.00	$ 2,080	1 Millwright's Truck ($150,000, 5 year life) @ 104 hours per year (weekly check) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 500.00	$ 500	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 10,490	
				Total Cost	
Rehabilitation Expenses					
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 562,500.00	$ 562,500	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches

CSO053_1.4 - OLS Tank with Gravity Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank Operation and Maintenance									
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (Prev. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0										
1	$ 34,699				$ 10,962				$ 45,661	$ 43,487
2	$ 36,261				$ 11,456				$ 47,716	$ 43,280
3	$ 37,892				$ 11,971				$ 49,863	$ 43,074
4	$ 39,597				$ 12,510				$ 52,107	$ 42,869
5	$ 41,379				$ 13,073	$ 18,693			$ 73,145	$ 57,311
6	$ 43,241				$ 13,661				$ 56,902	$ 42,461
7	$ 45,187				$ 14,276				$ 59,463	$ 42,259
8	$ 47,221				$ 14,918				$ 62,139	$ 42,058
9	$ 49,346				$ 15,590				$ 64,935	$ 41,858
10	$ 51,566				$ 16,291	$ 23,295			$ 91,152	$ 55,959
11	$ 53,887				$ 17,024				$ 70,911	$ 41,460
12	$ 56,312				$ 17,790				$ 74,102	$ 41,263
13	$ 58,846				$ 18,591				$ 77,436	$ 41,066
14	$ 61,494				$ 19,427				$ 80,921	$ 40,871
15	$ 64,261				$ 20,302	$ 29,029			$ 113,592	$ 54,640
16	$ 67,153				$ 21,215				$ 88,368	$ 40,482
17	$ 70,174				$ 22,170				$ 92,344	$ 40,290
18	$ 73,332				$ 23,168				$ 96,500	$ 40,098
19	$ 76,632				$ 24,210				$ 100,842	$ 39,907
20	$ 80,081				$ 25,299	$ 36,176	$ 1,356,589		$ 1,498,145	$ 564,635
21	$ 83,684				$ 26,438				$ 110,122	$ 39,528
22	$ 87,450				$ 27,628				$ 115,078	$ 39,339
23	$ 91,385				$ 28,871				$ 120,256	$ 39,152
24	$ 95,498				$ 30,170				$ 125,668	$ 38,966
25	$ 99,795			$ 150,272	$ 31,528	$ 45,082		$ 150,272	$ 476,948	$ 140,844
26	$ 104,286				$ 32,947				$ 137,232	$ 38,595
27	$ 108,979				$ 34,429				$ 143,408	$ 38,412
28	$ 113,883				$ 35,978				$ 149,861	$ 38,229
29	$ 119,008				$ 37,597				$ 156,605	$ 38,047
30	$ 124,363				$ 39,289	$ 56,180			$ 219,832	$ 50,864
31	$ 129,959				$ 41,057				$ 171,017	$ 37,685
32	$ 135,807				$ 42,905				$ 178,712	$ 37,506
33	$ 141,919				$ 44,836				$ 186,754	$ 37,327
34	$ 148,305				$ 46,853				$ 195,158	$ 37,149
35	$ 154,979				$ 48,962	$ 70,010			$ 273,951	$ 49,665
36	$ 161,953				$ 51,165				$ 213,118	$ 36,796
37	$ 169,241				$ 53,467				$ 222,708	$ 36,621
38	$ 176,856				$ 55,873				$ 232,730	$ 36,447
39	$ 184,815				$ 58,388				$ 243,203	$ 36,273
40	$ 193,132				$ 61,015	$ 87,245	$ 3,271,705		$ 3,613,097	$ 513,225
41	$ 201,823				$ 63,761				$ 265,583	$ 35,929
42	$ 210,905				$ 66,630				$ 277,535	$ 35,757
43	$ 220,395				$ 69,628				$ 290,024	$ 35,587
44	$ 230,313				$ 72,762				$ 303,075	$ 35,418
45	$ 240,677				$ 76,036	$ 108,724			$ 425,437	$ 47,350
46	$ 251,508				$ 79,458				$ 330,965	$ 35,081
47	$ 262,826				$ 83,033				$ 345,859	$ 34,914
48	$ 274,653				$ 86,770				$ 361,422	$ 34,748
49	$ 287,012				$ 90,674				$ 377,686	$ 34,582
50	$ 299,928			$ 451,632	$ 94,755	$ 135,490		$ 451,632	$ 1,433,435	$ 125,001
										$ 3,214,370

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate) ^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate) ^{Year} = $F / (1 + i)^n$

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Edison Martha OLS

1/17/2022 **v3.4.0** **2.61** **MG**

Description	Basis	Material No. Units	Material Per Unit	Material Subtotal	Installation [1] Per Unit	Installation [1] Subtotal	Total Cost [2]	Notes
Satellite Storage								
Land Acquisition	Acres	1.3	$ 100,000	$ 125,307	$ -	$ -	$ 125,307	Assumed equal to site clearing quantity. COB-owned (Roosevelt Park)
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	54,584	$ 3	$ 147,376	$ -	$ -	$ 147,376	SF of tank + 25%
Excavation	CY	40,432	$ 30	$ 1,212,972	$ -	$ -	$ 1,212,972	
Rock Excavation	CY	4,488	$ 200	$ 897,599		$ -	$ 897,599	
Piles / Foundation	LS		$ 500,000	$ -		$ -	$ -	Piles not needed on bedrock
Bedding	CY	4,043	$ 77	$ 311,330	$ -	$ -	$ 311,330	
Structural Concrete	CY	6,876	$ 1,600	$ 11,001,031	$ -	$ -	$ 11,001,031	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	21,740	$ 46	$ 1,000,032		$ -	$ 1,000,032	
Backfill	CY	31,982	$ 44	$ 1,407,210		$ -	$ 1,407,210	
Hauling	CY	0	$ 14	$ -		$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	130	$ 4,500	$ 585,000	$ -	$ -	$ 585,000	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 200,000	$ 200,000		$ -	$ 200,000	Misc site and pipe trench restoration
Grass Restoration	SY	6,065	$ 9	$ 54,584	$ -	$ -	$ 54,584	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	1,349	$ 30	$ 40,477	$ -	$ -	$ 40,477	
Bedding	CY	31	$ 77	$ 2,387	$ -	$ -	$ 2,387	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	14,572	$ 46	$ 670,292	$ -	$ -	$ 670,292	
Backfill	CY	1,349	$ 44	$ 59,366	$ -	$ -	$ 59,366	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
4 ft Concrete Pipe	LF	328	$ 800	$ 262,314	$ -	$ -	$ 262,314	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	
Satellite Storage Conveyance 2 / OLS Effluent to Collection System								
Excavation	CY	1,654	$ 30	$ 49,610	$ -	$ -	$ 49,610	
Bedding	CY	38	$ 77	$ 2,926	$ -	$ -	$ 2,926	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	17,859	$ 46	$ 821,535	$ -	$ -	$ 821,535	
Backfill	CY	1,654	$ 44	$ 72,761	$ -	$ -	$ 72,761	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
2 ft Concrete Pipe	LF	402	$ 450	$ 180,845	$ -	$ -	$ 180,845	
Cut Access into Main Interceptor	EA	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	
Inlet and Outlet Gates								
4 ft Inlet RTC Gate	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	Broadway Oak RTC gates $100,000 each
2 ft Outlet RTC Gate	EA	1	$ 60,000	$ 60,000	$ -	$ -	$ 60,000	

Subtotal	**$**	**20,300,000**
Electrical, Controls and Instrumentation (15%)	**$**	**3,000,000**
Utility Relocation / Coordination (5%)	**$**	**1,000,000**
MPT (5%)	**$**	**1,000,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	**$**	**1,300,000**
Base Probable Construction Cost (Rounded)	**$**	**26,600,000**
Contingency (40%)	**$**	**10,640,000**
Total Probable Construction Cost	**$**	**37,240,000**
Total Probable Construction Cost per Gallon	**$**	**14.27**

(1) For items without installation cost, installation cost is included in material price

(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency

CSO053_5.2 Edison Martha - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Gravity Dewatering

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Gravity Dewatering					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Water for Tipping Buckets	59.09	1000 cft	$ 22.83	$ 1,349	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	26	hr	$ 43.73	$ 1,137	2 instrument techs @ 0.25 hour per week
Annual Maintenance Labor (clean tank)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
ANNUAL LABOR AND UTILITY TOTAL				$ 32,990	
Millwright's Truck	104	hour	$ 20.00	$ 2,080	1 Millwright's Truck ($150,000, 5 year life) @ 104 hours per year (weekly check) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 500.00	$ 500	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 10,490	
				Total Cost	
Rehabilitation Expenses					
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 585,000.00	$ 585,000	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches

CSO053_5.2 Edison Martha - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Gravity Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank Operation and Maintenance									
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (Prev. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0										
1	$ 34,474				$ 10,962				$ 45,437	$ 43,273
2	$ 36,026				$ 11,456				$ 47,481	$ 43,067
3	$ 37,647				$ 11,971				$ 49,618	$ 42,862
4	$ 39,341				$ 12,510				$ 51,851	$ 42,658
5	$ 41,111				$ 13,073	$ 18,693			$ 72,877	$ 57,101
6	$ 42,961				$ 13,661				$ 56,622	$ 42,252
7	$ 44,894				$ 14,276				$ 59,170	$ 42,051
8	$ 46,915				$ 14,918				$ 61,833	$ 41,851
9	$ 49,026				$ 15,590				$ 64,615	$ 41,652
10	$ 51,232				$ 16,291	$ 23,295			$ 90,818	$ 55,754
11	$ 53,537				$ 17,024				$ 70,562	$ 41,256
12	$ 55,947				$ 17,790				$ 73,737	$ 41,059
13	$ 58,464				$ 18,591				$ 77,055	$ 40,864
14	$ 61,095				$ 19,427				$ 80,523	$ 40,669
15	$ 63,844				$ 20,302	$ 29,029			$ 113,175	$ 54,439
16	$ 66,717				$ 21,215				$ 87,933	$ 40,283
17	$ 69,720				$ 22,170				$ 91,890	$ 40,091
18	$ 72,857				$ 23,168				$ 96,025	$ 39,900
19	$ 76,136				$ 24,210				$ 100,346	$ 39,710
20	$ 79,562				$ 25,299	$ 36,176	$ 1,410,853		$ 1,551,890	$ 584,891
21	$ 83,142				$ 26,438				$ 109,580	$ 39,333
22	$ 86,883				$ 27,628				$ 114,511	$ 39,146
23	$ 90,793				$ 28,871				$ 119,664	$ 38,959
24	$ 94,879				$ 30,170				$ 125,049	$ 38,774
25	$ 99,148			$ 150,272	$ 31,528	$ 45,082		$ 150,272	$ 476,301	$ 140,653
26	$ 103,610				$ 32,947				$ 136,557	$ 38,405
27	$ 108,273				$ 34,429				$ 142,702	$ 38,222
28	$ 113,145				$ 35,978				$ 149,123	$ 38,040
29	$ 118,236				$ 37,597				$ 155,834	$ 37,859
30	$ 123,557				$ 39,289	$ 56,180			$ 219,026	$ 50,678
31	$ 129,117				$ 41,057				$ 170,174	$ 37,500
32	$ 134,927				$ 42,905				$ 177,832	$ 37,321
33	$ 140,999				$ 44,836				$ 185,835	$ 37,143
34	$ 147,344				$ 46,853				$ 194,197	$ 36,966
35	$ 153,975				$ 48,962	$ 70,010			$ 272,946	$ 49,483
36	$ 160,903				$ 51,165				$ 212,068	$ 36,615
37	$ 168,144				$ 53,467				$ 221,611	$ 36,441
38	$ 175,710				$ 55,873				$ 231,584	$ 36,267
39	$ 183,617				$ 58,388				$ 242,005	$ 36,095
40	$ 191,880				$ 61,015	$ 87,245	$ 3,402,573		$ 3,742,714	$ 531,636
41	$ 200,515				$ 63,761				$ 264,276	$ 35,752
42	$ 209,538				$ 66,630				$ 276,168	$ 35,581
43	$ 218,967				$ 69,628				$ 288,596	$ 35,412
44	$ 228,821				$ 72,762				$ 301,582	$ 35,243
45	$ 239,118				$ 76,036	$ 108,724			$ 423,877	$ 47,176
46	$ 249,878				$ 79,458				$ 329,336	$ 34,908
47	$ 261,123				$ 83,033				$ 344,156	$ 34,742
48	$ 272,873				$ 86,770				$ 359,643	$ 34,577
49	$ 285,152				$ 90,674				$ 375,827	$ 34,412
50	$ 297,984			$ 451,632	$ 94,755	$ 135,490		$ 451,632	$ 1,431,492	$ 124,831
										$ 3,243,860

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

CSO053_11 Canisius - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Gravity Dewatering

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Gravity Dewatering					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Water for Tipping Buckets	45.88	1000 cft	$ 22.83	$ 1,047	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	26	hr	$ 43.73	$ 1,137	2 instrument techs @ 0.25 hour per week
Annual Maintenance Labor (clean tank)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
ANNUAL LABOR AND UTILITY TOTAL				$ 32,688	
Millwright's Truck	104	hour	$ 20.00	$ 2,080	1 Millwright's Truck ($150,000, 5 year life) @ 104 hours per year (weekly check) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 500.00	$ 500	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 10,490	
				Total Cost	
Rehabilitation Expenses					
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 351,000.00	$ 351,000	Assumes 78 ft tank width and $4500/LF for tipping buckets. May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches

CSO053_11 Canisius - OLS Tank with Gravity Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank Operation and Maintenance									
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (Prev. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0										
1	$ 34,159				$ 10,962				$ 45,121	$ 42,973
2	$ 35,696				$ 11,456				$ 47,152	$ 42,768
3	$ 37,303				$ 11,971				$ 49,274	$ 42,565
4	$ 38,981				$ 12,510				$ 51,491	$ 42,362
5	$ 40,735				$ 13,073	$ 18,693			$ 72,501	$ 56,806
6	$ 42,569				$ 13,661				$ 56,230	$ 41,959
7	$ 44,484				$ 14,276				$ 58,760	$ 41,760
8	$ 46,486				$ 14,918				$ 61,404	$ 41,561
9	$ 48,578				$ 15,590				$ 64,167	$ 41,363
10	$ 50,764				$ 16,291	$ 23,295			$ 90,349	$ 55,467
11	$ 53,048				$ 17,024				$ 70,072	$ 40,970
12	$ 55,435				$ 17,790				$ 73,226	$ 40,775
13	$ 57,930				$ 18,591				$ 76,521	$ 40,581
14	$ 60,537				$ 19,427				$ 79,964	$ 40,387
15	$ 63,261				$ 20,302	$ 29,029			$ 112,592	$ 54,159
16	$ 66,108				$ 21,215				$ 87,323	$ 40,004
17	$ 69,082				$ 22,170				$ 91,252	$ 39,813
18	$ 72,191				$ 23,168				$ 95,359	$ 39,624
19	$ 75,440				$ 24,210				$ 99,650	$ 39,435
20	$ 78,835				$ 25,299	$ 36,176	$ 846,512		$ 986,821	$ 371,923
21	$ 82,382				$ 26,438				$ 108,820	$ 39,060
22	$ 86,089				$ 27,628				$ 113,717	$ 38,874
23	$ 89,963				$ 28,871				$ 118,834	$ 38,689
24	$ 94,012				$ 30,170				$ 124,182	$ 38,505
25	$ 98,242			$ 150,272	$ 31,528	$ 45,082		$ 150,272	$ 475,395	$ 140,385
26	$ 102,663				$ 32,947				$ 135,610	$ 38,139
27	$ 107,283				$ 34,429				$ 141,712	$ 37,957
28	$ 112,111				$ 35,978				$ 148,089	$ 37,777
29	$ 117,156				$ 37,597				$ 154,753	$ 37,597
30	$ 122,428				$ 39,289	$ 56,180			$ 217,897	$ 50,416
31	$ 127,937				$ 41,057				$ 168,994	$ 37,239
32	$ 133,694				$ 42,905				$ 176,599	$ 37,062
33	$ 139,710				$ 44,836				$ 184,546	$ 36,886
34	$ 145,997				$ 46,853				$ 192,851	$ 36,710
35	$ 152,567				$ 48,962	$ 70,010			$ 271,539	$ 49,227
36	$ 159,433				$ 51,165				$ 210,598	$ 36,361
37	$ 166,607				$ 53,467				$ 220,075	$ 36,188
38	$ 174,104				$ 55,873				$ 229,978	$ 36,016
39	$ 181,939				$ 58,388				$ 240,327	$ 35,844
40	$ 190,126				$ 61,015	$ 87,245	$ 2,041,544		$ 2,379,931	$ 338,059
41	$ 198,682				$ 63,761				$ 262,443	$ 35,504
42	$ 207,623				$ 66,630				$ 274,253	$ 35,335
43	$ 216,966				$ 69,628				$ 286,594	$ 35,166
44	$ 226,729				$ 72,762				$ 299,491	$ 34,999
45	$ 236,932				$ 76,036	$ 108,724			$ 421,692	$ 46,933
46	$ 247,594				$ 79,458				$ 327,052	$ 34,666
47	$ 258,736				$ 83,033				$ 341,769	$ 34,501
48	$ 270,379				$ 86,770				$ 357,149	$ 34,337
49	$ 282,546				$ 90,674				$ 373,220	$ 34,174
50	$ 295,261			$ 451,632	$ 94,755	$ 135,490		$ 451,632	$ 1,428,768	$ 124,594
										$ 2,824,460

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate) ^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate) ^{Year} = $F / (1 + i)^n$

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Military Rd OLS/Hertel OLS

1/10/2022 **v3.4.0** **11.55** **MG**

Description	Material				Installation [1]		Total Cost [2]	Notes
	Basis	No. Units	Per Unit	Subtotal	Per Unit	Subtotal		
Satellite Storage								
Land Acquisition	Acres	2.2	$ 100,000	$ 221,550	$ -	$ -	$ 221,550	Assumed equal to site clearing area. COB-owned (PS 94)
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	96,508	$ 3	$ 260,570	$ -	$ -	$ 260,570	SF of tank + 25%
Excavation	CY	89,359	$ 30	$ 2,680,764	$ -	$ -	$ 2,680,764	
Rock Excavation	CY	64,160	$ 200	$ 12,831,923		$ -	$ 12,831,923	
Piles / Foundation	LS	0	$ 500,000	$ -		$ -	$ -	Piles not needed on bedrock
Bedding	CY	7,149	$ 77	$ 550,450	$ -	$ -	$ 550,450	
Structural Concrete	CY	12,881	$ 1,600	$ 20,609,493	$ -	$ -	$ 20,609,493	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	52,857	$ 46	$ 2,431,421		$ -	$ 2,431,421	
Backfill	CY	96,329	$ 44	$ 4,238,466		$ -	$ 4,238,466	
Hauling	CY	0	$ 14	$ -		$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	200	$ 4,500	$ 900,000	$ -	$ -	$ 900,000	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	0	$ 100,000	$ -		$ -	$ -	
Pavement Restoration	SF	96,508	$ 11	$ 1,061,583	$ -	$ -	$ 1,061,583	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	10,506	$ 30	$ 315,173	$ -	$ -	$ 315,173	
Bedding	CY	123	$ 77	$ 9,471	$ -	$ -	$ 9,471	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	56,731	$ 46	$ 2,609,631	$ -	$ -	$ 2,609,631	
Backfill	CY	10,506	$ 44	$ 462,253	$ -	$ -	$ 462,253	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
7 ft Concrete Pipe	LF	660	$ 1,200	$ 792,518	$ -	$ -	$ 792,518	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Inlet and Outlet Gates								
7 ft Inlet RTC Gate	EA	1	$ 175,000	$ 175,000	$ -	$ -	$ 175,000	
			$ -	$ -	$ -	$ -	$ -	
Satellite Storage Force Main								
Excavation	CY	5,982	$ 30	$ 179,454	$ -	$ -	$ 179,454	
Bedding	CY	70	$ 77	$ 5,390	$ -	$ -	$ 5,390	
Backfill	CY	5,982	$ 44	$ 263,199	$ -	$ -	$ 263,199	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
Cut Access into Main Interceptor	EA	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	
Pig Launcher	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	
20" ID Pipe	LF	806	$ 200	$ 161,148	$ -	$ -	$ 161,148	
Satellite Storage Pump Station								
Pumps	EA	2	$ 108,000	$ 216,000	$ 54,000	$ 108,000	$ 324,000	8.5 MGD dewatering capacity need noted in Xylem project list
Pump Station Building	SF	100	$ 2,000	$ 200,000		$ -	$ 200,000	
Piles / Foundation	LS	1	$ 100,000	$ 100,000		$ -	$ 100,000	
Piping in Tank (Including Bends)	LF	50	$ 500	$ 25,000		$ -	$ 25,000	
Check Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Gate Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Wet Well Isolation Gates	EA	2	$ 50,000	$ 100,000	$ 13,500	$ 27,000	$ 127,000	
Misc Metals (Grating, Handrail, Monorails, Etc.)	LS	1	$ 150,000	$ 150,000	$ -	$ -	$ 150,000	
Start-up and testing	LS	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	

Subtotal	**$**	**52,800,000**
Electrical, Controls and Instrumentation (15%)	**$**	**7,900,000**
Utility Relocation / Coordination (5%)	**$**	**2,600,000**
MPT (5%)	**$**	**2,600,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	**$**	**3,300,000**
Base Probable Construction Cost (Rounded)	**$**	**69,200,000**
Contingency (40%)	**$**	**27,680,000**
Total Probable Construction Cost	**$**	**96,880,000**
Total Probable Construction Cost per Gallon	**$**	**8.39**

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency.

CSO055_1.4 Military Rd - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Dewatering Pumps

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Dewatering Pumps					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Electrical Demands					
Dewatering Pumps (assumed 50 HP)	948	kWh	$ 0.14	$ 3,600	Based on activations per year, running 24 hours/activation, ME 85%, ML 90%
					Input kW = HP x Quantity x Motor Load (ML) x 0.746 / Motor Efficiency (ME)
Water for Tipping Buckets	72.19	1000 cft	$ 22.83	$ 1,648	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 43.73	$ 4,547	2 instrument techs @ 1 hour per week
Biweekly Yards and Grounds Maintenance	104	hr	$ 33.00	$ 3,432	2 laborers @ 2 hrs biweekly
Quarterly Maintenance	64	hr	$ 43.73	$ 2,798	1 millwright @ 2 days per quarter
	64	hr	$ 37.31	$ 2,388	1 millwright's helper @ 2 days per quarter
	64	hr	$ 33.00	$ 2,112	1 laborer @ 2 days per quarter
Annual Maintenance Labor (clean tank / pigging FM)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
Annual Property Maintenance	1	LS	$ 2,500.00	$ 2,500	Fence repair, landscaping upkeep
ANNUAL LABOR AND UTILITY TOTAL				$ 53,529	
Millwright's Truck	168	hour	$ 20.00	$ 3,360	1 Millwright's Truck ($150,000, 5 year life) @ 168 hours per year (weekly check plus quarterly maintenance) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 1,000.00	$ 1,000	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 12,270	
				Total Cost	
Rehabilitation Expenses					
Minor Pump Rehabilitation Labor (every 2 years)	10	hr	$ 43.73	$ 437	Assumes 5 hours for 2 millwrights
Minor Pump Rehabilitation Parts (every 2 years)	1	LS	$ 1,000.00	$ 1,000	Allowance for seals and other wearing parts.
Major Pump Rehabilitation Labor (every 5 years)	48	hr	$ 43.73	$ 2,099	3 days for 2 millwrights
Major Pump Rehabilitation Parts (every 5 years)	1	LS	$ 7,500.00	$ 7,500	Assumed centrifugal pump. Allowance for bearings, impellers, full pump end work.
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Electrical Replacement Parts (every 5 years)	1	LS	$ 300.00	$ 300	Breakers, relays
Minor Electrical De-Energized Maintenance and IR scans (every 5 years)	16	hr	$ 105.29	$ 1,685	1 day electrical maintenance (assuming breakers can be fully isolated for de-energized maintenance; no generator required). IR Scan 2 people, 1 day @ $105.29/hr.
PS Building Minor Maintenance (every 10 years)	1	LS	$ 5,000.00	$ 5,000	Painting, other property maintenance
PS HVAC Equipment Replacement (every 10 years)	1	LS	$ 100,000.00	$ 100,000	In line with Babcock PS
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 900,000.00	$ 900,000	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Pump Replacement (at year 25)	1	LS	$ 324,000.00	$ 324,000	Includes motor
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches
MCC Cabinet Replacement (every 30 years)	1	LS	$ 10,000.00	$ 10,000	New buckets
PS Building Rehabilitation (every 30 years)	1	LS	$ 15,000.00	$ 15,000	Roof and window replacement

CSO055_1.4 Military Rd - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Dewatering Pumps

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank and Pump Maintenance														
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (10 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Labor Cost (30 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Rehab Cost (30 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0															
1	$ 55,938						$ 12,822							$ 68,761	$ 65,486
2	$ 58,455	$ 477					$ 13,399	$ 1,092						$ 73,424	$ 66,598
3	$ 61,086						$ 14,002							$ 75,088	$ 64,864
4	$ 63,835	$ 521					$ 14,633	$ 1,193						$ 80,181	$ 65,965
5	$ 66,707		$ 4,715				$ 15,291		$ 28,413					$ 115,126	$ 90,204
6	$ 69,709	$ 569					$ 15,979	$ 1,302						$ 87,560	$ 65,338
7	$ 72,846						$ 16,698							$ 89,544	$ 63,637
8	$ 76,124	$ 622					$ 17,450	$ 1,422						$ 95,617	$ 64,718
9	$ 79,550						$ 18,235							$ 97,784	$ 63,033
10	$ 83,129	$ 679	$ 5,876				$ 19,055	$ 1,553	$ 35,408	$ 163,062				$ 308,762	$ 189,553
11	$ 86,870						$ 19,913							$ 106,783	$ 62,434
12	$ 90,779	$ 742					$ 20,809	$ 1,696						$ 114,026	$ 63,494
13	$ 94,864						$ 21,745							$ 116,610	$ 61,841
14	$ 99,133	$ 810					$ 22,724	$ 1,852						$ 124,519	$ 62,890
15	$ 103,594		$ 7,322				$ 23,746		$ 44,124					$ 178,787	$ 86,000
16	$ 108,256	$ 884					$ 24,815	$ 2,022						$ 135,978	$ 62,293
17	$ 113,128						$ 25,932							$ 139,059	$ 60,671
18	$ 118,218	$ 966					$ 27,099	$ 2,208						$ 148,491	$ 61,701
19	$ 123,538						$ 28,318							$ 151,856	$ 60,095
20	$ 129,097	$ 1,055	$ 9,125				$ 29,592	$ 2,412	$ 54,987	$ 253,230	$ 2,170,543			$ 2,650,040	$ 998,772
21	$ 134,907						$ 30,924							$ 165,831	$ 59,524
22	$ 140,977	$ 1,152					$ 32,316	$ 2,634						$ 177,078	$ 60,534
23	$ 147,321						$ 33,770							$ 181,091	$ 58,958
24	$ 153,951	$ 1,258					$ 35,289	$ 2,876						$ 193,374	$ 59,959
25	$ 160,879		$ 11,371		$ 150,272		$ 36,877		$ 68,524			$ 1,124,032		$ 1,551,955	$ 458,297
26	$ 168,118	$ 1,373					$ 38,537	$ 3,141						$ 211,169	$ 59,389
27	$ 175,684						$ 40,271							$ 215,955	$ 57,843
28	$ 183,589	$ 1,500					$ 42,083	$ 3,430						$ 230,602	$ 58,825
29	$ 191,851						$ 43,977							$ 235,828	$ 57,294
30	$ 200,484	$ 1,638	$ 14,170				$ 45,956	$ 3,745	$ 85,393	$ 393,258			$ 93,633	$ 838,278	$ 193,959
31	$ 209,506						$ 48,024							$ 257,530	$ 56,749
32	$ 218,934	$ 1,788					$ 50,185	$ 4,090						$ 274,997	$ 57,713
33	$ 228,786						$ 52,443							$ 281,229	$ 56,210
34	$ 239,081	$ 1,953					$ 54,803	$ 4,466						$ 300,304	$ 57,164
35	$ 249,840		$ 17,659				$ 57,270		$ 106,416					$ 431,183	$ 78,169
36	$ 261,083	$ 2,133					$ 59,847	$ 4,877						$ 327,939	$ 56,621
37	$ 272,831						$ 62,540							$ 335,371	$ 55,147
38	$ 285,109	$ 2,329					$ 65,354	$ 5,326						$ 358,118	$ 56,083
39	$ 297,939						$ 68,295							$ 366,234	$ 54,623
40	$ 311,346	$ 2,543	$ 22,006				$ 71,368	$ 5,816	$ 132,613	$ 610,718	$ 5,234,728			$ 6,391,139	$ 907,834
41	$ 325,356						$ 74,580							$ 399,936	$ 54,104
42	$ 339,997	$ 2,777					$ 77,936	$ 6,352						$ 427,062	$ 55,023
43	$ 355,297						$ 81,443							$ 436,740	$ 53,590
44	$ 371,286	$ 3,033					$ 85,108	$ 6,936						$ 466,363	$ 54,500
45	$ 387,994		$ 27,423				$ 88,938		$ 165,260					$ 669,615	$ 74,526
46	$ 405,453	$ 3,312					$ 92,940	$ 7,574						$ 509,280	$ 53,982
47	$ 423,699						$ 97,122							$ 520,821	$ 52,576
48	$ 442,765	$ 3,617					$ 101,493	$ 8,271						$ 556,146	$ 53,469
49	$ 462,689						$ 106,060							$ 568,750	$ 52,077
50	$ 483,511	$ 3,950	$ 34,174		$ 451,632		$ 110,833	$ 9,033	$ 205,944	$ 948,427		$ 3,378,206		$ 5,625,709	$ 490,583
															$ 5,984,920

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_0(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Schiller Park OLS

1/17/2022 **v3.4.0** **8.00** **MG**

Description	Basis	Material			Installation [1]		Total Cost [2]	Notes
		No. Units	Per Unit	Subtotal	Per Unit	Subtotal		
Satellite Storage								
Land Acquisition	Acres	3.1	$ 100,000	$ 306,909	$ -	$ -	$ 306,909	Assumed equal to site clearing quantity. COB-owned (Schiller Park)
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	133,690	$ 3	$ 360,963	$ -	$ -	$ 360,963	SF of tank + 25%
Excavation	CY	99,030	$ 30	$ 2,970,889	$ -	$ -	$ 2,970,889	
Rock Excavation	CY	43,524	$ 200	$ 8,704,704	$ -	$ -	$ 8,704,704	
Piles / Foundation	LS	0	$ 500,000	$ -	$ -	$ -	$ -	Piles not needed on bedrock
Bedding	CY	9,903	$ 77	$ 762,528	$ -	$ -	$ 762,528	
Structural Concrete	CY	16,736	$ 1,200	$ 20,083,360	$ -	$ -	$ 20,083,360	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	40,349	$ 46	$ 1,856,060	$ -	$ -	$ 1,856,060	
Backfill	CY	102,941	$ 44	$ 4,529,417	$ -	$ -	$ 4,529,417	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	267	$ 4,500	$ 1,203,210	$ -	$ -	$ 1,203,210	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	1	$ 200,000	$ 200,000	$ -	$ -	$ 200,000	to cover conveyance restoration
Grass Restoration	SY	14,854	$ 9	$ 133,690	$ -	$ -	$ 133,690	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	2,003	$ 30	$ 60,101	$ -	$ -	$ 60,101	
Bedding	CY	35	$ 77	$ 2,695	$ -	$ -	$ 2,695	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	15,454	$ 46	$ 710,906	$ -	$ -	$ 710,906	
Backfill	CY	2,003	$ 44	$ 88,148	$ -	$ -	$ 88,148	Assumed to be the same as volume excavatec
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
4 ft Concrete Pipe	LF	268	$ 800	$ 214,720	$ -	$ -	$ 214,720	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	
Satellite Storage Conveyance 2								
Excavation	CY	6,535	$ 30	$ 196,041	$ -	$ -	$ 196,041	
Bedding	CY	114	$ 77	$ 8,778	$ -	$ -	$ 8,778	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	50,411	$ 46	$ 2,318,888	$ -	$ -	$ 2,318,888	Assumed to be the same as volume excavatec
Backfill	CY	6,535	$ 44	$ 287,527	$ -	$ -	$ 287,527	Assumed to be included with excavation
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
4 ft Concrete Pipe	LF	875	$ 800	$ 700,390	$ -	$ -	$ 700,390	
Cut Access into Main Interceptor	EA	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	4	$ 3,100	$ 12,400	$ -	$ -	$ 12,400	
Inlet and Outlet Gates								
4 ft Diameter Inlet Gate	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	Broadway Oak RTC gates $100,000 each
4 ft Diameter Outlet Gate	EA	1	$ 100,000	$ 100,000	$ -	$ -	$ 100,000	Broadway Oak RTC gates $100,000 each

Subtotal	**$**	**46,900,000**
Electrical, Controls and Instrumentation (15%)	**$**	**7,000,000**
Utility Relocation / Coordination (5%)	**$**	**2,300,000**
MPT (5%)	**$**	**2,300,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	**$**	**2,900,000**
Base Probable Construction Cost (Rounded)	**$**	**61,400,000**
Contingency (40%)	**$**	**24,560,000**
Total Probable Construction Cost	**$**	**85,960,000**
Total Probable Construction Cost per Gallon	**$**	**10.75**

(1) For items without installation cost, installation cost is included in material price

(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency

System_2 Schiller Park - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Gravity Dewatering

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Gravity Dewatering					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Water for Tipping Buckets	121.53	1000 cft	$ 22.83	$ 2,774	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	26	hr	$ 43.73	$ 1,137	2 instrument techs @ 0.25 hour per week
Annual Maintenance Labor (clean tank)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
ANNUAL LABOR AND UTILITY TOTAL				$ 34,415	
Millwright's Truck	104	hour	$ 20.00	$ 2,080	1 Millwright's Truck ($150,000, 5 year life) @ 104 hours per year (weekly check) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 500.00	$ 500	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 10,490	
				Total Cost	
Rehabilitation Expenses					
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 1,203,210.00	$ 1,203,210	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches

System_2 Schiller Park - OLS Tank with Gravity Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank Operation and Maintenance									
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (Prev. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0										
1	$ 35,964				$ 10,962				$ 46,926	$ 44,692
2	$ 37,582				$ 11,456				$ 49,038	$ 44,479
3	$ 39,274				$ 11,971				$ 51,245	$ 44,267
4	$ 41,041				$ 12,510				$ 53,551	$ 44,056
5	$ 42,888				$ 13,073	$ 18,693			$ 74,653	$ 58,493
6	$ 44,818				$ 13,661				$ 58,479	$ 43,638
7	$ 46,834				$ 14,276				$ 61,110	$ 43,430
8	$ 48,942				$ 14,918				$ 63,860	$ 43,223
9	$ 51,144				$ 15,590				$ 66,734	$ 43,017
10	$ 53,446				$ 16,291	$ 23,295			$ 93,031	$ 57,113
11	$ 55,851				$ 17,024				$ 72,875	$ 42,609
12	$ 58,364				$ 17,790				$ 76,154	$ 42,406
13	$ 60,991				$ 18,591				$ 79,581	$ 42,204
14	$ 63,735				$ 19,427				$ 83,163	$ 42,003
15	$ 66,603				$ 20,302	$ 29,029			$ 115,934	$ 55,766
16	$ 69,600				$ 21,215				$ 90,816	$ 41,604
17	$ 72,732				$ 22,170				$ 94,902	$ 41,406
18	$ 76,005				$ 23,168				$ 99,173	$ 41,208
19	$ 79,426				$ 24,210				$ 103,636	$ 41,012
20	$ 83,000				$ 25,299	$ 36,176	$ 2,901,798		$ 3,046,273	$ 1,148,108
21	$ 86,735				$ 26,438				$ 113,173	$ 40,622
22	$ 90,638				$ 27,628				$ 118,265	$ 40,429
23	$ 94,716				$ 28,871				$ 123,587	$ 40,237
24	$ 98,979				$ 30,170				$ 129,149	$ 40,045
25	$ 103,433			$ 150,272	$ 31,528	$ 45,082		$ 150,272	$ 480,586	$ 141,918
26	$ 108,087				$ 32,947				$ 141,034	$ 39,664
27	$ 112,951				$ 34,429				$ 147,380	$ 39,476
28	$ 118,034				$ 35,978				$ 154,012	$ 39,288
29	$ 123,346				$ 37,597				$ 160,943	$ 39,101
30	$ 128,896				$ 39,289	$ 56,180			$ 224,365	$ 51,913
31	$ 134,696				$ 41,057				$ 175,754	$ 38,729
32	$ 140,758				$ 42,905				$ 183,663	$ 38,545
33	$ 147,092				$ 44,836				$ 191,928	$ 38,361
34	$ 153,711				$ 46,853				$ 200,564	$ 38,178
35	$ 160,628				$ 48,962	$ 70,010			$ 279,600	$ 50,689
36	$ 167,856				$ 51,165				$ 219,021	$ 37,816
37	$ 175,410				$ 53,467				$ 228,877	$ 37,636
38	$ 183,303				$ 55,873				$ 239,177	$ 37,456
39	$ 191,552				$ 58,388				$ 249,940	$ 37,278
40	$ 200,172				$ 61,015	$ 87,245	$ 6,998,308		$ 7,346,740	$ 1,043,573
41	$ 209,179				$ 63,761				$ 272,940	$ 36,924
42	$ 218,592				$ 66,630				$ 285,223	$ 36,748
43	$ 228,429				$ 69,628				$ 298,058	$ 36,573
44	$ 238,708				$ 72,762				$ 311,470	$ 36,399
45	$ 249,450				$ 76,036	$ 108,724			$ 434,210	$ 48,326
46	$ 260,676				$ 79,458				$ 340,133	$ 36,053
47	$ 272,406				$ 83,033				$ 355,439	$ 35,881
48	$ 284,664				$ 86,770				$ 371,434	$ 35,710
49	$ 297,474				$ 90,674				$ 388,148	$ 35,540
50	$ 310,860			$ 451,632	$ 94,755	$ 135,490		$ 451,632	$ 1,444,368	$ 125,954
										$ 4,379,800

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

BUFFALO SEWER AUTHORITY LONG TERM CONTROL PLAN SELECTED ALTERNATIVE
ENGINEER'S OPINION OF PROBABLE PROJECT COST

Bass Alley OLS

1/17/2022 **v3.4.0** **3.60** **MG**

Description	Material				Installation [1]		Total Cost [2]	Notes
	Basis	No. Units	Per Unit	Subtotal	Per Unit	Subtotal		
Satellite Storage								
Land Acquisition	Acres	0.4	$ 100,000	$ 39,569	$ -	$ -	$ 39,569	Assumed equal to site clearing quantity. COB-owned parcels.
Survey & Stake-out	LS	1	$ 36,450	$ 36,450	$ -	$ -	$ 36,450	
Site Clearing	SF	17,236	$ 3	$ 46,538	$ -	$ -	$ 46,538	SF of tank + 25%
Excavation	CY	6,384	$ 30	$ 191,514	$ -	$ -	$ 191,514	
Rock Excavation	CY	25,535	$ 200	$ 5,107,037	$ -	$ -	$ 5,107,037	
Piles / Foundation	LS	1	$ 500,000	$ 500,000	$ -	$ -	$ 500,000	
Bedding	CY	1,277	$ 77	$ 98,310	$ -	$ -	$ 98,310	
Structural Concrete	CY	3,320	$ 1,200	$ 3,983,738	$ -	$ -	$ 3,983,738	
Site Dewatering and Erosion Control	LS	1		$ -	$ 675,000	$ 675,000	$ 675,000	
Sheeting/Bracing	SF	7,166	$ 46	$ 329,648	$ -	$ -	$ 329,648	
Backfill	CY	14,044	$ 44	$ 617,951	$ -	$ -	$ 617,951	
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Hauling and disposal rolled into excavation costs
Cleaning Equipment	LF	133	$ 4,500	$ 596,250	$ -	$ -	$ 596,250	Tipping buckets price per Koester
Access Manholes	EA	3	$ 3,100	$ 9,300	$ -	$ -	$ 9,300	
Miscellaneous Site Restoration	LS	0	$ 100,000	$ -	$ -	$ -	$ -	
Pavement Restoration	SF	17,236	$ 11	$ 189,599	$ -	$ -	$ 189,599	Assumed equal to site clearing quantity
Satellite Storage Conveyance 1 / Connection to OLS								
Excavation	CY	3,813	$ 30	$ 114,401	$ -	$ -	$ 114,401	
Bedding	CY	39	$ 77	$ 3,003	$ -	$ -	$ 3,003	
Site Dewatering and Erosion Control	LS	1		$ -	$ 67,500	$ 67,500	$ 67,500	
Sheeting/Bracing	SF	34,320	$ 46	$ 1,578,738	$ -	$ -	$ 1,578,738	
Backfill	CY	3,813	$ 44	$ 167,789	$ -	$ -	$ 167,789	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
3 ft Concrete Pipe	LF	343	$ 500	$ 171,602	$ -	$ -	$ 171,602	
Cut Access into Main Interceptor	LS	1	$ 67,500	$ 67,500	$ -	$ -	$ 67,500	
Manholes	EA	2	$ 3,100	$ 6,200	$ -	$ -	$ 6,200	
Inlet and Outlet Gates								
Outlet RTC Gate	EA	0	$ 10,000	$ -	$ -	$ -	$ -	
		0	$ -	$ -	$ -	$ -	$ -	
Satellite Storage Force Main								
Excavation	CY	2,750	$ 30	$ 82,485	$ -	$ -	$ 82,485	
Bedding	CY	28	$ 77	$ 2,156	$ -	$ -	$ 2,156	
Backfill	CY	2,750	$ 44	$ 120,978	$ -	$ -	$ 120,978	Assumed to be the same as volume excavated
Hauling	CY	0	$ 14	$ -	$ -	$ -	$ -	Assumed to be included with excavation
Cut Access into Main Interceptor	EA	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	
Pig Launcher	EA	1	$ 75,000	$ 75,000	$ -	$ -	$ 75,000	
12" ID Pipe	LF	371	$ 174	$ 64,586	$ -	$ -	$ 64,586	
Satellite Storage Pump Station								
Pumps	EA	2	$ 65,000	$ 130,000	$ 27,000	$ 54,000	$ 184,000	3.6 MGD capacity needed
Pump Station Building	SF	100	$ 2,000	$ 200,000		$ -	$ 200,000	
Piles / Foundation	LS	1	$ 100,000	$ 100,000		$ -	$ 100,000	
Piping in Tank (Including Bends)	LF	50	$ 500	$ 25,000		$ -	$ 25,000	
Check Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Gate Valves	EA	2	$ 6,750	$ 13,500	$ 13,500	$ 27,000	$ 40,500	
Wet Well Isolation Gates	EA	2	$ 50,000	$ 100,000	$ 13,500	$ 27,000	$ 127,000	
Misc Metals (Grating, Handrail, Monorails, Etc.	LS	1	$ 150,000	$ 150,000	$ -	$ -	$ 150,000	
Start-up and testing	LS	1	$ 13,500	$ 13,500	$ -	$ -	$ 13,500	

Subtotal	**$**	**17,700,000**
Electrical, Controls and Instrumentation (15%)	**$**	**2,700,000**
Utility Relocation / Coordination (5%)	**$**	**900,000**
MPT (5%)	**$**	**900,000**
General Conditions, Bonds & Insurance (5% of Subtotal)	**$**	**1,100,000**
Base Probable Construction Cost (Rounded)	**$**	**23,300,000**
Contingency (40%)	**$**	**9,320,000**
Total Probable Construction Cost	**$**	**32,620,000**
Total Probable Construction Cost per Gallon	**$**	**9.06**

(1) For items without installation cost, installation cost is included in material price.
(2) Year 2022 dollars. Does not include engineering, administrative, and legal costs or contingency.

CSO017_6 Bass Alley - Life Cycle Cost Estimate (50 years) for Offline Storage Tank with Dewatering Pumps

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Dewatering Pumps					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Electrical Demands					
Dewatering Pumps (assumed 50 HP)	948	kWh	$ 0.14	$ 2,700	Based on activations per year, running 24 hours/activation, ME 85%, ML 90%
					Input kW = HP x Quantity x Motor Load (ML) x 0.746 / Motor Efficiency (ME)
Water for Tipping Buckets	35.43	1000 cft	$ 22.83	$ 809	Assumes anticipated no. activations x 100 gal/ft of tipping bucket x length of tipping buckets
	4	quarter	$ 399.20	$ 1,597	$399.20 quarterly for 2" connection (specs mention 2" solenoid valve so flushing line is assumed to have that diameter)
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	1 millwright (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 37.31	$ 3,880	1 millwright's helper (1.5 x wage to capture fringe benefits) @ 2 hours per week
	104	hr	$ 43.73	$ 4,547	2 instrument techs @ 1 hour per week
Biweekly Yards and Grounds Maintenance	104	hr	$ 33.00	$ 3,432	2 laborers @ 2 hrs biweekly
Quarterly Maintenance	64	hr	$ 43.73	$ 2,798	1 millwright @ 2 days per quarter
	64	hr	$ 37.31	$ 2,388	1 millwright's helper @ 2 days per quarter
	64	hr	$ 33.00	$ 2,112	1 laborer @ 2 days per quarter
Annual Maintenance Labor (clean tank / pigging FM)	160	hr	$ 45.00	$ 7,200	2 Vactor Crews: 2 EOs @ 5 days per year
	240	hr	$ 42.00	$ 10,080	2 ERC Crews: 3 SCW @ 5 days per year
Annual Property Maintenance	1	LS	$ 2,500.00	$ 2,500	Fence repair, landscaping upkeep
ANNUAL LABOR AND UTILITY TOTAL				$ 51,790	
Millwright's Truck	168	hour	$ 20.00	$ 3,360	1 Millwright's Truck ($150,000, 5 year life) @ 168 hours per year (weekly check plus quarterly maintenance) rounded to $20/hr
ERC Truck	1	week	$ 1,153.85	$ 1,154	2 ERC Truck ($150,000, 5 year life) @ 1 week per year (annual maintenance)
Vactor Truck	1	week	$ 6,410.26	$ 6,410	2 Vactor Trucks ($500K each, 3 year life) @ 1 work week per year
Skid Steer	1	week	$ 346.15	$ 346	2 Skid Steers ($45K each, 5 year life) @ 1 work week per year
Lubricants / Misc. Supplies	1	LS	$ 1,000.00	$ 1,000	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 12,270	
				Total Cost	
Rehabilitation Expenses					
Minor Pump Rehabilitation Labor (every 2 years)	10	hr	$ 43.73	$ 437	Assumes 5 hours for 2 millwrights
Minor Pump Rehabilitation Parts (every 2 years)	1	LS	$ 1,000.00	$ 1,000	Allowance for seals and other wearing parts.
Major Pump Rehabilitation Labor (every 5 years)	48	hr	$ 43.73	$ 2,099	3 days for 2 millwrights
Major Pump Rehabilitation Parts (every 5 years)	1	LS	$ 7,500.00	$ 7,500	Assumed centrifugal pump. Allowance for bearings, impellers, full pump end work.
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Electrical Replacement Parts (every 5 years)	1	LS	$ 300.00	$ 300	Breakers, relays
Minor Electrical De-Energized Maintenance and IR scans (every 5 years)	16	hr	$ 105.29	$ 1,685	1 day electrical maintenance (assuming breakers can be fully isolated for de-energized maintenance; no generator required). IR Scan 2 people, 1 day @ $105.29/hr.
PS Building Minor Maintenance (every 10 years)	1	LS	$ 5,000.00	$ 5,000	Painting, other property maintenance
PS HVAC Equipment Replacement (every 10 years)	1	LS	$ 100,000.00	$ 100,000	In line with Babcock PS
Cleaning Equipment Replacement (every 20 years)	1	LS	$ 596,250.00	$ 596,250	May also require crane
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Pump Replacement (at year 25)	1	LS	$ 184,000.00	$ 184,000	Includes motor
Misc Metal Replacement (at year 25)	1	LS	$ 50,000.00	$ 50,000	Grating, railing, hatches
MCC Cabinet Replacement (every 30 years)	1	LS	$ 10,000.00	$ 10,000	New buckets
PS Building Rehabilitation (every 30 years)	1	LS	$ 15,000.00	$ 15,000	Roof and window replacement

CSO017_6 Bass Alley - OLS Tank with Pumped Dewatering

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Tank and Pump Maintenance												
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (20 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Rehab Cost (30 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0													
1	$ 54,121				$ 12,822							$ 66,943	$ 63,755
2	$ 56,556	$ 477			$ 13,399	$ 1,092						$ 71,525	$ 64,875
3	$ 59,101				$ 14,002							$ 73,103	$ 63,149
4	$ 61,761	$ 521			$ 14,633	$ 1,193						$ 78,107	$ 64,259
5	$ 64,540		$ 4,715		$ 15,291		$ 28,413					$ 112,959	$ 88,506
6	$ 67,444	$ 569			$ 15,979	$ 1,302						$ 85,295	$ 63,648
7	$ 70,479				$ 16,698							$ 87,177	$ 61,955
8	$ 73,651	$ 622			$ 17,450	$ 1,422						$ 93,144	$ 63,044
9	$ 76,965				$ 18,235							$ 95,200	$ 61,367
10	$ 80,428	$ 679	$ 5,876		$ 19,055	$ 1,553	$ 35,408	$ 163,062				$ 306,061	$ 187,895
11	$ 84,048				$ 19,913							$ 103,960	$ 60,783
12	$ 87,830	$ 742			$ 20,809	$ 1,696						$ 111,076	$ 61,851
13	$ 91,782				$ 21,745							$ 113,527	$ 60,206
14	$ 95,912	$ 810			$ 22,724	$ 1,852						$ 121,298	$ 61,264
15	$ 100,228		$ 7,322		$ 23,746		$ 44,124					$ 175,421	$ 84,381
16	$ 104,739	$ 884			$ 24,815	$ 2,022						$ 132,460	$ 60,682
17	$ 109,452				$ 25,932							$ 135,383	$ 59,067
18	$ 114,377	$ 966			$ 27,099	$ 2,208						$ 144,650	$ 60,105
19	$ 119,524				$ 28,318							$ 147,842	$ 58,506
20	$ 124,903	$ 1,055	$ 9,125		$ 29,592	$ 2,412	$ 54,987	$ 253,230	$ 1,437,984			$ 1,913,287	$ 721,098
21	$ 130,523				$ 30,924							$ 161,447	$ 57,950
22	$ 136,397	$ 1,152			$ 32,316	$ 2,634						$ 172,498	$ 58,968
23	$ 142,535				$ 33,770							$ 176,304	$ 57,400
24	$ 148,949	$ 1,258			$ 35,289	$ 2,876						$ 188,372	$ 58,408
25	$ 155,651		$ 11,371	$ 150,272	$ 36,877		$ 68,524			$ 703,272		$ 1,125,967	$ 332,501
26	$ 162,656	$ 1,373			$ 38,537	$ 3,141						$ 205,707	$ 57,853
27	$ 169,975				$ 40,271							$ 210,246	$ 56,314
28	$ 177,624	$ 1,500			$ 42,083	$ 3,430						$ 224,637	$ 57,303
29	$ 185,617				$ 43,977							$ 229,594	$ 55,779
30	$ 193,970	$ 1,638	$ 14,170		$ 45,956	$ 3,745	$ 85,393	$ 393,258			$ 93,633	$ 831,764	$ 192,451
31	$ 202,699				$ 48,024							$ 250,723	$ 55,249
32	$ 211,820	$ 1,788			$ 50,185	$ 4,090						$ 267,884	$ 56,220
33	$ 221,352				$ 52,443							$ 273,795	$ 54,724
34	$ 231,313	$ 1,953			$ 54,803	$ 4,466						$ 292,536	$ 55,686
35	$ 241,722		$ 17,659		$ 57,270		$ 106,416					$ 423,066	$ 76,698
36	$ 252,599	$ 2,133			$ 59,847	$ 4,877						$ 319,456	$ 55,156
37	$ 263,966				$ 62,540							$ 326,506	$ 53,689
38	$ 275,845	$ 2,329			$ 65,354	$ 5,326						$ 348,854	$ 54,632
39	$ 288,258				$ 68,295							$ 356,553	$ 53,179
40	$ 301,230	$ 2,543	$ 22,006		$ 71,368	$ 5,816	$ 132,613	$ 610,718	$ 3,468,007			$ 4,614,302	$ 655,442
41	$ 314,785				$ 74,580							$ 389,365	$ 52,674
42	$ 328,950	$ 2,777			$ 77,936	$ 6,352						$ 416,015	$ 53,599
43	$ 343,753				$ 81,443							$ 425,196	$ 52,173
44	$ 359,222	$ 3,033			$ 85,108	$ 6,936						$ 454,299	$ 53,090
45	$ 375,387		$ 27,423		$ 88,938		$ 165,260					$ 657,008	$ 73,123
46	$ 392,279	$ 3,312			$ 92,940	$ 7,574						$ 496,106	$ 52,586
47	$ 409,932				$ 97,122							$ 507,054	$ 51,187
48	$ 428,379	$ 3,617			$ 101,493	$ 8,271						$ 541,760	$ 52,086
49	$ 447,656				$ 106,060							$ 553,716	$ 50,700
50	$ 467,800	$ 3,950	$ 34,174	$ 451,632	$ 110,833	$ 9,033	$ 205,944	$ 948,427		$ 2,113,637		$ 4,345,429	$ 378,938
													$ 5,096,160

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_0(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

Life Cycle Cost Estimate (50 years) for Real Time Control Structure

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
Real Time Control Structure					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Electrical Demands					
Actuators	4	quarter	$ 100.00	$ 400	Plant personnel states electrical usage at each RTC site is approx. $100/quarter
Routine Maintenance Expenses					
Weekly Check	104	hr	$ 43.73	$ 4,547	2 instrument techs @ 1 hour per week
Quarterly Maintenance	64	hr	$ 43.73	$ 2,798	1 millwright @ 2 days per quarter
	64	hr	$ 37.31	$ 2,388	1 millwright's helper @ 2 days per quarter
	64	hr	$ 33.00	$ 2,112	1 laborer @ 2 days per quarter
Annual Maintenance Labor (clean RTC of debris)	16	hr	$ 45.00	$ 720	1 Vactor Crews: 2 EOs @ 1 day per year
ANNUAL LABOR AND ELECTRICAL TOTAL				$ 15,565	
Millwright's Truck	64	hour	$ 20.00	$ 1,280	1 Millwright's Truck ($150,000, 5 year life) @ 64 hours per year (quarterly maintenance) rounded to $20/hr
Vactor Truck	1	day	$ 456.62	$ 457	1 Vactor Truck ($500K each, 3 year life) @ 1 day per year
Lubricants / Misc. Supplies	1	LS	$ 1,000.00	$ 1,000	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ 2,737	
				Total Cost	
Rehabilitation Expenses					
Minor Gate / Actuator Service Labor (every 2 years)	10	hr	$ 43.73	$ 437	Assumes 5 hours for 2 millwrights
Minor Gate / Actuator Service Parts (every 2 years)	1	LS	$ 500.00	$ 500	Allowance for wearing parts.
Major Gate / Actuator Service Labor (every 5 years)	64	hr	$ 43.73	$ 2,798	2 days for 2 millwrights and 2 Instrument Techs
Major Gate / Actuator Service Parts (every 5 years)	1	LS	$ 5,000.00	$ 5,000	
Major Gate / Actuator Service Outside 3rd party Service Order (every 5 years)	1	LS	$ 8,000.00	$ 8,000	Service order bid - Third party vendor service support
Instrumentation Upgrades (every 5 years)	1	LS	$ 3,000.00	$ 3,000	Level, pressure, temp sensors
Electrical/Controls Replacement Parts (every 5 years)	1	LS	$ 1,000.00	$ 1,000	Breakers, relays, cards
Minor Electrical De-Energized Maintenance and IR scans (every 5 years)	16	hr	$ 105.29	$ 1,685	1 day electrical maintenance (assuming breakers can be fully isolated for de-energized maintenance; no generator required). IR Scan 2 people, 1 day @ $105.29/hr.
Control Panel Component Parts Replacement (every 10 years)	1	LS	$ 10,000.00	$ 10,000	I/O cards, relays, switches, etc.
Engineering Evaluation (at year 25)	1	LS	$ 50,000.00	$ 50,000	Structural inspection, global control strategy review, etc.
Actuator Replacement (at year 25)	2	count	$ 30,000.00	$ 60,000	Assumes 2 actuators per RTC
Misc Metal Replacement (at year 25)	1	LS	$ 10,000.00	$ 10,000	Hatches

Real-Time Control (RTC) Structure

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	RTC Structure Maintenance										
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0											
1	$ 16,266				$ 2,860					$ 19,126	$ 18,215
2	$ 16,998	$ 477			$ 2,988	$ 546				$ 21,010	$ 19,056
3	$ 17,763				$ 3,123					$ 20,886	$ 18,042
4	$ 18,562	$ 521			$ 3,263	$ 596				$ 22,943	$ 18,875
5	$ 19,397		$ 5,587		$ 3,410		$ 21,185			$ 49,579	$ 38,847
6	$ 20,270	$ 569			$ 3,564	$ 651				$ 25,054	$ 18,696
7	$ 21,182				$ 3,724					$ 24,906	$ 17,701
8	$ 22,135	$ 622			$ 3,892	$ 711				$ 27,360	$ 18,518
9	$ 23,132				$ 4,067					$ 27,198	$ 17,532
10	$ 24,172	$ 679	$ 6,962		$ 4,250	$ 776	$ 26,400	$ 15,530		$ 78,770	$ 48,358
11	$ 25,260				$ 4,441					$ 29,701	$ 17,366
12	$ 26,397	$ 742			$ 4,641	$ 848				$ 32,627	$ 18,168
13	$ 27,585				$ 4,850					$ 32,435	$ 17,201
14	$ 28,826	$ 810			$ 5,068	$ 926				$ 35,630	$ 17,996
15	$ 30,123		$ 8,676		$ 5,296		$ 32,900			$ 76,995	$ 37,036
16	$ 31,479	$ 884			$ 5,534	$ 1,011				$ 38,909	$ 17,825
17	$ 32,895				$ 5,784					$ 38,679	$ 16,875
18	$ 34,376	$ 966			$ 6,044	$ 1,104				$ 42,489	$ 17,655
19	$ 35,923				$ 6,316					$ 42,238	$ 16,715
20	$ 37,539	$ 1,055	$ 10,812		$ 6,600	$ 1,206	$ 40,999	$ 24,117		$ 122,328	$ 46,104
21	$ 39,228				$ 6,897					$ 46,125	$ 16,556
22	$ 40,994	$ 1,152			$ 7,207	$ 1,317				$ 50,669	$ 17,321
23	$ 42,838				$ 7,532					$ 50,370	$ 16,399
24	$ 44,766	$ 1,258			$ 7,871	$ 1,438				$ 55,332	$ 17,157
25	$ 46,781		$ 13,473	$ 150,272	$ 8,225		$ 51,092		$ 210,380	$ 480,223	$ 141,811
26	$ 48,886	$ 1,373			$ 8,595	$ 1,570				$ 60,424	$ 16,994
27	$ 51,086				$ 8,982					$ 60,067	$ 16,089
28	$ 53,384	$ 1,500			$ 9,386	$ 1,715				$ 65,985	$ 16,832
29	$ 55,787				$ 9,808					$ 65,595	$ 15,936
30	$ 58,297	$ 1,638	$ 16,790		$ 10,250	$ 1,873	$ 63,670	$ 37,453		$ 189,971	$ 43,955
31	$ 60,920				$ 10,711					$ 71,631	$ 15,785
32	$ 63,662	$ 1,788			$ 11,193	$ 2,045				$ 78,688	$ 16,514
33	$ 66,527				$ 11,696					$ 78,223	$ 15,635
34	$ 69,520	$ 1,953			$ 12,223	$ 2,233				$ 85,929	$ 16,357
35	$ 72,649		$ 20,924		$ 12,773		$ 79,345			$ 185,690	$ 33,664
36	$ 75,918	$ 2,133			$ 13,348	$ 2,439				$ 93,837	$ 16,202
37	$ 79,334				$ 13,948					$ 93,282	$ 15,339
38	$ 82,904	$ 2,329			$ 14,576	$ 2,663				$ 102,472	$ 16,048
39	$ 86,635				$ 15,232					$ 101,867	$ 15,193
40	$ 90,534	$ 2,543	$ 26,075		$ 15,917	$ 2,908	$ 98,878	$ 58,164		$ 295,019	$ 41,906
41	$ 94,608				$ 16,633					$ 111,241	$ 15,049
42	$ 98,865	$ 2,777			$ 17,382	$ 3,176				$ 122,200	$ 15,744
43	$ 103,314				$ 18,164					$ 121,478	$ 14,906
44	$ 107,963	$ 3,033			$ 18,982	$ 3,468				$ 133,445	$ 15,595
45	$ 112,821		$ 32,494		$ 19,836		$ 123,220			$ 288,371	$ 32,095
46	$ 117,898	$ 3,312			$ 20,728	$ 3,787				$ 145,726	$ 15,446
47	$ 123,204				$ 21,661					$ 144,865	$ 14,624
48	$ 128,748	$ 3,617			$ 22,636	$ 4,136				$ 159,136	$ 15,300
49	$ 134,542				$ 23,654					$ 158,196	$ 14,485
50	$ 140,596	$ 3,950	$ 40,494	$ 451,632	$ 24,719	$ 4,516	$ 153,555	$ 90,326	$ 632,285	$ 1,542,072	$ 134,474
											$ 1,266,200

1. Labor Rates are calculated on O&M Costs worksheet
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

CSO017_1.1 SPP054 Sewer Separation Opinion of Probable Construction Costs

Item	Description	Quantity	Unit	Cost per Unit	Total
1.0 Storm Sewer					
1.1	24" PVC	593	LF	$ 110	$ 65,184
1.2	30" RCP	418	LF	$ 120	$ 50,111
1.3	Trench and Restoration - Pavement Areas	1,010	LF	$ 162.00	$ 163,648
1.4	2'x2' Catch Basin	20	EA	$ 4,820	$ 96,400
1.5	4' Dia Manhole	8	EA	$ 3,065	$ 24,521
1.6	Cutting pavement subbase	2,020	LF	$ 4	$ 8,117
1.7	Milling full roadway		SY	$ 3.44	$ -
1.8	Utility Relocation allowance	1	LS	$ 50,000	$ 50,000
				SUBTOTAL	$ *457,980*
				ROUNDED	**$ *460,000***
2.0 Misc. Construction Costs					
2.1	Div 1 / Mobilization[(1)]	5%			$ 23,000
2.2	Legal, Engineering and Administration[(2)]				$ -
				SUBTOTAL	$ 483,000
2.3	Contingency	40%			$ 184,000
2.4	Allowance - Utility Coordination & Permitting	0.5%			$ 2,300
				TOTAL	**$ 669,300**
				ROUNDED	**$ 700,000**

[(1)]Contractor's contract execution costs + cost to mobilize equipment and labor to the job site.

[(2)]Fees for design engineering, construction administration, and Owner's contract execution.

CSO017_1.1 SPP054 Sewer Separation O&M Costs

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
Gravity Sewers					
Operations Expenses					
		$/wk		$ -	
Routine Maintenance Expenses					
Budget for occasional issues/repairs	1	LS	$ 5,000.00	$ 5,000	
TOTAL ANNUAL COSTS				$ 5,000	
Rehabilitation Expenses					
Jet cleaning of gravity sewers - Labor (every 5 years)	80	hr	$ 45.00	$ 3,600	1 Vactor Crews: 2 EOs @ 5 days
Jet cleaning of gravity sewers - Vactor Truck (every 5 years)	1	week	$ 6,410.26	$ 6,410	1 Vactor Truck ($500K each, 3 year life) @ 1 work week
CCTV inspection - Labor (every 5 years)	80	hr	$ 45.00	$ 3,600	1 CCTV Crew: 2 EOs @ 5 days
CCTV inspection - CCTV Truck (every 5 years)	1	week	$ 3,205.13	$ 3,205	1 CCTV Truck ($250K each, 3 year life) @ 1 work week
Manhole maintenance (every 10 years)	1	LS	$ 3,151.31	$ 3,151	Assumes manhole rehab company provides labor and materials
Manhole rehabilitation (every 25 years)	1	LS	$ 33,592.00	$ 33,592	Assumes manhole rehab company provides labor and materials

CSO017_1.1 SPP054 Sewer Separation O&M Costs

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

	Sewer Maintenance								
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0									
1				$ 5,225				$ 5,225	$ 4,976
2				$ 5,460				$ 5,460	$ 4,952
3				$ 5,706				$ 5,706	$ 4,929
4				$ 5,963				$ 5,963	$ 4,905
5			$ 8,973	$ 6,231	$ 11,983			$ 27,186	$ 21,301
6				$ 6,511				$ 6,511	$ 4,859
7				$ 6,804				$ 6,804	$ 4,836
8				$ 7,111				$ 7,111	$ 4,813
9				$ 7,430				$ 7,430	$ 4,790
10			$ 11,181	$ 7,765	$ 14,932	$ 4,894		$ 38,773	$ 23,803
11				$ 8,114				$ 8,114	$ 4,744
12				$ 8,479				$ 8,479	$ 4,722
13				$ 8,861				$ 8,861	$ 4,699
14				$ 9,260				$ 9,260	$ 4,677
15			$ 13,934	$ 9,676	$ 18,608			$ 42,219	$ 20,308
16				$ 10,112				$ 10,112	$ 4,632
17				$ 10,567				$ 10,567	$ 4,610
18				$ 11,042				$ 11,042	$ 4,588
19				$ 11,539				$ 11,539	$ 4,566
20			$ 17,364	$ 12,059	$ 23,190	$ 7,600		$ 60,213	$ 22,693
21				$ 12,601				$ 12,601	$ 4,523
22				$ 13,168				$ 13,168	$ 4,502
23				$ 13,761				$ 13,761	$ 4,480
24				$ 14,380				$ 14,380	$ 4,459
25			$ 21,639	$ 15,027	$ 28,898		$ 100,959	$ 166,523	$ 49,175
26				$ 15,703				$ 15,703	$ 4,416
27				$ 16,410				$ 16,410	$ 4,395
28				$ 17,148				$ 17,148	$ 4,374
29				$ 17,920				$ 17,920	$ 4,354
30			$ 26,966	$ 18,727	$ 36,013	$ 11,803		$ 93,508	$ 21,636
31				$ 19,569				$ 19,569	$ 4,312
32				$ 20,450				$ 20,450	$ 4,292
33				$ 21,370				$ 21,370	$ 4,271
34				$ 22,332				$ 22,332	$ 4,251
35			$ 33,605	$ 23,337	$ 44,878			$ 101,820	$ 18,459
36				$ 24,387				$ 24,387	$ 4,211
37				$ 25,484				$ 25,484	$ 4,191
38				$ 26,631				$ 26,631	$ 4,171
39				$ 27,829				$ 27,829	$ 4,151
40			$ 41,878	$ 29,082	$ 55,927	$ 18,329		$ 145,215	$ 20,627
41				$ 30,391				$ 30,391	$ 4,111
42				$ 31,758				$ 31,758	$ 4,092
43				$ 33,187				$ 33,187	$ 4,072
44				$ 34,681				$ 34,681	$ 4,053
45			$ 52,187	$ 36,241	$ 69,695			$ 158,123	$ 17,599
46				$ 37,872				$ 37,872	$ 4,014
47				$ 39,576				$ 39,576	$ 3,995
48				$ 41,357				$ 41,357	$ 3,976
49				$ 43,218				$ 43,218	$ 3,957
50			$ 65,035	$ 45,163	$ 86,852	$ 28,465	$ 100,959	$ 326,474	$ 28,470
									$ 422,000

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

CSO064_2 Perry St Sewer Separation Opinion of Probable Construction Costs

Item	Description	Quantity	Unit	Cost per Unit	Total
1.0 Storm Sewer					
1.1	18" PVC	1,385	LF	$ 345	$ 477,713
1.2	24" PVC	2,730	LF	$ 110	$ 300,296
1.3	36" RCP	1,040	LF	$ 240	$ 249,648
1.4	42" RCP	1,262	LF	$ 480	$ 605,664
1.5	Trench and Restoration - Pavement Areas	6,417	LF	$ 208.00	$ 1,334,662
1.6	2'x2' Catch Basin	25	EA	$ 4,820	$ 120,500
1.7	4' Dia Manhole	14	EA	$ 3,065	$ 42,912
1.8	Cutting pavement subbase	12,833	LF	$ 4	$ 51,559
1.9	Milling full roadway		SY	$ 3.44	$ -
1.10	Utility Relocation allowance	1	LS	$ 100,000	$ 100,000
				SUBTOTAL	$ *3,282,954*
				ROUNDED	**$ *3,290,000***
2.0 Misc. Construction Costs					
2.1	Div 1 / Mobilization[(1)]	5%			$ 164,500
2.2	Legal, Engineering and Administration[(2)]				$ -
2.3	Contingency	40%			$ 1,316,000
2.4	Allowance - Utility Coordination & Permitting	0.5%			$ 16,450
				TOTAL	**$ 4,786,950**
				ROUNDED	**$ 4,800,000**

[(1)]Contractor's contract execution costs + cost to mobilize equipment and labor to the job site.

[(2)]Fees for design engineering, construction administration, and Owner's contract execution.

CSO064_2 Perry St Sewer Separation O&M Costs

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
Gravity Sewers and Force Mains					
Operations Expenses					
		$/wk		$ -	
Routine Maintenance Expenses					
Budget for occasional issues/repairs	1	LS	$ 5,000.00	$ 5,000	
TOTAL ANNUAL COSTS				$ 5,000	
Rehabilitation Expenses					
Jet cleaning of gravity sewers - Labor (every 5 years)	80	hr	$ 45.00	$ 3,600	1 Vactor Crews: 2 EOs @ 5 days
Jet cleaning of gravity sewers - Vactor Truck (every 5 years)	1	week	$ 6,410.26	$ 6,410	1 Vactor Truck ($500K each, 3 year life) @ 1 work week
CCTV inspection - Labor (every 5 years)	80	hr	$ 45.00	$ 3,600	1 CCTV Crew: 2 EOs @ 5 days
CCTV inspection - CCTV Truck (every 5 years)	1	week	$ 3,205.13	$ 3,205	1 CCTV Truck ($250K each, 3 year life) @ 1 work week
Manhole maintenance (every 10 years)	1	LS	$ 5,514.80	$ 5,515	Assumes manhole rehab company provides labor and materials
Manhole rehabilitation (every 25 years)	1	LS	$ 58,786.00	$ 58,786	Assumes manhole rehab company provides labor and materials

CSO064_2 Perry St Sewer Separation O&M Costs

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

Year (n)	Sewer Maintenance: Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (5 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Rehab Cost (25 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0									
1				$ 5,225				$ 5,225	$ 4,976
2				$ 5,460				$ 5,460	$ 4,952
3				$ 5,706				$ 5,706	$ 4,929
4				$ 5,963				$ 5,963	$ 4,905
5			$ 8,973	$ 6,231	$ 11,983			$ 27,186	$ 21,301
6				$ 6,511				$ 6,511	$ 4,859
7				$ 6,804				$ 6,804	$ 4,836
8				$ 7,111				$ 7,111	$ 4,813
9				$ 7,430				$ 7,430	$ 4,790
10			$ 11,181	$ 7,765	$ 14,932	$ 8,564		$ 42,443	$ 26,056
11				$ 8,114				$ 8,114	$ 4,744
12				$ 8,479				$ 8,479	$ 4,722
13				$ 8,861				$ 8,861	$ 4,699
14				$ 9,260				$ 9,260	$ 4,677
15			$ 13,934	$ 9,676	$ 18,608			$ 42,219	$ 20,308
16				$ 10,112				$ 10,112	$ 4,632
17				$ 10,567				$ 10,567	$ 4,610
18				$ 11,042				$ 11,042	$ 4,588
19				$ 11,539				$ 11,539	$ 4,566
20			$ 17,364	$ 12,059	$ 23,190	$ 13,300		$ 65,913	$ 24,842
21				$ 12,601				$ 12,601	$ 4,523
22				$ 13,168				$ 13,168	$ 4,502
23				$ 13,761				$ 13,761	$ 4,480
24				$ 14,380				$ 14,380	$ 4,459
25			$ 21,639	$ 15,027	$ 28,898		$ 176,677	$ 242,242	$ 71,535
26				$ 15,703				$ 15,703	$ 4,416
27				$ 16,410				$ 16,410	$ 4,395
28				$ 17,148				$ 17,148	$ 4,374
29				$ 17,920				$ 17,920	$ 4,354
30			$ 26,966	$ 18,727	$ 36,013	$ 20,655		$ 102,360	$ 23,684
31				$ 19,569				$ 19,569	$ 4,312
32				$ 20,450				$ 20,450	$ 4,292
33				$ 21,370				$ 21,370	$ 4,271
34				$ 22,332				$ 22,332	$ 4,251
35			$ 33,605	$ 23,337	$ 44,878			$ 101,820	$ 18,459
36				$ 24,387				$ 24,387	$ 4,211
37				$ 25,484				$ 25,484	$ 4,191
38				$ 26,631				$ 26,631	$ 4,171
39				$ 27,829				$ 27,829	$ 4,151
40			$ 41,878	$ 29,082	$ 55,927	$ 32,076		$ 158,962	$ 22,580
41				$ 30,391				$ 30,391	$ 4,111
42				$ 31,758				$ 31,758	$ 4,092
43				$ 33,187				$ 33,187	$ 4,072
44				$ 34,681				$ 34,681	$ 4,053
45			$ 52,187	$ 36,241	$ 69,695			$ 158,123	$ 17,599
46				$ 37,872				$ 37,872	$ 4,014
47				$ 39,576				$ 39,576	$ 3,995
48				$ 41,357				$ 41,357	$ 3,976
49				$ 43,218				$ 43,218	$ 3,957
50			$ 65,035	$ 45,163	$ 86,852	$ 49,813	$ 530,993	$ 777,856	$ 67,832
									$ 492,120

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

Life Cycle Cost Estimate (50 years) for SPP Modifications

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
SPP Modifications					
Operations Expenses					
		hour	$ 50.00	$ -	
Routine Maintenance Expenses					
Weekly Check	52	hr	$ 50.00	$ 2,600	2 operators/Sewer Construction Inspectors @ 1 extra hour every other week
Rehabilitation Expenses					
TOTAL ANNUAL COSTS				***$ 2,600***	

SPP Modifications

Assumed Interest Rate =	i =	5.0%
Assumed Inflation Rate =	I =	4.5%

	SPP Maintenance								
Year (n)	Annual Labor and Utility Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (10 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Annual Parts Cost (PM. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0									
1	$ 2,717							$ 2,717	$ 2,588
2	$ 2,839							$ 2,839	$ 2,575
3	$ 2,967							$ 2,967	$ 2,563
4	$ 3,101							$ 3,101	$ 2,551
5	$ 3,240							$ 3,240	$ 2,539
6	$ 3,386							$ 3,386	$ 2,527
7	$ 3,538							$ 3,538	$ 2,515
8	$ 3,697							$ 3,697	$ 2,503
9	$ 3,864							$ 3,864	$ 2,491
10	$ 4,038							$ 4,038	$ 2,479
11	$ 4,219							$ 4,219	$ 2,467
12	$ 4,409							$ 4,409	$ 2,455
13	$ 4,608							$ 4,608	$ 2,444
14	$ 4,815							$ 4,815	$ 2,432
15	$ 5,032							$ 5,032	$ 2,420
16	$ 5,258							$ 5,258	$ 2,409
17	$ 5,495							$ 5,495	$ 2,397
18	$ 5,742							$ 5,742	$ 2,386
19	$ 6,000							$ 6,000	$ 2,375
20	$ 6,270							$ 6,270	$ 2,363
21	$ 6,553							$ 6,553	$ 2,352
22	$ 6,847							$ 6,847	$ 2,341
23	$ 7,156							$ 7,156	$ 2,330
24	$ 7,478							$ 7,478	$ 2,319
25	$ 7,814							$ 7,814	$ 2,308
26	$ 8,166							$ 8,166	$ 2,297
27	$ 8,533							$ 8,533	$ 2,286
28	$ 8,917							$ 8,917	$ 2,275
29	$ 9,318							$ 9,318	$ 2,264
30	$ 9,738							$ 9,738	$ 2,253
31	$ 10,176							$ 10,176	$ 2,242
32	$ 10,634							$ 10,634	$ 2,232
33	$ 11,112							$ 11,112	$ 2,221
34	$ 11,613							$ 11,613	$ 2,211
35	$ 12,135							$ 12,135	$ 2,200
36	$ 12,681							$ 12,681	$ 2,190
37	$ 13,252							$ 13,252	$ 2,179
38	$ 13,848							$ 13,848	$ 2,169
39	$ 14,471							$ 14,471	$ 2,158
40	$ 15,123							$ 15,123	$ 2,148
41	$ 15,803							$ 15,803	$ 2,138
42	$ 16,514							$ 16,514	$ 2,128
43	$ 17,257							$ 17,257	$ 2,118
44	$ 18,034							$ 18,034	$ 2,107
45	$ 18,845							$ 18,845	$ 2,097
46	$ 19,693							$ 19,693	$ 2,087
47	$ 20,580							$ 20,580	$ 2,078
48	$ 21,506							$ 21,506	$ 2,068
49	$ 22,474							$ 22,474	$ 2,058
50	$ 23,485							$ 23,485	$ 2,048
									$ 115,380

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

Life Cycle Cost Estimate (50 years) for Northern Relief Tunnel

Description	Quantity	Unit	Unit Cost	Total Annual Cost	Comments
Annual Operation & Maintenance					
OLS Tank with Gravity Dewatering					
Operations Expenses					
Licensed Wastewater Treatment Plant Operator	52	hour	$ 50.00	$ 2,600	SCADA monitoring of entire collection system @ 1 hour per week
Communications	12	month	$ 50.00	$ 600	Cellular data, alarm system, etc.
ANNUAL LABOR AND ELECTRICAL TOTAL				$ 3,200	
ANNUAL PARTS AND EQUIPMENT TOTAL				$ -	
				Total Cost	
Rehabilitation Expenses					
Instrumentation Upgrades (every 5 years)	1	LS	$ 15,000.00	$ 15,000	Level, pressure, temp sensors, I&C/communication equipment
Inspection/Cleaning Service Outside 3rd party Service Order (every 5 years)	1	LS	$ 250,000.00	$ 250,000	Inspection, maintenance, and cleaning of tunnel

Life Cycle Cost Estimate (50 years) for Northern Relief Tunnel

Assumed Interest Rate =	i =	5.0%
Assumed Inflation Rate =	I =	4.5%

	Tunnel Operation and Maintenance							
Year (n)	Annual Labor and Electrical Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (10 yr. maint.)[1,2]	Labor Cost (25 yr. maint.)[1,2]	Rehab Cost (5 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0								
1	$ 3,344						$ 3,344	$ 3,185
2	$ 3,494						$ 3,494	$ 3,170
3	$ 3,652						$ 3,652	$ 3,155
4	$ 3,816						$ 3,816	$ 3,139
5	$ 3,988					$ 330,238	$ 334,226	$ 261,875
6	$ 4,167						$ 4,167	$ 3,110
7	$ 4,355						$ 4,355	$ 3,095
8	$ 4,551						$ 4,551	$ 3,080
9	$ 4,756						$ 4,756	$ 3,065
10	$ 4,970					$ 411,537	$ 416,506	$ 255,699
11	$ 5,193						$ 5,193	$ 3,036
12	$ 5,427						$ 5,427	$ 3,022
13	$ 5,671						$ 5,671	$ 3,007
14	$ 5,926						$ 5,926	$ 2,993
15	$ 6,193					$ 512,850	$ 519,043	$ 249,668
16	$ 6,472						$ 6,472	$ 2,965
17	$ 6,763						$ 6,763	$ 2,951
18	$ 7,067						$ 7,067	$ 2,937
19	$ 7,385						$ 7,385	$ 2,923
20	$ 7,717					$ 639,104	$ 646,822	$ 243,780
21	$ 8,065						$ 8,065	$ 2,895
22	$ 8,428						$ 8,428	$ 2,881
23	$ 8,807						$ 8,807	$ 2,867
24	$ 9,203						$ 9,203	$ 2,854
25	$ 9,617					$ 796,440	$ 806,058	$ 238,031
26	$ 10,050						$ 10,050	$ 2,827
27	$ 10,502						$ 10,502	$ 2,813
28	$ 10,975						$ 10,975	$ 2,800
29	$ 11,469						$ 11,469	$ 2,786
30	$ 11,985					$ 992,509	$ 1,004,494	$ 232,417
31	$ 12,524						$ 12,524	$ 2,760
32	$ 13,088						$ 13,088	$ 2,747
33	$ 13,677						$ 13,677	$ 2,734
34	$ 14,292						$ 14,292	$ 2,721
35	$ 14,936					$ 1,236,847	$ 1,251,783	$ 226,936
36	$ 15,608						$ 15,608	$ 2,695
37	$ 16,310						$ 16,310	$ 2,682
38	$ 17,044						$ 17,044	$ 2,669
39	$ 17,811						$ 17,811	$ 2,656
40	$ 18,612					$ 1,541,337	$ 1,559,949	$ 221,584
41	$ 19,450						$ 19,450	$ 2,631
42	$ 20,325						$ 20,325	$ 2,619
43	$ 21,240						$ 21,240	$ 2,606
44	$ 22,196						$ 22,196	$ 2,594
45	$ 23,194					$ 1,920,786	$ 1,943,980	$ 216,358
46	$ 24,238						$ 24,238	$ 2,569
47	$ 25,329						$ 25,329	$ 2,557
48	$ 26,469						$ 26,469	$ 2,545
49	$ 27,660						$ 27,660	$ 2,533
50	$ 28,904					$ 2,393,649	$ 2,422,553	$ 211,256
								$ 2,471,480

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

Opinion of Probable Construction Cost for Permeable Pavement (GI)

Project	Description		Unit	Unit	Cost per Unit	Total
CSO053_12.1	Jefferson Ave GI	Permeable pavement managing 2.3 acres of impervious area	AC	AC	$ 200,000	$ 460,000
CSO053_12.2	Jefferson Ave GI	Permeable Pavement on Jefferson Ave. managing 7.55 acres of impervious area	AC	AC	$ 200,000	$ 1,520,000
CSO055_3	20% GI Implementation	260 acres of impervious area managed	AC	AC	$ 200,000	$ 52,032,000
CSO011_1.1	20% GI Implementation	19.9 acres of impervious area managed	AC	AC	$ 200,000	$ 3,982,000
CSO017_4	20% GI Implementation	37.5 acres of impervious area managed	AC	AC	$ 200,000	$ 7,490,000
CSO006_5	CSO006 20% GI Implementation	52.5 acres of impervious area managed	AC	AC	$ 200,000	$ 10,506,000
CSO053_9	20% GI Implementation	Permeable Pavement (530 acres of impervious area managed)	AC	AC	$ 200,000	$ 3,344,000
CSO026_4	20% GI Implementation	125.5 acres of impervious area managed	AC	AC	$ 200,000	$ 25,104,000
		Totals				**104,438,000.00**

Life Cycle Cost Estimate (50 years) for Permeable Pavement (GI)

Description	Quantity	Unit		Total Annual Cost	Comments
Annual Operation & Maintenance					
Permeable Pavement (GI)					
Operations Expenses					
Fuel	26	$/wk	$	13,000	Assumes $500/every other week fuel needed for both sweepers
Hauling/Disposal of Collected Debris	3	$/ton/day	$	268	Assumes one ton collected each day sweepers operate per production rate below
Routine Maintenance Expenses					
Pavement Vacuum Equipment Operator(s)	21.4	$/hr	$	963	Assume all 178 acres of permeable pavement cleaned twice per year. 1 operator per sweeper. Elgin Whirlwind can clean 12-foot width at a time and is assumed to travel at 3 mph (can go up to 5), enabling rate of 4.36 ac/hr.
Pavement Vacuum Equipment	1	$/yr	$	70,000	Assume $350,000 per unit / 5 years; 1 unit in total
TOTAL ANNUAL COSTS			$	84,231	
Rehabilitation Expenses					
Pavement Repair / Resurfacing (every 10 years)	1	LS	$	5,000,000	Approx. 5% of initial capital cost

Green Infrastruction (Permeable Pavement)

Assumed Interest Rate = i = 5.0%

Assumed Inflation Rate = I = 4.5%

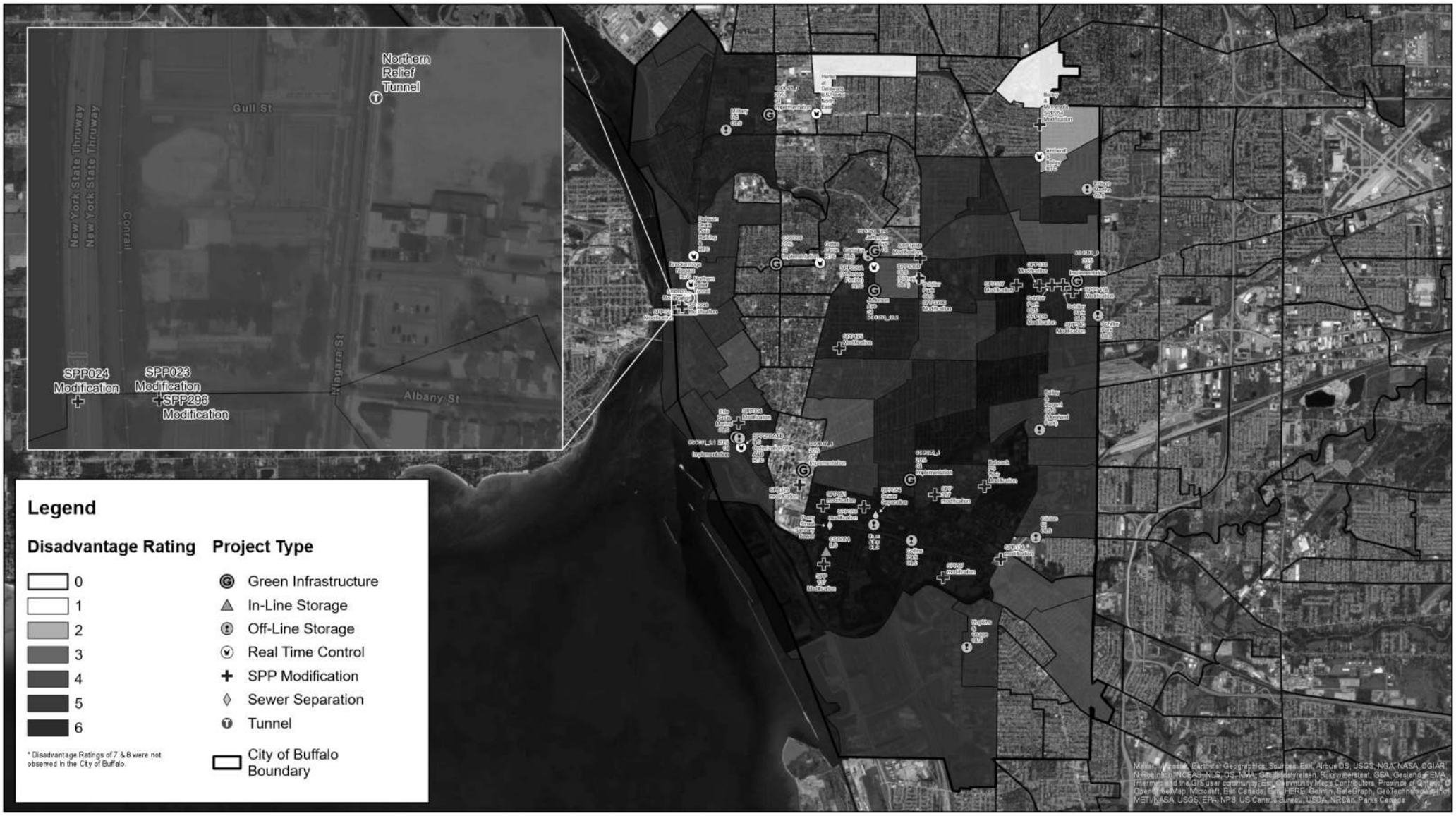
Year (n)	Permeable Pavement Operation and Maintenance: Annual Labor and Equipment Cost (Prev. maint.)[1,2]	Labor Cost (2 yr. maint.)[1,2]	Labor Cost (5 yr. maint.)[1,2]	Labor Cost (10 yr. maint.)[1,2]	Annual Parts Cost (Prev. maint.)[2]	Rehab Cost (2 yr. maint.)[2]	Rehab Cost (10 yr. maint.)[2]	Total Annual Cost	PW Cost[3]
0									
1	$ 88,021							$ 88,021	$ 83,830
2	$ 91,982							$ 91,982	$ 83,431
3	$ 96,122							$ 96,122	$ 83,033
4	$ 100,447							$ 100,447	$ 82,638
5	$ 104,967							$ 104,967	$ 82,245
6	$ 109,691							$ 109,691	$ 81,853
7	$ 114,627							$ 114,627	$ 81,463
8	$ 119,785							$ 119,785	$ 81,075
9	$ 125,175							$ 125,175	$ 80,689
10	$ 130,808						$ 7,764,847	$ 7,895,655	$ 4,847,247
11	$ 136,695							$ 136,695	$ 79,922
12	$ 142,846							$ 142,846	$ 79,542
13	$ 149,274							$ 149,274	$ 79,163
14	$ 155,991							$ 155,991	$ 78,786
15	$ 163,011							$ 163,011	$ 78,411
16	$ 170,346							$ 170,346	$ 78,038
17	$ 178,012							$ 178,012	$ 77,666
18	$ 186,022							$ 186,022	$ 77,296
19	$ 194,393							$ 194,393	$ 76,928
20	$ 203,141						$ 12,058,570	$ 12,261,711	$ 4,621,310
21	$ 212,282							$ 212,282	$ 76,197
22	$ 221,835							$ 221,835	$ 75,834
23	$ 231,818							$ 231,818	$ 75,473
24	$ 242,250							$ 242,250	$ 75,114
25	$ 253,151							$ 253,151	$ 74,756
26	$ 264,543							$ 264,543	$ 74,400
27	$ 276,447							$ 276,447	$ 74,046
28	$ 288,887							$ 288,887	$ 73,693
29	$ 301,887							$ 301,887	$ 73,342
30	$ 315,472						$ 18,726,591	$ 19,042,063	$ 4,405,904
31	$ 329,668							$ 329,668	$ 72,646
32	$ 344,503							$ 344,503	$ 72,300
33	$ 360,006							$ 360,006	$ 71,955
34	$ 376,206							$ 376,206	$ 71,613
35	$ 393,135							$ 393,135	$ 71,272
36	$ 410,827							$ 410,827	$ 70,932
37	$ 429,314							$ 429,314	$ 70,594
38	$ 448,633							$ 448,633	$ 70,258
39	$ 468,821							$ 468,821	$ 69,924
40	$ 489,918						$ 29,081,823	$ 29,571,741	$ 4,200,538
41	$ 511,965							$ 511,965	$ 69,259
42	$ 535,003							$ 535,003	$ 68,930
43	$ 559,078							$ 559,078	$ 68,601
44	$ 584,237							$ 584,237	$ 68,275
45	$ 610,527							$ 610,527	$ 67,950
46	$ 638,001							$ 638,001	$ 67,626
47	$ 666,711							$ 666,711	$ 67,304
48	$ 696,713							$ 696,713	$ 66,983
49	$ 728,065							$ 728,065	$ 66,664
50	$ 760,828						$ 45,163,181	$ 45,924,009	$ 4,004,745
									$ 25,451,700

1. Labor Rates are calculated on Life Cycle Costs worksheet.
2. Future Annual Cost = Present Annual Cost x (1 + Inflation Rate)^{Year} = $A_o(1+I)^n$ (present annual costs located on the O&M Costs worksheet).
3. Present Worth Cost = PW = Future Annual Cost / (1 + Interest Rate)^{Year} = $F / (1 + i)^n$

Attachment G

DISADVANTAGE RANKING FOR SELECTED ALTERNATIVE PROJECTS

Project Number 299



0 0.5 1 2 3 Miles

N

Spatial Reference
Name: NAD83 New York West ftUS
PCS: NAD83 New York West ftUS
GCS: GCS North American 1983
Datum: North American 1983
Projection: Transverse Mercator

xylem Let's Solve Water

ARCADIS

GHD

LTCP OPTIMIZATION SELECTED ALTERNATIVE PROJECTS & DISADVANTAGED COMMUNITIES

BUFFALO, NY

Project No. 30085108

Date: 01/12/2023

Data Source:
Disadvantage Ratings Layer - Climate and Economic Justice Screening tool (CEJST)
https://screeningtool.geoplatform.gov/en/#3/33.47/97.5
rderfbverview

LTCP OPTIMIZATION SELECTED ALTERNATIVE PROJECTS & DISADVANTAGED COMMUNITIES

Notes:

(1) The disadvantage ranking of GI projects was calculated using the weighted average of the GI project subcatchments distribution across the various disadvantaged communities.

(2) The disadvantage ranking for all other projects (OLS, RTC, ILS, and SPP Modifications) corresponds to the highest census' tract disadvantage ranking in the 0.25 mi buffer zone around the project.

(3) Data Source: Disadvantage Ratings Layer - Climate and Economic Justice Screening tool (CEJST) https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5'rder#overview

No.	Tag	Project	Disadvantage Rating .25-mi buffer$_3$
1	CSO006_2	Gates Circle RTC	0
2	CSO055_1.1	Hertel at Delaware ILS/Hertel North East	1
3	CSO053_12.1	CSO053_12.1 Jefferson Ave GI$_{(1)}$	1
4	CSO053_3.3	Bailey & Minnesota SPP254 Modification	2
5	CSO055_3	CSO055_3 20% GI Implementation$_{(1)}$	2
6	CSO006_5	CSO006_5 20% GI Implementation$_{(1)}$	3
7	CSO017_4	CSO017_4 20% GI Implementation$_{(1)}$	3
8	CSO033_2	Clinton St OLS	4
9	CSO053_3.2	Amherst & Bailey RTC	4
10	CSO006_3	Delavan Drain Weir Raising & RTC	4
11	CSO011_1.2	SPP024 Modification	4
12	CSO012_1.2	SPP023 Modification	4
13	CSO012_2.1	SPP296 Modification	4
14	CSO028_1	Hopkins & Osage OLS	4
15	System_1	Northern Relief Tunnel	4
16	CSO010_1	Breckenridge Niagara RTC	4
17	CSO011_1.1	CSO011_1.1 20% GI Implementation$_{(1)}$	4
18	CSO053_11	Canisius OLS	5
19	CSO053_5.2	Edison Martha OLS	5
20	System_2	Schiller Park OLS	5
21	CSO053_9	CSO053_9 20% GI Implementation$_{(1)}$	5
22	CSO053_12.2	CSO053_12.2 Jefferson Ave GI$_{(1)}$	5
23	CSO013_1	SPP304 Modification	5

No.	Tag	Project	Disadvantage Rating .25-mi buffer$_3$
24	CSO014_1.1	SPP206A&B ILS Optimization/206 A&B RTC	5
25	CSO014_1.2	Erie Basin Marina OLS	5
26	CSO053_1.4	SPP336B OLS (Sidney OLS)	5
27	CSO053_1.5	Schiller Park OLS SPP336B Modification	5
28	CSO053_10	SPP229A (Jefferson Florida) RTC	5
29	CSO053_13	SPP165B Modification	5
30	CSO053_14	SPP175 Modification	5
31	CSO053_8	SPP341A Modification	5
32	CSO055_1.6	Military Rd OLS	5
33	System_2_4	Schiller Park OLS SPP340 Modification	5
34	CSO053_1.4	SPP326 modification	6
35	CSO033_3	SPP104 modification	6
36	CSO033_1	Bailey & Regent OLS (Moreland Park)	6
37	CSO027_1	SPP 317 modification	6
38	CSO027_2	Babcock PS Weir Modification	6
39	CSO053_3.1	SPP338 Modification	6
40	System_2_3	Schiller Park OLS SPP339 Modification	6
41	CSO026_4	CSO026_4 20% GI Implementation$_{(1)}$	6
42	CSO017_1.1	SPP054 Sewer Separation	6
43	CSO017_10	SPP051 modification	6
44	CSO017_6	Bass Alley OLS	6
45	CSO017_9	SPP059 modification	6
46	CSO026_1.3	Collins Park OLS	6
47	CSO027_3	SPP97 modification	6
48	CSO053_2.5	SPP337 Modification	6
49	CSO064_1.1	CSO064 ILS	6
50	CSO064_1.2	SPP 137 Modification	6
51	CSO064_2	Perry Street Sanitary Sewer	6

Attachment H

PRELIMINARY IMPLEMENTATION SCHEDULE

Project Number 299

ID	Task Name	Start	Finish
1	**NFA Phase I**	Mon 11/25/19	Sat 5/25/30
4	**NFA Phase II**	Wed 10/28/20	Fri 12/26/31
7	**Jefferson & Florida (SPP 170B) (2.6 MG) (M) Replaced by CSO053_11 1.5 MG Canisius/Jefferson Delavan OLS**	Wed 12/1/21	Fri 4/9/32
10	**Amherst Quarry OLS (M) Now CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC**	Wed 12/1/21	Thu 7/6/28
13	**Underflow Upsizing (CSO 008/010, 061, 004) (M) Replaced by CSO010_1 Breckenridge Niagara RTC**	Tue 3/1/22	Wed 1/31/29
16	**CSO006_2 Gates Circle RTC**	Tue 3/1/22	Wed 5/17/28
19	**CSO053_10 SPP229A RTC**	Tue 3/1/22	Sun 7/19/26
22	**CSO053_12.2 Jefferson Ave GI**	Tue 3/1/22	Wed 6/14/28
25	**CSO053_12.1 Jefferson Ave GI**	Tue 3/1/22	Wed 6/14/28
28	**CSO053_3.3 Bailey & Minnesota SPP254 Modification**	Tue 3/1/22	Mon 7/20/26
31	**Colorado ILS (M) Replaced by CSO053_2.5 SPP337 Modification**	Sat 3/2/24	Sat 11/20/27
34	**South Bailey ILS (M) Replaced with CSO053_3.1 SPP338 Modification**	Sat 3/2/24	Sat 6/1/30
37	**SPP 341A Optimization Genesee & Kearns (M) Replaced by CSO053_8 SPP341A Modification**	Sat 3/2/24	Sat 11/20/27
40	**CSO053_1.5 SPP336B Modification**	Sat 3/2/24	Sat 11/20/27
43	**SPP 336 A/B (SPP165A, SPP165B, SPP336A, SPP 336B) (4.2 MG) (M) Replaced by CSO053_1.4 3.26 MG Sidney OLS**	Sat 3/2/24	Sat 5/29/32
46	**CSO053_13 SPP165B Modification**	Sat 3/2/24	Sat 11/20/27
49	**CSO053_14 SPP175 Modification**	Sat 3/2/24	Sat 11/20/27
52	**CSO053_5.2 Edison Martha OLS**	Sat 3/2/24	Sat 4/30/33
55	**NFA Phase III**	Fri 3/29/24	Wed 9/3/31
58	**Non-NFA Phase III Improvements**	Fri 3/29/24	Thu 3/31/33
61	**CSO014_1.1 SPP206A&B RTC**	Mon 3/3/25	Sat 2/9/30
64	**System_2 Schiller Park OLS**	Mon 3/3/25	Sat 5/28/33
67	**System_2_3 SPP339 Modification**	Mon 3/3/25	Sat 11/18/28
70	**System_2_4 Schiller Park OLS SPP340 Modification**	Mon 3/3/25	Sat 4/7/29
73	**CSO-014/015 (0.8 MG) (M) Updated to larger tank: CSO014_1.2 5.55 MG Erie Basin Marina OLS**	Tue 3/3/26	Sun 3/5/34



BSA Revised Schedule
Date: Wed 12/6/23

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

ID	Task Name	Start	Finish
76	CSO-013 (0.3 MG) (M) Replaced with CSO013_1 SPP304 Modification	Tue 3/3/26	Sun 11/18/29
79	CSO017_8 SPP326 Modification	Tue 3/3/26	Sun 11/18/29
82	CSO011_1.2 SPP024 Modification	Tue 3/3/26	Sun 11/18/29
85	CSO012_1.2 SPP023 Modification	Tue 3/3/26	Sun 11/18/29
88	CSO012_2.1 SPP296 Modification	Tue 3/3/26	Sun 11/18/29
91	CSO026_1.3 Collins Park OLS	Wed 3/3/27	Wed 5/30/35
94	CSO027_1 SPP 317 Modification	Wed 3/3/27	Wed 11/20/3(
97	CSO027_2 Babcock PS Weir Modification	Wed 3/3/27	Wed 4/9/31
100	CSO-055 (7.5 MG) (M) Updated to larger tank with new location: CSO055_1.5 11.55 MG Military Rd OLS	Fri 8/27/27	Fri 1/2/37
103	Northern Relief Sewer/ North Relief - Interceptor (M) New Configuration, tagged as System_1 Northern Relief Tunnel	Fri 8/27/27	Fri 6/1/40
106	CSO017_9 SPP059 Modification	Sat 3/3/29	Sat 11/20/32
109	CSO027_3 SPP097 modification	Sat 3/3/29	Sat 11/20/32
112	CSO033_2 Clinton St OLS	Sat 3/3/29	Sat 3/8/36
115	CSO033_3 SPP104 Modification	Sat 3/3/29	Mon 11/22/3:
118	CSO017_10 SPP051 Modification	Sat 3/3/29	Sat 11/20/32
121	CSO-064 (0.1 MG) (M) Replaced with CSO064_1.1 CSO-064 ILS	Sun 3/3/30	Sat 3/10/35
124	CSO006_3 Delavan Drain Weir Raising & RTC	Sun 3/3/30	Sat 4/5/36
127	CSO064_1.2 SPP 137 Modification	Sun 3/3/30	Sat 11/19/33
130	CSO-028/044/047 (2.3 MG) (M) Updated to smaller tank: CSO028_1 0.95 MG Hopkins & Osage OLS	Mon 3/3/31	Mon 3/7/39
133	CSO017_6 Bass Alley OLS	Mon 3/3/31	Sat 3/5/39
136	CSO033_1 Bailey & Regent OLS (Moreland Park)	Tue 3/2/32	Sun 3/4/40
139	CSO064_2 Perry Street Sanitary Sewer	Thu 3/3/33	Thu 6/3/38
142	CSO017_1.1 SPP054 Sewer Separation	Thu 3/3/33	Thu 6/3/38
145	Hertel North East ILS(M) Updated design (CSO055_1.1)	Fri 3/3/34	Fri 6/1/40
148	Scajaquada Creek GI (16.7 acres managed, CSO053_9)	Thu 3/2/28	Wed 3/1/34
155	Black Rock Canal GI (52.5 acres managed, CSO006_5)	Mon 3/3/31	Sun 3/1/37
162	Buffalo River GI (163 acres managed, CSO017_4 & CSO026_4)	Tue 3/2/32	Wed 3/2/39
169	Niagara River GI (279.9 acres managed, CSO011_1.1 & CSO055_3	Tue 3/2/32	Thu 3/1/40


2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040
H1 H2 H1 H2 H1 H2

APPENDIX B

BUFFALO

SEWER AUTHORITY

LTCP Optimization Bridging Document

July 3, 2024

xylem

Let's Solve Water

ARCADIS

GHD

JMDavidson

Engineering, D.P.C.

List of Abbreviations 6
Introduction 1
Objective 1
1. Waterbody Level Impacts 2
1.1. Projects 2
1.2. Activations 4
1.3. Costs 4
1.4. Schedule 10
2. CSO Level Impacts 11
2.1. Black Rock Canal: CSO-003 11
2.2. Black Rock Canal: CSO-004 12
2.3. Black Rock Canal: CSO-006 13
2.4. Black Rock Canal: CSO-010 15
2.5. Black Rock Canal: CSO-012 17
2.6. Black Rock Canal: CSO-013 19
2.7. Black Rock Canal: CSO-063 21
2.8. Buffalo River CSO-017 22
2.9. Buffalo River: CSO-026 24
2.10. Buffalo River: CSO-027 26
2.11. Buffalo River: CSO-028 28
2.12. Buffalo River: CSO-033 30
2.13. Buffalo River: CSO-052 32
2.14. Buffalo River: CSO-064 34
2.15. Buffalo River: CSO-066 36
2.16. Cazenovia Creek – C: CSO-037 37
2.17. Erie Basin Marina: CSO-014 38
2.18. Erie Basin Marina: CSO-015 40
2.19. Niagara River: CSO-011 41
2.20. Niagara River: CSO-055 43
2.21. Scajaquada Creek: CSO-053 45
2.22. Scajaquada Creek: CSO-059 49
2.23. Scajaquada Creek: CSO-060 50
3. Approved Projects in LTCP 51
3.1. Underflow Pipe Upsizing (CSO 008/010, 061, 004)/ CSO010_1 Breckenridge Niagara RTC 51
3.2. Northern Relief Sewer / System_1 Northern Relief Tunnel 53

3.3. CSO-013 Satellite Storage, Conveyance, FM & PS / CSO013_1 SPP304 Modification 55
3.4. Hamburg Drain Storage 57
3.5. Fillmore North ILS 58
3.6. SPP075 Optimization 59
3.7. Gibson CSO Line Storage 60
3.8. CSOs 028/044/047 Satellite Storage, Conveyance, FM & PS / CSO028_1 Hopkins & Osage OLS 61
3.9. CSO-052 Satellite Storage, Conveyance, FM & PS 63
3.10. CSO-064 Satellite Storage, Conveyance, FM & PS / CSO064_1.1 CSO-064 ILS 64
3.11. CSO-014/015 Satellite Storage, Conveyance, FM & PS / CSO14_1.2 Erie Basin Marina OLS 66
3.12. CSO-055 Satellite Storage, Conveyance, FM & PS / CSO055_1.5 Military Rd OLS/Hertel OLS 68
3.13. Hertel North East / Hertel Delaware ILS (CSO055_1.1) 70
3.14. SPP 336 A&B (CSO-053) Satellite Storage, Conveyance, FM & PS / CSO053_1.4 SPP336B Sidney Street OLS 72
3.15. Jefferson Avenue & Florida Street (CSO-053) Satellite Storage / CSO053_11 Jefferson Delavan OLS 74
3.16. Colorado ILS/ CSO053_2.5 SPP337 Modification 76
3.17. South Bailey ILS / CSO053_3.1 SPP338 Modification 78
3.18. Amherst Quarry OLS / CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC 80
3.19. SPP 341A Optimization Genesee & Kearns, now CSO053_8 SPP341A Modification. 82
3.20. East Ferry ILS 84
3.21. SPP 337 (CSO-053) Satellite Storage, Conveyance, FM & PS 85
3.22. Texas (Roslyn ILS) 86
3.23. Green Infrastructure 87
4. New Projects to Be Added 88
4.1. CSO006_2 Gates Circle RTC 88
4.2. CSO006_3 Delavan Drain RTC 89
4.3. CSO006_5 20% GI Implementation 90
4.4. CSO012_1.2 SPP023 Modification 91
4.5. CSO012_2.1 SPP296 Modification 92
4.6. CSO017_1.1 SPP054 Sewer Separation 93
4.7. CSO017_10 SPP051 Modification 94
4.8. CSO017_4 20% GI Implementation 95
4.9. CSO017_6 Bass Alley OLS 96
4.10. CSO017_8 SPP326 Modification 97

4.11. CSO017_9 SPP059 Modification 98
4.12. CSO026_1.3 Collins Park OLS 99
4.13. CSO026_4 20% GI Implementation 100
4.14. CSO027_1 SPP 317 Modification 101
4.15. CSO027_2 Babcock PS Weir Modification 102
4.16. CSO027_3 SPP097 Modification 103
4.17. CSO033_1 Bailey & Regent OLS 104
4.18. CSO033_2 Clinton St. OLS RTC 105
4.19. CSO033_3 SPP104 Modification 106
4.20. CSO064_1.2 SPP 137 Modification 107
4.21. CSO064_2 Perry Street Sanitary Sewer 108
4.22. CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC 109
4.23. CSO011_1.1 20% GI Implementation 110
4.24. CSO011_1.2 SPP024 Modification 111
4.25. CSO055_3 20% GI Implementation 112
4.26. CSO053_1.5 SPP336B Modification 113
4.26a CSO053_1.5 SPP336B Modification 114
4.27. CSO053_10 SPP229A RTC 115
4.28. CSO053_12.1 Jefferson Ave GI 116
4.29. CSO053_12.2 Jefferson Ave GI 117
4.30. CSO053_13 SPP165B Modification 118
4.31. CSO053_14 SPP175, 176, & 177 Modifications 119
4.32. CSO053_3.3 SPP254 Modification 120
4.33. CSO053_5.2 Edison Martha OLS 121
4.34. CSO053_9 20% GI Implementation 122
4.35. System_2 Schiller Park OLS 123
4.36. System_2_3 SPP339 Modification 124
4.37. System_2_4 SPP340 Modification 125
5. Projects from LTCP Completed 126
5.1. Niagara Street Phase 4a: Scajaquada Expressway to Hertel Ave 126
5.2. Bird Ave Underflow SPP 13 Modifications - North Relief Interceptor 127
5.3. Bird RTC Project/ RTC-1/ Bird East/ Bird West 128
5.4. SPP 180 Optimization 129
5.5. SPP 331 Optimization 130
5.6. Niagara Street Phase 3: Hampshire Street to Scajaquada Expressway 131
5.7. PUSH Blue Projects 132

5.8. Niagara Street Phase 2: Virginia Street to Porter Avenue 133
5.9. SPP 283 Optimization 134
5.10. Carlton Street Porous Asphalt 135
5.11. Willert Park 136
5.12. CSO No. 026 RTC Structure/ Smith at Perry RTC/ Smith Street Storage/Smith CSO Line Storage 137
5.13. CSO No. 026 Sewer Separation 138
5.14. Montgomery CSO (Smith at Eagle) 139
5.15. SPP 217 Optimization 140
5.16. SPP 318 Optimization 141
5.17. Babcock Pump Station In-Line Storage 142
5.18. SPP 097A Optimization 143
5.19. Ohio Street 144
5.20. SPP 211 Optimization 145
5.21. SPP 122 Optimization 146
5.22. Niagara Street Phase 1: Elmwood Street to Virginia Street 147
5.23. SPPs 206A&B (CSO 014/015) 148
5.24. Genesee Street/Genesee Gateway Project 149
5.25. SPP 035 (CSO 014/015) 150
5.26. SPP 036 151
5.27. Kenmore Avenue 152
5.28. Hertel at Deer/ Hertel Northwest/ Hertel South In-Line Storage 153
5.29. SPP 001 Optimization 154
5.30. Fillmore Avenue Porous Parking and Green Lots 155
5.31. Hazelwood (Kay) In-Line Storage 156
5.32. Lang RTC Project / RTC-1 / Hagen St RTC 157
5.33. North Bailey In-Line Storage 158
5.34. Northland Ave 159
5.35. 612 Northland Ave 160
5.36. SPP 163 Optimization - 163A 161
5.37. SPP 165 Optimization 162
5.38. SPP 165A Optimization 163
5.39. SPP 178 Optimization 164
5.40. SPP 335B Optimization 165
5.41. SPP 336A Optimization 166
5.42. SPP 342B Optimization 167
5.43. SPP 183 Optimization 168

5.44. CSO 060 GI Project 169
5.45. 2001 - 2016 Commercial and Industrial Demolitions 170
5.46. 2001-2016 Residential (traditional) Demolitions 171
5.47. 2017 - 2024 Demolitions 172
5.48. Green Demolition Pilot Project 173

List of Abbreviations

BSA	Buffalo Sewer Authority
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CCI	Construction Cost Index
CSO	Combined Sewer Overflow
ENR	Engineering News Record
GCCS	Globally Coordinated Control Strategy
GI	Green Infrastructure
ILS	In-line Storage
LF	Linear Feet
LTCP	Long Term Control Plan
MBO	Market Based Optimization
NYSDEC	New York State Department of Environmental Conservation
OLS	Off-line Storage
OPCC	Opinions of Probable Construction Cost
RTC	Real-Time Control
SF	Square Feet
SPP	Sewer Patrol Point
SWMM	Stormwater Management Model
TBM	Tunnel Boring Machine
USEPA	United States Environmental Protection Agency

Introduction

The Buffalo Sewer Authority's (BSA's) Combined Sewer Overflow Long Term Control Plan (LTCP) was accepted and approved on March 18, 2014, by the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA). The approved document outlined a multi-year plan for implementing projects to reduce overflows in the BSA sewer collection system to target levels. Potential projects included a mix of in-line storage (ILS), off-line storage (OLS), real time control (RTC), and green infrastructure (GI). The collection system hydraulic model used in the LTCP was updated after completion of the first phase of LTCP projects. Simulations from the updated LTCP model suggest that some projects envisioned in the LTCP are no longer feasible and that other planned projects can be further optimized to meet targets.

The project team has worked collaboratively to compile a revised list of potential projects to be considered. The list included both new projects and those projects from the 2014 LTCP preferred alternative which have not since been ruled infeasible or unnecessary. An optimization process was then leveraged to evaluate the impacts of implementing different variations and combinations of these projects with the goal of minimizing both CSO activations and construction costs. The project team also optimized the distributed control scheme to find the optimal combination of control set points that maximize the system's conveyance and storage capacity. The result of these activities is a new set of recommended projects (the Selected Alternative) for achieving LTCP compliance. This process and the Selected Alternative are further described herein.

Objective

The intent of this document is to provide a detailed comparison of the projects remaining from the 2014 LTCP that have not been completed and the alternative projects proposed in the "LTCP Optimization Selected Alternative" memo submitted on January 31, 2023. The justification for keeping, modifying, removing, or replacing original LTCP projects will be presented in terms of cost, schedule, water quality goals, and other site-specific considerations.

1. Waterbody Level Impacts

1.1. Projects

i. Original LTCP Projects Unfinished

Table 1: Original LTCP Projects Unfinished

No.	Project Name and Tag	Most Impacted CSO	Most Impacted Waterbody	Included as Specified (S), Modified (M), or Removed (R)
1	Underflow Upsizing (CSO 008/010, 061, 004)	CSO-010	Black Rock Canal	(M) Replaced by CSO010_1 Breckenridge Niagara RTC
2	Northern Relief Sewer/ North Relief - Interceptor	CSO-011, 012, 055	Black Rock Canal & Niagara River	(M) New Configuration, tagged as System_1 Northern Relief Tunnel
3	CSO-013 (0.3 MG)	CSO-013	Black Rock Canal	(M) Replaced with CSO013_1 SPP304 Modification
4	Hamburg Drain Storage (5 MG) / Foundation 4	CSO-017	Buffalo River	(R)
5	Fillmore North ILS	CSO-026	Buffalo River	(R)
6	SPP075 Optimization	CSO-026	Buffalo River	(R)
7	Gibson CSO Line Storage	CSO-026	Buffalo River	(R)
8	CSO-028/044/047 (2.3 MG)	CSO-028	Buffalo River	(M) Updated to smaller tank: CSO028_1 0.95 MG Hopkins & Osage OLS
9	CSO-052 (0.6 MG)	CSO-052	Buffalo River	(R)
10	CSO-064 (0.1 MG)	CSO-064	Buffalo River	(M) Replaced with CSO064_1.1 CSO-064 ILS
11	CSO-014/015 (0.8 MG)	CSO-014	Erie Basin Marina	(M) Updated to larger tank: CSO014_1.2 5.55 MG Erie Basin Marina OLS
12	CSO-055 (7.5 MG)	CSO-055	Niagara River	(M) Updated to larger tank with new location: CSO055_1.5 11.55 MG Military Rd OLS
13	Hertel North East ILS	CSO-055	Niagara River	(M) Updated design (CSO055_1.1)
14	SPP 336 A/B (SPP165A, SPP165B, SPP336A, SPP 336B) (4.2 MG)	CSO-053	Scajaquada Creek	(M) Replaced by CSO053_1.4 3.26 MG Sidney OLS
15	Jefferson & Florida (SPP 170B) (2.6 MG)	CSO-053	Scajaquada Creek	(M) Replaced by CSO053_11 1.5 MG Canisius/Jefferson Delavan OLS
16	Colorado ILS	CSO-053	Scajaquada Creek	(M) Replaced by CSO053_2.5 SPP337 Modification
17	South Bailey ILS	CSO-053	Scajaquada Creek	(M) Replaced with CSO053_3.1 SPP338 Modification
18	Amherst Quarry OLS	CSO-053	Scajaquada Creek	(M) Now CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC
19	SPP 341A Optimization Genesee & Kearns	CSO-053	Scajaquada Creek	(M) Replaced by CSO053_8 SPP341A Modification
20	East Ferry ILS	CSO-053	Scajaquada Creek	(R)
21	SPP 337 (0.7 MG)	CSO-053	Scajaquada Creek	(R)
22	Texas (Roslyn ILS)	CSO-053	Scajaquada Creek	(R)
23	Green Infrastructure	Multiple	Multiple	(M) Separate CSO Basin GI projects will be listed as “New” projects under CSO Level Impacts

ii. New Projects to be Added

Table 2: New Projects to be Added

No.	Project Name and Tag	Most Impacted CSO	Most Impacted Waterbody
1	CSO006_2 Gates Circle RTC	CSO-006	Black Rock Canal
2	CSO006_3 Delavan Drain Weir Raising & RTC	CSO-006	Black Rock Canal
3	CSO006_5 20% GI Implementation	CSO-006	Black Rock Canal
4	CSO012_1.2 SPP023 Modification	CSO-012	Black Rock Canal
5	CSO012_2.1 SPP296 Modification	CSO-012	Black Rock Canal
6	CSO017_1.1 SPP054 Sewer Separation	CSO-017	Buffalo River
7	CSO017_10 SPP051 Modification	CSO-017	Buffalo River
8	CSO017_4 20% GI Implementation	CSO-017	Buffalo River
9	CSO017_6 Bass Alley OLS	CSO-017	Buffalo River
10	CSO017_8 SPP326 Modification	CSO-017	Buffalo River
11	CSO017_9 SPP059 Modification	CSO-017	Buffalo River
12	CSO026_1.3 Collins Park OLS	CSO-026	Buffalo River
13	CSO026_4 20% GI Implementation	CSO-026	Buffalo River
14	CSO027_1 SPP 317 Modification	CSO-027	Buffalo River
15	CSO027_2 Babcock PS Weir Modification	CSO-027	Buffalo River
16	CSO027_3 SPP097 modification	CSO-027	Buffalo River
17	CSO033_1 Bailey & Regent OLS (Moreland Park)	CSO-033	Buffalo River
18	CSO033_2 Clinton St OLS	CSO-033	Buffalo River
19	CSO033_3 SPP104 Modification	CSO-033	Buffalo River
20	CSO064_1.2 SPP 137 Modification	CSO-064	Buffalo River
21	CSO064_2 Perry Street Sanitary Sewer	CSO-064	Buffalo River
22	CSO014_1.1 SPP206A&B RTC	CSO-014	Erie Basin Marina
23	CSO011_1.1 20% GI Implementation	CSO-011	Niagara River
24	CSO011_1.2 SPP024 Modification	CSO-011	Niagara River
25	CSO055_3 20% GI Implementation	CSO-055	Niagara River
26	CSO053_1.5 SPP336B Modification	CSO-053	Scajaquada Creek
27	CSO053_10 SPP229A RTC	CSO-053	Scajaquada Creek
28	CSO053_12.1 Jefferson Ave GI	CSO-053	Scajaquada Creek
29	CSO053_12.2 Jefferson Ave GI	CSO-053	Scajaquada Creek
30	CSO053_13 SPP165B Modification	CSO-053	Scajaquada Creek
31	CSO053_14 SPP175 Modification	CSO-053	Scajaquada Creek
32	CSO053_3.3 Bailey & Minnesota SPP254 Modification	CSO-053	Scajaquada Creek
33	CSO053_5.2 Edison Martha OLS	CSO-053	Scajaquada Creek
34	CSO053_9 20% GI Implementation	CSO-053	Scajaquada Creek
35	System_2 Schiller Park OLS	CSO-053	Scajaquada Creek
36	System_2_3 SPP339 Modification	CSO-053	Scajaquada Creek
37	System_2_4 Schiller Park OLS SPP340 Modification	CSO-053	Scajaquada Creek

1.2. Activations

Compliance is defined by the number of activations allowed in the typical year (Level of Control or LOC) for each CSO's receiving waterbody as shown in Table 3 below.

Table 3: Activations by Waterbody

Waterbody	Activation Goals (Level of Control)	Old Model LTCP Completion Activations	New Model LTCP Completion Activations	Selected Alternative Completion Activations
Black Rock Canal	0-4	5	15	4
Buffalo River	0-6	6	15	6
Cazenovia Creek - B	0-0	0	0	0
Cazenovia Creek - C	0-6	6	5	5
Erie Basin Marina	0-2	2	2	2
Niagara River	0-9	9	16	9
Scajaquada Creek	0-4	4	26	4
Overall	**0-9**	**9**	**26**	**9**

1.3. Costs

The costs in the following tables are represented in both 2012 dollars and 2022 dollars to facilitate comparison between project alternatives and within project estimates over time. Cost estimates referred to as "Inflation Only Adjusted Costs" were prepared in 2012 and escalated to 2022 dollars using the change in ENR Construction Cost Index (CCI) during that time period, but not updated with respect to specific line items. Cost estimates referred to as "Updated Estimates in 2012 Dollars" and "Updated Estimates in 2022 Dollars" were revised in substance in 2022 by adding cost elements not considered in the initial 2012 estimates, following consultation with construction professionals and additional design engineers. These more comprehensive estimates developed in 2022 were therefore converted back to 2012 dollars where relevant. Further information on the development of these cost estimates can be found in the January 2023 "LTCP Optimization Selected Alternative" technical memo. Cost estimates for any unfinished LTCP projects that have been removed are not included in the Costs for Collection System Projects by Waterbody table below

i. Costs for Collection System Projects by Waterbody

Table 4: Costs for Collection System Projects by Waterbody

Water Body	List of LTCP Projects included in Waterbody Cost Estimate	Cost in LTCP 2012 Dollars	Inflation Only Adjusted Costs of LTCP Projects	True Cost Adjusted Costs of LTCP Projects	List of Proposed Projects included in Waterbody Cost Estimate	Cost of Proposed Projects in 2012 Dollars	2022 Cost of Proposed Projects
Black Rock Canal	CSO-013 (300,000 gallons)	$3,000,000	$4,192,149	$7,700,000	CSO006_2 Gates Circle RTC	$2,028,998	$2,835,287
	North Relief Sewer	$36,000,000	$50,305,784	$72,810,744	CSO006_3 Delavan Drain Storage/Delavan Drain Weir Raising & RTC	$2,862,494	$4,000,000
	Underflow Upsizing (CSO-008/010, 061, 004)	$500,000	$698,691	$675,000	CSO006_5 20% GI Implementation	$7,518,340	$10,506,000
					CSO010_1 Breckenridge Niagara RTC	$2,602,448	$3,636,617
					CSO012_1.2 SPP023 Modification	$42,937	$60,000
					CSO012_2.1 SPP296 Modification	$42,937	$60,000
					CSO013_1 SPP304 Modification	$42,937	$60,000
	SUBTOTAL	***$39,500,000***	***$55,196,624***	***$81,185,744***	***SUBTOTAL***	***$15,141,093***	***$21,157,904***

Table 4: Costs for Collection System Projects by Waterbody (Cont.)

Buffalo River	CSO-028/044/047* (2,300,000 gallons)	$12,200,000	$17,048,071	$29,200,000	CSO017_1.1 SPP054 Sewer Separation	$500,936	$700,000
	CSO-052 (600,000 gallons)	$3,900,000	$5,449,793	$9,900,000	CSO017_10 SPP051 modification	$42,937	$60,000
	CSO-064 (100,000 gallons)	$2,000,000	$2,794,766	$5,500,000	CSO017_4 20% GI Implementation	$5,360,020	$7,490,000
					CSO017_6 Bass Alley OLS	$23,343,638	$32,620,000
					CSO017_8 SPP326 Modification	$42,937	$60,000
					CSO017_9 SPP059 Modification (SPP059_w)	$42,937	$60,000
					CSO026_1.3 Collins Park OLS	$21,540,267	$30,100,000
					CSO026_4 20% GI Implementation	$17,965,012	$25,104,000
					CSO027_1 Weir #35, SPP 317 modification	$42,937	$60,000
					CSO027_2 Babcock PS WEIR#42 modification	$42,937	$60,000
					CSO027_3 SPP97 Modification (WEIR#10)	$42,937	$60,000
					CSO027_4 SPP067 Modification (WEIR#9)	$42,937	$60,000
					CSO028_1 Hopkins & Osage OLS	$12,623,598	$17,640,000
					CSO033_1 Bailey & Regent OLS	$38,371,731	$53,620,000
					CSO033_2 Clinton St OLS RTC	$117,219,125	$163,800,000
					CSO033_3 SPP104 Modification (WEIR#53)	$42,937	$60,000
					CSO064_1.2 SPP 137 Modification	$42,937	$60,000
					CSO064_2 Perry Street Sanitary Sewer	$3,434,993	$4,800,000
	SUBTOTAL	***$5,900,000***	***$8,244,559***	***$15,400,000***	***SUBTOTAL***	***$240,745,755***	***$336,414,000***
Cazenovia Creek	N/A*	N/A	N/A	N/A	N/A	N/A	N/A

*In Table ES-6 of the Approved LTCP, this project was associated with Cazenovia Creek-C due to the inclusion of CSOs 047 & 044 together with CSO 028. As CSO 028 is the only remaining CSO of these three not in compliance in the new model, this project has been reallocated to the Buffalo River

Table 4: Costs for Collection System Projects by Waterbody (Cont.)

Erie Basin Marina	CSO-014/015 (800,000 gallons)	$6,700,000	$9,362,465	$16,600,000	CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC	$2,862,494	$4,000,000
					CSO014_1.2 Erie Basin Marina OLS	$44,683,530	$62,440,000
	SUBTOTAL	***$6,700,000***	***$9,362,465***	***$16,600,000***	***SUBTOTAL***	***$47,546,023***	***$66,440,000***
Niagara River (including Cornelius Creek)	CSO-055 (7,500,000 gallons)	$18,500,000	$25,851,584	$45,200,000	CSO011_1.1 20% GI Implementation	$2,849,613	$3,982,000
					CSO011_1.2 SPP024 Modification	$42,937	$60,000
					CSO055_1.1 Hertel at Delaware ILS/Hertel North East	$2,862,494	$4,000,000
					CSO055_1.5 Military Rd OLS	$69,329,602	$96,880,000
					CSO055_3 20% GI Implementation	$37,235,320	$52,032,000
					System_1 Northern Relief Tunnel	$52,105,077	$72,810,744
	SUBTOTAL	***$18,500,000***	***$25,851,584***	***$45,200,000***	***SUBTOTAL***	***$164,425,044***	***$229,764,744***

Table 4: Costs for Collection System Projects by Waterbody (Cont.)

Scajaquada Creek	Jefferson & Florida (SPP 170B) (2,600,000 gallons)	$9,500,000	$13,275,138	$23,800,000	CSO053_1.4 SPP336B OLS	$19,837,083	$27,720,000
	SPP 336 a/b (SPP165A, SPP165B, SPP 336A, SPP336B) (4,200,000 gallons)	$11,500,000	$16,069,903	$31,200,000	CSO053_1.5 Schiller Park OLS SPP336B Modification	$42,937	$60,000
	SPP 337	$4,000,000	$5,589,532	$10,000,000	CSO053_10 SPP229A RTC	$2,146,870	$3,000,000
					CSO053_11 Canisius OLS	$21,468,704	$30,000,000
					CSO053_12.1 Jefferson Ave Main Beverly	$329,187	$460,000
					CSO053_12.2 Jefferson Ave Best Beverly	$1,087,748	$1,520,000
					CSO053_13 SPP165B Modification	$42,937	$60,000
					CSO053_14 SPP175 Modification	$42,937	$60,000
					CSO053_2.5 SPP337 Modification	$42,937	$60,000
					CSO053_3.1 South Bailey DUC/ILS	$2,862,494	$4,000,000
					CSO053_3.2 Amherst & Bailey RTC	$1,539,214	$2,150,872
					CSO053_3.3 SPP254 modification	$166,300	$232,385
					CSO053_5.2 Edison Martha OLS	$26,649,818	$37,240,000
					CSO053_8 SPP341A Modification	$42,937	$60,000
					CSO053_9 20% GI Implementation	$2,393,045	$3,344,000
					System_2 Schiller Park OLS	$61,514,994	$85,960,000
					System_2_3 Schiller Park OLS SPP339 Modification	$42,937	$60,000
					System_2_4 Schiller Park OLS SPP340 Modification	$42,937	$60,000
	SUBTOTAL	***$25,000,000***	***$34,934,572***	***$65,000,000***	***SUBTOTAL***	***$140,296,019***	***$196,047,257***
TOTAL		**$107,800,000**	**$150,637,876**	**$252,585,744**	**TOTAL**	**$608,153,933**	**$849,823,905**

ii. Costs for No Feasible Alternative (NFA)

In addition to the projects within the collection system, the No Feasible Alternative (NFA) Evaluation indicated several projects at the wastewater treatment plant to maximize the amount of flow that could be treated at the plant during wet weather events before discharge to the Niagara River. The table below shows the costs for the three phases of the projects recommended in the NFA.

Table 5: Costs for NFA

NFA Phase	Description	Cost in 2012 LTCP Dollars	Inflation Only Adjusted Costs (2022 Dollars)	Updated Estimates in 2012 Dollars	Updated Estimates in 2022 Dollars
1	1. Remove Grit from System 2. Replace Aerators and Aeration Piping 3. Replace RAS Lines (Including Creating Redundant System) 4. Replace RAS Valves 5. Install Tank Isolation Gates	N/A	N/A	$51,453,328	$71,900,000
2	1. Rehab of Primary Pumpstation (Full-Building Gut) 2. Primary Clarifier Restoration 3. Primary Chlorine Contact Tank Installation 4. Primary Chlorine Storage and Metering Facility Upgrade 5. New Primary Treatment Pumping Station (to utilize existing outfall 001 for primary treated only flows from the Primary Chlorine Contact Tank)	$40,500,000	$56,594,007	$52,956,137	$74,000,000
3	1. Installation of New Flow Channels for Secondary Clarifiers 2. Installation of Two new Secondary Clarifiers 3. Installation of Third Chlorine Contact Tank 4. Upgrade and Rehabilitation of Existing Chlorine Contact Tanks			$53,671,760	$75,000,000 *(no formal estimating undertaken as of yet)*
Total		**$40,500,000**	**$56,594,007**	**$158,081,225**	**$220,900,000**

Note: N/A refers to costs for Phase 1 which were not originally envisioned within the NFA and the 2014 LTCP. This phase was only realized later on, as Phase 3 was starting to be implemented.

iii. Overall Costs

Table 6: Overall Costs

	Cost in 2012 LTCP Dollars	Inflation Only Adjusted Costs (2022 Dollars)	Updated Estimates in 2012 Dollars	Updated Estimates in 2022 Dollars
Collection System Projects	$107,800,000	$150,637,876	$608,153,933	$849,823,905
NFA	$40,500,000	$56,594,007	$158,081,225	$220,900,000
Total	**$188,800,000**	**$207,231,883**	**$766,235,158**	**$1,070,723,905**

Note: Inflation Only Adjusted Costs for collection system projects are baseline costs for unfinished LTCP projects. Updated Estimates represent the Proposed Alternative projects.

1.4. Schedule

Table 7 shows the schedule for the improvements for the tributary areas for each receiving waterbody as originally envisioned in the LTCP and as currently envisioned. The revised schedule has a target Substantial Completion date of 6/1/2040.

Table 7: Schedule by Waterbody

	Start of Engineering (LTCP)	Substantial Completion (LTCP)	Start of Engineering (Proposed)	Substantial Completion (Proposed)	Delta Start (Months)	Delta Completion (Months)
Black Rock Canal	Pre-2014	3/18/2026	Pre-2014	6/1/2040	0	+171
Buffalo River	Pre-2014	3/18/2034	Pre-2014	3/4/2040	0	+72
Cazenovia Creek	Pre-2014	3/18/2034	Pre-2014	Pre-2014	0	-240
Erie Basin Marina	Pre-2014	3/18/2015	Pre-2014	3/5/2034	0	+108
Niagara River	Pre-2014	3/18/2034	Pre-2014	6/1/2040	0	+71
Scajaquada Creek	Pre-2014	3/18/2030	Pre-2014	3/1/2034	0	+48
NFA (Phases I-III)	3/18/2015	3/18/2022	11/25/2019	9/3/2031	+56	+115
Overall	**Pre-2014**	**3/18/2034**	**Pre-2014**	**6/1/2040**	**0**	**+75**

2. CSO Level Impacts

2.1. Black Rock Canal: CSO-003

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Niagara Street Phase 4a: Scajaquada Expressway to Hertel Ave	N/A	3/18/2024	9/21/2022

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-003	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	6	0		5	
New Model	4	4	4	4	3	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.2. Black Rock Canal: CSO-004

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Bird Ave Underflow SPP 13 Modifications - North Relief Interceptor	N/A	N/A	12/11/2018
Bird RTC Project	RTC-1, Bird East, Bird West	9/2/2014	5/6/2016

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-004	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	5	0		3	
New Model	4	5	5	4	5	2

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.3. Black Rock Canal: CSO-006

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
SPP 180 Optimization	N/A	3/18/2017	12/16/2015
SPP 331 Optimization	N/A	3/18/2017	12/16/2015

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO006_2 Gates Circle RTC	$2,028,997.93	$2,835,287.00
CSO006_3 Delavan Drain Storage/Delavan Drain Weir Raising & RTC	$2,862,493.89	$4,000,000.00
CSO006_5 20% GI Implementation	$7,518,340.20	$10,506,000.00
Total Cost	**$12,409,832.02**	**$17,341,287.00**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO006_2 Gates Circle RTC	N/A	$2,028,997.93	$2,835,287.00
CSO006_3 Delavan Drain Storage/Delavan Drain Weir Raising & RTC	N/A	$2,862,493.89	$4,000,000.00
CSO006_5 20% GI Implementation	N/A	$7,518,340.20	$10,506,000.00
Total Cost	**N/A**	**$12,409,832.02**	**$17,341,287.00**

iii. Activations

CSO-006	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	65	10		4	
New Model	4	47	15	15	15	1

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO006_2 Gates Circle RTC	3/1/2022	4/8/2025	5/17/2028
CSO006_3 Delavan Drain Storage/Delavan Drain Weir Raising & RTC	3/3/2030	2/25/2033	4/5/2036
CSO006_5 20% GI Implementation	3/3/2031	3/1/2034	3/1/2037
Overall Dates	**3/1/2022**	**4/8/2025**	**3/1/2037**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO006_2 Gates Circle RTC	3/1/2022	4/8/2025	5/17/2028
CSO006_3 Delavan Drain Storage/Delavan Drain Weir Raising & RTC	3/3/2030	2/25/2033	4/5/2036
CSO006_5 20% GI Implementation	3/3/2031	3/1/2034	3/1/2037
Overall Dates	**3/1/2022**	**4/8/2025**	**3/1/2037**

d. GI Project Schedule Milestones*

Waterbody	GI Projects Included	Start Date	Percent Completion				
			20%	40%	60%	80%	100%
Black Rock Canal (52.5 acres managed)	CSO006_5	3/3/2031	3/1/2032	3/1/2033	3/1/2034	3/1/2036	3/1/2037

**Note: percentages to be determined based on progress per acre on a basis of planning= 30% completion; design=50% completion; NTP=60% completion; 50% construction= 80% completion; substantial completion=95% completion; acceptance and occupancy= 100% completion*

2.4. Black Rock Canal: CSO-010

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
No LTCP projects completed for this CSO.			

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
Underflow Upsizing (CSO 008/010, 061, 004)	(M) Replaced by Breckenridge Niagara RTC (CSO010_1)	$500,000	$2,602,448.48	$3,636,617.00
Total Cost		**$500,000**	**$2,602,448.48**	**$3,636,617.00**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
Underflow Upsizing (CSO 008/010, 061, 004) / CSO010_1 Breckenridge Niagara RTC	$500,000	$2,602,448.48	$3,636,617.00
Total Cost	**$500,000**	**$2,602,448.48**	**$3,636,617.00**

iii. Activations

CSO-010	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	44	2		1	
New Model	4	14	14	14	0	0

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
Underflow Upsizing (CSO 008/010, 061, 004)	(M) Replaced by Breckenridge Niagara RTC (CSO010_1)	3/1/2022	8/26/2025	1/31/2029
Overall Dates		**3/1/2022**	**8/26/2025**	**1/31/2029**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
Underflow Upsizing (CSO 008/010, 061, 004) / CSO010_1 Breckenridge Niagara RTC	3/1/2022	8/26/2025	1/31/2029
Overall Dates	**3/1/2022**	**8/26/2025**	**1/31/2029**

2.5. Black Rock Canal: CSO-012

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Niagara Street Phase 3: Hampshire Street to Scajaquada Expressway	N/A	3/18/2024	4/25/2022
PUSH Blue Projects	N/A	3/18/2018	7/1/2015

ii. Future Projects

a. Original LTCP Projects Unfinished*

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
North Relief Sewer	(M) New configuration, tagged as Northern Relief Tunnel (System_1)	$36,000,000	$52,105,077.42	$72,810,744
Total Cost		**$36,000,000**	**$52,105,077.42**	**$72,810,744**

**Note that the SPP modifications for CSO-012 were considered as part of the approved LTCP North Relief Sewer project and are now shown as separate projects. These projects did not have specific costs associated with them in the original LTCP.*

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO012_1.2 SPP023 Modification	$42,937	$60,000
CSO012_2.1 SPP296 Modification	$42,937	$60,000
Total Cost	**$85,874**	**$120,000**

c. All Projects in Selected Alternative

	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
North Relief Sewer/Northern Relief Tunnel (System_1)	$36,000,000	$52,105,077.42	$72,810,744
CSO012_1.2 SPP023 Modification	N/A	$42,937	$60,000
CSO012_2.1 SPP296 Modification	N/A	$42,937	$60,000
Total Cost	$36,000,000	$52,148,014	$72,930,744

iii. Activations

CSO-012	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	42	7		2	
New Model	4	35	35	35	0	3

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
North Relief Sewer	(M) New configuration, tagged as Northern Relief Tunnel (System_1)	3/18/2019	3/18/2022	3/18/2026
Overall Dates		**3/18/2019**	**3/18/2022**	**3/18/2026**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO012_1.2 SPP023 Modification	3/3/2026	4/22/2028	11/18/2029
CSO012_2.1 SPP296 Modification	3/3/2026	4/22/2028	11/18/2029
Overall Dates	**3/3/2026**	**4/22/2028**	**11/18/2029**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
North Relief Sewer/ System_1 Northern Relief Tunnel	8/27/2027	6/23/2033	6/1/2040
CSO012_1.2 SPP023 Modification	3/3/2026	4/22/2028	11/18/2029
CSO012_2.1 SPP296 Modification	3/3/2026	4/22/2028	11/18/2029
Overall Dates	**8/27/2027**	**6/23/2033**	**6/1/2040**

2.6. Black Rock Canal: CSO-013

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Niagara Street Phase 2: Virginia Street to Porter Avenue	N/A	3/18/2018	11/16/2017

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-013 (300,000 gallons)	(M) Replaced with SPP304 Modification (CSO013_1)	$3,000,000	$42,937.41	$60,000.00

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-013 (300,000 gallons) / CSO013_1 SPP304 Modification	$3,000,000	$42,937.41	$60,000.00
Total Cost	**$3,000,000**	**$42,937.41**	**$60,000.00**

iii. Activations

CSO-013	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	7	0		4	
New Model	4	4	4	4	0	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-013 (300,000 gallons)	(M) Replaced with SPP304 Modification (CSO013_1)	1/1/2020	1/1/2021	1/1/2023
Overall Dates		**1/1/2020**	**1/1/2021**	**1/1/2023**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-013 (300,000 gallons) / CSO013_1 SPP304 Modification	3/3/2026	4/22/2028	11/18/2029
Overall Dates	**3/3/2026**	**4/22/2028**	**11/18/2029**

2.7. Black Rock Canal: CSO-063

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
SPP 283 Optimization	N/A	3/18/2017	Prior to 1/1/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-063	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	13	9		4	
New Model	4	3	2	2	2	2

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.8. Buffalo River CSO-017

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Carlton Street Porous Asphalt	N/A	3/18/2018	7/25/2014
Willert Park	Miami St and Louisiana St Sewer Improvements	3/18/2018	4/26/2019

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
Hamburg Drain Storage (5 MG)	(R)	$19,960,000	N/A	N/A

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO017_1.1 SPP054 Sewer Separation	$500,936	$700,000
CSO017_4 20% GI Implementation	$5,360,020	$7,490,000
CSO017_6 Bass Alley OLS	$23,343,638	$32,620,000
CSO017_8 SPP326 Modification	$42,937	$60,000
CSO017_9 SPP059 Modification (SPP059_w)	$42,937	$60,000
CSO017_10 SPP051 Modification	$42,937	$60,000
Total Cost	**$29,333,405**	**$40,990,000**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO017_1.1 SPP054 Sewer Separation	N/A	$500,936	$700,000
CSO017_4 20% GI Implementation	N/A	$5,360,020	$7,490,000
CSO017_6 Bass Alley OLS	N/A	$23,343,638	$32,620,000
CSO017_8 SPP326 Modification	N/A	$42,937	$60,000
CSO017_9 SPP059 Modification (SPP059_w)	N/A	$42,937	$60,000
CSO017_10 SPP051 Modification	N/A	$42,937	$60,000
Total Cost	**N/A**	**$29,333,405**	**$40,990,000**

iii. Activations

CSO-017	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	49	5		4	
New Model	6	24	21	21	10	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
Hamburg Drain Storage (5 MG)	(R)	3/18/2028	3/18/2030	3/18/2032
Overall Dates		**3/18/2028**	**3/18/2030**	**3/18/2032**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO017_1.1 SPP054 Sewer Separation	3/3/2033	3/26/2036	6/3/2038
CSO017_4 20% GI Implementation	3/2/2032	3/1/2036	3/2/2039
CSO017_6 Bass Alley OLS	3/3/2031	3/24/2034	3/5/2039
CSO017_8 SPP326 Modification	3/3/2026	4/22/2028	11/18/2029
CSO017_9 SPP059 Modification (SPP059_w)	3/3/2029	4/25/2031	11/20/2032
CSO017_10 SPP051 Modification	3/3/2029	4/25/2031	11/20/2032
Overall Dates	**3/3/2026**	**4/22/2028**	**3/5/2039**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO017_1.1 SPP054 Sewer Separation	3/3/2033	3/26/2036	6/3/2038
CSO017_4 20% GI Implementation	3/2/2032	3/1/2036	3/2/2039
CSO017_6 Bass Alley OLS	3/3/2031	3/24/2034	3/5/2039
CSO017_8 SPP326 Modification	3/3/2026	4/22/2028	11/18/2029
CSO017_9 SPP059 Modification (SPP059_w)	3/3/2029	4/25/2031	11/20/2032
CSO017_10 SPP051 Modification	3/3/2029	4/25/2031	11/20/2032
Overall Dates	**3/3/2026**	**4/22/2028**	**3/5/2039**

d. GI Project Schedule Milestones*

Waterbody	GI Projects Included	Start Date	Percent Completion				
			20%	40%	60%	80%	100%
Buffalo River (163 acres managed)	CSO017_4 20% GI Implementation (37.5 of 163 acres to be managed)	3/2/2032	3/1/2033	3/1/2035	3/1/2036	3/1/2038	3/2/2039

**Note: percentages to be determined based on progress per acre on a basis of planning= 30% completion; design=50% completion; NTP=60% completion; 50% construction= 80% completion; substantial completion=95% completion; acceptance and occupancy= 100% completion*

2.9. Buffalo River: CSO-026

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
CSO No. 026 Sewer Separation	Smith Street Storage	3/18/2017	6/22/2016
CSO No. 026 RTC Structure	Smith at Perry RTC, Smith Street Storage, Smith CSO Line Storage	3/18/2017	10/9/2017
Montgomery CSO (Smith at Eagle) In-Line Storage	N/A	3/18/2024	12/31/2021
SPP 217 Optimization	N/A	3/18/2017	12/21/2015
SPP 318 Optimization	N/A	3/18/2017	12/21/2015

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
Fillmore North ILS	(R)	$2,015,000	N/A	N/A
Gibson CSO Line Storage	(R)	$2,015,000	N/A	N/A
SPP075 Optimization	(R)	$100,000	N/A	N/A
Total Cost		**$4,130,000.00**	**N/A**	**N/A**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO026_1.3 Collins Park OLS	$21,540,267	$30,100,000
CSO026_4 20% GI Implementation	$17,965,012	$25,104,000
Total Cost	**$39,505,279**	**$55,204,000**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO026_1.3 Collins Park OLS	N/A	$21,540,267	$30,100,000
CSO026_4 20% GI Implementation	N/A	$17,965,012	$25,104,000
Total Cost		**$39,505,279**	**$55,204,000**

iii. Activations

CSO-026	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	63	65		3	
New Model	6	9	8	8	8	6

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
Fillmore North ILS	(R)	3/18/2022	3/18/2023	3/18/2024
Gibson CSO Line Storage	(R)	3/18/2022	3/18/2023	3/18/2024
SPP075 Optimization	(R)	3/18/2014	3/18/2015	3/18/2017
Overall Dates		**3/18/2014**	**3/18/2015**	**3/18/2024**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO026_1.3 Collins Park OLS	3/3/2027	6/18/2030	5/30/2035
CSO026_4 20% GI Implementation	3/2/2032	3/1/2036	3/2/2039
Overall Dates	**3/3/2027**	**6/18/2030**	**3/2/2039**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO026_1.3 Collins Park OLS	3/3/2027	6/18/2030	5/30/2035
CSO026_4 20% GI Implementation	3/2/2032	3/1/2036	3/2/2039
Overall Dates	**3/3/2027**	**6/18/2030**	**3/2/2039**

e. GI Project Schedule Milestones*

Waterbody	GI Projects Included	Start Date	Percent Completion				
			20%	40%	60%	80%	100%
Buffalo River (163 acres managed)	CSO026_4 20% GI Implementation (125.5 of 163 acres to be managed)	3/2/2032	3/1/2033	3/1/2035	3/1/2036	3/1/2038	3/2/2039

**Note: percentages to be determined based on progress per acre on a basis of planning= 30% completion; design=50% completion; NTP=60% completion; 50% construction= 80% completion; substantial completion=95% completion; acceptance and occupancy= 100% completion*

2.10. Buffalo River: CSO-027

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Babcock Pump Station In-Line Storage	Not in original LTCP, was added later	3/18/2024	9/21/2021
SPP 097A Optimization	N/A	3/18/2017	12/16/2015

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in LTCP				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO027_1 Weir #35, SPP 317 Modification	$42,937	$60,000
CSO027_2 Babcock PS WEIR#42 Modification	$42,937	$60,000
CSO027_3 SPP97 Modification (WEIR#10)	$42,937	$60,000
Total Cost	**$128,811**	**$180,000**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO027_1 Weir #35, SPP 317 Modification	N/A	$42,937	$60,000
CSO027_2 Babcock PS WEIR#42 Modification	N/A	$42,937	$60,000
CSO027_3 SPP97 Modification (WEIR#10)	N/A	$42,937	$60,000
Total Cost	**N/A**	**$128,811**	**$180,000**

iii. Activations

CSO-027	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	36	3		6	
New Model	6	10	11	12	11	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO027_1 Weir #35, SPP 317 Modification	3/3/2027	4/24/2029	11/20/2030
CSO027_2 Babcock PS WEIR#42 Modification	3/3/2027	4/24/2029	4/9/2031
CSO027_3 SPP97 Modification (WEIR#10)	3/3/2029	4/25/2031	11/20/2032
Overall Dates	**3/3/2027**	**4/24/2029**	**11/21/2032**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO027_1 Weir #35, SPP 317 Modification	3/3/2027	4/24/2029	11/20/2030
CSO027_2 Babcock PS WEIR#42 Modification	3/3/2027	4/24/2029	4/9/2031
CSO027_3 SPP97 Modification (WEIR#10)	3/3/2029	4/25/2031	11/20/2032
Overall Dates	**3/3/2027**	**4/24/2029**	**11/21/2032**

2.11. Buffalo River: CSO-028

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
No LTCP projects completed for this CSO			

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-028/044/047 (2,300,000 gallons)	(M) Updated to smaller tank: 0.95 MG Hopkins & Osage OLS (CSO028_1)	$12,200,000	$12,623,598	$17,640,000
Total Cost		**$12,200,000**	**$12,623,598**	**$17,640,000**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-028/044/047 (2,300,000 gallons) / CSO028_1 Hopkins & Osage OLS	$12,200,000	$12,623,598	$17,640,000
Total Cost	**$12,200,000**	**$12,623,598**	**$17,640,000**

iii. Activations

CSO-028	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	69	29		6	
New Model	6	33	33	33	1	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-028/044/047 (2,300,000 gallons)	(M) Updated to smaller tank: 0.95 MG Hopkins & Osage OLS (CSO028_1)	3/18/2028	3/18/2031	3/18/2034*
Overall Dates		**3/18/2028**	**3/18/2031**	**3/18/2034**

**In Table ES-6 of the Approved LTCP, this project was associated with Cazenovia Creek-C due to the inclusion of CSOs 047 & 044 together with CSO 028. As CSO 028 is the only remaining CSO of these three not in compliance in the new model, this project has been reallocated to the Buffalo River. The approved substantial completion date for the original project is presented under Cazenovia Creek in Table 7.*

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-028/044/047 (2,300,000 gallons) / CSO028_1 Hopkins & Osage OLS	3/3/2031	3/24/2034	3/5/2039
Overall Dates	**3/3/2031**	**3/24/2034**	**3/5/2039**

2.12. Buffalo River: CSO-033

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
No LTCP projects completed for this CSO.			

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO033_1 Bailey & Regent OLS	$38,371,731	$53,620,000
CSO033_2 Clinton St OLS RTC	$117,219,125	$163,800,000
CSO033_3 SPP104 Modification (WEIR#53)	$42,937	$60,000
Total Cost	$155,633,793	$217,480,000

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO033_1 Bailey & Regent OLS	N/A	$38,371,731	$53,620,000
CSO033_2 Clinton St OLS RTC	N/A	$117,219,125	$163,800,000
CSO033_3 SPP104 modification (WEIR#53)	N/A	$42,937	$60,000
Total Cost	N/A	$155,633,793	$217,480,000

iii. Activations

CSO-033	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	9	5		5	
New Model	6	15	15	15	15	2

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO033_1 Bailey & Regent OLS	3/2/2032	3/24/2035	3/4/2040
CSO033_2 Clinton St OLS RTC	3/3/2029	2/27/2032	3/8/2036
CSO033_3 SPP104 Modification (WEIR#53)	3/3/2029	4/25/2031	11/20/2032
Overall Dates	**3/3/2029**	**4/25/2031**	**3/4/2040**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO033_1 Bailey & Regent OLS	3/2/2032	3/24/2035	3/4/2040
CSO033_2 Clinton St OLS RTC	3/3/2029	2/27/2032	3/8/2036
CSO033_3 SPP104 Modification (WEIR#53)	3/3/2029	4/25/2031	11/20/2032
Overall Dates	**3/3/2029**	**4/25/2031**	**3/4/2040**

2.13. Buffalo River: CSO-052

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
No LTCP projects completed for this CSO.			

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-052 (0.6 MG)	(R)	$3,900,000	$7,084,672	$9,900,000
Total Cost		**$3,900,000**	**$7,084,672**	**$9,900,000**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-052	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	10	6		3	
New Model	6	0	0	0	0	0

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-052 (0.6 MG)	(R)	3/18/2030	3/18/2032	3/18/2034
Overall Dates		**3/18/2030**	**3/18/2032**	**3/18/2034**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.14. Buffalo River: CSO-064

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Ohio Street	N/A	3/18/2018	12/1/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-064 (0.1 MG)	(M) Replaced with CSO-064 ILS (CSO064_1.1)	$2,000,000	$3,935,929	$5,500,000
Total Cost		**$2,000,000**	**$3,935,929**	**$5,500,000**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO064_1.2 SPP 137 Modification	$42,937	$60,000
CSO064_2 Perry Street Sanitary Sewer	$3,434,993	$4,800,000
Total Cost	**$3,477,930**	**$4,860,000**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-064 (0.1 MG) / CSO064_1.1 CSO-064 ILS	$2,000,000	$3,935,929	$5,500,000
CSO064_1.2 SPP 137 Modification	N/A	$42,937	$60,000
CSO064_2 Perry Street Sanitary Sewer	N/A	$3,434,993	$4,800,000
Total Cost	**$2,000,000**	**$7,413,859**	**$10,360,000**

iii. Activations

CSO-064	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	56	3		3	
New Model	6	10	10	10	6	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-064 (0.1 MG)	(M) Replaced with CSO-064 ILS (CSO064_1.1)	3/18/2030	3/18/2032	3/18/2034
Overall Dates		**3/18/2030**	**3/18/2032**	**3/18/2034**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO064_1.2 SPP 137 Modification	3/3/2030	4/23/2032	11/19/2033
CSO064_2 Perry Street Sanitary Sewer	3/3/2033	3/26/2036	6/3/2038
Overall Dates	**9/1/2029**	**7/3/2031**	**6/3/2036**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-064 (0.1 MG) / CSO064_1.1 CSO-064 ILS	3/3/2030	3/25/2033	3/10/2035
CSO064_1.2 SPP 137 Modification	3/3/2030	4/23/2032	11/19/2033
CSO064_2 Perry Street Sanitary Sewer	3/3/2033	3/26/2036	6/3/2038
Overall Dates	**3/3/2030**	**4/23/2032**	**6/3/2038**

2.15. Buffalo River: CSO-066

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
SPP 211 Optimization	N/A	3/18/2017	Prior to 1/1/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-066	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	6	10	3		4	
New Model	6	4	4	4	4	3

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.16. Cazenovia Creek – C: CSO-037

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
SPP 122 Optimization	N/A	3/18/2017	Prior to 1/1/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-037	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	0	13	6		6	
New Model	0	10	6	5	5	5

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.17. Erie Basin Marina: CSO-014

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Niagara Street Phase 1: Elmwood Street to Virginia Street	N/A	3/18/2018	12/1/2016
SPPs 206A&B	N/A	3/18/2015	12/29/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-014/015 (800,000 gallons)	(M) Updated to larger tank: CSO014_1.2 5.55 MG Erie Basin Marina OLS	$6,700,000	$44,683,530	$62,440,000
Total Cost		**$6,700,000**	**$44,683,530**	**$62,440,000**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC	$2,862,494	$4,000,000
Total Cost	**$2,862,494**	**$4,000,000**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-014/015 (800,000 gallons) / CSO014_1.2 Erie Basin Marina OLS	$6,700,000	$44,683,530	$62,440,000
CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC	N/A	$2,862,494	$4,000,000
Total Cost	**$6,700,000**	**$47,546,024**	**$66,440,000**

iii. Activations

CSO-014	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	2	4	1		2	
New Model	2	12	10	10	2	2

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-014/015 (800,000 gallons)	(M) Updated to larger tank: 5.55 MG Erie Basin Marina OLS (CSO014_1.2)	Prior to 1/1/2014	Prior to 1/1/2014	3/18/2015*
Overall Dates		**Prior to 1/1/2014**	**Prior to 1/1/2014**	**3/18/2015***

**Work was completed in 2014 to meet the purpose of the 0.8 MG Off-line Storage Facility as prescribed in Table 12-8 of the LTCP, however updated modeling indicates that this has not resulted in compliance for CSO-014. Therefore, this project is listed as "Unfinished".*

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC	3/3/2025	2/25/2028	2/9/2030
Overall Dates	**3/3/2025**	**2/25/2028**	**2/9/2030**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-014/015 (800,000 gallons) / CSO014_1.2 Erie Basin Marina OLS	3/3/2026	3/24/2029	3/5/2034
CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC	3/3/2025	2/25/2028	2/9/2030
Overall Dates	**3/3/2025**	**2/25/2028**	**3/5/2034**

2.18. Erie Basin Marina: CSO-015

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Genesee Street	Genesee Gateway Project	3/18/2018	6/1/2017
SPP 035	N/A	3/18/2015	5/31/2014
SPP 036	N/A	3/18/2015	12/5/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-015	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	2	12	0		1	
New Model	2	0	0	0	0	0

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.19. Niagara River: CSO-011

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
No LTCP projects completed for this CSO.			

ii. Future Projects

a. Original LTCP Projects Unfinished*

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in LTCP.				

**Note that the SPP modification for CSO-011 was included as part of the approved LTCP North Relief Sewer project (listed under Black Rock Canal CSO-012) and did not have a separate cost associated with it. This is now considered a separate project.*

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO011_1.1 20% GI Implementation	$2,849,612.67	$3,982,000.00
CSO011_1.2 SPP024 Modification	$42,937.41	$60,000.00
Total Cost	**$2,892,550**	**$4,042,000**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO011_1.1 20% GI Implementation	N/A	$2,849,612.67	$3,982,000.00
CSO011_1.2 SPP024 Modification	N/A	$42,937.41	$60,000.00
Total Cost		**$2,892,550**	**$4,042,000**

iii. Activations

CSO-011	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	9	41	16		4	
New Model	9	39	35	35	5	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO011_1.1 20% GI Implementation	3/2/2032	3/1/2037	3/1/2040
CSO011_1.2 SPP024 Modification	3/3/2026	4/22/2028	11/18/2029
Overall Dates	**3/3/2026**	**4/22/2028**	**3/1/2040**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO011_1.1 20% GI Implementation	3/2/2032	3/1/2037	3/1/2040
CSO011_1.2 SPP024 Modification	3/3/2026	4/22/2028	11/18/2029
Overall Dates	**3/3/2026**	**4/22/2028**	**3/1/2040**

d. GI Project Schedule Milestones*

Waterbody	GI Projects Included	Start Date	Percent Completion				
			20%	40%	60%	80%	100%
Niagara River (279.9 acres managed)	CSO011_1.1 20% GI Implementation (19.9 acres of 279.9 acres to be managed)	3/2/2032	3/1/2034	3/1/2036	3/1/2037	3/1/2039	3/1/2040

**Note: percentages to be determined based on progress per acre on a basis of planning= 30% completion; design=50% completion; NTP=60% completion; 50% construction= 80% completion; substantial completion=95% completion; acceptance and occupancy= 100% completion*

2.20. Niagara River: CSO-055

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Kenmore Avenue	N/A	3/18/2018	3/1/2017
Hertel Northwest (Hertel at Deer) In-Line Storage	N/A	3/18/2024	5/6/2020
Hertel South (Hertel at Deer) In-Line Storage	N/A	3/18/2024	5/6/2020
SPP 001 Optimization	N/A	3/18/2017	12/12/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-055 (7,500,000 gallons)	(M) Updated to larger tank with new location: CSO055_1.5 11.55 MG Military Rd OLS	$18,500,000	$69,329,602	$ 96,880,000
Hertel North East ILS	(M) Updated design (CSO055_1.1)	$2,875,000	$2,862,494	$4,000,000
Total Cost		**$21,375,000**	**$72,192,096**	**$100,880,000**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO055_3 20% GI Implementation	$37,235,320	$52,032,000
Total Cost	**$37,235,320**	**$52,032,000**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO-055 (7,500,000 gallons) / CSO055_1.5 11.55 MG Military Rd OLS	$18,500,000	$69,329,602	$96,880,000
Hertel North East ILS	$2,875,000	$2,862,494	$4,000,000
CSO055_3 20% GI Implementation	N/A	$37,235,320	$52,032,000
Total Cost	**$21,375,000**	**$109,427,416**	**$152,912,000**

iii. Activations

CSO-055	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	9	41	15		9	
New Model	9	38	31	33	16	9

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-055 (7,500,000 gallons)	(M) CSO055_1.5 Military Rd OLS	3/18/2027	3/18/2030	3/18/2034
Hertel North East ILS	(M) Updated design (CSO055_1.1)	3/18/2022	3/18/2023	3/18/2024
Overall Dates		**3/18/2022**	**3/18/2023**	**3/18/2034**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO055_3 20% GI Implementation	3/2/2032	3/1/2037	3/1/2040
Overall Dates	**3/2/2032**	**3/1/2037**	**3/1/2040**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO-055 (7,500,000 gallons) / CSO055_1.5 11.55 MG Military Rd OLS	8/27/2027	12/12/2030	1/2/2037
CSO055_1.1 Hertel at Delaware ILS/Hertel North East	3/3/2034	4/23/2037	6/1/2040
CSO055_3 20% GI Implementation	3/2/2032	3/1/2037	3/1/2040
Overall Dates	**8/27/2027**	**12/12/2030**	**6/1/2040**

d. GI Project Schedule Milestones*

Waterbody	GI Projects Included	Start Date	Percent Completion				
			20%	40%	60%	80%	100%
Niagara River (279.9 acres managed)	CSO055_3 20% GI Implementation (260 of 279.9 acres to be managed)	3/2/2032	3/1/2034	3/1/2036	3/1/2037	3/1/2039	3/1/2040

**Note: percentages to be determined based on progress per acre on a basis of planning= 30% completion; design=50% completion; NTP=60% completion; 50% construction= 80% completion; substantial completion=95% completion; acceptance and occupancy= 100% completion*

2.21. Scajaquada Creek: CSO-053

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
Fillmore Avenue Porous Parking and Green Lots	N/A	3/18/2018	4/23/2015
Lang RTC Project	RTC-1 / Hagen St RTC	9/2/2014	5/9/2016
Hazelwood (Kay) In-Line Storage	N/A	3/18/2024	6/19/2019
North Bailey In-Line Storage	N/A	3/18/2024	5/27/2020
Northland Ave	N/A	3/18/2018	12/17/2019
612 Northland Ave	N/A	3/18/2024	12/1/2019
SPP 163 Optimization	163A	3/18/2017	8/6/2015
SPP 165 Optimization	N/A	3/18/2017	Prior to 1/1/2014
SPP 165A Optimization	N/A	3/18/2017	11/3/2014
SPP 178 Optimization	N/A	3/18/2017	Prior to 1/1/2014
SPP 335B Optimization	N/A	3/18/2017	Prior to 1/1/2014
SPP 336A Optimization	N/A	3/18/2017	12/16/2015
SPP 342B Optimization	N/A	3/18/2017	Prior to 1/1/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
Jefferson & Florida (SPP 170B) (2,600,000 gallons)	(M) Replaced by CSO053_11 1.5 MG Canisius/Jefferson Delavan OLS	$9,500,000	$21,468,704	$30,000,000
SPP 336 a/b (SPP165A, SPP165B, SPP 336A, SPP336B) (4,200,000 gallons)	(M) Replaced by CSO053_1.4 3.26 MG Sidney OLS	$11,500,000	$19,837,083	$27,720,000
SPP 337 (0.7 MG)	(R)	$4,000,000	N/A	N/A
SPP341A Optimization Genesee & Kearns	(M) Replaced by CSO053_8 SPP341A Modification	$190,000	$42,937	$60,000
South Bailey ILS	(M) Replaced with CSO053_3.1 SPP 338 Modification	$2,025,000	$2,862,494	$4,000,000
Texas (Roslyn ILS)	(R)	$2,170,000	N/A	N/A
Amherst Quarry OLS	(M) Now Bailey & Amherst, Amherst Quarry PS RTC (CSO053_3.2)	$2,875,000	$1,539,214	$2,150,872
East Ferry ILS	(R)	$2,040,000	N/A	N/A
Colorado ILS	(M) Replaced by CSO053_2.5 SPP337 Modification	$2,025,000	$42,937	$60,000
Total Cost		**$36,325,000**	**$45,793,369**	**$63,990,872**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
CSO053_12.1 Jefferson Ave Main Beverly	N/A	$329,187	$460,000
CSO053_12.2 Jefferson Ave Best Beverly	N/A	$1,087,748	$1,520,000
CSO053_1.5 SPP336B Modification	N/A	$42,937	$60,000
CSO053_10 SPP229A RTC	N/A	$2,146,870	$3,000,000
CSO053_13 SPP165B Modification	N/A	$42,937	$60,000
CSO053_14 SPP175 Modification	N/A	$42,937	$60,000
CSO053_3.3 SPP254 Modification	N/A	$166,300	$232,385
CSO053_5.2 Edison Martha OLS	N/A	$26,649,818	$37,240,000
CSO053_9 20% GI Implementation	N/A	$2,393,045	$3,344,000
System_2 Schiller Park OLS	N/A	$61,514,994	$85,960,000
System_2_3 SPP339 Modification	N/A	$42,937	$60,000
System_2_4 SPP340 Modification	N/A	$42,937	$60,000
Total Cost		**$94,459,710**	**$131,996,385**

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
Jefferson & Florida (SPP 170B) (2,600,000 gallons) / CSO053_11 1.5 MG Canisius/Jefferson Delavan OLS	$9,500,000	$21,468,704	$30,000,000
SPP 336 a/b (SPP165A, SPP165B, SPP 336A, SPP336B) (4,200,000 gallons) / CSO053_1.4 Sidney OLS	$11,500,000	$19,837,083	$27,720,000
CSO053_10 SPP229A RTC	N/A	$2,146,870	$3,000,000
CSO053_13 SPP165B Modification	N/A	$42,937	$60,000
CSO053_1.5 SPP336B Modification	N/A	$42,937	$60,000
SPP341A Optimization Genesee & Kearns / CSO053_8 SPP341A Modification	$190,000	$42,937	$60,000
CSO053_12.1 Jefferson Ave Main Beverly	N/A	$329,187	$460,000
CSO053_12.2 Jefferson Ave Best Beverly	N/A	$1,087,748	$1,520,000
CSO053_14 SPP175 Modification	N/A	$42,937	$60,000
South Bailey ILS / CSO053_3.1 South Bailey DUC/ILS	N/A	$2,862,494	$4,000,000
Amherst Quarry OLS / CSO053_3.2 Amherst & Bailey RTC	N/A	$1,539,214	$2,150,872
Colorado ILS / CSO053_2.5 SPP337 Modification	$2,025,000	$42,937	$60,000
CSO053_3.3 SPP254 modification	N/A	$166,300	$232,385
CSO053_5.2 Edison Martha OLS	N/A	$26,649,818	$37,240,000
CSO053_9 20% GI Implementation	N/A	$2,393,045	$3,344,000
System_2 Schiller Park OLS	N/A	$61,514,994	$85,960,000
System_2_3 SPP339 Modification	N/A	$42,937	$60,000
System_2_4 SPP340 Modification	N/A	$42,937	$60,000
Total Cost	**$23,215,000**	**$140,296,016**	**$196,047,257**

iii. Activations

CSO-053	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	65	24		4	
New Model	4	37	37	37	26	4

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
Jefferson & Florida (SPP 170B) (2,600,000 gallons)	(M) Replaced by CSO053_11 1.5 MG Canisius/Jefferson Delavan OLS	3/18/2025	3/18/2027	3/18/2030
SPP 336 a/b (SPP165A, SPP165B, SPP 336A, SPP336B) (4,200,000 gallons)	(M) Replaced by CSO053_1.4 3.26 MG Sidney OLS	3/18/2024	3/18/2026	3/18/2029
SPP 337 (0.7 MG)	(R)	3/18/2023	3/18/2025	3/18/2027
SPP341A Optimization Genesee & Kearns	(M) Replaced by CSO053_8 SPP341A Modification	1/1/2014	N/A	3/18/2017
South Bailey ILS	(M) Replaced with CSO053_3.1 SPP338 Modification	3/18/2022	3/18/2023	3/18/2024
Texas (Roslyn ILS)	(R)	3/18/2022	3/18/2023	3/18/2024
Amherst Quarry OLS	(M) Now CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC	3/18/2022	3/18/2023	3/18/2024
East Ferry ILS	(R)	3/18/2022	3/18/2023	3/18/2024
Colorado ILS	(M) Replaced by CSO053_2.5 SPP337 Modification	3/18/2022	3/18/2023	3/18/2024
Overall Dates		**1/1/2014**	**3/18/2023**	**3/18/2030**

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
CSO053_12.1 Jefferson Ave Main Beverly	3/1/2022	3/31/2026	6/14/2028
CSO053_12.2 Jefferson Ave Best Beverly	3/1/2022	3/31/2026	6/14/2028
CSO053_1.5 SPP336B Modification	3/2/2024	4/24/2026	11/20/2027
CSO053_10 SPP229A RTC	3/1/2022	10/22/2024	7/19/2026
CSO053_13 SPP165B Modification	3/2/2024	4/24/2026	11/20/2027
CSO053_14 SPP175 Modification	3/2/2024	4/24/2026	11/20/2027
CSO053_3.3 SPP254 Modification	3/1/2022	10/22/2024	7/19/2026
CSO053_5.2 Edison Martha OLS	3/2/2024	6/18/2027	4/30/2033
CSO053_9 20% GI Implementation	3/2/2028	3/1/2034	3/1/2034
System_2 Schiller Park OLS	3/3/2025	6/16/2028	5/28/2033
System_2_3 SPP339 Modification	3/3/2025	4/23/2027	11/18/2028
System_2_4 SPP340 Modification	3/3/2025	4/23/2027	4/7/2029
Overall Dates	**3/1/2022**	**10/22/2024**	**3/1/2034**

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
Jefferson & Florida (SPP 170B) (2,600,000 gallons) / CSO053_11 1.5 MG Canisius/Jefferson Delavan OLS	12/1/2021	9/7/2028	4/9/2032
SPP 336 a/b (SPP165A, SPP165B, SPP 336A, SPP336B) (4,200,000 gallons) / CSO053_1.4 Sidney OLS	3/2/2024	6/18/2027	5/29/2032
CSO053_10 SPP229A RTC	3/1/2022	10/22/2024	7/19/2026
CSO053_13 SPP165B Modification	3/2/2024	4/24/2026	11/20/2027
CSO053_1.5 SPP336B Modification	3/2/2024	4/24/2026	11/20/2027
SPP341A Optimization Genesee & Kearns / CSO053_8 SPP341A Modification	3/2/2024	4/24/2026	11/20/2027
CSO053_12.1 Jefferson Ave Main Beverly	3/1/2022	3/31/2026	6/14/2028
CSO053_12.2 Jefferson Ave Best Beverly	3/1/2022	3/31/2026	6/14/2028
CSO053_14 SPP175 Modification	3/2/2024	4/24/2026	11/20/2027
South Bailey ILS / CSO053_3.1 South Bailey DUC/ILS	3/2/2024	4/23/2027	6/1/2030
Amherst Quarry OLS / CSO053_3.2 Amherst & Bailey RTC	12/1/2021	5/28/2025	7/6/2028
Colorado ILS / CSO053_2.5 SPP337 Modification	3/2/2024	4/24/2026	11/20/2027
CSO053_3.3 SPP254 modification	3/1/2022	10/22/2024	7/19/2026
CSO053_5.2 Edison Martha OLS	3/2/2024	6/18/2027	4/30/2033
CSO053_9 20% GI Implementation	3/2/2028	3/1/2031	3/1/2034
System_2 Schiller Park OLS	3/3/2025	6/16/2028	5/28/2033
System_2_3 SPP339 Modification	3/3/2025	4/23/2027	11/18/2028
System_2_4 SPP340 Modification	3/3/2025	4/23/2027	4/7/2029
Overall Dates	**12/1/2021**	**10/22/2024**	**3/1/2034**

d. GI Project Schedule Milestones*

Waterbody	GI Projects Included	Start Date	Percent Completion				
			20%	40%	60%	80%	100%
Scajaquada Creek (16.7 acres managed)	CSO053_9 20% GI Implementation	3/2/2028	3/1/2029	3/1/2030	3/1/2031	3/1/2033	3/1/2034

**Note: percentages to be determined based on progress per acre on a basis of planning= 30% completion; design=50% completion; NTP=60% completion; 50% construction= 80% completion; substantial completion=95% completion; acceptance and occupancy= 100% completion*

2.22. Scajaquada Creek: CSO-059

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
SPP 183 Optimization	N/A	3/18/2017	Prior to 1/1/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-059	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	0	2		0	
New Model	4	12	1	1	1	1

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

2.23. Scajaquada Creek: CSO-060

i. Past Projects

LTCP Project Name	Alternate Project Name	LTCP Completion Date	Actual Completion Date
CSO 060 GI Project	N/A	9/2/2014	Prior to 1/1/2014

ii. Future Projects

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M) / Removed (R)	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No unfinished projects for this CSO in the LTCP.				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No new projects for this CSO in the Selected Alternative.		

c. All Projects in Selected Alternative

Project Name and Tag	LTCP Estimate 2012 Dollars	Updated Estimate 2012 Dollars	Updated Estimate 2022 Dollars
No projects for this CSO in the Selected Alternative.			

iii. Activations

CSO-060	Waterbody Maximum	Baseline	Scheduled Work 3/18/2022	Actual Work Completed 3/18/2022	Approved LTCP Completion	Proposed (Selected Alternative)
Old Model	4	5	19		0	
New Model	4	0	0	0	0	0

iv. Schedule

a. Original LTCP Projects Unfinished

Project Name and Tag	Included as Specified (S) / Included as Modified (M)/ Removed (R)	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No unfinished projects for this CSO in LTCP				

b. New Projects to be Added in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No new projects for this CSO in the Selected Alternative.			

c. All Projects in Selected Alternative

Project Name and Tag	Engineering Start Date	Construction NTP Date	Substantial Completion Date
No projects for this CSO in the Selected Alternative.			

3. Approved Projects in LTCP

3.1. Underflow Pipe Upsizing (CSO 008/010, 061, 004)/ CSO010_1 Breckenridge Niagara RTC

i. Project Description

All CSOs Impacted: 008,010,061,004 (Listed under CSO-010 in CSO Level Impact)
Location: Between Breckenridge Street and Brace Street along the I-190 with an extension along Brace Street across Niagara Street.
Size: Varying upsizing of the underflow piping for CSO 010, 008, 061, and potentially 004.

ii. Activation Reductions

Old Model: Together with other LTCP Projects, Underflow Pipe Upsizing (CSO 008/010, 061, 004) project was projected to reduce CSO discharges into the Black Rock Canal. The expected activations reductions were from 5 to 3 for CSO 004, from 39 to 0 for CSO 008, from 44 to 1 for CSO 010, and from 10 to 2 for CSO-061 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the Underflow Pipe Upsizing (CSO 008/010, 061, 004) project was projected to maintain 5 activations for CSO 004, reduce from 33 to 0 activations for CSO 008, and reduce from 14 to 0 activations for CSO 010. In the new model's baseline and 2014 LTCP scenarios, there were no activations at CSO-061.

Selected Alternative: Regarding the Selected Alternative model, the proposed Breckenridge Niagara RTC is planned to replace the Underflow Pipe Upsizing project. In this Selected Alternative, it is anticipated that the new project with other LTCP projects will reduce activations from 5 to 2 for CSO 004, from 33 to no activations for CSO 008, and from 14 to no activations for CSO 010 upon completion of the Selected Alternative. In the new model's baseline and Selected Alternative scenarios, CSO-061 is already in compliance.

iii. Implementation Issue

The project was updated because CSO-061 already met its target activations in the baseline model. CSO-004 was already in compliance based on actual work completed by March 2022. There were also constructability concerns because these underflows are located near railroad and NYS DOT properties.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2021	3/18/2023	3/18/2024
Proposed	3/1/2022	8/26/2025	1/31/2029

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$500,000	$698,691
Updated Estimate	$2,602,448	$3,636,617

vi. Modified/Eliminated/Included in Updated Model

Modification: Replaced by Breckenridge Niagara RTC (CSO010_1)

The Breckenridge Niagara RTC project is being proposed as an alternative to the CSO-061, 008/010, and 004 underflow upsizing project in the LTCP baseline plan. Since the target activations are already met at CSO-008, CSO-061, and CSO-004, the project only needs to address activations at CSO-010. The proposed design was similar to the Smith St. and Mill Race RTC projects, with a static weir in the 36" diameter pipe upstream of SPP021 diverting flow to a new controlled connection to the North Interceptor. This project also has the potential to reduce overflows at CSO-011 (SPP024) and CSO-055 (SPP001).

Due to additional information on site and construction constraints and community feedback acquired during the detailed design for Breckenridge Niagara RTC, this project may become a sewer redirection/replacement project with a similar impact.

Impact on Cost: The cost significantly increased in this area.

Impact on Schedule: The modified project is projected to be completed 3 years after the approved LTCP project completion date.

Reason for Modifications: CSO-008, CSO-061, and CSO-004 were already in compliance and there were constructability concerns for the original design.

Are changes significant enough to require further public participation: Yes.

The changes in project type and location have impacts, and involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.2. Northern Relief Sewer / System_1 Northern Relief Tunnel

i. Project Description

All CSOs Impacted: 011, 012, 055 (Listed in CSO Level Impacts under CSO-012)
Location: Niagara Street between Bird Avenue and Albany Street with an additional line connecting the tunnel to the WWTP influent siphon.
Size: 5,310' of 96" pipe and 571' of 120" pipe

ii. Activation Reductions

Old Model: Together with other LTCP Projects, the Northern Relief Sewer project was projected to reduce CSO activations from 42 to 2 for CSO-012 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the Northern Relief Sewer project was projected to reduce activations from 35 to 0 for CSO-012 upon completion of the approved 2014 LTCP.

Selected Alternative: In the Selected Alternative, it is anticipated that the proposed tunnel together with other projects will reduce activations from 35 to 3 for CSO-012.

iii. Implementation Issue

Preliminary subsurface investigation in conjunction with the North Relief-Interceptor concept has revealed concerns with the location of bedrock and the feasibility of the proposed tunnel location. As an initial phase of replacement, the Bird Avenue Underflow Sewer Project has been completed. Additionally, a significant blockage in a previously unmapped sewer was removed, which resulted in decreased overflows to the Black Rock Canal.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2019	3/18/2022	3/18/2026
Proposed	8/27/2027	6/23/2033	6/1/2040

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$36,000,000	$50,305,784
Updated Estimate	$52,105,077	$72,810,744

vi. Modified/Eliminated/Included in Updated Model

Modification: New Configuration, tagged as Northern Relief Tunnel (System_1)
The Northern Relief Tunnel is designed to create more conveyance capacity to the WWTP, supplement capacity in the North and South Interceptors, and increase the ability of the system to store wet-weather flows. It is anticipated that the tunnel will have an inside diameter of 12-feet based on the most recent system simulations. This is subject to change if alternate RTC sites are constructed as the LTCP evolves. This tunnel system is anticipated to have three parts, North of Scajaquada Creek, South of Scajaquada Creek, and the Southern Relief Tunnel.
North of Scajaquada Creek is anticipated to be constructed as a potential replacement for the Military Road OLS project. The anticipated route for the tunnel will be to start at Tonawanda Street and head south. The launch shaft will also be needed for open cut connections to the large parallel sewers that connect to SPP 1 from Hertel Avenue. This section of the tunnel is currently under

development as multiple alignment options are being investigated. The alignment is required to pick up flow from the north, near Arthur St. or Hertel Ave., and extend to the southern end of Scajaquada Creek towards Breckenridge St. at the Breckenridge Siphons. These siphons would then connect the new system to the Bird Island Treatment Facility. The entire length of tunnel is estimated to be approximately 2.3 miles and would be constructed in multiple sections using a Tunnel Boring Machine (TBM).

The Southern Relief Tunnel is anticipated to start at Albany Street and connect to the proposed junction chamber near the Breckenridge Siphons. The general route for this sewer will be to flow North on the western Side of Niagara Street. The Proposed Swan Trunk connection and associated sewers will need to be reconfigured at this area to relieve the South Interceptor and convey flow to the WWTP. The approximate length of this section is 700 feet.

The anticipated tunnel operation is to flow by gravity into the siphons. To operate this way, the tunnel invert will need to be higher than the existing Breckenridge Siphons. This places the tunnel in a position where the northern tunnel will be installed below the water table and mixed rock/soft material conditions. This type of construction will likely require use of soft ground TBM, which is an appropriate tool for mixed conditions but is ideal for soft, wet ground. It may be possible to install the entire tunnel below bedrock if the tunnel can be dewatered by pumping. Next steps for tunnel design include bedrock and soils characterization along anticipated routes, an engineering evaluation to optimize the tunnel alignment, and acquisition of easements and property to construct access shafts.

Impact on Cost: Initial engineering estimates now place costs for this Interceptor sewer at over $70,000,000, though this cost may rise significantly due to potential contaminated soils and property acquisition issues.

Impact on Schedule: The January 31, 2023 proposed schedule pushes this project back significantly to begin design in February 2027 and complete Substantial Completion in June of 2038 to allow for exploration of additional cost saving concepts including the potential transformation of the Hertel Avenue Offline storage facility into an extension of the North Relief Tunnel. This would also allow work to focus first on the Scajaquada Creek system where there is greater water quality impact.

Reason for Modifications: Availability of more detailed geological assessments, environmental considerations, and cost-efficiency analysis information gathered in more detailed tunnel route evaluation than provided in the original LTCP.

Are changes significant enough to require further public participation: Yes.
The new tunnel configuration goes beyond the original Northern Relief Sewer Interceptor alignment. These changes have significant impacts, and involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.3. CSO-013 Satellite Storage, Conveyance, FM & PS / CSO013_1 SPP304 Modification

i. Project Description

All CSOs Impacted: 013
Location: Virginia Street
Size: 0.3 MG satellite storage facility with pumping station and forcemain discharge.

ii. Activation Reductions

Old Model: Together with other LTCP projects, CSO-013 Satellite Storage was projected to reduce CSO discharges into the Black Rock Canal. The expected activations reductions were from 7 to 4 for CSO-013 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP project, CSO-013 Satellite Storage was projected to sustain the target of 4 CSO activations at CSO-013 in the Black Rock Canal from the initial baseline conditions to the completion of the approved 2014 LTCP in the new model.

Selected Alternative: Regarding the Selected Alternative model, the proposed SPP304 Modification (CSO013_1) is planned to replace the CSO-013 Satellite Storage. In this Selected Alternative, it is anticipated that the target of 4 CSO activations at CSO-013 in the Black Rock Canal will be sustained from the initial baseline conditions to the implementation of the Selected Alternative.

iii. Implementation Issue

Rather than an off-line storage system at this location, the removal of an existing underflow orifice plate in combination with upstream proposed off-line storage projects are expected to achieve compliance under the revised model.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	1/1/2020	1/1/2021	1/1/2023
Proposed	3/3/2026	4/22/2028	11/18/2029

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$3,000,000	$4,192,149
Updated Estimate	$42,937	$60,000

vi. Modified/Eliminated/Included in Updated Model

Modification: The CSO-013 offline storage was replaced with SPP304 Modification (CSO013_1).
For this SPP modification project, SPP304 (CSO-013, Virginia St. & Busti Ave.) would be modified by removing the underflow orifice plate. Since this project sends more flow to the Swan Trunk, it would benefit from the implementation of OLS projects in the South Central District.

Impact on Cost: Cost reduction is achieved with the smaller SPP modification project.

Impact on Schedule: The modified project is anticipated to be completed 4 years after the original LTCP project completion date.

Reason for Modifications: SPP modification is more cost effective than OLS to address small out of compliance activations in final version of Selected Alternative.

Are changes significant enough to require further public participation: No.
The SPP modifications have lesser impact than an OLS structure. Further public participation is not required.

3.4. Hamburg Drain Storage

i. Project Description

All CSOs Impacted: 017, 022, and 064 (Listed under CSO-017 in CSO Level Impacts)
Location: Hamburg Basin along the Riverline Trail
Size: 5.0 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, this project was projected to reduce CSO discharges into the Buffalo River. The expected activations reductions were from 49 to 4 for CSO-017 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the Hamburg Drain Storage project was projected to reduce activations from 24 to 4 for CSO from the initial baseline conditions to the completion of the approved 2014 LTCP in the new model.

Selected Alternative: Regarding the Selected Alternative model, the Hamburg Drain Storage was eliminated and replaced with more efficient/constructable alternatives. Therefore, this project is not included in the Selected Alternative scenario.

iii. Implementation Issue

The Hamburg Drain Storage Project was conceived as being constructed on privately held lands. The feasibility of acquiring these lands in a timely and economical matter is highly suspect. The 5.0 MG storage facility would not achieve the desired number of activations for CSO-017. Alternative options are therefore being proposed.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	2015	2016	2018
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$19,960,000	$27,891,763
Updated Estimate	N/A	N/A

vi. Modified/Eliminated/Included in Updated Model

Eliminated: The Hamburg Drain Storage has been removed and more efficient/constructable alternatives are being considered to ensure that BSA achieves the water quality goals of the Administrative Order within the anticipated schedule.

3.5. Fillmore North ILS

i. Project Description

All CSOs Impacted: 026
Location: Fillmore Avenue from Sienkiewicz to William
Size: 2500 ft of detention within 75" Brick Egg Shaped Sewer

ii. Activation Reductions

Old Model: Together with other LTCP Projects, Fillmore North ILS was projected to reduce CSO discharges into the Buffalo River. The expected activations reductions were from 63 to 3 for CSO-026 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the Fillmore North ILS project was projected to reduce activations from 9 to 6 for CSO-026 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the Fillmore North ILS was eliminated, therefore, this project is not included in the Selected Alternative scenario.

iii. Implementation Issue

This project did not provide any changes in activations in the updated model and is therefore no longer being pursued.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,015,000	$2,815,727
Updated Estimate	N/A	N/A

vi. Modified/Eliminated/Included in Updated Model

Elimination: In the updated model, this project did not provide any changes in activations and is therefore no longer being pursued.

3.6. SPP075 Optimization

i. Project Description

All CSOs Impacted: 026
Location: Perry Street and Smith Street
Size: Upsize underflow pipe to have a capacity of 3.5 cfs and remove underflow orifice.

ii. Activation Reductions

Old Model: Together with other LTCP Projects, SPP075 Optimization project was projected to reduce CSO discharges into the Buffalo River. The expected activations reductions were from 63 to 3 for CSO-026 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the SPP075 Optimization project was projected to reduce activations from 9 to 6 for CSO-026 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the SPP075 Optimization project was eliminated and is not included in the Selected Alternative scenario.

iii. Implementation Issue

The weir crest elevation at SPP075 was raised in 2010 to 1.5 ft in the BSA datum. Additional SPP optimization work was planned along with the Smith Street RTC but was never implemented. Costs to increase the pipe diameter were very high and did not show significant impact in preliminary modeling. This project was removed and replaced with more cost-effective projects upstream of CSO-026.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2014	3/18/2015	3/18/2017
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$100,000	$139,738
Updated Estimate	N/A	N/A

vi. Modified/Eliminated/Included in Updated Model

Elimination: SPP Optimization deemed no longer necessary when running the updated PC-SWMM model using the typical year rainfall because this SPP has no activations.

3.7. Gibson CSO Line Storage

i. Project Description

All CSOs Impacted: 026
Location: Gibson St from Stanislaus to Siekiewicz
Size: 1800 ft of detention within 78" Precast Concrete Sewer

ii. Activation Reductions

Old Model: Together with other LTCP Projects, Gibson CSO Line Storage was projected to reduce CSO discharges into the Buffalo River. The expected activations reductions were from 63 to 3 for CSO-026 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the Gibson CSO Line Storage project was projected to reduce activations from 9 to 6 for CSO-026 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the Gibson CSO Line Storage was eliminated and is not included in the Selected Alternative scenario.

iii. Implementation Issue

This project did not provide any changes in activations in the updated model and is therefore no longer being pursued.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,015,000	$2,815,727
Updated Estimate	N/A	N/A

vi. Modified/Eliminated/Included in Updated Model

Eliminated: This project did not provide any changes in activations in the updated model and is therefore no longer being pursued.

3.8. CSOs 028/044/047 Satellite Storage, Conveyance, FM & PS / CSO028_1 Hopkins & Osage OLS

i. Project Description

All CSOs Impacted: 028/044/047 (Listed under CSO-028 in CSO Level Impacts)
Location: underneath the Tops parking lot between South Park Avenue and the Buffalo River
Size: 2.3 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, CSOs 028/044/047 Satellite Storage project was projected to reduce activations from 69 to 6 for CSO-028, from 7 to 2 for CSO-044, and from 44 to 3 for CSO-047 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, CSOs 028/044/047 Satellite Storage project was projected to reduce activations from 33 to 1 for CSO 28 upon completion of the approved 2014 LTCP. Both CSO-044 and CSO-047 were in compliance in the new model's baseline and the approved 2014 LTCP scenarios.

Selected Alternative: Regarding the Selected Alternative model, the proposed Hopkins & Osage OLS (CSO028_1) is planned to replace the CSOs 028/044/047 Satellite Storage. In this Selected Alternative, it is anticipated that the smaller proposed tank, together with other LTCP Projects, will reduce activations from 33 to 4 for CSO-028. Both CSO-044 and CSO-047 are in compliance in the new model's baseline and the Selected Alternative scenarios.

iii. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2028	3/18/2031	3/18/2034
Proposed	9/1/2030	5/4/2034	3/5/2037

iv. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$12,200,000	$17,048,071
Updated Estimate	$12,623,598	$17,640,000

v. Modified/Eliminated/Included in Updated Model

Modification: Updated to smaller tank, 0.95 MG Hopkins & Osage OLS (CSO028_1)
The LTCP model results showed that storage was no longer needed to achieve compliance for CSO-044 and CSO-047. To address CSO-028 overflows, the Hopkins and Osage OLS would store flow from the Hopkins Street sewer in a 0.95 MG tank at the eastern end of Osage Street. The storage would dewater when there is available capacity in the South Park Avenue sewer and no risk of overflow at the downstream SPPs 125 and 126. The Proposed OLS configuration requires a pump station for dewatering. This project also includes raising the weir at SPP123A to 2.40 ft (City datum) to send flow to the downstream off-line storage and further reduce CSO-028 overflows.

Impact on Cost: The cost of the re-located tank is about the same as the original cost estimate.

Impact on Schedule: The modified project is projected to complete Substantial Completion 3 years after the approved LTCP project.

Reason for Modifications: Preliminary model results showed storage was no longer needed to achieve compliance for CSO-044 and CSO-047.

Are changes significant enough to require further public participation: Yes.
The proposed modifications include a smaller 0.95 MG storage tank in a new location. These changes have impacts, and involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.9. CSO-052 Satellite Storage, Conveyance, FM & PS

i. Project Description

All CSOs Impacted: 052
Location: Ogden Street between Mineral Springs Road and Cazenovia Creek
Size: 0.6 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, CSO-052 Satellite Storage was projected to reduce CSO discharges into the Buffalo River. The expected activations reductions were from 10 to 3 for CSO-052 upon completion of the approved 2014 LTCP.

New Model: No activations were observed for CSO-052 when running updated PC-SWMM model using the typical year rainfall for the baseline and the approved 2014 LTCP scenarios

Selected Alternative: Regarding the Selected Alternative model, the CSO-052 Satellite Storage was eliminated and is not included in the Selected Alternative scenario.

iii. Implementation Issue

This CSO is already in compliance, so a project in this area is no longer warranted.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2030	3/18/2032	3/18/2034
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$3,900,000	$5,449,793
Updated Estimate	$7,084,672	$9,900,000

vi. Modified/Eliminated/Included in Updated Model

Eliminated: Deemed to no longer be necessary when running the updated PC-SWMM model using the typical year rainfall because the downstream SPP was in compliance.

3.10. CSO-064 Satellite Storage, Conveyance, FM & PS / CSO064_1.1 CSO-064 ILS

i. Project Description

All CSOs Impacted: 064
Location: Near the confluence of Ohio, Louisiana and Saint Claire Streets.
Size: 0.1 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, CSO-064 Satellite Storage project was projected to reduce CSO discharges into the Buffalo River. Expected activations reductions were from 56 to 3 for CSO-064 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, CSO-064 Satellite Storage project was projected to reduce activations from 10 to 6 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed CSO-064 ILS (CSO064_1.1) is planned to replace CSO-064 Satellite Storage. It is anticipated that the proposed project together with other proposed projects will reduce activations from 10 to 4 for CSO-064 upon completion of the Selected Alternative.

iii. Implementation Issue

There are significant hydraulic challenges preventing the construction of the original design of the satellite storage project. It is BSA's preference to rely on gravity rather than pumped flow and to construct in the existing right-of-way where possible.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2030	3/18/2032	3/18/2034
Proposed	3/3/2030	3/25/2033	3/10/2035

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,000,000	$2,794,766
Updated Estimate	$2,862,494	$4,000,000

vi. Modified/Eliminated/Included in Updated Model

Modification: The new project includes replacing the CSO-064 Satellite Storage with two 60-inch ILS (CSO064_1.1).
The existing 24" sewer upstream of SPP137 between South Street and Republic Street along Louisiana Street would be replaced by two 60" diameter sewers. These sewers would provide in-line storage volume to help reduce overflows at SPP137.

Impact on Cost: The cost estimate increased compared to the original estimate.

Impact on Schedule: The modified ILS project is projected to complete construction in 2033, 1 year earlier than the original OLS project schedule.

Reason for Modifications: The OLS project is replaced with a more efficient/constructable project to ensure that BSA achieves the water quality goals of the Administrative Order within the anticipated schedule.

Are changes significant enough to require further public participation: Yes.
The proposed modifications may have less impact on the public than an OLS project. However, involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.11. CSO-014/015 Satellite Storage, Conveyance, FM & PS / CSO14_1.2 Erie Basin Marina OLS

i. Project Description

All CSOs Impacted: 014, 015
Location: Trenton Road and Fourth Street
Size: 0.8 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, CSO-014/015- Satellite Storage was projected to reduce CSO discharges into the Erie Basin Marina. Expected activations reductions were from 4 to 2 for CSO-014 and from 12 to 1 for CSO-015 upon the completion of the approved 2014 LTCP

New Model: Together with other LTCP Projects, CSO-014/015- Satellite Storage was projected to reduce CSO discharges into the Erie Basin Marina. Specifically, it was expected to reduce activations from 12 to 2 for CSO-014. In the new model's baseline and 2014 LTCP scenarios, there were no activations at CSO-015.

Selected Alternative: Regarding the Selected Alternative model, the proposed Erie Basin Marina OLS (CSO014_1.2) is planned to replace the CSO-014/015 Satellite Storage. In this Selected Alternative, it is anticipated that the new project together with other LTCP projects will reduce activations from 12 to 2 for CSO-014. In the new model's baseline and the Selected Alternative scenarios, there were no activations observed at CSO-015.

iii. Implementation Issue

The New Model typical year results indicated that additional storage would be required to achieve compliance for Erie Basin Marina.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	Prior to 1/1/2014	Prior to 1/1/2014	3/18/2015
Proposed	3/3/2026	3/24/2029	3/5/2034

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$6,700,000	$9,362,465
Updated Estimate	$44,683,530	$62,440,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Updated to larger tank, 5.55 MG Erie Basin Marina OLS (CSO014_1.2)

To address CSO-014 overflows, flow from Swan Trunk would be diverted to the proposed Erie Basin Marina OLS. The OLS would consist of a 5.55 MG tank north of the intersection of Trenton Road and Fourth Street. The storage would dewater when there is available capacity in the Swan

trunk sewer. The Proposed OLS configuration requires a pump station for dewatering. The inlet for this storage is near SPP206A&B, so it would be beneficial to implement the OLS in conjunction with the SPP206A&B RTC project.

Impact on Cost: Increase in cost to accommodate larger tank size.

Impact on Schedule: Modifying the CSO/014/015 project to achieve compliance at SPP206A&B extends the schedule for work in this area to 2032.

Reason for Modifications: The remaining out of compliance activations at SPP206A&B exceeded the capacity of the original CSO014/015 tank size. This situation arose due to an increase in inflow, as reported by the Erie County Sewer District (ECSD), resulting in a higher number of activations at SPP206A&B. In addition, the implementation of this OLS helps mitigate overflows at other nearby SPPs, such as SPP024 and SPP097.

Are changes significant enough to require further public participation: Yes.
The proposed modifications, including a larger 5.55 MG storage tank and Real-Time Control modifications, go beyond the initial plan of a 0.8 MG tank. These changes have significant impacts, and involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.12. CSO-055 Satellite Storage, Conveyance, FM & PS / CSO055_1.5 Military Rd OLS/Hertel OLS

i. Project Description

All CSOs Impacted: 055
Location: upstream of the SPP001 regulator, near Military Road
Size: 7.5 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, CSO-055 Satellite Storage project was projected to reduce CSO discharges into the Niagara River. The expected activations reductions were from 41 to 9 for CSO-055 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, CSO-055 Satellite Storage project was projected to reduce activations from 38 to 16 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed Military Rd OLS (CSO055_1.5) is planned to replace the CSO-055 Satellite Storage. In this Selected Alternative, it is anticipated that the proposed larger tank together with other LTCP Projects will reduce activations from 38 to 9 for CSO-055 upon completion of the Selected Alternative.

iii. Implementation Issue

A few different alternatives were considered in this area due to maintenance and constructability concerns. The size and number of activations at CSO-055 also required additional storage to achieve compliance.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2027	3/18/2030	3/18/2034
Proposed	8/27/2027	12/12/2030	1/2/2037

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$18,500,000	$25,851,584
Updated Estimate	$69,329,602	$96,880,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Updated to larger tank with new location: 11.55 MG Military Rd OLS (CSO055_1.5)

The proposed Military Road OLS project is a 11.55 MG tank that stores flow diverted from the Hertel Avenue South barrel at the intersection of Hertel Avenue and Military Road. The currently proposed location for the storage tank is the parking lot for West Hertel Academy at 245 Hertel. The inlet of the offline storage is directly upstream of the existing Hertel at Deer RTC structure and would store when the Hertel at Deer ILS is full. The storage would dewater via a pump station when there is no risk of overflow at SPP001. Note that this OLS may not be implemented as it is currently configured if the North of Scajaquada Creek section of the Northern Relief Tunnel is

constructed. Compliance in this area will be further evaluated during the Northern Relief Tunnel detailed design phase, and the Military OLS project will be adjusted as needed to minimize overall program costs while still achieving compliance.

Impact on Cost: Significant cost increase due to larger tank size. The cost impact may change if the North of Scajaquada Creek section of the Northern Relief Tunnel is constructed.

Impact on Schedule: The modified project is projected to be completed 1 year after the approved LTCP project completion.

Reason for Modifications: The capacity of the original CSO055 tank size proved insufficient as volume for the remaining out of compliance activations at SPP001 exceeded it. Additionally, an increase in inflow, as reported by the ECSD, resulted in a higher number of activations and a greater total overflow volume at SPP001. In addition, to address challenges related to land acquisition, a new location was chosen for the project. Moreover, the implementation and size of CSO055_1.5 are dependent on a detailed design evaluation for the Northern Relief Tunnel.

Are changes significant enough to require further public participation: Yes.
The proposed modifications, including a larger 11.55 MG storage tank in a new location, go beyond the initial plan of a 7.5 MG tank. These changes have significant impacts, and involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.13. Hertel North East / Hertel Delaware ILS (CSO055_1.1)

i. Project Description

All CSOs Impacted: 055
Location: Hertel Avenue between Colvin and Shoshone
Size: 2500 ft of detention within 102" Reinforced Concrete Sewer

ii. Activation Reductions

Old Model: Together with other LTCP Projects, Hertel North East / Hertel Delaware ILS (CSO055_1.1) project was projected to reduce CSO discharges into the Niagara River. The expected activations reductions were from 41 to 9 for CSO-055 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, Hertel North East / Hertel Delaware ILS (CSO055_1.1) project was projected to reduce activations from 38 to 16 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed updated design of the Hertel North East / Hertel Delaware ILS (CSO055_1.1) together with other LTCP Projects will reduce activations from 38 to 9 for CSO-055 upon completion of the Selected Alternative.

iii. Implementation Issue

There are existing flooding concerns in the vicinity and significant traffic issues that will need to be addressed. Additionally, this project in and of itself while impacting the volume of overflows, will have minimal impact on water quality and/or overflow events. There are also significant seiche influences at CSO-055 that will be addressed with a backwater gate project.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	3/3/2034	4/23/2037	6/1/2040

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,185,000	$3,053,282
Updated Estimate	$2,862,494	$4,000,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Updated to Hertel Delaware ILS (CSO055_1.1)
The Hertel North East / Hertel Delaware ILS (CSO055_1.1) is designed to take advantage of additional storage capacity available on Hertel Avenue North barrel upstream of the existing Hertel at Deer RTC structure. Since there is a short travel time between the two locations, the preliminary control strategy would start storage when the depth upstream of the Hertel North East / Hertel Delaware ILS (CSO055_1.1) structure indicates wet weather. This project will work in conjunction with the CSO-055/ Military Road OLS project.

Impact on Cost: Increase in cost compared to original design.

Impact on Schedule: The modified ILS project is projected to complete construction 14 years after the approved LTCP completion year.

Are changes significant enough to require further public participation? No.
The modifications to this project do not significantly change the size/location. However, this is a high traffic area that will require additional public participation to ensure the public is aware of how construction will impact traffic patterns.

3.14. SPP 336 A&B (CSO-053) Satellite Storage, Conveyance, FM & PS / CSO053_1.4 SPP336B Sidney Street OLS

i. Project Description

All CSOs Impacted: 053
Location: Humboldt Parkway on each side of the Scajaquada Drain
Size: 4.2 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, SPP 336 A&B (CSO-053) Satellite Storage project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, SPP 336 A&B (CSO-053) Satellite Storage project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed Sidney OLS (CSO053_1.4) is planned to replace the SPP 336 A&B (CSO-053) Satellite Storage. In this Selected Alternative, it is anticipated that the proposed smaller tank together with other LTCP Projects will reduce activations from 37 to 4 for CSO-053 upon completion of the Selected Alternative.

iii. Implementation Issue

The updated model indicates that 336A is already in compliance. Additionally, as described in the LTCP, this project would require the acquisition and demolition of occupied homes in East Buffalo near the site of the May 14, 2022, Tops Friendly Markets racially motivated massacre. Alternatives were explored on vacant land that would require less disruption in this neighborhood.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2024	3/18/2026	3/18/2029
Proposed	3/2/2024	6/18/2027	5/29/2032

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$11,500,000	$16,069,903
Updated Estimate	$19,837,083	$27,720,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Replaced 3.26 MG Sidney OLS (CSO053_1.4)

The SPP 336 A&B (CSO-053) Satellite Storage at Humboldt Parkway will be replaced with a smaller 3.26 MG tank at the corner of Sidney Street and Lark Street. This area is currently vacant land that will be maintained as a parking lot or pocket park after Substantial Completion. To reduce flows at SPP336B, the Sidney Street OLS will store flow diverted from the sewer along Humboldt

Parkway. The storage would dewater via gravity when there is sufficient available capacity in the Scajaquada Tunnel Interceptor.

Impact on Cost: The combined cost of the Proposed Alternative projects is higher than the original SPP336A&B satellite storage project.

Impact on Schedule: The updated schedule projects Substantial Completion in 2030 instead of 2029 in the approved LTCP.

Reason for Modifications: SPP165A and SPP336A were in compliance in the preliminary model results. Also, there is an opportunity to coordinate when to send flows to Scajaquada Tunnel with new projects such as Schiller Park OLS, resulting in the reduction in storage capacity for the new proposed OLS.

Are changes significant enough to require further public participation: Yes.
The proposed project consisting of a 3.6 MG tank has a smaller footprint than the original project. However, since the project is in a new location, involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.15. Jefferson Avenue & Florida Street (CSO-053) Satellite Storage / CSO053_11 Jefferson Delavan OLS

i. Project Description

All CSOs Impacted: 053
Location: Near the intersection of Jefferson Avenue and Florida Street.
Size: 2.6 MG satellite storage facility with pumping station and forcemain discharge

ii. Activation Reductions

Old Model: Together with other LTCP Projects, Jefferson Avenue & Florida Street (CSO-053) Satellite Storage project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, Jefferson Avenue & Florida Street (CSO-053) Satellite Storage project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed Canisius/Jefferson Delavan OLS (CSO053_11) is planned to replace the Jefferson Avenue & Florida Street (CSO-053) Satellite Storage. In this Selected Alternative, it is anticipated that the proposed smaller tank together with other LTCP Projects will reduce activations from 37 to 4 for CSO-053 upon completion of the Selected Alternative.

iii. Implementation Issue

BSA has explored different alternatives in this area to accommodate property rights issues and potential environmental contamination. Alternatives being explored include a tunnel within the right of way of East Delavan and an underground storage tank on Canisius College owned property.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2025	3/18/2027	3/18/2030
Proposed	12/1/2021	9/7/2028	4/9/2032

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$9,500,000	$13,275,138
Updated Estimate	$21,468,704	$30,000,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Replaced by 1.5 MG Canisius/Jefferson Delavan OLS (CSO053_11)
There is a new opportunity to move the tank location north and utilize an existing parking garage area at Jefferson and Delavan proposed to be demolished for the construction of a new surface parking lot. In the updated configuration and location, flow at SPP333 is routed to a 1.5 MG offline storage tank with an RTC at SPP229A. The storage would dewater via gravity when there is capacity available in the Scajaquada Tunnel. Rock is present at shallow depths in this area which

would impact construction costs and scheduling. Note the Proposed Alternative assumed an off-line storage facility would be implemented. This project is currently in preliminary design and progressing towards a tunnel alternative to avoid private property and community impact issues.

Impact on Cost: The cost significantly increased from the original unfinished LTCP project.

Impact on Schedule: The modified project is projected to meet the Substantial Completion year of 2029, 1 year earlier than the approved LTCP project.

Reason for Modifications: The availability of an existing parking garage area at Jefferson and Delavan proposed to be demolished for the construction of a new surface parking lot presented a new opportunity to locate the tank in this area to prevent land acquisition related challenges. Since this initial proposal, land acquisition in this area has proven to be more challenging.

Are changes significant enough to require further public participation: Yes.
The new project consisting of a 1.5 MG tank has a smaller footprint than the original project. However, since the project is in a new location, involving the public in the decision-making process would ensure transparency, allow stakeholders to provide input, and address any concerns.

3.16. Colorado ILS/ CSO053_2.5 SPP337 Modification

i. Project Description

All CSOs Impacted: 053
Location: Colorado Street & Scajaquada to East Delavan & Northumberland
Size: 2500 ft of detention within 60" Brick Egg Shaped Sewer

ii. Activation Reductions

Old Model: Together with other LTCP Projects, Colorado ILS project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon the completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, Colorado ILS project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed CSO053_2.5 SPP337 Modification is planned to replace the Colorado ILS project. In the Selected Alternative, it is anticipated that the proposed project together with other LTCP Projects will reduce activations from 37 to 4 for CSO-053 upon completion of the Selected Alternative.

iii. Implementation Issue

This project was to be located on Colorado Street near Scajaquada Street within the footprint of the former American Axle property on East Delavan Street. Construction of an RTC structure at this location would require an easement from a private property owner in a known Superfund site and would entail excavation within what are highly suspected to be contaminated soils. Due to the high cost-benefit ratio and the extended legal process entailed with this project, implementation was delayed indefinitely.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	3/2/2024	4/24/2026	11/20/2027

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,025,000	$2,829,700
Updated Estimate	$42,937	$60,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Replaced by CSO053_2.5 SPP337 Modification
The SPP 337 (CSO-053) offline storage was replaced with SPP337 Modification (CSO053_2.5). For this project, SPP337 would be modified by incorporating an additional 30" diameter underflow pipe. This modification would reduce overflows at CSO-053 and would benefit from the implementation of the Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.

Impact on Cost: The cost of the SPP modification is significantly lower than the original satellite storage facility cost estimate.

Impact on Schedule: The modified project is projected to complete Substantial Completion 1 year after the approved LTCP completion date.

Reason for Modifications: SPP modification is more cost effective than OLS to address small out of compliance activations in the final version of the Selected Alternative.

Are changes significant enough to require further public participation: No.
SPP modifications have lesser impact than an OLS structure. Further public participation is not required.

3.17. South Bailey ILS / CSO053_3.1 SPP338 Modification

i. Project Description

All CSOs Impacted: 053
Location: Bailey from Dorris to Scajaquada
Size: 3250 ft of detention within 66" Brick Sewer

ii. Activation Reductions

Old Model: Together with other LTCP Projects, the South Bailey ILS project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the South Bailey ILS project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed SPP338 Modification (CSO053_3.1) would replace the South Bailey ILS project. It is anticipated that the proposed project together with other proposed projects will reduce activations from 37 to 4 for CSO-053 upon completion of the Selected Alternative.

iii. Implementation Issue

A modification of SPP 338 without real-time control was found to have similar impacts to this project and require less long-term maintenance.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	3/2/2024	4/23/2027	6/1/2030

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,025,000	$2,829,700
Updated Estimate	$2,862,494	$4,000,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Replaced with SPP338 Modification (CSO053_3.1)

South Bailey ILS will be replaced by SPP338 Modification (CSO053_3.1). SPP338 is located south of the intersection of Scajaquada Street and Bailey Avenue. For this project, the SPP338 underflow orifice would be enlarged. The overflow weir would be raised to 55.24 ft (City datum), and the length increased to 30'. To prevent construction in the intersection, another version of this project is under consideration that diverts flow upstream of the SPP at Bailey Avenue and Northland Avenue along public open land to tie in to the Scajaquada Tunnel at Scajaquada Street. Either version of this project would reduce overflows at CSO-053 and would benefit from the implementation of the Schiller Park OLS or Sidney OLS.

Impact on Cost: The proposed alternative version of this project will have higher costs than the original project.

Impact on Schedule: The modified project is projected to be complete 4 years after the approved LTCP project completion.

Reason for Modifications: replaced with more efficient/constructable project to ensure that BSA achieves the water quality goals of the Administrative Order within the anticipated schedule.

Are changes significant enough to require further public participation: No.
SPP modifications projects have a relatively small impact and further public participation is not required.

3.18. Amherst Quarry OLS / CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC

i. Project Description

All CSOs Impacted: 053
Location: Area bounded by Parkridge Avenue, East Amherst Street, and Hewitt Avenue.
Size: Real-time control to maximize existing system

ii. Activation Reductions

Old Model: Together with other LTCP Projects, the Amherst Quarry OLS project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the Amherst Quarry OLS project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC would replace the Amherst Quarry OLS. It is anticipated that the proposed project together with other proposed projects will reduce activations from 37 to 4 for CSO-053 upon completion of the Selected Alternative.

iii. Implementation Issue

This project is being progressed in phases. In the interest of ensuring competitive bidding, RTC implementation at Bailey & Amherst is being combined with other RTC projects as the "Scajaquada Creek and Black Rock Canal Smart Sewer Project." The second phase of the Amherst Quarry pump station project is expected to start engineering in 2023 and consist of the station rehabilitation and logic improvements.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	12/1/2021	5/28/2025	7/6/2028

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,875,000	$4,017,476
Updated Estimate	$1,539,214	$2,150,872

vi. Modified/Eliminated/Included in Updated Model

Modification: Now Bailey & Amherst, Amherst Quarry PS RTC (CSO053_3.2)
This RTC project includes adding RTC at SPP255 (Bailey Avenue and East Amherst Street) as well as improving the efficiency of Amherst Quarry dewatering operations to reduce overflows. The SPP255 RTC component was not part of the 2014 LTCP. RTC at this location would send more flow from the North Bailey sewer to the Amherst Quarry when it has available storage capacity, and the Amherst Quarry pump station would dewater the quarry when there is no risk for overflow at Scajaquada SPPs. This project includes updating sensors at Amherst Quarry and adding instrumentation at SPP338 (Bailey Ave & Kerns Ave).

The second phase of this project, Amherst Quarry PS RTC, will consist of the station rehabilitation and logic improvements.

Impact on Cost: The modifications reduced the overall project cost in this area.

Impact on Schedule: The modified projects in this area are projected to be completed 2 years after the approved LTCP completion date.

Reason for Modifications: Modifications were made to take advantage of a road improvement project on Bailey Ave.

Are changes significant enough to require further public participation: Yes.
Additional public participation is already underway for this project. Public meetings have been held to inform the public and address concerns regarding construction impacts.

3.19. SPP 341A Optimization Genesee & Kearns, now CSO053_8 SPP341A Modification

i. Project Description

All CSOs Impacted: 053
Location: Genesee Street east of Kerns Avenue
Size: Increase underflow orifices to 7.1 sf and upsize underflow piping to 36" diameter

ii. Activation Reductions

Old Model: Together with other LTCP Projects, SPP 341A Optimization Genesee & Kearns project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, SPP 341A Optimization Genesee & Kearns project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: Regarding the Selected Alternative model, the proposed CSO053_8 SPP341A Modification
is planned to replace the SPP 341A Optimization Genesee & Kearns project. It is anticipated that the proposed project together with other proposed projects will reduce activations from 37 to 4 for CSO-053 upon completion of the Selected Alternative.

iii. Implementation Issue

This Optimization involved significantly more work than originally anticipated due to site conditions and was not completed by 2017 with the other Foundation 2 SPP Optimizations. Due to its complexity, for bidding purposes, this project is best accomplished in tandem with larger scale system modifications.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	1/1/2014	N/A	3/18/2017
Proposed	3/2/2024	4/24/2026	11/20/2027

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$190,000	$265,503
Updated Estimate	$42,937	$60,000

vi. Modified/Eliminated/Included in Updated Model

Modification: Replaced by CSO053_8 SPP341A Modification
For this project, SPP341A would be modified by incorporating an additional 18" diameter underflow pipe and raising the overflow weir to 55.60 ft (City datum), reducing overflows at CSO-

053. This modification would benefit from the implementation of the Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.

Impact on Cost: Reduction in cost compared to original project.

Impact on Schedule: As the revised model indicates the need for this project, design is planned to begin in September 2023 and be bid together with other additional optimizations to the Scajaquada system.

Reason for Modifications: The 314A Optimization project is replaced with more efficient/constructable SPP341A Modification (CSO053_8) project to ensure that BSA achieves the water quality goals of the Administrative Order within the anticipated schedule**.**

Are changes significant enough to require further public participation: No.
SPP modifications projects have a relatively small impact and further public participation is not required.

3.20. East Ferry ILS

i. Project Description

All CSOs Impacted: 053
Location: East Ferry from Kensington Expressway to Cornwall
Size: 5800 ft of detention within 75" Brick Sewer

ii. Activation Reductions

Old Model: Together with other LTCP Projects, the East Ferry ILS project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the East ILS project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: The East Ferry ILS project has been eliminated and is not included in the Selected Alternative scenario.

iii. Implementation Issue

Investigations have demonstrated that storage is not available in this section due to low basement and side sewer connections. This project is therefore no longer being contemplated.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,040,000	$2,850,661
Updated Estimate	N/A	N/A

vi. Modified/Eliminated/Included in Updated Model

Eliminated: This project is not feasible due to low sewer connections. Alternative projects to address overflows within the Scajaquada-Black Rock system have been provided in the October 24, 2022 and January 31, 2023 submittals to the regulators.

3.21. SPP 337 (CSO-053) Satellite Storage, Conveyance, FM & PS

i. Project Description

All CSOs Impacted: 053
Location: Northwest of Intersection of Scajaquada Street and Colorado Avenue
Size: 0.7 MG satellite storage facility with pumping station and forcemain discharge located on privately owned lands within a potential brownfield site.

ii. Activation Reductions

Old Model: Together with other LTCP Projects, the SPP 337 (CSO-053) Satellite Storage project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the SPP 337 (CSO-053) Satellite Storage project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: The SPP 337 (CSO-053) Satellite Storage project has been eliminated and is not included in the Selected Alternative scenario.

iii. Implementation Issue

This satellite storage project was associated with significant land acquisition and constructability concerns. It also did not achieve compliance in the New Model, therefore other projects are currently being proposed.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2023	3/18/2025	3/18/2027
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$4,000,000	$5,589,532
Updated Estimate	N/A	N/A

vi. Modified/Eliminated/Included in Updated Model

Eliminated: Other projects for systemwide storage are being considered in areas that are more feasible.

3.22. Texas (Roslyn ILS)

i. Project Description

All CSOs Impacted: 053
Location: Texas St & Lang to Suffolk & Proctor
Size: 3000 ft of detention within 72" Reinforced Concrete Sewer

ii. Activation Reductions

Old Model: Together with other LTCP Projects, the Texas (Roslyn ILS) project was projected to reduce CSO discharges into Scajaquada Creek. The expected activations reductions were from 65 to 4 for CSO-053 upon completion of the approved 2014 LTCP.

New Model: Together with other LTCP Projects, the Texas (Roslyn ILS) project was projected to reduce activations from 37 to 26 upon completion of the approved 2014 LTCP.

Selected Alternative: The Texas (Roslyn ILS) project has been eliminated and is not included in the Selected Alternative scenario.

iii. Implementation Issue

This project reduced but did not eliminate overflows of SPP 339. There were also multiple low sewers coming into the main combined sewer, potentially resulting in basement back-ups.

iv. Schedule

	Engineering Start Date	NTP Date	Substantial Completion
Approved LTCP	3/18/2022	3/18/2023	3/18/2024
Proposed	N/A	N/A	N/A

v. Costs

	2012 Dollars	2022 Dollars
LTCP Estimate	$2,170,000	$3,032,321
Updated Estimate	N/A	N/A

vi. Modified/Eliminated/Included in Updated Model

Eliminated: The Texas ILS project was deemed to be infeasible and the SPP modification project was able to achieve compliance for SPP339 in the Proposed Alternative.

3.23. Green Infrastructure

i. Project Description

All CSOs Impacted: Multiple
Location: Multiple
Size: Unfinished Green Infrastructure projects from the LTCP included projects to manage 1,620 acres of impervious land. Separate sections for GI in each CSO basin included in the Selected Alternative are presented in the following section, New Projects to be Added.

4. New Projects to Be Added

4.1. CSO006_2 Gates Circle RTC

i. Project Description

CSO Impacted: 006
Location: Gates Circle (Delaware Ave and Lafayette Ave)
Size: Real-Time Controlled gate structure at SPP 332. Additional instrumentation will also be installed at the Niagara Metering Station (SPP 330) to inform gate control.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO 006 discharges to Scajaquada Creek from 47 to 1 activation.	$2,028,998	$2,835,287	3/1/2022	4/8/2025	5/17/2028

4.2. CSO006_3 Delavan Drain RTC

i. Project Description

CSO Impacted: 006

Location: Intersection of West Delavan Ave and Niagara St

Size: Replace existing permanently closed sluice gate with dynamically real-time controlled interconnection between the Delavan Drain and North Interceptor. Modification (raising of weir) of SPP 170A to divert flows from Scajaquada Creek to the Delavan Drain during only the most extreme storm events for flood prevention purposes. This project requires that upstream Scajaquada Creek projects be completed to bring CSO 053 into compliance to ensure Creek rather than CSO waters are being restored to the Lower Scajaquada Creek. This project would also benefit from the additional conveyance capacity created by the Northern Relief Tunnel project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO 006 discharges to Scajaquada Creek from 47 to 1 activation.	$2,862,494	$4,000,000	3/3/2030	2/25/2033	4/5/2036

4.3. CSO006_5 20% GI Implementation

i. Project Description

CSO Impacted: 006
Location: Various CSO 006 Basin
Size: Green infrastructure projects would be constructed within the basin sufficient to control runoff from 20% of the impervious area within the basin (52.5 acres managed). The exact list of projects to be implemented would be determined during the design phase, but would likely consist of some combination of the following project types, as originally defined in the BSA's Green Infrastructure Implementation Plan:

- Street permeable pavement
- Parking lot permeable pavement
- Rain Gardens
- Bioswales
- Downspout disconnections

For this evaluation, street permeable pavement was applied as the representative GI project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO 006 discharges to Scajaquada Creek from 47 to 1 activation.	$7,518,340	$10,506,000	3/3/2031	3/1/2034	3/1/2037

4.4. CSO012_1.2 SPP023 Modification

i. Project Description

CSO Impacted: 012
Location: West of Albany St and Niagara St intersection
Size: Enlarge SPP 023 underflow opening to 5 ft by 5 ft and by raise the overflow weir to 1.55' (City Datum). This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-012 discharges to Black Rock Canal from 35 to 3 activation.	$42,937	$60,000	3/3/2026	4/22/2028	11/18/2029

4.5. CSO012_2.1 SPP296 Modification

i. Project Description

CSO Impacted: 012
Location: West of Albany St and Niagara St intersection
Size: Enlarge SPP 296 underflow opening to 5 ft by 5 ft and by raise the overflow weir to 1.55' (City Datum). This project would be implemented after or in parallel with the SPP023 modification since it is directly upstream of the SPP023 underflow.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-012 discharges to Black Rock Canal from 35 to 3 activation.	$42,937	$60,000	3/3/2026	4/22/2028	11/18/2029

4.6. CSO017_1.1 SPP054 Sewer Separation

i. Project Description

CSO Impacted: 017
Location: near Exchange Street between Hamburg Street and Larkin Street
Size: Convert the sewer upstream of SPP054 to a separate storm sewer. This would eliminate SPP054 as an SPP.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activation.	$500,936	$700,000	3/3/2033	3/26/2036	6/3/2038

4.7. CSO017_10 SPP051 Modification

i. Project Description

CSO Impacted: 017
Location: South of the intersection of Exchange Street and Chicago Street
Size: Remove orifice plate and raise overflow weir to -1.35 ft (City Datum). This project would benefit from the implementation of the Clinton St OLS (CSO033_2) project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activation.	$42,937	$60,000	3/3/2029	4/25/2031	11/20/2032

4.8. CSO017_4 20% GI Implementation

i. Project Description

CSO Impacted: 017
Location: Various CSO 017 Basin
Size: 37.5 acres of impervious area
The exact list of projects to be implemented would be determined during the design phase, but would likely consist of some combination of the following project types, as originally defined in the BSA's Green Infrastructure Implementation Plan:

- Street permeable pavement
- Parking lot permeable pavement
- Rain Gardens
- Bioswales
- Downspout disconnections

For this evaluation, street permeable pavement was applied as the representative GI project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activations.	$5,360,020	$7,490,000	3/2/2032	3/1/2036	3/2/2039

4.9. CSO017_6 Bass Alley OLS

i. Project Description

CSO Impacted: 017
Location: South of the intersection of Swan Street and Oak Street
Size: 3.60 MG Storage Tank with Dewatering Pump Station

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activation.	$23,343,638	$32,620,000	3/3/2031	3/24/2034	3/5/2039

4.10. CSO017_8 SPP326 Modification

i. Project Description

CSO Impacted: 017
Location: South of the intersection of Swan Street and Oak Street
Size: Upsize SPP 326 underflow pipe to 36" to utilize capacity created by CSO014_1.2 Erie Basin Marina OLS.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activation.	$42,937	$60,000	3/3/2026	4/22/2028	11/18/2029

4.11. CSO017_9 SPP059 Modification

i. Project Description

CSO Impacted: 017
Location: near the intersection of Hamburg Street and Seneca Street
Size: Upsize underflow pipe to 24”; Raise overflow weir to 3.25’ (City Datum)

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activations.	$42,937	$60,000	3/3/2029	4/25/2031	11/20/2032

4.12. CSO026_1.3 Collins Park OLS

i. Project Description

CSO Impacted: 026
Location: Collins Park Field between Smith Street and Clifford Street
Size: 2.56 MG Storage Tank with Gravity Dewatering

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-026 discharges to Buffalo River from 9 to 6 activations.	$21,540,267	$30,100,000	3/3/2027	6/18/2030	5/30/2035

4.13. CSO026_4 20% GI Implementation

i. Project Description

CSO Impacted: 026
Location: Various CSO-026 Basin
Size: The CSO-026 basin would have green infrastructure managing 125.5 acres of impervious area. See CSO006_5 description for details.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-026 discharges to Buffalo River from 9 to 6 activations.	$17,965,012	$25,104,000	3/2/2032	3/1/2036	3/2/2039

4.14. CSO027_1 SPP 317 Modification

i. Project Description

CSO Impacted: 027
Location: north of the intersection of Clinton Street and Fillmore Avenue
Size: SPP317 overflow weir would be lowered to 7.25 ft (City datum). Lowering the weir would result in increased flows being directed to the Smith Street ILS facility, while lowering the flows in the Swan Trunk. The lowered flows in the Swan Trunk results in a reduction in overflows at CSO-027. This project would benefit from the additional downstream storage capacity provided by the Collins Park OLS facility.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-027 discharges to Buffalo River from 10 to 4 activations.	$42,937	$60,000	3/3/2027	4/24/2029	11/20/2030

4.15. CSO027_2 Babcock PS Weir Modification

i. Project Description

CSO Impacted: 027
Location: Babcock St
Size: Babcock Pump Station operates as an RTC facility to store flows in an upstream 11 ft by 11 ft box culvert during wet weather. The CSO027_2 modification project redirects flow from a 48" sewer to the box culvert instead of the sewer downstream of the pump station. This increases the in-line storage utilization and reduces the flow sent to the Swan Trunk in wet weather.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-027 discharges to Buffalo River from 10 to 4 activations.	$42,937	$60,000	3/3/2027	4/24/2029	4/9/2031

4.16. CSO027_3 SPP097 Modification

i. Project Description

CSO Impacted: 027
Location: Babcock Street, 555 ft north of the Buffalo River.
Size: The SPP097 underflow pipe would be upsized to 48 inches. The overflow weir would be raised to 0.82 ft (City datum) with an associated length increase to 100 ft. Upstream diversion alternatives that achieve the same impact as the SPP097 modification are also being considered in this area.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-027 discharges to Buffalo River from 10 to 4 activations.	$42,937	$60,000	3/3/2029	4/25/2031	11/20/2032

4.17. CSO033_1 Bailey & Regent OLS

i. Project Description

CSO Impacted: 033
Location: Moreland Field between Regent Street and Moreland Street along Bailey Avenue
Size: 4.50 MG tank at Moreland Field between Regent Street and Moreland Street along Bailey Avenue. The storage would dewater when there is available capacity in the downstream sewer and no risk of overflow at the downstream SPP 104. The Proposed OLS configuration requires a pump station for dewatering.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-033 discharges to Buffalo River from 15 to 2 activations.	$38,371,731	$53,620,000	3/2/2032	3/24/2035	3/4/2040

4.18. CSO033_2 Clinton St. OLS RTC

i. Project Description

CSO Impacted: 033
Location: Clinton Street near Kelburn Street
Size: The Clinton St. OLS project includes adding a new 60" diameter sewer that starts on Clinton Street near Kelburn Street and routes wet weather flow through Houghton Park to a 21.72 MG storage tank. An orifice plate and weir would be added at the intersection of Bailey Avenue and Clinton Street to route more flow to the tank via Clinton Street. An automatically controlled gate at the downstream end of the tank would close to store flow when SPP104 (CSO-033) is at risk for overflow and would open to prevent basement backups upstream. ECSD#4 would get priority in sending flows for treatment, and the storage tank would drain via gravity when there is conveyance capacity available downstream.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-033 discharges to Buffalo River from 15 to 2 activations.	$117,219,125	$163,800,000	3/3/2029	2/27/2032	3/8/2036

4.19. CSO033_3 SPP104 Modification

i. Project Description

CSO Impacted: 033
Location: Bailey Avenue, north of Littell Avenue
Size: The SPP104 overflow weir would be raised to 6.85 ft (City datum), and the length increased to 40'. These modifications would reduce overflows at CSO-017. Since this project is near the Clinton St. OLS, it would be beneficial to implement the SPP104 modification in parallel or after the OLS is constructed.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-033 discharges to Buffalo River from 15 to 2 activations.	$42,937	$60,000	3/3/2029	4/25/2031	11/20/2032

4.20. CSO064_1.2 SPP 137 Modification

i. Project Description

CSO Impacted: 064
Location: intersection of Louisiana Street and Republic Street.
Size: The SPP137 overflow weir would be raised to 0.50 ft (City datum). In addition, the underflow orifice plate would be removed. These modifications would reduce overflows at CSO-064 and would be implemented in conjunction with the CSO-064 ILS (CSO064_1.1) project

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-064 discharges to Buffalo River from 10 to 4 activations.	$42,937	$60,000	3/3/2030	4/23/2032	11/19/2033

4.21. CSO064_2 Perry Street Sanitary Sewer

i. Project Description

CSO Impacted: 064
Location: Scott St near Illinois St to Louisiana St
Size: This project would replace an existing sewer partially built into Hamburg Drain. The new sewer would start on Scott St near Illinois St to Louisiana St, then continue along Perry St to the Hamburg St. Pump Station. The total length of new sewer would be 6,417 ft, with the largest pipe diameter being 42".

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-064 discharges to Buffalo River from 10 to 4 activations.	$3,434,993	$4,800,000	3/3/2033	3/26/2036	6/3/2038

4.22. CSO014_1.1 SPP206A&B ILS Optimization/206 A&B RTC

i. Project Description

CSO Impacted: 014
Location:
Size: The proposed RTC project adds a 24" dewatering gate and connection to the South Interceptor. The gate would open to send more flow to the South Interceptor when it has available capacity, and close when it is near full capacity. This would further reduce overflows at SPP206A&B and could provide additional benefit downstream at SPP024 (CSO-011).

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-014 discharges to Erie Basin Marina from 12 to 2 activation.	$2,862,494	$4,000,000	3/3/2025	2/25/2028	2/9/2030

4.23. CSO011_1.1 20% GI Implementation

i. Project Description

CSO Impacted: 011
Location: Multiple
Size: Green infrastructure projects would be constructed within the basin sufficient to control runoff from 20% of the impervious area within the basin (19.9 acres managed). The exact list of projects to be implemented would be determined during the design phase, but would likely consist of some combination of the following project types, as originally defined in the BSA's Green Infrastructure Implementation Plan:

- Street permeable pavement
- Parking lot permeable pavement
- Rain Gardens
- Bioswales
- Downspout disconnections

For this evaluation, street permeable pavement was applied as the representative GI project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-011 discharges to Niagara River from 39 to 4 activation.	$2,849,613	$3,982,000	3/2/2032	3/1/2037	3/1/2040

4.24. CSO011_1.2 SPP024 Modification

i. Project Description

CSO Impacted: 011
Location: West of Albany St and Niagara St intersection
Size: SPP024 (CSO-011) would be modified by enlarging the underflow opening to 4.8 ft, which would send more flow to South Interceptor and reduce overflows at CSO-011. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-011 discharges to Niagara River from 39 to 4 activation.	$42,937	$60,000	3/3/2026	4/22/2028	11/18/2029

4.25. CSO055_3 20% GI Implementation

i. Project Description

CSO Impacted: 055
Location: Multiple
Size: The CSO-055 basin would have green infrastructure managing 260.2 acres of impervious area. The exact list of projects to be implemented would be determined during the design phase, but would likely consist of some combination of the following project types, as originally defined in the BSA's Green Infrastructure Implementation Plan:

- Street permeable pavement
- Parking lot permeable pavement
- Rain Gardens
- Bioswales
- Downspout disconnections

For this evaluation, street permeable pavement was applied as the representative GI project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-055 discharges to Niagara River from 38 to 9 activations.	$37,235,320	$52,032,000	3/2/2032	3/1/2037	3/1/2040

4.26. CSO053_1.5 SPP336B Modification

i. Project Description

CSO Impacted: 053
Location: in the Kensington Expressway, north of Hamlin Road
Size: SPP336B would be modified by removing the underflow orifice plate, reducing overflows at CSO-053. It would be beneficial to implement this modification after or in parallel with the Sidney OLS project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$42,937	$60,000	3/2/2024	4/24/2026	11/20/2027

4.26a CSO053_1.4 SPP336B Modification

iii. Project Description

CSO Impacted: 053

Location: 28 Sidney St, Buffalo, NY 14211

Size: To reduce flows at SPP336B, the Sidney Street OLS would store flow diverted from the sewer along Humboldt Parkway in a 3.26 MG tank at the corner of Sidney Street and Lark Street. The storage would dewater via gravity when there is sufficient available capacity in the Scajaquada Tunnel Interceptor.

iv. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$19,837,083	$ 27,720,000.00	3/2/2024	6/18/2027	5/29/2032

4.27. CSO053_10 SPP229A RTC

i. Project Description

CSO Impacted: 053
Location: intersection of Florida Street and Jefferson Avenue
Size: SPP229A would be modified by incorporating an additional 24" diameter underflow pipe downstream of a 24" dynamically controlled gate. The gate would open when there is available capacity in the Scajaquada Tunnel or there is a risk for overflow at SPP229A.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$2,146,870	$3,000,000	3/1/2022	10/22/2024	7/19/2026

4.28. CSO053_12.1 Jefferson Ave GI

i. Project Description

CSO Impacted: 053
Location: Jefferson Avenue from the intersection with Main Street to the intersection with Beverly Road
Size: This project would manage 2.3 acres of impervious area upstream of SPP333.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$329,187	$460,000	3/1/2022	3/31/2026	6/14/2028

4.29. CSO053_12.2 Jefferson Ave GI

i. Project Description

CSO Impacted: 053
Location: Jefferson Avenue from the intersection with Beverly Road to the intersection with Best Street.
Size: This project would manage 7.6 acres of impervious area upstream of SPP229A.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$1,087,748	$1,520,000	3/1/2022	3/31/2026	6/14/2028

4.30. CSO053_13 SPP165B Modification

i. Project Description

CSO Impacted: 053
Location: intersection of East Delavan Avenue and Humboldt Parkway
Size: SPP165B underflow orifice would be upsized to 24" and underflow pipe to 36". The overflow weir would also be raised to 54.81 ft (City datum). These modifications would reduce overflows at CSO-053. This project would benefit from the implementation of the Sidney OLS project to make more capacity available in the Scajaquada Tunnel.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$42,937	$60,000	3/2/2024	4/24/2026	11/20/2027

4.31. CSO053_14 SPP175, 176, & 177 Modifications

i. Project Description

CSO Impacted: 053
Location: Multiple
Size: SPP175 at Dodge Street and Michigan Ave would be raised to 56.10 ft (City datum). SPP176 at Michigan Avenue and Riley Street and SPP177 at Michigan Avenue and Glenwood Avenue would both be raised to 52.85 ft (City datum). These modifications are upstream of the Gates Circle RTC project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$42,937	$60,000	3/2/2024	4/24/2026	11/20/2027

4.32. CSO053_3.3 SPP254 Modification

i. Project Description

CSO Impacted: 053
Location: intersection of Minnesota Avenue and Bailey Avenue
Size: The overflow weir at SPP254 (located at the intersection of Minnesota Avenue and Bailey Avenue) would be replaced. The new weir elevation would be 82.90 ft (City datum), which is slightly lower than the weir elevation in the LTCP model. Lowering the weir results in more flow being routed to the Amherst Quarry PS storage.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$166,300	$232,385	3/1/2022	10/22/2024	7/19/2026

4.33. CSO053_5.2 Edison Martha OLS

i. Project Description

CSO Impacted: 053
Location: northwest corner of Edison Avenue and Kensington Expressway
Size: 2.61 MG tank at the northwest corner of Edison Avenue and Kensington Expressway. The storage would dewater via gravity when there is available capacity in the Edison Avenue trunk sewer.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$26,649,818	$37,240,000	3/2/2024	6/18/2027	4/30/2033

4.34. CSO053_9 20% GI Implementation

i. Project Description

CSO Impacted: 053
Location: Multiple
Size: The CSO-053 basin would have green infrastructure managing 16.7 acres of impervious area. The exact list of projects to be implemented would be determined during the design phase, but would likely consist of some combination of the following project types, as originally defined in the BSA's Green Infrastructure Implementation Plan:

- Street permeable pavement
- Parking lot permeable pavement
- Rain Gardens
- Bioswales
- Downspout disconnections

For this evaluation, street permeable pavement was applied as the representative GI project.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$2,393,045	$3,344,000	3/2/2028	3/1/2031	3/1/2034

4.35. System_2 Schiller Park OLS

i. Project Description

CSO Impacted: 012, 053, 055 (Listed under CSO-053 for CSO Level Impact)
Location: Schiller Park
Size: 8.0 MG offline storage project to divert inflows from Cheektowaga to an 8.00 MG storage facility during wet weather until the BSA collection system has capacity to receive and treat it. This project would help buffer peak flows to the Bird Island Treatment Facility and reduce overflows at SPPs along the North and South Interceptor, including SPP001 and SPP024. The OLS is currently configured as gravity-driven storage with dynamically controlled inlet and outlet gates.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-012 discharges to Black Rock Canal from 35 to 3 activations., CSO-053 discharges to Scajaquada Creek from 37 to 4 activations, and CSO-055 discharges to Niagara River from 38 to 9 activations.	$61,514,994	$85,960,000	3/3/2025	6/16/2028	5/28/2033

4.36. System_2_3 SPP339 Modification

i. Project Description

CSO Impacted: 053
Location: north of the intersection of Kerns Avenue and Texas Street
Size: SPP339 would be modified by increasing the diameter of the underflow pipe to 48", and by raising the elevation of the overflow weir to 52.71 ft (City datum). These modifications would reduce CSO-053 overflows and would benefit from the implementation of Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$42,937	$60,000	3/3/2025	4/23/2027	11/18/2028

4.37. System_2_4 SPP340 Modification

i. Project Description

CSO Impacted: 053
Location: north of the intersection of Kerns Avenue and Hagen Street.
Size: SPP340 would be modified by increasing the diameter of the underflow orifice to 24". A flap gate would also be applied to prevent backflow from the Scajaquada Drain. This modification would reduce CSO-053 overflows and would benefit from the implementation of Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.

ii. Impact

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.	$42,937	$60,000	3/3/2025	4/23/2027	4/7/2029

5. Projects from LTCP Completed

5.1. Niagara Street Phase 4a: Scajaquada Expressway to Hertel Ave

i. Project Description Specified

Location: Part of Niagara Street from Niagara Square to Ontario Street
Physical Size: Overall project 4 miles x 55 feet
Capacity: Overall project to control 35.8 acres of Impervious area
Impact: (Cost and Dates for Overall Project)

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO-003 to 5 activations	$3,250,000.00	$4,031,200.00	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: Scajaquada Expressway to Hertel Ave
Physical Size: Approximately 24,274 SF
Capacity: Manages 3.7 acres of impervious area, 21,202 CF storage capacity, 0.159 MG storage capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO-003 to 4 activations	$1,006,672.22	$1,271,898.80	10/28/2015	6/13/2018	9/21/2022

5.2. Bird Ave Underflow SPP 13 Modifications - North Relief Interceptor

i. Project Description Specified

N/A: This project was not in original LTCP, it was added later.

ii. Project Description As-Built

Location: Intersection of Bird Ave and Niagara St
Physical Size: Weir raised to 2.75' elevation, 120 LF of 60" pipe
Capacity: 74.71 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO 004 to 4 activations	$1,834,157.11	$2,412,228.05	5/15/2015	4/24/2018	12/11/2018

5.3. Bird RTC Project/ RTC-1/ Bird East/ Bird West

i. Project Description Specified

Location: Bird from Dewitt to Baynes (Bird West)
Bird& Baynes to Delaware & E. Delavan (Bird East)
Physical Size: Available capacity of 78" x 114" sewer
Capacity: 1.1 MG of storage
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO 004 to 3 activations	$1,565,000.00	$1,941,180.00	3/18/2016	3/18/2023	3/18/2024
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO 004, to 3 activations	$2,025,000.00	$2,511,750.00	3/18/2016	3/18/2023	3/18/2024

ii. Project Description As-Built

Location: Bird Avenue between Parkdale Avenue and Hoyt Street
Physical Size: Available capacity of 78" x 114" sewer
Capacity: 0.63 MG storage volume
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO 004 to 4 activations	$1,219,610.78	$1,512,766.11	2/24/2014	5/6/2016	10/1/2016

5.4. SPP 180 Optimization

i. Project Description Specified

Location: Delaware Avenue at the intersection with West Delavan
Physical Size: SPP 180 weir raised 2.0-ft along its entire length
Capacity: 36 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO 006 to 4 activations	$20,000.00	$25,853.28	3/1/2014	3/1/2014	3/1/2014

ii. Project Description As-Built

Location: Delaware Avenue at the intersection with West Delavan
Physical Size: SPP 180 weir raised 2.0-ft along its entire length
Capacity: 36 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO 006 to 15 activations	$20,000.00	$25,853.28	3/1/2014	3/1/2014	3/1/2014

5.5. SPP 331 Optimization

i. Project Description Specified

Location: Delaware Avenue at the intersection with West Delavan
Physical Size: Redirect SPP331's underflow to the Bird Avenue trunk sewer using a 1700' long D=30" sewer; Increase the area of the underflow orifice by 100% to 2.5 SF
Capacity: 3.2 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO 006 to 4 activations	$3,235,000.00	$4,012,590.00	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Delaware Avenue at the intersection with West Delavan & northeast quadrant of Gates Circle
Physical Size: SPP 180 weir raised 1.75-ft & bench located in SPP 332 removed and replaced with 6.2-ft high weir
Capacity: 3.2 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO 006 to 15 activations	$127,025.72	$164,201.60	Prior to 1/1/2014	9/8/2015	12/16/2015

5.6. Niagara Street Phase 3: Hampshire Street to Scajaquada Expressway

i. Project Description Specified

Location: Part of Niagara Street from Niagara Square to Ontario Street
Physical Size: Overall project 4 miles x 55 feet
Capacity: Overall project to control 35.8 acres of Impervious area
Impact: (Cost and Dates for Overall Project)

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO-012 to 2 activations	$3,250,000.00	$4,031,200.00	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: Hampshire St to Scajaquada Expressway
Physical Size:

- 1610 SF of standalone tree pits
- 22,915 SF of stormwater planters

Capacity: Manages 11.1 acres of impervious area, 38,278 CF Storage capacity, 0.286 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO-012 to 35 activations	$2,455,762.12	$3,102,778.45	10/28/2015	3/21/2018	4/25/2022

5.7. PUSH Blue Projects

i. Project Description Specified

Location: Within the CSO-012 sewershed

Physical Size:

- 20 rain gardens to capture the runoff from a total of 71,050 SF
- Four cisterns for use as a water source for community gardens with a capture area of 10,771 SF and 5,000 gallons of storage capacity
- Two green roofs with a capture area of 4,219 SF
- Three porous pavement projects on three lots with a total design area of 5,657 SF

Capacity: Designed to control stormwater flow from 1 acre of impervious area

Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Black Rock Canal through CSO-012 to 2 activations	$0.00	$0.00	3/18/2019	3/18/2023	3/18/2018

ii. Project Description As-Built

Location: Within the CSO-012 sewershed

Physical Size:

- 20 rain gardens to capture the runoff from a total of 71,050 SF
- 1 green roof with a capture area of 3069 sq ft
- 1 porous pavement project with a design capacity of 144 CF
- 4 cisterns with 5,000 cf of storage capacity

Capacity: 1 impervious acre managed, 427 CF storage capacity, 0.003 MG Storage Capacity

Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Black Rock Canal through CSO-012 to 35 activations	$0.00	$0.00	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.8. Niagara Street Phase 2: Virginia Street to Porter Avenue

i. Project Description Specified

Location: Part of Niagara Street from Niagara Square to Ontario Street
Physical Size: Overall project 4 miles x 55 feet
Capacity: Overall project to control 35.8 acres of Impervious area
Impact: (Cost and Dates for Overall Project)

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO-013 to 4 activations	$3,250,000.00	$4,031,200.00	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: Virginia St to Porter Ave
Physical Size: Approximately 47,756 SF
Capacity: 7.3 impervious acres managed, 30,928 CF storage capacity, 0.231 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO-013 to 4 activations	$1,417,903.47	$1,832,873.10	Prior to 1/1/2014	6/3/2015[7]	11/16/2017

5.9. SPP 283 Optimization

i. Project Description Specified

Location: Located in the median between the I-190 South ramp to Porter Avenue and a service road near the West Side Rowing Club
Physical Size: Remove orifice plate & install 1-ft weir
Capacity: 1.3 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Black Rock Canal through CSO 063 to 4 activations	$5,000.00[3.]	$6,463.32[3.]	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Located in the median between the I-190 Southbound exit ramp to Porter Avenue and the Empire State Trail near the West Side Rowing Club
Physical Size: Remove orifice plate & install 1-ft weir
Capacity: 1.3 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Black Rock Canal through CSO 063 to 2 activations	$5,237.75	$6,770.65	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.10. Carlton Street Porous Asphalt

i. Project Description Specified

Location: From the area tributary to the Right-of-Way on Carlton Street between Michigan and Jefferson Avenues in the City of Buffalo
Physical Size: The provided porous pavement area will cover 38,280 square-feet of roadway Existing roadway will be reduced in width by 2.0 linear feet along the south side of the roadway
Capacity: Designed to control stormwater flow from 1 acre of impervious area
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO-017 to 4 activations	$387,211.88	$500,534.95	3/18/2019	3/18/2023[5.]	3/18/2018

ii. Project Description As-Built

Location: From the area tributary to the Right-of-Way on Carlton Street between Michigan and Jefferson Avenues in the City of Buffalo
Physical Size: The provided porous pavement area will cover 38,280 square-feet of roadway Existing roadway will be reduced in width by 2.0 linear feet along the south side of the roadway
Capacity: 2.1 impervious acres managed, 26,676 CF storage capacity, 0.200 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Buffalo River through CSO-017 to 21 activations	$411,107.00	$531,423.31	Prior to 1/1/2014	Prior to 1/1/2014[7.]	Prior to 1/1/2014

5.11. Willert Park

i. Project Description Specified

N/A: This project was not in original LTCP, it was added later.

ii. Project Description As-Built

Location: William Street between Michigan and Jefferson in the City of Buffalo

Physical Size:

- Approximately 2,400 LF of storm sewer pipe which range in size from 12-inches to 30-inches in diameter along Louisiana Street and Miami St
- JFK Community Center, installation of 2 bioretention cells
- Pratt Willert Community Center, Installation of a bioretention cell
- William St Improvements, installation of several bioretention cells in the roadway median and the installation of sections of pervious pavement

Capacity: 13.88 impervious acres managed, 40,610 CF storage capacity, 0.304 MG Storage Capacity

Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Buffalo River through CSO-017 to 21 activations	$3,624,681.07	$4,685,495.57	6/1/2016	2/1/2017	4/26/2019

5.12. CSO No. 026 RTC Structure/ Smith at Perry RTC/ Smith Street Storage/Smith CSO Line Storage

i. Project Description Specified: Smith Street Storage

Location: Base of Smith Street (Red Jacket Park)
Physical Size: 500,000 gallon tank and constructed wetland
Capacity: Together with the CSO No. 026 Sewer Separation, this project is designed to divert and detain 1.94 MG storage volume.
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO-026 to 6 activations or less	$7,260,000.00	$9,384,742.31	3/18/2014	3/18/2015	3/18/2017

ii. Project Description Specified: Smith CSO Line Storage

Location: Smith from Eagle to Perry
Physical Size: 3000 ft of detention within 192” Reinforced Concrete Sewer
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO-026 to 6 activations or less	$2,015,000.00	$2,499,340.00	3/18/2016	3/18/2023	3/18/2024

iii. Project Description As-Built

Location: West side of Smith St North of I-190 and South of Clifford St
Physical Size: 142' overflow weir
Capacity: 1.9 MG storage volume
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Buffalo River through CSO-026 to 8 activations	$4,216,805.55	$5,450,913.7	Prior to 1/1/2014	7/13/2016	10/9/2017

5.13. CSO No. 026 Sewer Separation

i. Project Description Specified

N/A: This project was not in original LTCP, it was added later.

ii. Project Description As-Built

Location: Leddy Street, South Park Avenue, Owahn Place, Prenatt Street, Bolton Place, St. Stephen's Place, and Buffalo River Place
Physical Size: Approx. 3,700' of storm sewer, 32 catch basins,14 Storm sewer manholes
Capacity: Together with the CSO No. 026 RTC structure, this project is designed to divert and detain 1.94 MG storage volume.
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Buffalo River through CSO-026 to 8 activations	$2,573,356.03	$3,326,485.28	Prior to 1/1/2014	7/8/2015	6/22/2016

5.14. Montgomery CSO (Smith at Eagle)

i. Project Description Specified

Location: Fillmore & Eagle to Smith & Peckham
Physical Size: 4500 ft of detention within 108” Reinforced Concrete Sewer
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO-026 to 6 activations or less	$2,015,000.00	$2,604,718.42	3/18/2016	3/18/2023	3/18/2024

ii. Project Description As-Built

Location: Smith St approx. 200' south of East Eagle St
Physical Size: Although the project was put into operation on 12/31/21, As-built drawings are not available yet as the contract is being kept open due to supply chain issues.
Capacity: 7.19 MG storage volume
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Buffalo River through CSO-026 to 8 activations	$2,213,371.45	$2,861,146.11	4/4/2019	7/13/2020	12/31/2021

5.15. SPP 217 Optimization

i. Project Description Specified

Location: Emslie Street at its intersection with Eagle Street
Physical Size: Increased the area of the underflow orifice to 12.6 sf
Capacity:
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO-026 to 6 activations or less	$5,000.00	$6,463.32	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Emslie Street at its intersection with Eagle Street
Physical Size: Removal of two bottom orifice plates totaling 1.42' in height
Capacity: 12.2 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Buffalo River through CSO-026 to 8 activations	$8,368.91	$10,818.19	Prior to 1/1/2014	7/8/2015	12/21/2015

5.16. SPP 318 Optimization

i. Project Description Specified

Location: East of the intersection of Fillmore Avenue and Clinton Street
Physical Size: Increase the area of the underflow orifice by 30% to 1.8 SF
Capacity:
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO-026 to 6 activations or less	$5,000.00	$6,463.32	3/1/2014	3/1/8/2015	3/18/2017

ii. Project Description As-Built

Location: East of the intersection of Fillmore Avenue and Clinton Street
Physical Size: Increase the area of the underflow orifice by 30% to 1.8 SF
Capacity: 6.4 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Buffalo River through CSO-026 to 8 activations	$8,368.91	$10,818.19	Prior to 1/1/2014	7/8/2015	12/21/2015

5.17. Babcock Pump Station In-Line Storage

i. Project Description Specified

Location: N/A: This Project was not in original LTCP, it was added later
Physical Size: N/A
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
N/A	N/A	N/A	N/A	N/A	N/A

ii. Project Description As-Built

Location: New Babcock Street at Howard Street
Physical Size: 2-3700 GPM Pumps
Capacity: 1.4 MG storage
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Buffalo River through CSO-027 to 12 activations	$1,728,797.39	$2,234,754.55	6/19/2019	7/24/2020	9/21/2021

5.18. SPP 097A Optimization

i. Project Description Specified

Location: Orlando St and the intersection of the extension of Prenatt and Orlando Streets
Physical Size: Upsize the underflow pipe to have a capacity of 1.25 cfs (L=10') - slope of existing underflow pipe not available, so required diameter TBD
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Buffalo River through CSO-027 to 6 activations	$100,000.00	$129,266.42	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Orlando St and the intersection of the extension of Prenatt and Orlando Streets
Physical Size: Abandoned an inactive combined sewer, converting another to a storm sewer and abandoning the underflow connection.
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Buffalo River through CSO-027 to 12 activations	$11,702.71	$15,127.67	Prior to 1/1/2014	9/8/2015	12/16/2015

5.19. Ohio Street

i. Project Description Specified

Location: From the area tributary to the Right-of-Way on Ohio Street in the City of Buffalo
Physical Size: Reduction of travel lanes resulting in a 30% reduction of road surface. Implementation of porous pavement for shared use path along the majority of the west side project length & porous pavement for parking lanes along the west side on the north end of the project. Creation of a 5 to 13 foot wide green snow storage area between the road and the path/sidewalk on the east and west sides for the entire length of the project.Over 260 trees will be planted throughout the length of the project
Capacity: Designed to control stormwater flow from 6.1 total acres of impervious area, of which approx. 2.1 acres will be applied to the GI target acreage
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO-064 to 3 activations	$141,800.85	$183,300.88	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: From the area tributary to the Right-of-Way on Ohio Street in the City of Buffalo
Physical Size: 3.2 acres of impervious area removed. 260 trees planted. 12ft wide path and parking lanes installed with porous pavement installed.
Capacity: 6.1 impervious acres managed, 21,036 CF storage capacity, 0.157 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Buffalo River through CSO-064 to 10 activations	$170,896.69	$220,912.04	Prior to 1/1/2014	Prior to 1/1/2014[7].	Prior to 1/1/2014

5.20. SPP 211 Optimization

i. Project Description Specified

Location: South East corner of the intersection of Clinton and South Ogden Streets
Physical Size: Added a weir at SPP211 with a crest elevation of 584 ft
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Buffalo River through CSO 066 to 4 activations	$20,000.00	$25,853.28	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: South East corner of the intersection of Clinton and South Ogden Streets
Physical Size: Overflow invert was raised to elev. 8.50'
Capacity: 1.8 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Buffalo River through CSO 066 to 4 activations	$6,600.88	$8,532.71	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.21. SPP 122 Optimization

i. Project Description Specified

Location: South Legion Drive just north of the intersection with Meriden Street
Physical Size: SPP 122 weir raised by 0.5-ft along its entire length
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other LTCP projects, projected to reduce discharges to Cazenovia Creek - C through CSO-037 to 6 activations	$20,000.00	$25,853.28	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: South Legion Drive just north of the intersection with Meriden Street
Physical Size: SPP 122 weir raised by 0.5-ft along its entire length
Capacity: 36.9 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other LTCP projects, reduced discharges to the Cazenovia Creek - C through CSO-037 to 5 activations	$9,457.97	$12,225.97	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.22. Niagara Street Phase 1: Elmwood Street to Virginia Street

i. Project Description Specified

Location: Part of Niagara Street from Niagara Square to Ontario Street
Physical Size: Overall project 4 miles x 55 feet
Capacity: Overall project to control 35.8 acres of Impervious area
Impact: (Cost and Dates for Overall Project)

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Erie Basin Marina through CSO-014 to 2 activations	$3,250,000.00	$4,031,200.00	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: Elmwood Ave to Virginia St
Physical Size: 6,483 SF
Capacity: 2 impervious acres managed, 6,897 CF storage capacity, 0.052 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Erie Basin Marina through CSO-014 to 10 activations	$696,590.87	$900,458.10	Prior to 1/1/2014	7/9/2014	12/1/2016

5.23. SPPs 206A&B (CSO 014/015)

i. Project Description Specified

Location: Trenton Road/ Village Court north east of Fourth Street
Physical Size: 0.8 MG in-line storage and optimization
Capacity: 0.8 MG with SPP 035
Impact: (Cost and Dates for Overall Project)

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Erie Basin Marina through CSO-014 to 2 activations	$6,700,000.00	$8,310,470.00	Prior to 1/1/2014	3/18/2014	3/18/2015

ii. Project Description As-Built

Location: SPP 206A & 206B - Trenton Rd/Village Ct & 4th St, North side of Village Ct ~230' NE of intersection
Physical Size: 113,000 gallon in-line storage facility was constructed in association with SPPs 206 A&B
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Erie Basin Marina through CSO-014 to 10 activations	$1,163,368.02	$1,503,844.22	Prior to 1/1/2014	5/30/2014	12/29/2014

5.24. Genesee Street/Genesee Gateway Project

i. Project Description Specified

N/A: This project was not in original LTCP, it was added later.

ii. Project Description As-Built

Location: From the area tributary to the Right-of-Way on Genesee Street in the City of Buffalo
Physical Size: 3,091.6 SF
Capacity: 2.8 impervious acres managed, 4,364 CF storage capacity, 0.033 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Erie Basin Marina through CSO-015 to 0 activations	$493,636.53	$638,106.29	Prior to 1/1/2014	6/8/2015	6/1/2017

5.25. SPP 035 (CSO 014/015)

i. Project Description Specified

Location: Northwest of the intersection of South Elmwood Avenue and West Genesee Street
Physical Size: 50,000 gallon in-line storage facility in association with SPP 035
Capacity: 0.8 MG with SPPs 206A&B
Impact: (Cost and Dates for Overall Project)

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Erie Basin Marina through CSO-015 to 1 activation	$6,700,000.00	$8,310,470.00	Prior to 1/1/2014	3/18/2014	3/18/2015

ii. Project Description As-Built

Location: Northwest of the intersection of South Elmwood Avenue and West Genesee Street
Physical Size: 50,000 gallon in-line storage facility in association with SPP 035
Capacity: 50,000 gal
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Erie Basin Marina through CSO-015 to 0 activations	$1,187,477.02	$1,535,009.07	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.26. SPP 036

i. Project Description Specified

Location: Church Street between the off and on ramps of the Skyway bridge (State Route 5)
Physical Size: 35' of 30" sewer
Capacity: 2.7 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduce discharges to the Erie Basin Marina through CSO-015 to 1 activation	$5,000.00	$6,463.32	Prior to 1/1/2014	3/18/2014	3/18/2015

ii. Project Description As-Built

Location: Church St, Ctr, 20' W of W Cb of Upper Terrace (State Route 5)
Physical Size: 35' of 30" sewer
Capacity: 4.7 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Erie Basin Marina through CSO-015 to 0 activations	$485,275.65	$627,298.47	Prior to 1/1/2014	5/30/2014	12/5/2014

5.27. Kenmore Avenue

i. Project Description Specified

Location: From the area tributary to the Right-of-Way on Kenmore Avenue in the City of Buffalo
Physical Size: 22,882 SF
Capacity: Designed to control stormwater flow from 4.1 total acres of impervious area
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Niagara River through CSO-055 to 9 activations	$520,193.74	$672,435.84	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: From the area tributary to the Right-of-Way on Kenmore Avenue in the City of Buffalo
Physical Size: 22,882 SF
Capacity: 4.4 impervious acres managed, 25,170 CF storage capacity, 0.188 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Niagara River through CSO-055 to 33 activations	$370,726.53	$479,224.93	4/30/2014	4/20/2015	3/1/2017

5.28. Hertel at Deer/ Hertel Northwest/ Hertel South In-Line Storage

i. Project Description Specified: Hertel Northwest In-line Storage

Location: Hertel between Norris & Colvin
Physical Size: 6000 ft of detention within 102" Reinforced Concrete Sewer
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Niagara River through CSO-055 to 9 activations	$2,185,000	$2,824,471[3]	3/18/2016	3/18/2023	3/18/2024

ii. Project Description Specified: Hertel South In-Line Storage

Location: Hertel between Foundry & Colvin
Physical Size: 9,700 ft of detention within 99" Brick Sewer
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Niagara River through CSO-055 to 9 activations	$4,095.000.00	$5,079,310.00	3/18/2016	3/18/2023	3/18/2024

iii. Project Description As-Built

Location: Intersection of Hertel Ave and Deer St. Project location is within the northern portion of the two large combined sewers which are located under Hertel Avenue
Physical Size: 41'x36' 26' below grade
Capacity: 3.95 MG storage volume
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Niagara River through CSO-055 to 33 activations	$3,205,400	$4,143,506	1/19/2018	2/9/2019	5/6/2020

5.29. SPP 001 Optimization

i. Project Description Specified

Location: Located at the discharge of Cornelius Creek into the Niagara River
Physical Size: Raise weir of SPP001 by 1-ft
Capacity: 104.6 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to the Niagara River through CSO-055 to 9 activations	$230,000.00	$297,312.77	3/18/2015	3/1/2014	3/18/2017

ii. Project Description As-Built

Location: Located at the discharge of Cornelius Creek into the Niagara River
Physical Size: Raise weir of SPP001 by 1-ft
Capacity: 104.6 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to the Niagara River through CSO-055 to 33 activations	$460,467.67	$595,230.09	Prior to 1/1/2014	9/25/2014	12/12/2014

5.30. Fillmore Avenue Porous Parking and Green Lots

i. Project Description Specified

Location: From the area tributary to the Right-of-Way of Fillmore Avenue in the City of Buffalo
Physical Size: 41,850 SF
Capacity: Designed to control stormwater flow from 0.4 total acres of impervious area
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$15,156.02	$19,591.65	3/18/2019	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: From the area tributary to the Right-of-Way of Fillmore Avenue in the City of Buffalo
Physical Size: 41,850 SF
Capacity: 0.4 impervious acres managed, 1,379 CF storage capacity, 0.010 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$217,507.38	$281,164.01	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.31. Hazelwood (Kay) In-Line Storage

i. Project Description Specified

Location: Kay & Millicent to Hazelwood & Lang
Physical Size: 10,000 ft detention in 72" Reinforced Concrete Sewer
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$2,015,000.00	$2,604,718.42	3/18/2016	3/18/2023	3/18/2024

ii. Project Description As-Built

Location: Hazelwood Avenue between East Delavan and Easton Avenues, approx. 150' south of Easton Ave
Physical Size: 32'-10" x 22'-4" RTC Structure, 2- 5'x5' gates, 63.1 Weir elevation
Capacity: 0.8 MG storage volume
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$1,343,141.71	$1,736,231.24	8/9/2016	2/2/2018	6/19/2019

5.32. Lang RTC Project / RTC-1 / Hagen St RTC

i. Project Description Specified

Location: Hagen& Kerns to Hazelwood & East Delavan
Physical Size: 2,500 ft detention within 102" Reinforced Concrete Sewer
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through SPP 340 to CSO-053, to 4 activations	$4,085,000.00	$5,066,903.05	Prior to 1/1/2014	3/17/2014	9/2/2014

ii. Project Description As-Built

Location: Lang Avenue between Courtland Avenue and Hagen Street
Physical Size: 30'x20', 17' below grade. 2- 5'x5' sluice gates
Capacity: 0.84 MG storage volume
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through SPP 340 to CSO-053, to 37 activations	$1,219,610.78	$1,512,766.11	Prior to 1/1/2014	2/24/2014	5/9/2016

5.33. North Bailey In-Line Storage

i. Project Description Specified

Location: North Bailey Avenue from E. Amherst to Dorris
Physical Size: 4,800 ft detention within 78" Brick Sewer
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$2,025,000.00	$2,617,645.07	3/18/2016	3/18/2017	3/18/2024

ii. Project Description As-Built

Location: Bailey Avenue north of Scajaquada Street
Physical Size: 18'x53' RTC Structure, 2-4'x4' gates, 61.40' Weir elevation
Capacity: 0.41 MG storage volume
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$1,898,182.90	$2,453,713.13	12/8/2017	10/16/2018	5/27/2020

5.34. Northland Ave

i. Project Description Specified

N/A: This project was not in original LTCP, it was added later.

ii. Project Description As-Built

Location: Northland Avenue between Fillmore and Grider in the City of Buffalo
Physical Size: 10,788 SF
Capacity: 6.08 impervious acres managed, 20,967 CF storage capacity, 0.157 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$561,645.88	$726,019.54	7/1/2016	3/1/2017	12/17/2019

5.35. 612 Northland Ave

i. Project Description Specified

N/A: This project was not in original LTCP, it was added later.

ii. Project Description As-Built

Location: 612 Northland Ave
Physical Size: 2,118 SF of Storm Water Rain Garden; 1,253 SF of Permeable Gravel Pavement; 1,422 SF of Conversion Pavement to Lawn/Shrubs;
Capacity: 0.263 impervious acres managed, 907 CF storage capacity, 0.007 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$20,189.36	$26,098.06	1/1/2019	6/1/2019	12/1/2019

5.36. SPP 163 Optimization - 163A

i. Project Description Specified

Location: East of the intersection of Fillmore Avenue and Northland on Northland Avenue
Physical Size: Raise weir of SPP163 by 0.75-ft, and increased weir length to 10-ft
Capacity: 10.4 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$185,000.00[3]	$239,142.88	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: East of the intersection of Fillmore Avenue and Northland on Northland Avenue
Physical Size: Raised weir of SPP163 by 0.75-ft
Capacity: 10.4 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$449,360.50	$580,872.25	3/1/2014	3/1/2015	8/6/2015

5.37. SPP 165 Optimization

i. Project Description Specified

Location: Fillmore Avenue just north of the intersection with East Delavan Street
Physical Size: Raised weir of SPP165 by 0.5-ft
Capacity: 9.3 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$20,000.00	$25,853.28	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Fillmore Avenue just north of the intersection with East Delavan Street
Physical Size: Raised weir of SPP165 by 0.5-ft
Capacity: 9.3 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$7,389.03	$9,551.54	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.38. SPP 165A Optimization

i. Project Description Specified

Location: Intersections of Fillmore and Kensington Avenues
Physical Size: Upsize the existing underflow pipe between nodes 4228 and 12072 to 18 inches (L=550 feet), raise weir of SPP165A by 0.75-ft, and increase weir length to 10 feet
Capacity: 3.8 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$805,000.00	$1,040,594.71	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Intersections of Fillmore and Kensington Avenues
Physical Size: Raised weir of SPP165A by 0.75-ft & upsized 675' of 15" pipe to 18” pipe
Capacity: 3.8 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$294,647.71	$380,880.55	Prior to 1/1/2014	7/25/2014	11/3/2014

5.39. SPP 178 Optimization

i. Project Description Specified

Location: Masten Avenue just north of the intersection with Northland Avenue
Physical Size: Raised weir of SPP178 by 0.5-ft
Capacity: 8.9 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$20,000.00	$25,853.28	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Masten Avenue just north of the intersection with Northland Avenue
Physical Size: Raised weir of SPP178 by 0.5-ft
Capacity: 8.9 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$9,260.93	$11,971.27	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.40. SPP 335B Optimization

i. Project Description Specified

Location: Hager Street just south of the intersection with Florida Street
Physical Size: Raised weir of SPP335B by 1-ft
Capacity: 4.1 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$20,000.00	$25,853.28	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Hager Street just south of the intersection with Florida Street
Physical Size: Raised weir of SPP335B by 1-ft
Capacity: 4.1 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$12,216.54	$15,791.88	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.41. SPP 336A Optimization

i. Project Description Specified

Location: Humboldt Parkway North of the Scajaquada Drain
Physical Size: Increase the area of the underflow orifices to 4.9 SF (D=2.5 feet), Upsize the existing underflow pipe to D=30 inches (L=28 feet)
Capacity: 16.2 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$130,000.00	$168,046.35	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Humboldt Parkway North of the Scajaquada Drain
Physical Size: Removed a sluice gate and orifice plate and modified the existing structure by changing the existing side channel opening from 24" to 30"
Capacity: 16.2 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$27,018.12	$34,925.37	Prior to 1/1/2014	9/8/2015	12/16/2015

5.42. SPP 342B Optimization

i. Project Description Specified

Location: Sprenger Avenue adjacent to Schiller Park
Physical Size: Raised weir of SPP342B by 1-ft
Capacity: 2.7 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO-053 to 4 activations	$20,000.00[3.]	$25,853.28[3.]	3/1/2014	3/18/2015	3/18/2017

ii. Project Description As-Built

Location: Sprenger Avenue adjacent to Schiller Park
Physical Size: Raised weir of SPP342B by 1-ft
Capacity: 2.7 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO-053 to 37 activations	$12,216.54	$15,791.88	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.43. SPP 183 Optimization

i. Project Description Specified

Location: Intersection of Bradley Avenue and Fernwood
Physical Size: Raise weir of SPP183 by 0.5-ft
Capacity: 25.5 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO 059 to 0 activations	$20,000.00	$25,853.28	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

ii. Project Description As-Built

Location: Intersection of Bradley St & Fernwood Avenue
Physical Size: Raise weir of SPP183 by 2.0-ft
Capacity: 25.5 MGD
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO 059 to 1 activation	$20,000.00	$25,853.28	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.44. CSO 060 GI Project

i. Project Description Specified

Location: Windsor, Parkdale and Elmwood Avenues between Bird and Forest Avenues, Clarendon and Claremont Avenues between Bird and Forest Avenues, Bird Avenue and Granger Place & SPPs located at Parkdale and Forest Ave, Baynes St and Forest Ave, Tremont and Forest Ave, Forest Ave west of Claremont Ave, Intersection of Forest and Elmwood Ave, South side of Forest Ave and Lincoln Parkway, South side of Forest and Windsor Ave, Forest Ave and Berkley Pl, North side of Forest and Windsor Ave, North side of Forest Ave and Lincoln Parkway, East of Elmwood and Forest intersection

Physical Size: 4768 CF of rain garden, 39,600 SF of permeable pavement, 6,125 LF of 12-30 inch sewer, weirs were raised in SPPs 230, 231, 232, 233, 234, 235, 236, 237, 238, 239,240 and 241

Capacity: Treat 0.10 MG of stormwater runoff from the 0.9 inch water quality storm event and remove 31.99 MG of peak flow from the combined sewer system

Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, projected to reduce discharges to Scajaquada Creek through CSO 060 to negligible activations and flow	$5,065,000.00[3.]	$6,547,344.33[3.]	Prior to 1/1/2014	Prior to 1/1/2014	9/2/2014

ii. Project Description As-Built

Location: Windsor, Parkdale and Elmwood Avenues between Bird and Forest Avenues, Clarendon and Claremont Avenues between Bird and Forest Avenues, Bird Avenue and Granger Place & SPPs located at Parkdale and Forest Ave, Baynes St and Forest Ave, Tremont and Forest Ave, Forest Ave west of Claremont Ave, Intersection of Forest and Elmwood Ave, South side of Forest Ave and Lincoln Parkway, South side of Forest and Windsor Ave, Forest Ave and Berkley Pl, North side of Forest and Windsor Ave, North side of Forest Ave and Lincoln Parkway, East of Elmwood and Forest intersection

Physical Size: 4768 CF of rain garden, 39,600 SF of permeable pavement, 6,125 LF of 12-30 inch sewer, weirs were raised in SPPs 230, 231, 232, 233, 234, 235, 236, 237, 238, 239,240 and 241

Capacity: 0.154 MG storage volume

Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
Together with other projects, reduced discharges to Scajaquada Creek through CSO 060 to negligible activations and flow	$3,461,404.25	$4,474,433.46	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.45. 2001 - 2016 Commercial and Industrial Demolitions

i. Project Description Specified

Location: City-wide
Physical Size: 78 acres
Capacity: Designed to control stormwater flow from 78 total acres of impervious area
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
These demolitions were distributed across the City. Therefore, we are unable to assign activation reductions to a single CSO for this project.	$10,915,043.90	$14,109,486.83	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: City-wide
Physical Size: 78 acres
Capacity: Together with 2001-2016 Residential Demos this project managed 577 impervious acres
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
These demolitions were distributed across the city. Therefore, we are unable to assign activation reductions to a single CSO for this project.	$23,369,388.87[4]	$30,208,773.08	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.46. 2001-2016 Residential (traditional) Demolitions

i. Project Description Specified

Location: City-wide
Physical Size: 256 acres
Capacity: Designed to remove 256 total acres of impervious area and manage stormwater on site
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
These demolitions were distributed across the City. Therefore, we are unable to assign activation reductions to a single CSO for this project.	$35,823,733.84	$46,308,059.33	3/1/2014	3/18/2016	3/18/2018

ii. Project Description As-Built

Location: City-wide
Physical Size: 256 acres
Capacity: Together with 2001-2016 Commercial Demos this project managed 577 impervious acres
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
These demolitions were distributed across the City. Therefore, we are unable to assign activation reductions to a single CSO for this project.	$23,369,388.87[4]	$30,208,773.08	Prior to 1/1/2014	Prior to 1/1/2014	Prior to 1/1/2014

5.47. 2017 - 2024 Demolitions

i. Project Description Specified

Location: City-wide
Physical Size: Total acreage TBD on a rolling basis depending upon demolitions completed
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
At the direction of the regulators, these are no longer being counted	N/A	N/A	3/18/2019	3/18/2023	3/18/2024

ii. Project Description As-Built

Location: City-wide
Physical Size: 100.66 impervious acres managed
Capacity: N/A
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
These demolitions were distributed across the City. Therefore, we are unable to assign activation reductions to a single CSO for this project.	$32,697,518.35	$42,266,912.40	Prior to 1/1/2014	5/22/2019	9/21/2022

5.48. Green Demolition Pilot Project

i. Project Description Specified

Location: City-wide
Physical Size: 23 acres
Capacity: Approximately 0.25 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
These demolitions were distributed across the City. Therefore, we are unable to assign activation reductions to a single CSO for this project.	$1,941,270.75	$2,509,411.26	3/18/2019	3/18/2023	3/18/2024

ii. Project Description As-Built

Location: City-wide
Physical Size: 23 acres
Capacity: Manage stormwater for 20.4 acres
0.25 MG Storage Capacity
Impact:

Activation Reductions	Cost 2012 Dollars	Cost 2022 Dollars	Engineering Start Date	NTP Date	Substantial Completion
These demolitions were distributed across the City. Therefore, we are unable to assign activation reductions to a single CSO for this project.	$1,379,943.51	$1,783,803.61	Prior to 1/1/2014	7/1/2015	7/31/2017

APPENDIX C

LTCP Project Schedule

Project Name and Tag	Design Start Date		Design Completion Date		NTP Date		Construction Completion Date
NFA Phase I	11/25/2019		6/23/2022		9/27/2022		5/25/2030
NFA Phase II	10/28/2020		7/10/2025		7/23/2026		12/26/2031
CSO053_11 1.5 MG Canisius/Jefferson Delevan OLS	12/1/2021		6/30/2026		9/7/2028		4/9/2032
CSO053_3.2 Bailey & Amherst RTC	12/1/2021		11/27/2024		5/28/2025		7/6/2028
CSO010_1 Breckenridge Niagara RTC	3/1/2022		2/25/2025		8/26/2025		1/31/2029
CSO006_2 Gates Circle RTC	3/1/2022		10/8/2024		4/8/2025		5/17/2028
CSO053_10 SPP229A RTC	3/1/2022		4/23/2024		10/22/2024		7/19/2026
CSO053_12.2 Jefferson Ave GI	3/1/2022		7/31/2026		12/31/2026		6/14/2028
CSO053_12.1 Jefferson Ave GI	3/1/2022		7/31/2026		12/31/2026		6/14/2028
CSO053_3.3 SPP254 Modification	3/1/2022		4/23/2024		10/22/2024		7/19/2026
CSO053_2.5 SPP337 Modification	3/2/2024		6/30/2026		12/31/2026		12/31/2028
CSO053_3.1 SPP338 Modification	3/2/2024		12/31/2026		6/30/2027		12/31/2029
CSO053_8 SPP341A Modification	3/2/2024		12/31/2025		6/30/2026		12/31/2027
CSO053_1.5 SPP336B Modification	3/2/2024		12/31/2025		6/30/2026		12/31/2027
CSO053_1.4 3.26 MG Sidney OLS	3/2/2024		6/30/2027		12/31/2027		12/31/2032
CSO053_13 SPP165B Modification	3/2/2024		12/31/2025		6/30/2026		12/31/2027
CSO053_14 SPP175 Modification	3/2/2024		12/31/2025		6/30/2026		12/31/2027
CSO053_5.2 Edison Martha OLS	3/2/2024		12/31/2026		6/30/2027		6/30/2033
NFA Phase III	3/29/2024		9/30/2027		3/31/2028		12/31/2031
Non-NFA Phase III Improvements	3/29/2024		9/30/2027		3/31/2028		6/30/2033
CSO014_1.1 SPP206A&B RTC	3/3/2025		3/31/2028		9/30/2028		12/31/2030
System_2_2 Schiller Park OLS	3/3/2025		6/30/2028		12/31/2028		12/31/2033
System_2_3 SPP339 Modification	3/3/2025		12/31/2026		6/30/2027		6/30/2029
System_2_4 SPP340 Modification	3/3/2025		12/31/2026		6/30/2027		6/30/2029
CSO014_1.2 Erie Basin Marina OLS	3/3/2025		3/31/2028		9/30/2028		12/31/2033
CSO013_1 SPP304 Modification	3/3/2026		12/31/2027		6/30/2028		12/31/2029
CSO017_8 SPP326 Modification	3/3/2026		12/31/2028		6/30/2029		12/31/2030
CSO011_1.2 SPP024 Modification	3/3/2026		12/31/2029		6/30/2030		12/31/2032
CSO012_1.2 SPP023 Modification	3/3/2026		12/31/2029		6/30/2030		12/31/2032
CSO012_2.1 SPP296 Modification	3/3/2026		12/31/2029		6/30/2030		12/31/2032
CSO026_1.3 Collins Park OLS	3/3/2027		12/31/2029		6/30/2030		12/31/2035
CSO027_1 SPP 317 Modification	3/3/2027		12/31/2028		6/30/2029		12/31/2030
CSO027_2 Babcock PS Weir Modification	3/3/2027		6/30/2029		12/31/2029		12/31/2031
CSO055_1.5 Military Rd OLS	9/1/2027		9/30/2030		3/31/2031		12/31/2036
System_1 Northern Relief Tunnel	9/1/2027		12/31/2032		6/30/2033		12/31/2040
CSO017_9 SPP059 Modification	3/1/2028		12/31/2030		6/30/2031		6/30/2033
CSO027_3 SPP097 Modification	3/1/2028		12/31/2030		6/30/2031		6/30/2033
CSO033_2 Clinton St OLS	3/3/2029		12/31/2031		6/30/2032		12/31/2036
CSO033_3 SPP104 Modification	3/3/2029		12/31/2030		6/30/2031		12/31/2032
CSO017_10 SPP051 Modification	3/3/2029		12/31/2030		6/30/2031		12/31/2032
CSO064_1.1 CSO-064 ILS	3/3/2025		6/30/2028		12/31/2028		6/30/2031
CSO006_3 Delavan Drain Weir Raising & RTC	3/3/2030		12/31/2032		6/30/2033		12/31/2036
CSO064_1.2 SPP 137 Modification	3/3/2025		6/30/2028		12/31/2028		6/30/2031
CSO028_1 Hopkins & Osage OLS	3/3/2031		12/31/2033		6/30/2034		9/30/2039
CSO017_6 Bass Alley OLS	3/3/2031		12/31/2033		6/30/2034		9/30/2039
CSO033_1 Bailey & Regent OLS (Moreland Park)	3/2/2032		12/31/2034		6/30/2035		9/30/2040
CSO064_2 Perry Street Sanitary Sewer	3/3/2033		12/31/2035		6/30/2036		12/31/2038
CSO017_1.1 SPP054 Sewer Separation	3/3/2033		12/31/2035		6/30/2036		12/31/2038
CSO 055_1.1 Hertel North East ILS	3/3/2034		12/31/2036		6/30/2037		12/31/2040

GI Project Schedules*

Waterbody	GI Projects Included	Start Date	20% Complete	40% Complete	60% Complete	80% Complete	100% Complete
Scajaquada Creek (16.7 acres managed)	CSO053_9	3/2/2028	3/1/2029	3/2/2028	3/2/2028	3/1/2033	3/1/2034
Black Rock Canal (52.5 acresmanaged)	CSO006_5	3/3/2031	3/1/2032	3/1/2033	3/1/2034	3/1/2036	3/1/2037
Niagara River (279.9 acresmanaged)	CSO011_1.1	3/2/2032	3/1/2034	3/1/2036	3/1/2037	3/1/2039	3/1/2040
	CSO055_3	3/2/2032	3/1/2034	3/1/2036	3/1/2037	3/1/2039	3/1/2040
Buffalo River (163 acres managed)	CSO017_4	3/3/2032	3/1/2033	3/1/2035	3/1/2036	3/1/2038	3/2/2039
	CSO026_4	3/3/2032	3/1/2033	3/1/2035	3/1/2036	3/1/2038	3/2/2039

**Note: percentages to be determined based on progress per acre on a basis of planning= 30% completion; design=50% completion; NTP=60% completion; 50%*

APPENDIX D

BUFFALO
SEWER AUTHORITY

Selected Alternative Long-Term Control Plan

Public Participation Plan

September 2024

Table of Contents

Section 1 Introduction 3
1.1 Project Overview 3
1.2 Purpose of the Public Participation Plan 3

Section 2 Stakeholders 5
2.1 Overview of Stakeholders 5
2.2 Residents Impacted by the Proposed Amended LTCP 5
2.3 Local Elected Officials 5
2.4 Potential Environmental Justice Areas and Disadvantaged Communities 6
2.5 Stakeholder Advisory Committee 9

Section 3 Distribute and Post Written Information on the Proposed Amended LTCP and Permit Process 9
3.1 Materials Development and Distribution 10
3.2 Language Access 11

Section 4 Public Information Meeting Plans 11
4.1 Meeting Types and Scheduling 12
4.2 Approach to Public Meetings 13
4.3 Community Benefit Programs 14

Section 5 Document Repositories 13

Section 6 Schedule 15

Section 7 Ongoing Public Participation Activities for Individual Projects 16

Section 1 Introduction

1.1 Selected Alternatives Long Term Control Plan Overview

The Buffalo Sewer Authority's (BSA or Buffalo Sewer) Combined Sewer Overflow Long Term Control Plan (LTCP) was accepted and approved on March 18, 2014, by the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA). The approved document outlined a multi-year plan for implementing projects to reduce overflows in the BSA sewer collection system to target levels. Projects included a mix of in-line storage (ILS), off-line storage (OLS), real time control (RTC), and green infrastructure (GI).

The collection system hydraulic model used in the LTCP was updated after completion of the first phase of LTCP projects. Simulations from the updated LTCP model suggest that some projects envisioned in the LTCP are no longer feasible or necessary, other planned projects can be further optimized to meet targets, and additional projects are likely required.

The BSA project team worked collaboratively to compile a revised list of potential projects to be considered. The list included both new projects and those projects from the 2014 LTCP preferred alternative which have not since been ruled infeasible or unnecessary. An optimization process was then used to evaluate the impacts of implementing different variations and combinations of these projects with the goal of minimizing both CSO activations and construction costs. The project team also optimized the distributed control scheme to find the optimal combination of control set points that maximize the system's conveyance and storage capacity. The result of these activities is a new set of proposed projects included in the Selected Long-Term Control Plan (the Proposed Amended LTCP) for achieving LTCP compliance.

1.2 Purpose of the Public Participation Plan

The purpose of this Public Participation Plan (PPP, Plan) is to document the mechanisms by which the Buffalo Sewer Authority will disseminate information about the Proposed Amended LTCP to the public and seek meaningful feedback and input from community members on any adverse impacts, including environmental justice (EJ) impacts, from construction of the Proposed Amended LTCP projects, and how to ensure the maximum community benefit. Section 7 of this Plan discusses ongoing public participation related to the construction of the individual projects included in the Proposed Amended LTCP. After the United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (DEC) approve of the PPP, BSA will implement the PPP in accordance with the Schedule in Section 6. The public participation associated with the individual Proposed Amended LTCP projects discussed in Section 7 will continue throughout the implementation of the Amended LTCP, which is scheduled to continue into 2040.

Community engagement efforts for the Proposed Amended LTCP will be focused in four areas:

1. A series of public meetings to provide information and allow for discussion of the Proposed Amended LTCP;

2. Dissemination of written information to, and solicitation of feedback from, the community on the Proposed Amended LTCP through activities such as tabling at events, a publicly accessible website, presentations, and distribution of informational pamphlets;

3. Development of a stakeholder advisory committee to maintain continuous community engagement throughout the implementation of the Revised LTCP; and,

4. Direct outreach to local elected officials and community-based organizations in communities and neighborhoods impacted by the Proposed Amended LTCP.

The key elements of the Proposed Amended LTCP to be communicated and discussed with the public include the following:

- Water Quality Goals and Activation Targets by Waterbody
- Work Performed to Date in Furtherance of the LTCP Goals
- Changes in Modeling Results
- Individual Proposed Amended LTCP Projects
    - Site Locations
    - Project Costs
    - Timelines
    - Expected Short-term (Construction) Impacts especially in regard to Environmental Justice Communities
    - Long-term (Operation) Impacts especially in regard to Environmental Justice Communities
    - Opportunities for Community Betterment
    - Mitigation measures
- Commitment to Economic Growth: Supplier Diversity and Local Workforce. Program Manager will work with existing workforce development and business incubators to increase local participation, including DBEs and MWBEs, from those communities most impacted by the Proposed Amended LTCP projects. Stakeholder advisory committee will include members expected to aid in these goals
- Overall Cost, Penalties for Non-Compliance, Potential Rate Impacts, and strategies BSA is taking, such as rate restructuring and bill credits, to mitigate impacts.
- Opportunities for Ongoing Involvement including how to obtain additional information on the Proposed Amended LTCP projects, contact stakeholder advisory committee, participate in public meetings and submit written comments and questions.

Section 2 Stakeholders

2.1 Overview of Stakeholders

The Proposed Amended LTCP will impact the entire population of the City of Buffalo directly and indirectly during construction, through rate increases, and the resultant improved water quality. Residents of North, Niagara, Lovejoy, and Fillmore districts will be most directly impacted due to the cost of investments in those Common Council Districts.

The specific individuals most directly impacted over the duration of implementation of the Amended LTCP are expected to change due to the seventeen-year timeline as residents transition in and out of homes and as local elected officials and community-based organizations evolve and experience turnover. Specific stakeholders are identified in this plan for the overall Amended LTCP program rollout, but the identification of stakeholders will remain an ongoing process throughout the duration of the implementation of the Amended LTCP.

2.2 Residents Impacted by the Proposed Amended LTCP Project

Due to the breadth of the Proposed Amended LTCP, residents of eight of the nine council districts of the City of Buffalo are potentially adjacent to Proposed Amended LTCP project sites and residents of the ninth district (South) will likely be impacted due to the proximity of one of the larger LTCP projects to that district, traffic and public asset restrictions during construction, and increased sewer use rates.

2.3 Local Elected Officials

The local elected officials expected to be impacted by implementation of the Proposed Amended LTCP are:

1. The mayor of the City of Buffalo, currently acting Mayor Christopher P. Scanlon;

2. The City of Buffalo's common council members, as of January 1, 2024, these members are:
    a. Leah Halton-Pope– Ellicott District
    b. David A. Rivera- Niagara District
    c. Christopher Scanlon- South District
    d. Joel P. Feroleto- Delaware District
    e. Bryan Bollman- Lovejoy District
    f. Mitch Nowakowski- Fillmore District
    g. Joseph Golombek, Jr- North District
    h. Zeneta Everhart- Masten District
    i. Rasheed Wyatt- University District

3. Erie County legislators whose districts include the City of Buffalo:
    a. Lawrence Dupre- District 1

   b. April N.M. Baskin- District 2
   c. Michael H. Kooshoian- District 3
   d. Timothy J. Meyers– District 7
   e. John J. Gilmour– District 9

4. Erie County legislators whose districts include areas which receive wastewater treatment at the Buffalo Sewer Authority's Bird Island Treatment Facility:
   a. Frank J. Todaro- District 8
   b. James Malczewski- District 10

5. New York State senators whose districts include the City of Buffalo:
   a. Sean M. Ryan- District 61

6. New York State assembly members whose districts include the City of Buffalo:
   a. William C. Conrad III- District 140
   b. Crystal D. Peoples-Stokes- District 141
   c. Patrick B. Burke- District 142
   d. Monica Piga Wallace- District 143
   e. Jonathan D. Rivera- District 149

7. US Senators
   a. Charles Schumer
   b. Kirsten Gillibrand

8. US Representative Timothy M. Kennedy - District 26

All of these elected officials will be contacted regarding the Proposed Amended LTCP and expected impacts. At their discretion, meetings may be scheduled with these public officials.

2.4 Potential Environmental Justice Areas and Disadvantaged Communities

The City of Buffalo, as shown by the below mapping is predominantly Potential Environmental Justice Areas and Disadvantaged Communities.



Figure 1: Potential Environmental Justice Areas as Identified by New York State Department of Environmental Conservation

In developing the projects for the Proposed Amended LTCP, Buffalo Sewer utilized the Council on Environmental Quality's Climate and Economic Justice Screening Tool. The criteria for identifying burdens were:

No.	Category	Threshold for Environmental, climate, or other burdens	Threshold for Socioeconomic Burden
1	Climate change	At or above the 90th percentile for expected agriculture loss rate, expected building loss rate, expected population loss rate, projected flood risk, or projected wildfire risk	At or above the 65th percentile for low income
2	Energy	At or above the 90th percentile for energy cost or PM2.5 in the air	At or above the 65th percentile for low income
3	Health	At or above the 90th percentile for asthma, diabetes, heart disease, or low life expectancy	At or above the 65th percentile for low income
4	Housing	Experienced historic underinvestment or are at or above the 90th percentile for the housing cost, lack of green space, lack of indoor plumbing, or lead paint	At or above the 65th percentile for low income
5	Legacy pollution	Have at least one abandoned mine land or Formerly Used Defense Sites or are at or above the 90th percentile for proximity to hazardous waste facilities, proximity to Superfund sites (National Priorities List (NPL)), or proximity to Risk Management Plan (RMP) facilities	At or above the 65th percentile for low income
6	Transportation	At or above the 90th percentile for diesel particulate matter exposure, transportation barriers, or traffic proximity and volume	At or above the 65th percentile for low income
7	Water and wastewater	At or above the 90th percentile for underground storage tanks and releases or wastewater discharge	At or above the 65th percentile for low income
8	Workforce development	At or above the 90th percentile for linguistic isolation, low median income, poverty, or unemployment	Fewer than 10% of people ages 25 or older have a high school education (i.e., graduated with a high school diploma)

As shown in Figure 2, there is significant overlap between burdened communities as identified on the basis of the CEQ criteria and the Proposed Amended LTCP projects:

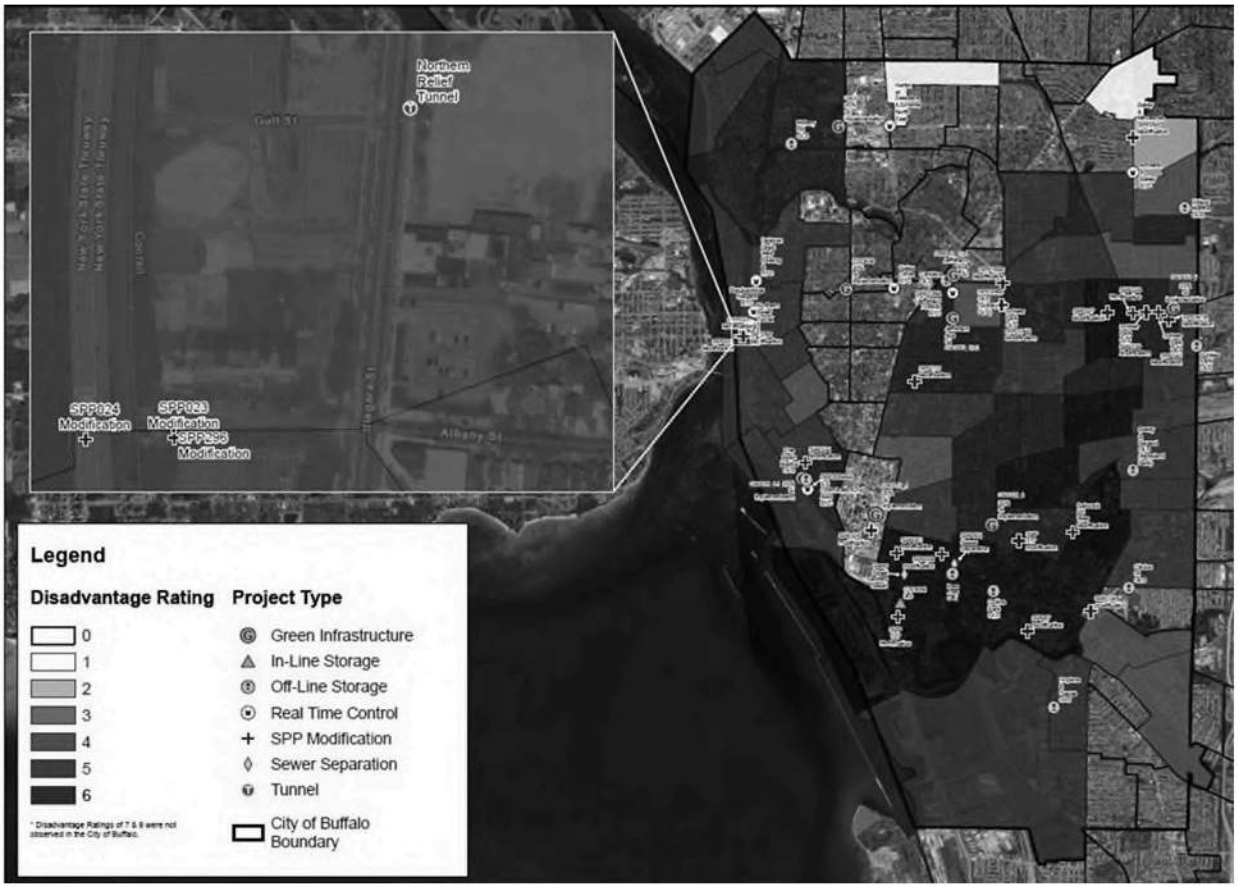


Figure 2: Selected Alternative Projects and Disadvantaged Communities.

2.5 Stakeholder Advisory Committee

A Stakeholder Advisory Committee of ten to twenty-five community members will be established to maintain ongoing community outreach throughout implementation of the Amended LTCP. Committee members will be chosen to represent the communities most impacted through a review of records of interested parties in related projects, recommendations from community members, and a focus on diversity of voices. Invitations to join the Stakeholder Advisory Committee will be based on a rubric emphasizing diversity, ability to reach the larger community, awareness of water quality and environmental issues, access to workforce and business development resources, and connectedness to those neighborhoods most impacted. Over time, self-nominations and recommendations from existing Stakeholder Advisory Committee members may be used to replenish the committee for the duration of the Amended LTCP's implementation.

Section 3 Distribute and Post Written Information on the Proposed Amended LTCP and Permit Process

3.1 Materials Development and Distribution

Buffalo Sewer's Proposed Amended LTCP will involve far greater costs than originally anticipated in the 2014 LTCP, larger underground storage facilities, different projects, and a longer implementation timeline. All of these changes will be communicated to the population of the City of Buffalo. More to the point however, we, as Buffalo Sewer need to hear from the community as to how the negative impacts associated with the Proposed Amended LTCP can be mitigated, what issues the community is already facing in accessing clean and storm water services in an affordable and equitable fashion, how Buffalo Sewer can better serve the community, and how the Proposed Amended LTCP projects can provide long-term benefits to the community beyond the receiving water quality requirements.

A. Distribute Educational/ informational materials. Easy to understand written materials developed for distribution to and through local elected officials, community-based organizations, social media, webpage directly to those residents most impacted. Materials have also been distributed during the following Buffalo parades and festivals:

- Dyngus Day (April 1, 2024)
- Buffalo Cherry Blossom Festival (April 27-28, 2024)
- Pride Festival (June 2, 2024)
- Juneteenth (June 15-16, 2024)

B. Social Media Posts. A minimum of twenty-five posts shall be developed and posted/distributed through Buffalo Sewer's existing social media channels. These posts may include some or all of the written materials developed for distribution, updates, and information on public meetings and events.

C. Webpage. A comprehensive webpage will be developed and include the following information

- explanation of the changes to the Proposed Amended LTCP and the reason for them;
- information on upcoming public meetings, and how to request special accommodations such as a sign language interpreter;
- a means to submit comments and questions;
- an interactive map of the changes in the Proposed Amended LTCP to inform residents of the neighborhood specific disruptions and benefits;
- Project manager contact information (telephone and email) that the public can call/email with questions/comments, and a time period that the Project Manager will set aside to answer project related calls and emails;
- Copies of the written materials that have been developed, including copies that have been translated into the languages listed in Section 3.2; and,

- A list of the members of the Stakeholder Advisory Committee.

D. Ongoing Program. Beyond the initial Proposed Amended LTCP program roll-out campaign, Buffalo Sewer will continue to implement an ongoing public information and participation program throughout the implementation of the Amended LTCP focused on individual LTCP projects. The ongoing public participation program related to individual LTCP projects is discussed in Section 7, and will include

- holding public meetings on individual Amended LTCP projects, which will occur during project development to ensure public concerns (including environmental justice and disadvantaged community concerns) are understood and mitigated to the extent practicable, in the area where the project will be located;
- preparing and distributing written materials;
- updating the webpage with respect to:
  - the status of implementation of the Amended LTCP projects
  - any changes to the Amended LTCP projects or timelines for implementation
  - information on upcoming public meetings
  - any changes in contact information
  - the interactive map
- continuing to solicit and accept public comments and questions on individual Amended LTCP projects, including concerns regarding negative impacts and mitigation.

3.2 Language Access

According to the Buffalo Common Council's website, "approximately 17% of Buffalo residents do not speak English as their primary language and have limited ability to read, speak or understand English." Further, the "seven most common languages spoken in Buffalo by people with Limited English Proficiency and English language learners are:

- Spanish
- Arabic
- Karen
- Somali
- Burmese
- Swahili
- Bengali

Buffalo Sewer will work together with partners from the International Institute to ensure that not only are written materials developed for public outreach produced in accessible, easy-to-read, plain language, but also that they are translated into these seven languages plus French, as many of our residents with Limited English Proficiency, including many whose first language is not included in these initial seven, speak French as a second language.

Section 4 Public Information Meetings

4.1. Meeting Types and Scheduling

A variety of meetings will be held to provide ample opportunity to relay information about the Proposed Amended LTCP to community members and stakeholders, and to solicit questions and comments on the proposed work and its impact to the surrounding neighborhood.

In consultation with the City of Buffalo's ADA Advocate and the International Institute, translation and/transcription services for persons with hearing challenges and/or English language learners may be provided at some or all of these meetings.

Public meetings will be held both during daytime and evening hours so that they allow for broad participation and be scheduled so that they do not conflict with national, state or religious holidays or locally important observances. The meetings will be in locations that are familiar to residents and community members, easily accessible to people with disabilities and to public transportation, and has ample space and parking.

Some or all of the following types of meetings will be scheduled:

- Meeting with Common Council Members –Depending on Common Council preferences, a series of meetings with Common Council members may be held, and/or a single presentation before the Common Council at their office on the 10th floor of City Hall during a caucus or regular meeting to explain the Proposed Amended LTCP and review the design plans. Each member of the Common Council will be provided the opportunity to discuss the Proposed Amended LTCP at length. The purpose is to provide the Council Member(s) and/or their staff with information before the public engagement begins so that they are prepared to respond to community questions and may also assist in proactively sharing project information through their public communications.

- Community Group Meetings – many neighborhoods and parks in Buffalo have established community groups and block clubs with routine meeting schedules. Buffalo Sewer in coordination with the Common Council, the Partnership for the Public Good, and the Buffalo Board of Block Clubs of Erie County will reach out to these groups to request an opportunity to present the project and solicit feedback from these stakeholders.

- Scheduled District Meetings – similar to the community group meetings, many Council Members hold routine meetings within their Common Council District. BSA would reach out to Council Member's staff to request an opportunity to present the project and solicit feedback from the constituents that attend these meetings.

- Proposed Amended LTCP Public Meetings – Buffalo Sewer will organize a total of nine public meetings at community centers within the nine Common Council Districts in consultation with Common Council staff to attempt to garner maximum interest and participation.

- Virtual Meetings – for those that are unable to attend the live Proposed Amended LTCP public meetings, two virtual meetings, one during business hours and a second in the evening will be scheduled to encourage maximum participation.

- Stakeholder Advisory Committee Meetings – upon establishment of the stakeholder advisory committee, the committee will meet together with Buffalo Sewer's representatives and design team at a minimum of quarterly with meetings held in accordance with New York State Open Meetings Law.

4.2 Approach to Public Meetings

The Proposed Amended LTCP and project specific public meetings will be conducted in accordance with the following format and practices:

- Meeting notices will be publicized as early as practicable, but no later than three (3) weeks prior to the meeting, to give stakeholders ample notification;

- Notices will be publicized as follows:
  - Common Council members and other local elected officials identified in Section 2 will be notified via email;
  - Posted via Buffalo Sewer social media outlets;
  - Posted on the Buffalo Sewer website; and,
  - Board of Block Clubs of Buffalo and Erie County will be notified via email.

- The notices for the public meetings will include:
  - the name of the project owner (Buffalo Sewer);
  - the name of the project (Proposed Amended LTCP or individual project);
  - the time and place of the public meeting;
  - a short description of why the public should attend;
  - a short description about how the public can participate;
  - a brief description about the information that will be discussed; and
  - contact information for any questions about the meeting or to request special accommodations such as a sign language interpreter.

- At the beginning of the meeting, review the agenda and meeting ground rules including providing time limits for individual participation. Let the attendees know how they can participate in the meeting and allow for comment/question periods both during, at the conclusion of the meeting as time allows, and after the meeting. Also, let the attendees know where they can obtain additional information and answers to questions they may have after the meeting, including contact information and website address, and how to ask questions and provide comments on the Proposed Amended LTCP .

- Encourage dialogue during the meeting. Avoid one-sided meetings where either the project sponsor does all of the talking or where the stakeholders read a prepared

statement with no feedback from the project sponsor. If a specific stakeholder group self-identifies a need for further discussion, meetings specific to that constituency may be arranged.

4.3 Community Benefits Program

Buffalo Sewer is committed to the goal of developing an inclusive and comprehensive Community Benefits Program to better serve and foster partnerships within our local communities, build a water workforce pipeline to support Buffalo Sewer's core services, and ensure the people of the City of Buffalo experience public benefits including, most especially those residents and businesses most impacted by the disruptions inherent in the large construction projects that are part of the Proposed Amended LTCP.

In public meetings with the community regarding the Proposed Amended LTCP, the Community Benefits Program will be a topic of discussion. Buffalo Sewer has committed to incorporating at least 1% of the cost of the overall plan into a designated Community Benefits Program. This program by necessity cannot be a top-down driven effort, but rather must reflect the needs of the community and will require ongoing public participation in its implementation throughout the duration of the implementation of the Amended LTCP projects.

Section 5 Document Repositories

Document repositories –location points for the public to access written Proposed Amended LTCP information and subsequent updates to that information – have been identified as public facilities easily accessible by stakeholders. The repositories will contain copies of information relevant to the Proposed Amended LTCP and the individual projects and will be updated regularly for the Proposed Amended LTCP and the Amended LTCP. Repositories will also be checked regularly to ensure that there are sufficient quantities of copies available, and no information is missing.

Table 5-1: In-person Document Repositories	
Facility	**Address**
Central Library (Downtown Buffalo) Buffalo & Erie County Public Library	1 Lafayette Square Buffalo, NY 14203
Crane Branch Buffalo & Erie County Public Library	633 Elmwood Ave. Buffalo, NY 14222
Dudley Branch Buffalo & Erie County Public Library	2010 South Park Ave. Buffalo, NY 14220
East Clinton Branch Buffalo & Erie County Public Library	1929 Clinton Street Buffalo, NY 14206
Elaine M. Panty Branch Buffalo & Erie County Public Library	633 Elmwood Ave. Buffalo, NY 14222
Frank E. Merriweather, Jr. Branch Buffalo & Erie County Public Library	1324 Jefferson Ave. Buffalo, NY 14208
Isaias Gonzalez-Soto Branch Buffalo & Erie County Public Library	280 Porter Ave. Buffalo, NY 14201
Leroy R. Coles, Jr. Branch Buffalo & Erie County Public Library	1187 E. Delavan Ave. Buffalo, NY 14215
North Park Branch Buffalo & Erie County Public Library	975 Hertel Ave. Buffalo, NY 14216
Buffalo Sewer Authority Main Office	Room 1038 City Hall 65 Niagara Square Buffalo, NY 14202
Buffalo Sewer Authority Facility Office	Administrative Building Base of West Ferry Street Buffalo, NY 14213
Table 5-2: Online Document Repositories	
Buffalo Sewer Authority website	https://buffalosewer.org/news/

Section 6 Implementation Schedule

Implementation of Sections 1-6 of this PPP associated with the Proposed Amended LTCP will be completed within one (1) year of NYSDEC and EPA approval of the PPP. However, public participation activities, including maintenance of the website and those activities discussed in Section 7, will continue throughout the implementation of the Amended LTCP, which is scheduled to be completed in 2040.

Section 7 Ongoing Public Participation Activities For Individual Projects

In addition to the public participation plan for the Proposed Amended LTCP itself, which will be conducted in accordance with the Schedule included in Section 6, public participation efforts have been conducted, and will continue, on the individual projects that are included in the Amended LTCP. Buffalo Sewer has already introduced multiple individual projects included in the Proposed Amended LTCP to the public. As implementation of the Amended LTCP projects progress, additional information and opportunities for participation will be provided to the public for individual projects.

Working together with the Common Council Members, the Partnership for the Public Good, the Buffalo Board of Block Clubs of Erie County, and other existing partners, Buffalo Sewer will, throughout the implementation of the individual Amended LTCP projects, continually work to identify community-based organizations and community residents specific to the neighborhoods of each individual projects.

The following individual LTCP projects from the 2014 Approved Long-Term Control Plan, which are also included in the Proposed Amended LTCP, have been introduced to the most impacted residents through existing community forums and, upon invitation of one Councilmember's office and adjacent residents, a project specific meeting.

- CSO053_3.2 Amherst & Bailey RTC
- CSO010_1 Breckenridge Niagara RTC
- CSO006_2 Gates Circle RTC
- CSO053_3.3 Bailey & Minnesota SPP254 Modification

For these projects, prior to construction, fliers will be distributed to adjacent residents and businesses regarding scheduling, construction expectations, and website and contact information. The Buffalo Sewer website will provide ongoing project updates, and information on how to submit questions and comments.

For the following LTCP projects, a public outreach specialist has been contracted, whose office is located adjacent to the project sites, to develop and disseminate ongoing public outreach and explore community betterment opportunities. Community input/comments on potential adverse impacts of construction and ways of mitigating such impacts will be sought. Prior to construction, fliers will be distributed to adjacent residents and businesses regarding scheduling, construction expectations. Contact and website information will also be included on the fliers so that community members can obtain ongoing project updates, and information on how to ask questions and submit comments.

- CSO053_11 Canisius (Jefferson Delavan) OLS
- CSO053_10 SPP229A (Jefferson Florida) RTC

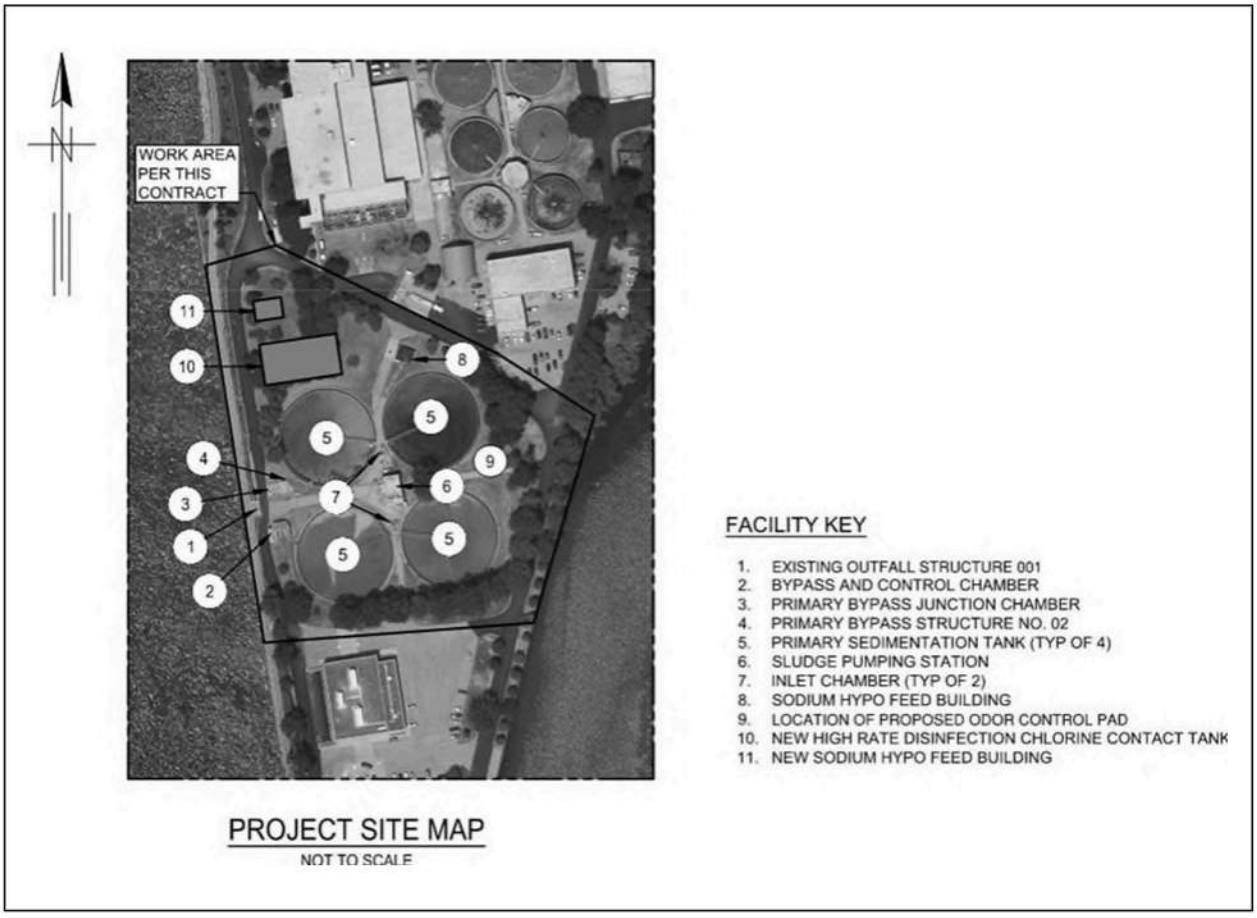
For the following projects, Buffalo Sewer's work will be as part of the larger RainCheck 2.0 Program for which extensive public outreach has already been conducted. As specific plans solidify, those stakeholders most directly impacted will be notified. In addition, The Buffalo Sewer website will provide ongoing project updates, and information on how to submit questions and comments.

- CSO053_12.2 Jefferson Ave GI
- CSO053_12.1 Jefferson Ave GI

WWTP Facility Upgrades Project

The Bird Island Wastewater Treatment Facility (WWTF) provides primary and secondary treatment, disinfection, and solids handling. The primary treatment system was constructed in 1935, and the secondary treatment system was constructed between 1970-1985.**Figure 1-1** is the site plan for the primary system. The existing primary system includes four Primary Sedimentation Tanks (PSTs), Sludge Pumping Station, Sodium Hypo Feed Building, and Outfall Structure 001.

The WWTF Upgrade Project is a major construction project that was included in the 2014 Selected Alternative Long Term Control Plan and the Proposed Amended LTCP, and is being conducted in three phases. Buffalo Sewer has already conducted extensive public outreach throughout the City of Buffalo related to this project. Phase I is the Secondary System Rehabilitation and Upgrade Project, which is currently under construction. Phase II is the WWTP Primary Treatment Renovation Project, which will: improve the existing primary treatment system and ensure treatment capacity up to 160 million gallons per day; include construction and installation of an Odor Control System to address community concerns; and, a new High-Rate Disinfection pumping station and chlorine contact tank to improve water quality of effluent discharges through a repurposed Outfall 001. Phase III is currently in early design with analysis ongoing of the hydraulics of each of the final clarifiers. Phase III will ultimately increase the throughput flow for the Secondary System to 400 MGD during wet weather through the increase in number of final clarifiers, increased capacity for flow from the aeration tanks to those clarifiers, increased chlorine contact tanks, and associated work.



The key elements of the WWTP Renovation Project to be communicated to the public include the following:

- Protect Public Health and the Environment; Improved Water Quality for the Niagara River
- Compliance with Regulatory Requirements to Achieve LTCP Goals.
- Cost of the project
- Modernizing and upgrading the WWTP.
- Implementing an Odor Control system for the Primary Settling Tanks, which has been a frequent request of the local community.
- Repairing of Outfall 001, will require a temporary closure of a portion of the Riverwalk that runs along the Bird Island WWTF. The current timeline is 6-8 months over a period between 2026-2027. A Work Zone Traffic Control Plan has been developed to detour pedestrians and cyclists along Niagara Street between Freedom Park (formerly Broderick Park) and Unity Island Park. Neither park will experience any closures. **Figure 1-3**.

The WWTP Upgrade Project specific primary stakeholder contact list is shown in **Table 3-1**. The contact list identifies organizations with a direct stake or interest in the Primary Treatment Renovation project, including:

- residents/neighborhood groups who are near or adjacent to the proposed project and that will be or potentially will be affected by the operation. This includes a sizable *New American* immigrant and refugee population based in the North and Niagara district areas;
- community boards, community leaders, local community, civic and recreational organizations, environmental and business groups.
- people who have expressed an interest in similar projects or in projects affecting the same neighborhood or community;
- neighborhood religious establishments; and
- elected officials who live in and/or represent the community of concern.

Table 3-1: Primary (Direct) Stakeholder Contact List

Assembly Of Christian Church 211 Ontario St, Buffalo NY (716) 883-1120	**Ontario Street United Methodist Church** 179 Ontario St, Buffalo NY (716) 875-3639
Black Rock Riverside Alliance 52 Amherst St, Buffalo, NY 14207 (716) 322-6602 https://brralliance.org/index.php/contact/ https://brralliance.org/	**Our Lady of Hope Parish** 18 Greenwood Place, Buffalo, NY 14213 (716) 885-2469 https://www.ourladyofhopewny.org/
Buffalo Myanmar Indigenous Christian Fellowship Church 410 East St, Buffalo, NY 14207 (716) 885-5911	**People for United Sustainable Housing** (PUSH Buffalo) 429 Plymouth Ave Suite 1, Buffalo, NY 14213 (716) 884-0356 https://www.pushbuffalo.org/
Niagara River Greenway Commission P.O. Box 1132 Niagara Falls, NY 14305 (716)299-0808 https://www.niagararivergreenway.com/	**Campus Wheelworks** 1330 Niagara Street Buffalo, NY 14213 (716) 881-3613 https://www.campuswheelworks.com/
Buffalo Niagara Waterkeeper 721 Main St, Buffalo, NY 14203 716.852.7483 info@bnwaterkeeper.org https://bnwaterkeeper.org/	**Rehoboth Ministries Worship** 1020 Grant St, Buffalo, NY 14207 (716) 874-4393
Clean Air Coalition of WNY 371 Delaware Ave, Buffalo, NY 14202 (716) 852-3813 info@cacwny.org https://www.cacwny.org/	**Riverside Baptist Church** 346 Ontario St, Buffalo, NY (716) 876-3994

City Department of Public Works, Parks & Streets (DPW) 65 Niagara Square, Room 502, Buffalo, NY 14202 716-851-5636 https://www.buffalony.gov/312/Department-of-Public-Works-Parks-Streets	**Riverside Park** Buffalo Olmsted Parks Conservancy 84 Parkside Ave. Buffalo, NY 14214 716-838-1249 https://www.bfloparks.org/parks/riverside-park/
El Batey Puerto Rican Center 175 Rano St, Buffalo, NY 14207 Phone: (716) 348-0156 https://elbateyprcenter.business.site/?m=true	**Sāsanasukha Buddhist Temple** 861 Military Rd, Buffalo, NY 14217
Friends of Freedom Park (formerly Broderick Park) 1170 Niagara Street, Buffalo, NY 14213 (716) 851-5553 https://friendsofbroderickpark.com/	**Shwe Min Won Myanmar Monastery** 356 Plymouth Ave, Buffalo, NY 14213 716-777-3925
Friends of Unity Island Park friendsofunityisland@gmail.com https://brralliance.org/index.php/friends-of-unity-island/	**Vision Niagara** Vision Niagara | A Vision for Niagara Street: Where We Love to Live, Work, and Play https://visionniagara.org/ info@visionniagara.org
International Institute of Buffalo 864 Delaware Avenue Buffalo, New York 14209 (716) 883-1900 https://iibuffalo.org/	**West Side Bazaar** https://www.wedibuffalo.org/ 436 Grant Street Buffalo, NY 14213 716.393.4088 info@wedibuffalo.org
Jericho Road Community Health Center 184 Barton Street Buffalo, NY 14213 716-348-3000 contact@jrchc.org https://jrchc.org/	**Believe in Black Rock** believeinblackrock@gmail.com https://www.facebook.com/BelieveinBR/
Massachusetts Avenue Project 387 Massachusetts Ave, Buffalo, NY 14213 (716) 882-5327 https://www.mass-ave.org/	
Council Member David A. Rivera – Niagara District 65 Niagara Sq., Rm. 1504 Buffalo, NY 14202 (716) 851 – 5125 darivera@city-buffalo.com https://www.buffalony.gov/1133/David-A-Rivera	

Council Member Joseph Golombek, Jr. – North District 65 Niagara Sq., Rm. 1502 Buffalo, NY 14202 (716) 851-5116 NORTH2@buffalony.gov https://www.buffalony.gov/1155/Joseph-Golombek-Jr

Along with the primary contact list of actual stakeholders (above), a secondary contact list is provided in **Table 3-2** for those with overall potential project interests.

Table 3-2: Secondary (Indirect) Stakeholder Contact List

Buffalo Rocket Community News 9195 Main Street Clarence, New York 14031 (716) 632-0808 buffalorocket@gmail.com http://buffalorocket.com/	Int'l Peace Bridge authority Buffalo and Fort Erie Public Bridge Authority 716-843-8521 https://www.peacebridge.com/
Challenger Community News 1337 Jefferson Ave, Buffalo, NY 14208 (716) 881-1051 https://issuu.com/challengercommunitynews	NYS Regional Public Participation Specialist Region 9 - Regional Director 700 Delaware Avenue, Buffalo, NY 14209 Phone: (716) 851-7200
Local Burmese community newsletters	Regional Public Participation Specialist Phone (716) 851- 7201

Some or all of the following materials will be used to help further explain the WWTP Upgrade Project details to community members, the impact the proposed work will have on their neighborhood during construction, steps being taken to mitigate said impacts, and the positive benefits to the community and environment of the work Buffalo Sewer is undertaking.

- Brochures – BSA has a standard tri-fold brochure that has been used on past projects to disseminate information to residents and businesses in the adjacent area (see sample in Figure 1). The brochures will provide a description of the project, information on where further detailed information can be obtained (i.e. website, document repository, Buffalo Sewer staff contact information, etc.), be made available at community meetings, document repository locations, and will be made available electronically to interested parties which can be posted on websites or distributed electronically. The brochures will be translated into the languages listed in Section 3.2, which will be made available electronically on the BSA website.

- PowerPoint Presentations – in support of the community engagement meetings, a standard PowerPoint presentation has been developed that includes an overview of the project and why it is being completed, a map of the project site, a summary of construction disturbances, a slide depicting work zone traffic control for detours during the Riverwalk closure, and before and after photo renderings.

- Local Publication Notices – Common Council Members and local community groups typically have routine emails that are distributed amongst their constituents and members. Buffalo Sewer will reach out to the stakeholders listed in Table 3 and provide a short description of the project and information about public meetings for distribution, as these emails can reach a wide audience. In addition, BSA will include similar information in local newspaper publications, such as The Challenger Community News and Buffalo Rocket Community News. These materials will be translated into the languages listed in Section 3.2, which will be made available electronically on the BSA website.

- Website Postings – the applicable notices, brochures, and PowerPoint presentations, along with periodic updates on construction progress, will be posted on the Buffalo Sewer Authority website to make this information available to the public any time. In addition, this information will be shared with stakeholders for posting on their websites.

- Construction Fencing Wraps / Signage – BSA developed a fencing wrap that was recently used on the Broadway at Oak RTC project (see Figure 2). The purpose of the wrap is to convey the overall project benefits to the community while, at the same time, shielding the community from the "mess" of construction. BSA intends to utilize a similar wrap on this project.



Figure 4-1. Standard Buffalo Sewer Tri-Fold Brochure



Figure 4-2. Future Rendering of the completed Primary Treatment Renovation project, that may be used in presentation materials – aerial view of the new HRD Facility and Odor Control system (circled), north direction



Figure 4-3. Future Rendering of the completed Primary Treatment Renovation project, that may be used in presentation materials – northwest aerial viewpoint from the Niagara River



Figure 4-4. Sample Construction Banner and Placement Location along Riverwalk

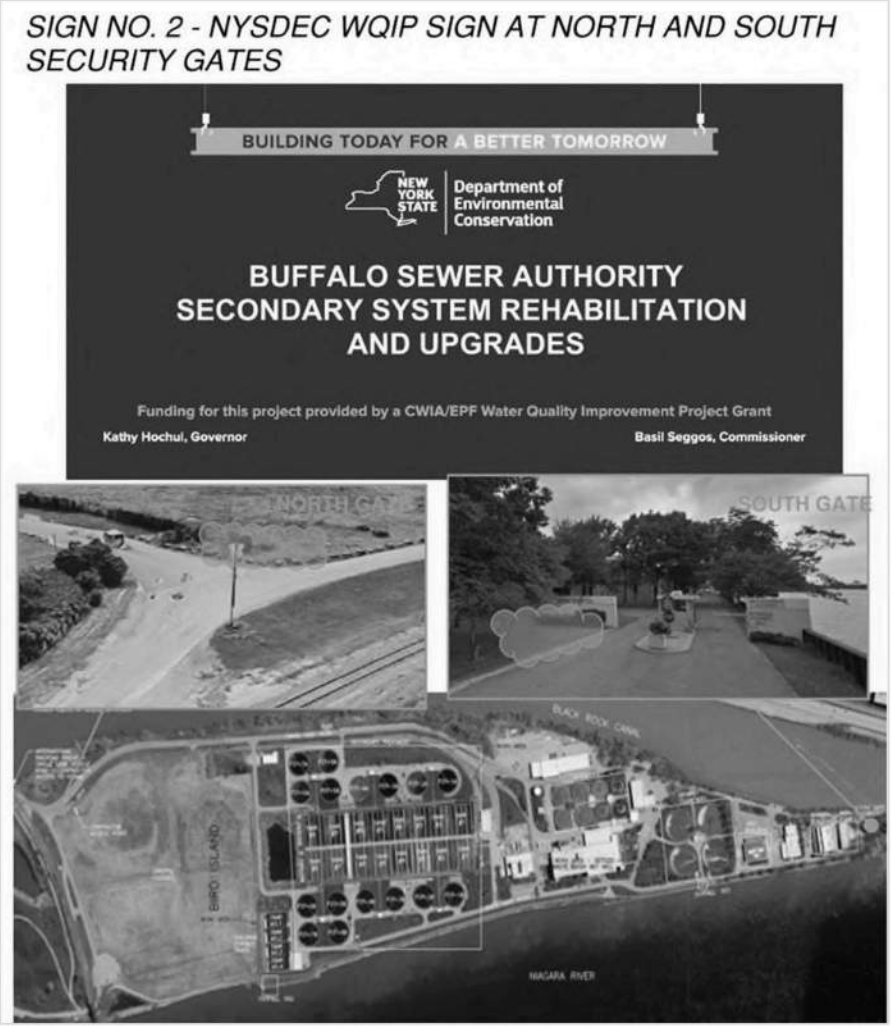


Figure 4-5. Sample Funding Banner and Placement Location at the North and South entrance gates of Bird Island WWTF

APPENDIX E

Interim Effluent Limits

Interim Limitations Apply	Treatment Units	Minimum Wet Weather Throughput (MGD) [1]
Nov 2024 - July 2026	Primary (Outfall 001)	180
Aug 2026 - Sept 2028	Primary (Outfall 001)	240
Oct 2028 (Meet Final Limit)	Primary (Outfall 001)	160

1. If additional capacity becomes available during the interim limitation period(s), BSA should treat additional flows, as possible, without destabilizing treatment.

APPENDIX F

Environmental Benefit Project

The Environmental Benefit Project (EBP) proposed herein is consistent with the Department's Environmental Benefit Projects Policy CP-37, and will provide a benefit to the environment and public health. The proposed EBP will benefit a Potential Environmental Justice Area and Disadvantaged Community, has a nexus to Buffalo Sewer's combined sewer system, and includes pollution prevention components.

Under the 2021 American Rescue Plan Act (ARPA), the City of Buffalo chose to devote several million dollars to capital investments in its parks. One of the parks identified for the utilization of ARPA funds was Roosevelt Park.

This park serves Buffalo's largest low-income housing development, Kenfield-Langfield which is accessed via a pedestrian bridge over the NY-33 highway from Roosevelt Park and serves as the primary recreational and natural space for this environmental justice and disadvantaged community. Additionally, before development, the location of Roosevelt Park was at or near the headwaters of a major branch of Scajaquada Creek that has been buried and inextricably integrated into the combined sewer system for over a century.

Under the leadership of New City Parks, the community was engaged in a Master Planning effort regarding this park: https://www.newcityparks.org/projects-grid/roosevelt-park. Several priority projects were identified on the western end of the park.

While these efforts were ongoing, Buffalo Sewer Authority was working to develop a selection of projects that would address the goals of the 2014 Administrative Order. Among these projects was the Martha and Edison Off-line Storage facility which would be located underneath the eastern portion of this park.

As design for the projects identified under the Master Plan have advanced, the costs for these projects, as with the construction projects more broadly, have risen dramatically. While the City has identified some additional funding sources to bring the Master Plan to fruition, including utilizing Buffalo Sewer's Environmental Impact Bond to incorporate Green Infrastructure to address drainage issues and ensure reduced impact to the combined system from impervious surfaces within the park, there remain budget shortfalls.

While a total investment from New City Parks, New York State's Environmental Protection Fund, the Dormitory Authority of New York, the American Rescue Plan Act, and Buffalo Sewer Authority's Environmental Impact Bond is expected to exceed $2.6 million, with inflationary impacts, the full vision of the Master Plan is expected to go unrealized and more specifically, while site improvements would be funded, the existing playground equipment would be reused. With part of the vision of the park being creating an accessible, inclusive space that could be used for the whole neighborhood, the inability to achieve these goals creates further issues of disparity for this disadvantaged community.

The Buffalo Sewer Authority proposes as the required Environmental Benefit Project to fund the construction of playground equipment and educational materials regarding the hydrological history of this location that is miles removed from any open waterways to increase public awareness of our interconnectedness and the ways that residents can prevent pollution of those waterways. The presence of water features including a splash pool within this park will further emphasize this interconnectedness. This will also demonstrate a commitment by Buffalo Sewer to the community as design and construction advances regarding the Edison and Martha Off-line Storage Facility and help to build trust and our relationship with the neighborhood.

APPENDIX B: LTCP Progress to Date

Project Name	Project Status	Project Description
2001-2016 Commercial and Industrial Demolitions	Completed ahead of schedule	This project was a city-wide effort designed to control stormwater flow from 78 acres of impervious area.
2001-2016 Residential (Traditional) Demolitions	Completed ahead of schedule	This project was a city-wide effort designed to remove 256 acres of impervious area and manage stormwater on site.
2017-2024 Demolitions	Completed	This project was a city-wide effort designed to manage 100 acres of impervious area.
612 Northland Ave	Completed ahead of schedule	This project is located at 612 Northland Avenue. It involved installing 2,118 SF of storm water rain gardens, 1,253 SF of permeable gravel pavement, and converting 1,422 SF of pavement to lawn/shrubs. In total, this project manages about 0.26 acres of impervious area.
Babcock Pump Station In-Line Storage	Completed	This project is located on New Babcock Street at the intersection with Howard Street. It involved installing two 3,700 GPM pumps at the Babcock Street Pump Station.
Bird Ave Underflow SPP13 Modifications - North Relief Interceptor	Completed	This project is located at the intersection of Bird Avenue and Niagara Street. It involved raising the weir to 2.75' elevation and installing 120 LF of 60" pipe.
Bird RTC Project	Completed ahead of schedule	This project is located on Bird Avenue between Parkdale Avenue and Hoyt Street. It involved installing an RTC structure with dimensions of 78" x 114", with a storage capacity of about 0.63 MG.
Bird RTC Project/RTC-1	Completed	This project is located on Bird Avenue between Parkdale Avenue and Hoyt Street. It involved installing sluice gates and an overflow weir in the RTC structure. Two 4'x4' sluice gates were installed, and the overflow weir was installed to elevation 29.1'.
Broadway Oak RTC	Completed	This project stores flows in the existing sewer along Broadway and Michigan Avenue during storm events, then on a controlled basis will release the flows for treatment at the WWTF.
Carlton Street Porous Asphalt	Completed ahead of schedule	This project is located in the area tributary to the right-of-way on Carlton Street between Michigan and Jefferson Avenues. It involved installing porous pavement that covers about 38,280 SF of roadway. The existing roadway was reduced in width by 2 LF along the south side of the roadway. It manages about 2.1 acres of impervious area.
CSO No. 026 RTC Structure, Smith at Perry	Completed	This project is located on the west side of Smith Street, north of the I-190 and south of Clifford Street. It included installing a 142' long overflow weir in the CSO-026 RTC structure.
CSO No. 026 Sewer Separation	Completed ahead of schedule	This project is located along Leddy Street, South Park Avenue, Owahn Place, Prenatt Street, Bolton Place, St. Stephen's Place, and Buffalo River Place. It involved installing approximately 3,700 LF of storm sewer, 32 catch basins, and 14 storm sewer manholes.
CSO060 GI Project	Completed ahead of schedule	This green infrastructure project is located in the CSO-060 sewershed. It involved installing 4,768 CF of rain gardens, 39,600 SF of permeable pavement, 6,125 LF of 12"-30" diameter sewer pipe, and raising weirs in SPPs 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, and 241.
Fillmore Avenue Porous Parking and Green Lots	Completed ahead of schedule	This green infrastructure project is located in the area tributary to the right-of-way of Fillmore Avenue. It manages 0.4 acres of impervious area.

Project Name	Project Status	Project Description
Genesee Street/Genesee Gateway Project	Completed ahead of schedule	This green infrastructure project is located in the area tributary to the right-of-way on Genesee Street. It manages about 2.8 acres of impervious area.
Green Demolition Pilot Project	Completed ahead of schedule	This project was a city-wide effort designed to manage 20 acres of impervious area.
Hazelwood (Kay) In-Line Storage	Completed ahead of schedule	This project is located on Hazelwood Avenue between East Delavan and Easton Avenues, about 150' south of Easton Avenue. It involved installing a 32'-10"x22'-4" RTC structure, including two 5'x5' gates and a weir at elevation 63.1'.
Hertel Northwest (Hertel at Deer) In-Line Storage	Completed ahead of schedule	This project is located at the intersection of Hertel Avenue and Deer Street, within the northern portion of the two large combined sewers that are located under Hertel Avenue. It involved installing a 41'x36' RTC structure about 26' below grade.
Hertel South (Hertel at Deer) In-Line Storage	Completed ahead of schedule	This project is located at the intersection of Hertel Avenue and Deer Street, within the southern portion of the two large combined sewers that are located under Hertel Avenue. It involved installing a 41'x36' RTC structure about 26' below grade.
Kenmore Avenue	Completed ahead of schedule	This green infrastructure project is located in the area tributary to the right-of-way on Kenmore Avenue. It manages about 4.4 acres of impervious area.
Lang RTC Project/RTC-1/Hagen St RTC	Completed	This project is located on Lang Avenue between Courtland Avenue and Hagen Street. It involved installing a 30'x20' RTC structure about 17' below grade, including two 5'x5' sluice gates.
Mill Race RTC	Completed	This project stores flows in the collection system through the operation of valves that prevent higher flows from entering the South Interceptor when levels in the Interceptor are high. Flow is drained to the South Interceptor when levels allow.
Montgomery CSO (Smith at Eagle)	Completed ahead of schedule	This project is located on Smith Street, about 200' south of East Eagle Street. It involved installing a 50'x28' RTC structure with two 5'x5' sluice gates and a weir that is 70' long and 6.87' high.
Niagara Street Phase 1: Elmwood Street to Virginia Street	Completed ahead of schedule	This green infrastructure project is located along Elmwood Avenue to Virginia Street. It manages about 2 acres of impervious area.
Niagara Street Phase 2: Virginia Street to Porter Avenue	Completed ahead of schedule	This green infrastructure project is located along Virginia Street to Porter Avenue. It involved installing approximately 47,756 SF of green infrastructure to manage about 7.3 acres of impervious area.
Niagara Street Phase 3: Hampshire Street to Scajaquada Expy	Completed ahead of schedule	This green infrastructure project is located along Hampshire Street to the Scajaquada Expressway. It involved installing 1,610 SF of standalone tree pits and 22,915 SF of stormwater planters. It manages about 11.1 acres of impervious area.
Niagara Street Phase 4a: Scajaquada Expressway to Hertel Ave	Completed ahead of schedule	This green infrastructure project is located along the Scajaquada Expressway to Hertel Avenue. It manages about 3.7 acres of impervious area.

Project Name	Project Status	Project Description
North Bailey In-Line Storage	Completed ahead of schedule	This project is located on Bailey Avenue north of Scajaquada Street. It involved installing a 18'x53' RTC structure, including two 4'x4' gates and a weir at elevation 61.4'.
Northland Ave	Completed	This green infrastructure project is located on Northland Avenue between Fillmore Avenue and Grider Street. It manages about 6.1 acres of impervious area.
Ohio Street	Completed ahead of schedule	This project is located in the area tributary to the right-of-way on Ohio Street. It involved removing 3.2 acres of impervious area, planting 260 trees, and installing a 12' wide path and parking lanes made of porous pavement. In total, the project manages about 6.1 acres of impervious area.
PUSH Blue Projects	Completed ahead of schedule	This project included multiple green infrastructure efforts within the CSO-012 sewershed. It included installing 20 rain gardens to capture the runoff from a total of 71,050 SF, 1 green roof with a capture area of 3,069 SF, 1 porous pavement project with a design capacity of 144 CF, and 4 cisterns with 5,000 CF of storage capacity. In total, the project manages about 1 acre of impervious area.
SPP001 Optimization	Completed ahead of schedule	This project is located at the discharge of Cornelius Creek into the Niagara River. It involved raising the weir in SPP001 by 1'.
SPP035	Completed ahead of schedule	This project is located northwest of the intersection of South Elmwood Avenue and West Genesee Street. It involved installing a 50,000 gallon inline storage facility in association with SPP035.
SPP036	Completed ahead of schedule	This project is located on Church Street, between the off and on ramps of the Skyway Bridge (State Route 5). It involved installing 35 LF of 30" diameter sewer pipe.
SPP097A Optimization	Completed ahead of schedule	This project is located on Orlando Street at the intersection of the extension of Prenatt and Orlando Streets. It involved abandoning an inactive combined sewer, converting another combined sewer to a storm sewer and abandoning the underflow connection.
SPP122 Optimization	Completed ahead of schedule	This project is located on South Legion Drive, just north of the intersection with Meriden Street. It involved raising the weir in SPP122 by 0.5' along its entire length.
SPP163 Optimization - 163A	Completed ahead of schedule	This project is located east of the intersection of Fillmore Avenue and Northland Avenue. It involved raising the weir in SPP163 by 0.75' and increasing the weir length to 10'.
SPP165 Optimization	Completed ahead of schedule	This project is located on Fillmore Avenue, just north of the intersection with East Delavan Street. It involved raising the weir in SPP165 by 0.5'.
SPP165A Optimization	Completed ahead of schedule	This project is located at the intersection of Fillmore Avenue and Kensington Avenue. It involved raising the weir in SPP165A by 0.75' and upsizing 675 LF of 15" diameter pipe to 18" diameter pipe.
SPP165B Modification (Humboldt & Delavan)	Completed ahead of schedule	SPP165B is located at the intersection of Humboldt Parkway and East Delavan Avenue. For this project, the SPP165B underflow orifice plate was removed. This project has been completed.

Project Name	Project Status	Project Description
SPP178 Optimization	Completed ahead of schedule	This project is located on Masten Avenue, just north of the intersection with Northland Avenue. It involved raising the weir in SPP178 by 0.5'.
SPP180 Optimization	Completed	This project is located at the intersection of Delaware Avenue and West Delavan. It involved raising the weir in SPP180 by 2' along its entire length.
SPP183 Optimization	Completed	This project is located at the intersection of Bradley Avenue and Dewitt Street. It involved raising the weir in SPP183 by 0.5'.
SPP211 Optimization	Completed ahead of schedule	This project is located at the south east corner of the intersection of Clinton and South Ogden Streets. It involved raising the overflow invert in SPP211 to elevation 8.50'.
SPP217 Optimization	Completed ahead of schedule	This project is located on Emslie Street at its intersection with Eagle Street. It involved the removal of two bottom orifice plates from SPP217, totaling 1.42' in height.
SPP229A Modification (Florida & Jefferson)	Completed ahead of schedule	For this project, the underflow pipe at SPP229A (located near the intersection of Florida Street and Jefferson Avenue) was increased to a 24" diameter pipe. This project has been completed.
SPP254 Modification (Bailey & Minnesota)	Completed ahead of schedule	For this project, the overflow weir at SPP254 (located at the intersection of Bailey Avenue & Minnesota Avenue) was replaced. The new weir elevation is 82.90 ft (City datum). Lowering the weir resulted in more flow being routed to the Amherst Quarry PS storage. This project has been completed.
SPP283 Optimization	Completed ahead of schedule	This project is located in the median between the I-190 Southbound exit ramp to Porter Avenue and the Empire State Trail near the West Side Rowing Club. It involved removing the orifice plate in SPP283 and installing a weir that is 1' high.
SPP318 Optimization	Completed ahead of schedule	This project is located east of the intersection of Fillmore Avenue and Clinton Street. It involved increasing the area of the underflow orifice to 1.8 SF in SPP318.
SPP331 Optimization	Completed ahead of schedule	This project is located on Delaware Avenue, at the intersection with West Delavan and the northeast quadrant of Gates Circle. It involved raising the weir in SPP331 by 1.75' and removing the bench inside and replacing with a weir that is 6.2' high.
SPP335B Optimization	Completed ahead of schedule	This project is located on Hager Street, just south of the intersection with Florida Street. It involved raising the weir in SPP335B by 1'.
SPP336A Optimization	Completed ahead of schedule	This project is located on Humboldt Parkway, north of the Scajaquada Drain. It involved removing a sluice gate and an orifice plate in SPP336A, as well as modifying the existing structure by changing the existing side channel opening from 24" to 30".
SPP338 Modification (Bailey & Kerns)	Completed ahead of schedule	SPP338 is located south of the intersection of Scajaquada Street and Bailey Avenue. For this project, the SPP338 underflow orifice would be enlarged. The overflow weir would be raised to 55.24 ft (City datum), and the length increased to 30'. This project is now complete.
SPP342B Optimization	Completed ahead of schedule	This project is located on Sprenger Avenue, adjacent to Schiller Park. It involved raising the weir in SPP342B by 1'.

Project Name	Project Status	Project Description
SPPs 206A&B	Completed ahead of schedule	This project is located on Trenton Road/Village Court, north east of Fourth Street. It involved installing a 113,000 gallon inline storage facility in association with SPPs 206A&B.
Willert Park	Completed	This project is located on William Street between Michigan and Jefferson Avenues. It involved installing approximately 2,400 LF of storm sewer pipe that ranged in size from 12" to 30" in diameter along Louisiana Street and Miami Street and installing 2 bioretention cells near the JFK Community Center, 1 bioretention cell near the Pratt Willert Community Center, several more bioretention cells in the roadway median along William Street, and sections of pervious pavement along William Street. In total, the project manages about 13.88 acres of impervious area.

APPENDIX C: Project Scope Comparison – 2024 LTCP versus 2026 Amended LTCP

Project Name & Tag	Status Compared to 2024 LTCP	2026 Project Description	2024 LTCP Project Description, if Different from 2026 Project Description
CSO010_1 Breckenridge Street CSO Project	Modified	A new sewer along West Avenue will capture flows from the Breckenridge Street combined sewer and West Avenue collector sewers, from Lafayette Avenue to Breckenridge Street and divert flows to Scajaquada Tunnel. A new energy dissipating drop shaft will be provided at West and Lafayette Street. Additionally, the combined sewer on Breckenridge Street will be relined from West Avenue to Herkimer Street.	The Breckenridge Niagara RTC project is being proposed as an alternative to the CSO-061, 008, and 010 underflow upsizing project in the LTCP baseline plan. Since the target activations are already met in the baseline model at CSO-008 and CSO-061, the project only needs to address activations at CSO-010. The site would be configured similar to the Smith St. and Mill Race RTC projects, with a static weir in the 36" diameter pipe upstream of SPP021 diverting flow to a new controlled connection to the North Interceptor. This project also has the potential to reduce overflows at CSO-011 (SPP024) and CSO-055 (SPP001).
CSO012_1.2 SPP023 Modification (Niagara Thruway & Albany St)	Modified	A new SPP023 will be constructed upstream of the existing and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor.	For this project, SPP023 (CSO-012, Albany St. and Niagara St.) would be modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum). These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.
CSO012_2.1 SPP296 Modification (Niagara Thruway & Albany St)	Modified	A new SPP296 will be constructed upstream of the existing and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor.	For this project, SPP296 (CSO-012, Albany St. and Niagara St.) would be modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum). These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would be implemented after or in parallel with the SPP023 modification since it is directly upstream of the SPP023 underflow.
CSO017_8 SPP326A Construction (Oak & Swan)	Modified	A new regulating structure (SPP326A) will be constructed near SPP327.	SPP326 is located south of the intersection of Swan Street and Oak Street. For this project, the SPP326 underflow pipe would be upsized to 36". This modification would reduce overflows at CSO-017. Since this modification sends more flow to the Swan Trunk, it would benefit from the implementation of the Erie Basin OLS project.
CSO053_1.5 SPP336B Modification (Humboldt Pkwy)	Modified	Modifications to SPP336B include removing the underflow orifice plate and raising the weir by 2.7'.	SPP336B is located in the Kensington Expressway, north of Hamlin Road. For this project, SPP336B would be modified by removing the underflow orifice plate, reducing overflows at CSO-053. It would be beneficial to implement this modification after or in parallel with the Sidney OLS project.
CSO053_11 Canisius RTC and Ventilation Facility	Modified	A tunnel will be constructed beneath Spillman Place to connect existing flows from SPP333 to the Scajaquada Tunnel Interceptor. A new RTC and Ventilation Facility near Canisius College will be constructed to further optimize flow conditions within the Scajaquada Tunnel.	This was a planned LTCP project, but there is a new opportunity to move the tank location North and utilize an existing parking garage area at Jefferson and Delavan proposed to be demolished for the construction of a new surface parking lot. In the updated configuration and location, flow at SPP333 is routed to a 1.5 MG offline storage tank. The storage would dewater via gravity when there is capacity available in the Scajaquada Tunnel. Rock is present at shallow depths in this area which would impact construction costs and scheduling.
CSO053_8 SPP341A Modification (Genesee)	Modified	SPP341A is located on Genesee Street east of Kerns Avenue. This project includes the installation of a new vortex-style drop shaft to the Scajaquada Tunnel to accommodate a peak flow of 26.4 MGD.	SPP341A is located on Genesee Street east of Kerns Avenue. For this project, SPP341A would be modified by incorporating an additional 18" diameter underflow pipe and raising the overflow weir to 55.60 ft (City datum), reducing overflows at CSO-053. This modification would benefit from the implementation of the Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.
CSO053_5.2 Roosevelt Park OLS	Modified	A 1.7 MG tank will be constructed in Roosevelt Park to storage flow diverted from the Edison Avenue trunk sewer. The tank will dewater via pumping back to the Edison Avenue trunk sewer.	To address CSO-053 overflows, the proposed Martha and Edison OLS project would store flow diverted from the Edison Avenue trunk sewer in a 2.61 MG tank at the northwest corner of Edison Avenue and Kensington Expressway. The storage would dewater via gravity when there is available capacity in the Edison Avenue trunk sewer.
CSO053_1.4 Sidney Street Sewer Improvement Project	Modified	Modifications to SPP336B include upsizing the underflow pipe to 4' diameter pipe and adding a gate with dynamic controls to the underflow pipe to throttle flow during large events to reduce the frequency of high HGLs in the ST.	To reduce flows at SPP336B, the Sidney Street OLS would store flow diverted from the sewer along Humboldt Parkway in a 3.26 MG tank at the corner of Sidney Street and Lark Street. The storage would dewater via gravity when there is sufficient available capacity in the Scajaquada Tunnel Interceptor. This project has undergone multiple revisions in the preliminary design process. In 2024, the OLS was downsized first and later converted to an RTC only site. In 2025 following the selection of a detailed design engineer, the project was altered again to be an upsizing of the underflow pipe to 4' directly connecting to the STI.

Project Name & Tag	Status Compared to 2024 LTCP	2026 Project Description	2024 LTCP Project Description, if Different from 2026 Project Description
CSO053_2.5 SPP337 Modification (Colorado)	Modified	A new vortex-style drop shaft will be constructed to connect to the Scajaquada Tunnel to accommodate a peak flow of 48 MGD.	SPP337 is located near the intersection of Scajaquada Street and Colorado Avenue. For this project, SPP337 would be modified by incorporating an additional 30" diameter underflow pipe. This modification would reduce overflows at CSO-053, and would benefit from the implementation of the Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.
GI – Buffalo Public Schools Package	Modified	The Buffalo Public Schools package consists of 16 school sites with a combination of both on-site work and work within the surrounding public right-of-way. The 60% design includes stormwater tree trenches, infiltration trenches, underground storage systems, stormwater planters, and bioretention areas. The total impervious area managed is estimated at 34.8 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – Buffalo Municipal Housing Authority Package	Modified	Installation of green infrastructure practices at two Buffalo Municipal Housing Authority sites (Ferry Grider and Langfield/ Kenfield) including underground storage within parking areas, stormwater tree trenches along the public right-of-way, and the planting of additional trees. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 41.6 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – ROW Package 1	Modified	Right-of-Way Package 1 consists of 22 green infrastructure systems, all of which are stormwater tree/infiltration trenches. The total impervious area managed is estimated at 10.9 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – ROW Package 2	Modified	Right-of-Way Package 2 consists of 17 green infrastructure systems, including 16 stormwater tree trenches and 1 rain garden. The total impervious area managed is estimated at 4.2 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – ROW Package 3	Modified	Right-of-Way Package 3 consists of 58 green infrastructure systems- all of which are stormwater tree trenches. The total drainage area managed is estimated at 15.6 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – ROW Package 4	Modified	Right-of-Way Package 4 consists of 26 green infrastructure systems all of which are stormwater trenches. The total impervious area managed is estimated at 8.1 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
System_1 North Sewer Interceptor	Modified	The North Sewer Interceptor is designed to create more conveyance capacity to the WWTF, supplement capacity in the North Interceptor, and increase the ability of the system to store wet-weather flows.	The Northern Relief Tunnel is designed to create more conveyance capacity to the WWTP, supplement capacity in the North and South Interceptors, and increase the ability of the system to store wet-weather flows. It is anticipated that the tunnel will have an inside diameter of 12-feet based on the most recent system simulations. This is subject to change if alternate RTC sites are constructed as the LTCP evolves. This tunnel system is anticipated to have three parts, North of Scajaquada Creek, South of Scajaquada Creek, and the Southern Relief Tunnel.
GI – ROW Package 5	Modified	Right-of-Way Package 5 consists of 43 green infrastructure systems, all of which are stormwater tree trenches. The total drainage area managed is estimated at 9.7 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.

Project Name & Tag	Status Compared to 2024 LTCP	2026 Project Description	2024 LTCP Project Description, if Different from 2026 Project Description
System_2_2 Schiller Park Ventilation Facility	Modified	A new ventilation facility will be built within Schiller Park to mitigate air releases caused by rapid filling and peak flows in the ST. This project is recommended due to the SPP modifications that occur downstream optimizing use of the ST.	The Schiller Park OLS project is an offline storage project that would divert inflows from Cheektowaga to an 8.00 MG storage facility during wet weather until the BSA collection system has capacity to receive and treat it. This project would help buffer peak flows to the Bird Island Treatment Facility and reduce overflows at SPPs along the North and South Interceptor, including SPP001 and SPP024. The OLS is currently configured as a gravity-driven storage with dynamically controlled inlet and outlet gates.
CSO027_3 SPP097 Modification	Modified	SPP097 is located on Babcock Street, 555 ft north of the Buffalo River. The underflow pipe at SPP097 will be upsized to 42 inches.	SPP097 is located on Babcock Street, 555 ft north of the Buffalo River. In the currently proposed version of this project, the SPP097 underflow pipe would be upsized to 48 inches. The overflow weir would be raised to 0.82 ft (City datum) with an associated length increase to 100 ft. Upstream diversion alternatives that achieve the same impact as the SPP097 modification are also being considered in this area.
GI – ROW Package 6	Modified	Right-of-Way Package 6 consists of 48 green infrastructure systems, including 43 stormwater tree trenches and 5 stormwater planters. The total drainage area managed is estimated at 15.5 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – ROW Package 7	Modified	Right-of-Way Package 7 consists of 41 green infrastructure systems, including 39 stormwater tree trenches and 2 bump outs. The total drainage area managed is estimated at 9.7 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – ROW Package 8	Modified	Right-of-Way Package 8 consists of 28 green infrastructure systems – all of which are stormwater tree trenches. The total impervious area managed is estimated at 8.4 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – ROW Package 9	Modified	Right-of-Way Package 9 consists of 25 green infrastructure systems, including stormwater tree trenches and infiltration trenches. The total impervious area managed is estimated at 8.9 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI - Park Package 1	Modified	Installation of an underground, stormwater detention area at Hennepin Park and the separation of stormwater and sanitary sewer piping contributing to the stormwater management practice. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, pavement, curbing, sidewalk, signage, the basketball court pavement, installation of an underdrain from the playground area, and any disturbed vegetated areas. The total impervious area managed is estimated at 13.1 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI - Park Package 2	Modified	Installation of green infrastructure practices at four Buffalo Parks including Martin Luther King Park, Genesee Gateway Triangle, Lincoln Park, and Eddie Dawson Park including underground storage, stormwater trenches, stormwater planters and the planting of additional trees. Site improvements will also include the replacement of existing, disturbed features in kind, including curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 5.5 acres	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI - Park Package 3	Modified	Installation of green infrastructure practices at four Buffalo Parks including Schiller Park, Hank Nowak Park, and Mary Jean Sloan Park including underground storage and stormwater tree trenches within park property and along the public right-of-way. Site improvements will also include the replacement of existing, disturbed features in kind, including basketball courts, parking areas, curb ramps, curbing, sidewalk, and disturbed vegetated areas. The total impervious area managed is estimated at 4.1 acres.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.

Project Name & Tag	Status Compared to 2024 LTCP	2026 Project Description	2024 LTCP Project Description, if Different from 2026 Project Description
GI - 100 acres: Buffalo River	Modified	Green infrastructure projects would be constructed within the Buffalo River Basin sufficient to control runoff from 20% of the impervious area within the basin (100 acres managed). The exact list of projects to be implemented would be determined during the design phase.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.
GI – 280 acres: Niagara River	Modified	Green infrastructure projects would be constructed within the Niagara River Basin sufficient to control runoff from 20% of the impervious area within the basin (280 acres managed). The exact list of projects to be implemented would be determined during the design phase.	The 2024 LTCP did not include defined projects to achieve the green infrastructure goals.

APPENDIX D: 2026 Amended LTCP Schedule

Project Name & Tag	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
NFA_1 NFA Phase I	Construction	11/25/2019	6/23/2022	9/27/2022	5/25/2030
NFA_2 NFA Phase II	Construction	10/28/2020	7/10/2025	7/23/2026	12/26/2031
CSO053_3.2 Bailey & Amherst RTC, Amherst Quarry PS RTC	Construction	12/1/2021	11/27/2024	5/28/2025	7/6/2028
CSO006_2 Gates Circle RTC	Construction	3/1/2022	10/8/2024	4/8/2025	5/17/2028
CSO010_1 Breckenridge Street CSO Project	Construction	3/1/2022	2/25/2025	8/26/2025	1/31/2029
CSO053_11 Canisius RTC and Ventilation Facility	Advanced Design	3/24/2022	1/31/2028	1/8/2029	3/31/2034
CSO053_14 SPP175, SPP176, SPP177 Modification (Michigan Ave)	Construction	3/2/2024	12/31/2025	6/30/2026	12/31/2027
CSO053_1.5 SPP336B Modification (Humboldt Pkwy)	Construction	3/2/2024	12/31/2025	6/30/2026	12/31/2027
CSO053_8 SPP341A Modification (Genesee)	Preconstruction	3/2/2024	12/31/2025	12/31/2026	12/31/2028
CSO053_5.2 Roosevelt Park OLS	Advanced Design	3/2/2024	8/31/2027	2/28/2028	7/4/2031
CSO053_1.4 Sidney Street Sewer Improvement Project	Advanced Design	3/2/2024	6/30/2027	12/31/2027	12/31/2032
CSO053_2.5 SPP337 Modification (Colorado)	Preconstruction	3/2/2024	6/30/2026	12/31/2026	12/31/2028
NFA_3A NFA Phase III A	Advanced Design	3/29/2024	9/30/2027	3/31/2028	12/31/2032
GI - Park Package 1	Preconstruction	9/27/2024	9/9/2026	12/22/2026	3/14/2028
GI - Park Package 2	Advanced Design	11/1/2024	4/7/2027	8/18/2027	8/23/2028

Project Name & Tag	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
CSO064_1.1 CSO-064 ILS (Louisiana & Mackinaw)	Preliminary Design	3/3/2025	12/31/2026	6/30/2027	6/30/2029
CSO064_1.2 SPP137 Modification (Louisiana & Republic)	Preliminary Design	3/3/2025	12/31/2026	6/30/2027	6/30/2029
System_2_3 SPP339 Modification (Texas & Kerns)	Preliminary Design	3/3/2025	6/30/2028	12/31/2028	6/30/2031
System_2_4 SPP340 Modification (Hagen & Kerns)	Preliminary Design	3/3/2025	6/30/2028	12/31/2028	6/30/2031
GI – ROW Package 1	Advanced Design	5/28/2025	3/31/2027	8/11/2027	8/9/2028
GI – ROW Package 2	Advanced Design	5/28/2025	3/31/2027	8/11/2027	8/9/2028
GI – ROW Package 3	Advanced Design	5/28/2025	5/12/2027	9/22/2027	10/4/2028
GI – ROW Package 4	Advanced Design	5/28/2025	4/7/2027	7/13/2027	7/12/2028
GI – ROW Package 5	Advanced Design	5/28/2025	4/14/2027	8/25/2027	9/16/2028
GI – ROW Package 6	Advanced Design	5/28/2025	4/28/2027	9/8/2027	7/19/2028
GI – ROW Package 7	Advanced Design	5/28/2025	5/5/2027	8/10/2027	8/30/2028
GI – ROW Package 8	Advanced Design	5/28/2025	4/21/2027	7/21/2027	7/14/2028
GI – ROW Package 9	Advanced Design	5/28/2025	6/9/2027	9/15/2027	9/10/2028

Project Name & Tag	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
GI - Park Package 3	Advanced Design	5/28/2025	4/14/2027	8/25/2027	8/27/2028
GI – Buffalo Public Schools Package	Advanced Design	6/10/2025	3/31/2027	7/7/2027	9/13/2028
GI – Buffalo Municipal Housing Authority Package	Advanced Design	6/10/2025	8/4/2027	11/10/2027	11/8/2028
CSO017_8 SPP326A Construction (Oak & Swan)	Preliminary Design	3/3/2026	12/31/2028	6/30/2029	12/31/2030
CSO013_1 SPP304 Modification (Virginia & Busti)	Preliminary Design	3/3/2026	12/31/2027	6/30/2028	12/31/2029
System_1A Sewer Interceptor System Preliminary Design	Not Started	6/30/2026	6/30/2028	N/A	N/A
NFA_3B NFA Phase III B	Preliminary Design	9/1/2026	12/31/2027	1/1/2029	12/31/2034
CSO012_1.2 SPP023 Modification (Niagara Thruway & Albany St)	Preliminary Design	3/3/2027	2/28/2031	10/31/2031	12/31/2033
CSO012_2.1 SPP296 Modification (Niagara Thruway & Albany St)	Preliminary Design	3/3/2027	2/28/2031	10/31/2031	12/31/2033
CSO027_2 Babcock PS Weir Modification	Not Started	3/3/2027	4/30/2029	12/31/2029	12/31/2031
CSO016_1 Charles Street Weir Modification	Not Started	3/3/2027	4/30/2029	12/31/2029	12/31/2031
CSO027_1 SPP317 Modification (Fillmore & Clinton)	Not Started	3/3/2027	12/31/2028	6/30/2029	12/31/2030
System_1B Sewer Interceptor Pump Station	Not Started	6/30/2028	2/1/2031	10/31/2031	10/31/2034

Project Name & Tag	Project Status	Design Start Date	Design Completion Date	NTP Date	Construction Completion Date
System_1 North Sewer Interceptor	Not Started	3/1/2028	7/30/2030	4/1/2031	11/30/2034
CSO027_3 SPP097 Modification	Not Started	3/1/2028	10/31/2030	6/30/2031	6/30/2033
System_2_2 Schiller Park Ventilation Facility	Not Started	3/3/2028	4/30/2030	12/31/2030	12/31/2033
CSO006_3 Delavan Drain Weir Raising & RTC	Not Started	3/3/2029	10/31/2031	6/30/2032	12/31/2035
System_2 South Sewer Interceptor	Not Started	3/1/2031	2/1/2034	10/31/2034	12/31/2040
CSO028_1 Hopkins & Osage OLS	Not Started	3/3/2031	10/31/2034	6/30/2035	9/30/2039
GI – 100 acres: Buffalo River	Not Started	3/2/2032	3/1/2035	3/1/2036	3/2/2039
GI – 280 acres: Niagara River	Not Started	3/2/2032	3/1/2036	3/1/2037	3/1/2040
CSO064_2 Perry Street Sanitary Sewer	Not Started	3/3/2033	10/31/2035	6/30/2036	12/31/2038
CSO017_1.1 SPP054 Sewer Separation	Not Started	3/3/2033	10/31/2035	6/30/2036	12/31/2038

APPENDIX E: 2026 Amended LTCP Cost Estimates

BUFFALO SEWER AUTHORITY 2026 AMENDED LONG TERM CONTROL PLAN
APPENDIX E: 2026 AMENDED LTCP COST ESTIMATES

Project Tag/Name	Capital Cost Estimate (1)	Source
NFA Projects		
NFA_2 NFA Phase II	$ 79,000,000	05/15/2026 OPCC TYLin[2]
NFA_3A NFA Phase III A	$ 83,100,000	05/19/2026 OPCC AECOM[2]
NFA_3B NFA Phase III B	$ 148,000,000	05/19/2026 OPCC AECOM[2]
Deep Interceptor System Projects		
System_1 North Sewer Interceptor	$ 412,000,000	02/27/26 OPCC Schnabel[3]
System_2 South Sewer Interceptor	$ 824,000,000	02/27/26 OPCC Schnabel[3]
System_1A Sewer Interceptor System Preliminary Design	$ 36,100,000	03/27/26 OPCC Arcadis[3]
System_1B Sewer Interceptor Pump Station	$ 94,600,000	03/27/26 OPCC Arcadis[3]
OLS Projects		
CSO028_1 Hopkins & Osage OLS	$ 20,900,000	02/24/26 OPCC TYLin[3]
CSO053_5.2 Roosevelt Park OLS	$ 41,300,000	04/20/2026 OPCC AECOM[2]
RTC Projects		
CSO053_11 Canisius RTC & Ventilation Facility	$ 74,000,000	03/13/2026 OPCC Hazen & Sawyer[3]
CSO006_3 Delavan Drain Storage/Delavan Drain Weir Raising & RTC	$ 7,160,000	05/01/2026 OPCC JMD[3]
ILS Projects		
CSO064_1.1 CSO-064 ILS	$ 7,250,000	05/01/2026 OPCC JMD[3]
SPP Modification Projects		
CSO012_1.2 SPP023 Modification (Niagara Thruway & Albany St)	$ 7,660,000	04/20/2026 OPCC Arcadis[3]
CSO012_2.1 SPP296 Modification (Niagara Thruway & Albany St)	$ 19,900,000	04/20/2026 OPCC Arcadis[3]
CSO053_2.5 SPP337 Modification (Colorado)	$ 10,300,000	05/01/2026 OPCC JMD[2]
CSO064_1.2 SPP137 Modification (Louisiana & Republic)	$ 338,000	05/01/2026 OPCC JMD[3]
System_2_3 SPP339 Modification (Texas & Kerns)	$ 12,100,000	05/01/2026 OPCC JMD[3]
System_2_4 SPP340 Modification (Hagen & Kerns)	$ 12,100,000	05/01/2026 OPCC JMD[3]
CSO013_1 SPP304 Modification (Virginia & Busti)	$ 1,840,000	05/01/2026 OPCC JMD[3]
CSO017_8 SPP326A Modification (Oak & Swan)	$ 5,160,000	05/01/2026 OPCC JMD[3]
CSO027_1 SPP317 Modification (Fillmore & Clinton)	$ 3,580,000	05/01/2026 OPCC JMD[3]
CSO027_2 Babcock PS Weir Modification	$ 1,710,000	04/01/2026 OPCC TYLin[3]
CSO027_3 SPP097 Modification	$ 10,900,000	04/01/2026 OPCC TYLin[3]
CSO053_1.4 Sidney Street Sewer Improvement Project	$ 5,400,000	04/01/2026 OPCC TYLin[2]
CSO016_1 Charles Street Weir Modification	$ 3,720,000	04/01/2026 OPCC TYLin[3]
Sewer Projects		
CSO017_1.1 SPP054 Sewer Separation	$ 4,130,000	05/01/2026 OPCC JMD[3]
CSO064_2 Perry Street Sanitary Sewer	$ 13,600,000	05/01/2026 OPCC JMD[3]
Ventilation Projects		
System_2 Schiller Park Ventilation Facility	$ 8,600,000	04/20/2026 OPCC Arcadis[3]
Total Selected Alternative without GI Cost	**$ 1,948,448,000**	
Green Infrastructure Projects		
20% GI Implementation	$ 92,800,000	04/01/2026 OPCC Stantec[2]
Total Green Infrastructure Cost	**$ 92,800,000**	
Total Selected Alternative Cost	**$ 2,041,248,000**	

(1) Year 2026 dollars. Project costs rounded to the third significant figure. This estimate includes capital costs for projects that have yet to be encumbered by BSA.

(2) Includes construction contingency only.

(3) Includes construction, engineering, administrative, and legal contingencies.

APPENDIX F: 2025 Public Participation Plan Summary Report

BUFFALO
SEWER AUTHORITY

PROPOSED AMENDED LONG-TERM CONTROL PLAN

Public Participation Plan Summary Report

November 30, 2025



BSA Capital Projects Program Management Team:

TYLin

Arcadis | JM Davidson Engineering | Hallmark Planning & Development | e3 Communications | Watts Architecture & Engineering | CORE Environmental | Atlantic Testing Laboratories | Frandina Engineering and Land Surveying | KHEOPS Architecture, Engineering and Survey | International Institute of Buffalo | Jade Stone Engineering | NASCO Construction Services | JKMuir | People Inc. | CWD Consulting | UDC Pro. Inc.

Table of Contents

SECTION 1 INTRODUCTION 1

1.1 Public Participation Plan Overview 1
1.2 Purpose of the Public Participation Plan Summary Report 2
1.3 Ongoing Engagement 2

SECTION 2 PROGRAM OUTREACH ACTIVITIES AND RESOURCES 2

2.1 Public Participation Meetings and Events 2
2.2 Public Sector and Representatives Meetings and Events 9
2.3 Online Engagement 11
2.4 Queen City Clean Waters Fair 11
2.5 Public Communications Campaign 13
2.6 Community Partnership Program 15
2.7 Outreach Accessibility 15
2.8 Outreach Resources 15

SECTION 3 PROJECT SPECIFIC COMMUNITY OUTREACH 16

3.1 Scajaquada Creek & Black Rock Canal Project 16
3.2 Roosevelt Park Offline Storage Facility 18
3.3 East Delevan Sewer Improvements Project 19

SECTION 4 ENGINEERING PARTICPATION PROCESS 22

4.1 Background 22
4.2 Preliminary Proposed Amended LTCP Projects Implementation 23
4.3 Projects Validation 27
4.4 Alternatives Analysis 30
4.5 Outcomes 31
4.6 Next Steps 31

List of Tables

Table 1: Program-Wide Attended Community Engagement Events 3
Table 2: QCCW Public Participation Forums 8
Table 3: Stakeholder Advisory Committee Meetings 9
Table 4: QCCW Fair Television and Radio Placements 13
Table 5: QCCW Fair Online/Print Coverage 14
Table 6: SC&BRC Outreach Events 17

Table of Contents

Table 7: Roosevelt Park Outreach Events 18
Table 8: E. Delavan Outreach Events 20
Table 9: E. Delavan Project - Attended Community Events 21
Table 10: OLS Utilization Report 27
Table 11: Project Feasibility Assessment Criteria 28
Table 12: Project Feasibility Results Summary 28
Table 13: Summary of Proposed Alternatives 30

List of Appendices

APPENDIX A:	Certification of Completion
APPENDIX B:	Certification Statement
APPENDIX C:	Public Notifications
APPENDIX D:	Outreach Presentations
APPENDIX E:	Social Media Posts
APPENDIX F:	Print Ads & Press Releases
APPENDIX G:	QCCW Fair
APPENDIX H:	Community Questions

SECTION 1 INTRODUCTION

The Buffalo Sewer Authority (BSA, Buffalo Sewer) provides wastewater conveyance and treatment services to approximately 450,000 residents and businesses located in the City of Buffalo and surrounding communities. BSA operates the Bird Island Wastewater Treatment Facility (WWTF), originally built in 1935, and later expanded in the late 1970s to include secondary treatment capabilities. The WWTF treats wastewater collected from the City of Buffalo service area and discharges the treated effluent to the Niagara River under authority of the Clean Water Act and the State Pollutant Discharge Elimination System (SPDES) permitting process. BSA owns, operates, and maintains the collection system that serves the City of Buffalo service area and the interceptor system, including interceptors and pump stations, that convey flow from the surrounding communities and the City residents to the WWTF.

In accordance with an Administrative Order (AO) from the New York State Department of Environmental Conservation (NYSDEC), the United States Environmental Protection Agency (USEPA), and the United States Department of Justice (USDOJ), Buffalo Sewer developed a Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP) that was approved on March 18, 2014 (2014 LTCP). This 2014 LTCP aimed to minimize CSO activations in the collection system and mitigate flow surges at the WWTF.

The 2014 LTCP compliance criteria involve limiting the number of CSO activations per typical year for each receiving waterbody. Projects were proposed according to BSA's Combined Sewer System (CSS) hydraulic model to meet the CSO activation requirements. The hydraulic model was updated and recalibrated to reflect the current conditions of the collection system following the approval of the 2014 LTCP.

The updated model indicated that some initially planned projects were no longer viable, while others could be further optimized to meet the established targets. BSA undertook an optimization process that resulted in the 2024 LTCP Selected Alternative Memorandum, the 2024 Bridging Document, and the 2024 Control Project Schedule. These three documents comprised the Proposed Amended LTCP, also known as the Queen City Clean Waters Initiative (QCCW).

BSA developed a Public Participation Plan (PPP) to accompany the Proposed Amended LTCP in accordance with the NYSDEC Commissioner Policy-29 (CP-29), Environmental Justice and Permitting. The PPP details procedures and a schedule for informing the public about actions and projects outlined in the Proposed Amended LTCP. The PPP aimed to address environmental justice concerns and promote public involvement in both the environmental permit review process and the NYSDEC application of the State Environmental Quality Review Act (SEQRA).

Buffalo Sewer's PPP was approved by NYSDEC on October 1, 2024. BSA agreed to complete the activities outlined in the PPP within 12 months of NYSDEC's approval of the plan. This Summary Report documents the implementation and completion of all activities carried out in accordance with the approved PPP between September 30, 2024, and September 30, 2025.

1.1 Public Participation Plan Overview

The approved PPP detailed stakeholder engagement, outreach material development and distribution, the types of public meetings and events that would be held or attended, as well as the approach to public meetings, document repositories, implementation schedule, and ongoing public participation activities for individual projects. The PPP included commitments to the following actions and activities throughout the public participation plan implementation period:

- Creation of a Stakeholder Advisory Committee (SAC) to maintain ongoing community outreach throughout implementation of the Proposed Amended LTCP
- Distribution of easy-to-understand educational materials to stakeholders
- Attendance at a minimum of 50 community events
- At least 25 posts to BSA's social media channels
- A comprehensive webpage developed with information about public forums, a means to submit comments, and an interactive map showing the Control Projects
- A variety of meetings to provide ample opportunity to relay information to community members and stakeholders, and to solicit questions and comments on the proposed work and its impact on the surrounding neighborhood
- Regularly updated in-person and online document repositories
- Project-specific public participation plans for Control Projects as implementation progresses

1.2 Purpose of the Public Participation Plan Summary Report

This Public Participation Plan Summary Report was developed to summarize the completed public participation process, the concerns collected, and the resolved and outstanding issues identified to date. **Section 1** provides a background on BSA's actions to date to comply with the NYSDEC and USEPA regulations, including an overview of the approved Public Participation Plan. **Section 2** details the program-specific outreach activities that were conducted while **Section 3** summarizes public feedback from the project-specific outreach activities that were conducted. **Section 4** describes the engineering participation process, including the involvement of a Program Management Team (PMT) and a review of the Control Projects in the Proposed Amended LTCP, the outcomes and next steps for the Proposed Amended LTCP.

1.3 Ongoing Engagement

Beyond the initial rollout of the PPP, BSA has committed to a continuous public information and participation program throughout the Proposed Amended LTCP's implementation. This includes:

- Hosting project-specific public meetings during early development phases
- Regularly updating written materials and the LTCP webpages
- Providing timely updates on project status, changes, and contact information
- Maintaining open channels for public comments and questions
- Hosting the now Annual Queen City Clean Waters Fair
- Continuing attendance at committee meetings and events
- Continuing development of the Community Partnership Program

SECTION 2 PROGRAM OUTREACH ACTIVITIES AND RESOURCES

2.1 Public Participation Meetings and Events

2.1.1 Community Group Meetings and Events

Buffalo Sewer, in collaboration with the Common Council, the Partnership for the Public Good, and the Buffalo Board of Block Clubs of Erie County, committed to engaging Buffalo's established community groups and block clubs as part of the approved PPP. Many of these organizations have regular meetings and serve as trusted neighborhood anchors.

To ensure meaningful engagement, BSA coordinated over 100 outreach efforts, averaging about two events per week, between September 30, 2024, and September 30, 2025, to request opportunities to present the Proposed Amended LTCP, rebranded as the Queen City Clean Waters Initiative in public communications. Objectives included sharing a Proposed Amended LTCP overview, communicating project descriptions and updates, and gathering feedback from residents and stakeholders directly impacted by the Control Projects.

2.1.1.1 Block Clubs and Association Events

BSA attended and presented at various block blub meetings and taxpayer association gatherings across Buffalo. These meetings provided direct access to residents and neighborhood representatives, allowing for tailored discussions about nearby Control Projects and potential project impacts.

BSA attended the Northland Taxpayers Association Meeting on Tuesday, April 8, 2025, the Bickford, Edith, Alice Block Club Meeting on Thursday, June 12, 2025, the Brunswick Block Club Party and the Ellicott District Stakeholder Meeting on Saturday, July 19, 2025, and the Winslow Ave FK Block Club Meeting on Saturday, September 27, 2025.

2.1.1.2 City-Wide Events

In addition to neighborhood-level meetings, BSA participated in a range of City-wide events to reach broader audiences. These events offered informal and accessible platforms for engagement, allowing BSA to connect with residents in community-centered settings. Over 100 events were attended across all nine council districts, and nearly 3,500 printed materials were distributed to participants.

These events included, but were not limited to:

Table 1: Program-Wide Attended Community Engagement Events

Event Type	Event Name	Event Date
Public Agency Event	Buffalo Fire Department Open House - Niagara District	Saturday, October 5, 2024
Public Agency Event	Buffalo Fire Department Open House - North District	Saturday, October 5, 2024
Public Agency Event	Buffalo Fire Department Open House - Ellicott District	Saturday, October 5, 2024
Public Agency Event	Buffalo Fire Department Open House - University District	Saturday, October 5, 2024
District Event	Masten District Breakfast	Saturday, October 19, 2024
Recruitment Event	Central Terminal Construction Career Fair	Tuesday, November 12, 2024
City Wide Event	Buffalo Common Council Annual Winter Preparedness Event	Wednesday, November 13, 2024
City Wide Event	Buffalo Common Council Annual Winter Preparedness Event	Friday, November 15, 2024
Community Organization Event	Open Buffalo Eco Justice Block Party	Saturday, November 16, 2024
District Event	Ellicott District's Soulful Xmas Market	Saturday, December 7, 2024

Public Agency Event	Niagara Frontier Transportation (NFT) Bailey Avenue Bus Rapid Transit (BRT) Open House	Thursday, February 6, 2025
District Event	University District Breakfast	Saturday, February 8, 2025
Public Agency Event	Niagara Frontier Transportation (NFT) Bailey Avenue Bus Rapid Transit (BRT) Open House	Saturday, February 8, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Highgate Heights Elementary	Saturday, March 8, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Lovejoy Discovery Elementary School	Saturday, March 15, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Riverside High School	Saturday, March 15, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – North Park Community Elementary School	Saturday, March 22, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Harvey Austin Elementary School	Saturday, March 22, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, April 2, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning Envision Neighborhood - Ellicott	Thursday, April 3, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Charles R. Drew Science Magnet School	Saturday, April 5, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Stanley M. Makowski Early Childhood Center	Saturday, April 5, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Lafayette International	Saturday, April 5, 2025
Block Club and Association Event	Northland Taxpayers Association Meeting	Tuesday, April 8, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, April 9, 2025
Block Club and Association Event	University District Block Club Coalition	Tuesday, April 15, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, April 16, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, April 23 2025

Neighborhood Event	Buffalo's Office of Strategic Planning (OSP) Envision Neighborhood – Lower West Side	Thursday April 24, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, April 30, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – West Hertel Academy	Saturday, May 3, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, May 7, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning (OSP) Envision Neighborhood – Seneca Babcock	Wednesday, May 7, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, May 14, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning (OSP) Envision Neighborhood – Fillmore-Leroy	Tuesday, May 20, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, May 21, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, May 28, 2025
Community Organization Event	Buffalo Say Yes' Saturday Academy – Herman Badillo	Saturday, May 31, 2025
Community Organization Event	Buffalo Niagara Waterkeeper Weekend	Saturday, May 31, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning (OSP) Envision Neighborhood – Kenfield	Tuesday, June 3, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, June 4, 2025
City Wide Event	Buffalo Pride Parade	Sunday, June 6, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, June 11, 2025
Public Agency Event	Niagara Frontier Transportation (NFTA) Bailey Avenue Bus Rapid Transit (BRT) Outreach Event	Wednesday, June 11, 2025
Block Club and Association Event	Bickford, Edith, Alice Block Club	Thursday, June 12, 2025
City Wide Event	Buffalo Juneteenth Festival	Saturday, June 14, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning Envision Neighborhood – Allentown	Tuesday, June 17, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, June 15, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, June 25, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning Envision Neighborhood – North Park	Wednesday, June 25, 2025
District Event	South Buffalo Farmers Market	Sunday, June 29, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning Envision Neighborhood – West Side	Tuesday, July 1, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, July 2, 2025

City Wide Event	Buffalo City Clean Sweep	Wednesday, July 9, 2025
Neighborhood Event	Jefferson Avenue Friday Night Live	Friday, July 11, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, July 16, 2025
Community Organization Event	Trusted Gives and Dion's Dreamers' 716 CommUNITY Day	Friday, July 16, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning Envision Neighborhood – Seneca Cazenovia	Thursday, July 17, 2025
Block Club and Association Event	Brunswick Block Club Party	Saturday, July 19, 2025
City Wide Event	Pappy Martin Jazz Festival - Week 1	Sunday, July 20, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, July 23, 2025
City Wide Event	Italian Heritage Festival	Friday, July 25, 2025
Neighborhood Event	Jefferson Avenue Friday Night Live	Friday, July 25, 2025
Public Agency Event	Buffalo Police Department Community A - District Day	Saturday, July 26, 2025
City Wide Event	Pappy Martin Jazz Festival - Week 2	Sunday, July 27, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, July 30, 2025
Neighborhood Event	Buffalo's Office of Strategic Planning Envision Neighborhood – Central	Thursday, July 31, 2025
Public Agency Event	Buffalo Police Department Community D - District Day	Thursday, July 31, 2025
City Wide Event	Pine Grill Jazz Reunion - Week 1	Sunday, August 3, 2025
City Wide Event	Buffalo City's National Night Out	Tuesday, August 5, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, August 6, 2025
Neighborhood Event	Jefferson Avenue Friday Night Live	Friday, August 8, 2025
City Wide Event	Pine Grill Jazz Reunion - Week 2	Sunday, August 10, 2025
City Wide Event	Asian Food & Cultural Festival	Sunday, August 10, 2025
City Wide Event	Slow Roll Buffalo	Monday, August 11, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, August 13, 2025
City Wide Event	Puerto Rican and Hispanic Day Parade of WNY	Wednesday, August 16, 2025
City Wide Event	Central Terminal's Back to School Giveaway	Wednesday, August 16, 2025
Community Organization Event	Slow Roll Buffalo	Monday, August 18, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, August 20, 2025
Community Organization Event	Buffalo Waterkeeper Weekend	Friday, August 22, 2025
City Wide Event	Buffalo Funk Fest Block Party	Friday, August 22, 2025
City Wide Event	Beau Fleuve Music & Arts Festival	Sunday, August 24, 2025
City Wide Event	Buffalo Funk Fest	Sunday, August 24, 2025
Community Organization Event	Slow Roll Buffalo	Monday, August 25, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, August 27, 2025
Community Organization Event	Beverly Gray Block Party	Wednesday, August 27, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, September 3, 2025

City Wide Event	Party In Park and Community Resource Fair hosted by Assembly Member Jon Rivera	Saturday, September 6, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, September 10, 2025
Recruitment Event	University of Buffalo's Hydrologic Engineering Class – Speaking Engagement	Wednesday, September 16, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, September 17, 2025
District Event	Ellicott District Breakfast	Saturday, September 20, 2025
District Event	Masten District Breakfast	Saturday, September 20, 2025
District Event	South Buffalo Farmers Market	Sunday, September 21, 2025
City Wide Event	Buffalo City Clean Sweep	Wednesday, September 24, 2025
Block Club and Association Event	Winslow FK Block Club	Saturday, September 27, 2025

2.1.2 Milestone Events and Celebrations

In addition to attending established community events, Buffalo Sewer also hosted milestone events to open the doors for the public community to learn more about the Proposed Amended LTCP and Control Project milestones.

On October 16th, 2024, alongside acting Mayor Chris Scanlon, BSA unveiled the Proposed Amended LTCP – Queen City Clean Water Initiative at the launch event. The event was held at Freedom Park in Buffalo, NY.

On April 19th, 2025, BSA celebrated their 90th anniversary as well as the groundbreaking of the East Delavan Sewer Improvements Project. The event was held on the corner of Jefferson Avenue and Florida Street.

2.1.3 Scheduled District Meetings

Many Council members held routine meetings within their Common Council Districts to provide forums for direct engagement with constituents. BSA coordinated with Council member staff to leverage opportunities to present project updates and gather feedback from attendees.

Participation in regular Council Meetings and District Stakeholder Breakfasts allowed BSA to tailor communications to each district's priorities and concerns. These engagements helped build trust and transparency between BSA and the community, while also informing project planning with local input. BSA attended the following District Stakeholder Breakfasts:

- Masten District Breakfast – Saturday, October 19, 2024
- University District Breakfast – Saturday, February 8, 2025
- Ellicott District Breakfast – Saturday, September 20, 2025
- Masten District Breakfast – Saturday, September 20, 2025

2.1.4 Public Participation Forums

To garner maximum interest, participation, and feedback from constituents, BSA, in consultation with Common Council staff, scheduled nine Common Council District Meetings—renamed Public Participation Forums—within city district limits. These forums were held at community centers across Buffalo and provided residents with the opportunity to learn about the Queen City Clean Waters Initiative and the $1 billion investments in sewer projects planned in the next 15 years.

Each forum included a presentation that provided the history of Buffalo Sewer, an overview of the Control Projects proposed for that district, including preliminary project scopes, projected costs and timelines. The forums also included an overview of the community engagement activities to date and proposed for the future, and opportunities for the public to stay engaged and provide feedback. Attendees were encouraged to ask questions and share comments throughout the session.

The district meetings were hosted:

Table 2: QCCW Public Participation Forums

Event	Location	Date
South District Public Participation Forum	Buffalo Irish Center	Thursday, April 17, 2025
University District Public Participation Forum	Gerard Place	Thursday, April 24, 2025
Masten District Public Participation Forum	Northland Workforce Training Center	Monday, April 28, 2025
Lovejoy District Public Participation Forum	Schiller Park Senior Center	Tuesday, May 13, 2025
Fillmore District Public Participation Forum	Matt Urban Center	Wednesday, May 14, 2025
Ellicott District Public Participation Forum	Pratt Willert Community Center	Tuesday, May 20, 2025
Delaware District Public Participation Forum	Dash's Market	Tuesday, June 10, 2025
Niagara District Public Participation Forum	Belle Center	Thursday, June 12, 2025
North District Public Participation Forum	Northwest Buffalo Community Center	Tuesday, June 17, 2025

To increase accessibility and participation, each in-person public participation forum provided interpretation and translation services and a meal. Recordings and presentation materials from these forums are available online at https://buffalosewer.org/construction-projects/queen-city-clean-waters/ and reference materials are documented in ***Appendix C***.

2.1.5 Virtual Meetings

For those that were unable to attend the live Public Participation Forums, a virtual meeting was held on Saturday, July 12th, 2025, from 9:00 am - 11:00 am. The agenda for this meeting included the following:

- Overview of Buffalo Sewer and Queen City Clean Waters
- Question & Answer (Q&A) session

- Community Engagement approach and opportunities
- Walkthrough of the new Queen City Clean Waters interactive website https://buffaloqccw.org/
- Final Q&A and closeout

Participants were encouraged to ask questions and provide feedback using the Chat feature. The virtual session was recorded and published on BSA's YouTube channel.

2.1.6 Stakeholder Advisory Committee Meetings

The Stakeholder Advisory Committee (SAC) was established in January 2025 to ensure that community voices are meaningfully integrated into the planning and execution of the Control Projects. The SAC brings together representatives from diverse community organizations, advocacy groups, and local government selected for their deep ties to Buffalo's neighborhoods, particularly those most impacted by environmental and infrastructure challenges.

Upon its formation, the SAC began meeting monthly with representatives from Buffalo Sewer and the Control Projects design team. These meetings were held in accordance with the New York State Open Meetings Law, reinforcing BSA's commitment to transparency and public accountability. The inaugural meeting introduced members to the goals of the Proposed Amended LTCP, the structure of the Public Participation Plan, and the critical role the SAC would play in shaping equitable outcomes.

The committee's input influenced how BSA communicated project impacts, identified opportunities for community betterment, and ensured that Environmental Justice communities are prioritized.

Table 3: Stakeholder Advisory Committee Meetings

Event	Location	Date
SAC Monthly Meeting	In-Person at the BSA Board Room	Thursday, January 23, 2025
SAC Monthly Meeting	Virtual	Tuesday, February 25, 2025
SAC Monthly Meeting	Virtual	Tuesday, March 25, 2025
SAC Monthly Meeting	Virtual	Tuesday, April 22, 2025
SAC Monthly Meeting	Virtual	Tuesday, May 27, 2025
SAC Monthly Meeting	Virtual	Tuesday, June 24, 2025
SAC Monthly Meeting	Virtual	Tuesday, July 22, 2025
SAC Monthly Meeting	Virtual	Tuesday, August 26, 2025
SAC Monthly Meeting	Virtual	Tuesday, September 23, 2025

SAC Meeting Presentations are included in ***Appendix D***. Meeting minutes are also stored on the QCCW Webpage.

2.2 Public Sector and Representatives Meetings and Events

2.2.1 Meetings with Public Sector Organizations

Broad engagements with public sector organizations, including the Buffalo Office of Strategic Planning, Real Estate Division, Water Board, Police Department, Niagara Frontier Transportation Authority, New York

Department of Transportation and Erie County Water Authority were conducted throughout the public participation process.

The Buffalo Department of Public Works, Parks & Streets (DPW) expressed particular interest in monthly coordination meetings to establish and maintain awareness of the Control Projects design progress, milestones, and potential impacts to public land and parks. DPW requested that Control Projects consider the previously developed Parks Master Plan and align with proposed park improvements, wherever feasible.

During the monthly meetings with DPW, the Edison Martha Offline Storage Tank (OLS), renamed Roosevelt Park, Schiller Park OLS, and Erie Basin Marina OLS, renamed Waterfront Park, projects were discussed in further detail. DPW leadership provided three mandates during these discussions:

1) No trees were to be removed as part of the projects,
2) No new buildings were to be constructed unless they could align with current park Master Plans due to safety issues, and
3) No access hatches were to be permitted in playing fields, including buried access hatches.

DPW expressed that existing buildings in the park could be evaluated for small additions, and in cases where bathroom facilities are needed, new buildings could be evaluated. Overall, DPW provided preference for the location of above ground infrastructure and below ground access points to be within pavement or hard surfaces to avoid potential trip hazards.

Community feedback was also incorporated into conversations with DPW. Opportunities for park betterments, such as neighborhood walking paths that could be included under the Control Project scopes of work were raised. Through these discussions, DPW advised the project teams to involve stakeholders early on, especially when easements and land acquisition are necessary.

BSA has taken steps to conserve Buffalo's parks to the extent possible. Site investigations and project designs were modified to minimize impacts to public parks, but there are remaining concerns for the long-term operation and maintenance of the proposed facilities.

2.2.2 Meetings with Common Council Members

A series of one-on-one meetings with Council members was conducted to raise awareness of the Proposed Amended LTCP and its impacts on the stakeholders and residents represented by each Council member.

These meetings provided the platform for the Council members and staff to become knowledgeable about the Proposed Amended LTCP, enabling them to respond effectively to community questions and to proactively share project information through their public communications.

As part of the 30% design phase for each project, geotechnical surveying work was required. Prior to the commencement of this fieldwork, Buffalo Sewer notified the relevant Council member's office of the upcoming activities. BSA also distributed public notification flyers to nearby residents and businesses to ensure transparency and community awareness of the project activities.

Throughout the PPP implementation period, an increase in public questions and concerns about the Control Projects activities and impacts was reported by Council members. Despite engagement efforts,

some examples of residents that were unaware of project activities were raised by Council members throughout this period. These findings highlight the need for early, frequent, and ongoing engagement.

2.2.3 Public Presentations

The PMT has also delivered several public presentations regarding the QCCW Initiative, including "Queen Cities Clean Waters: Leveraging Infrastructure Projects into Community Investment" at the 2025 NYWEA Conference and "From Brick Tunnels to Smart Sewers" to the University at Buffalo on September 16., School of Hydrologic Engineering. These presentations can be found in ***Appendix D.***

2.3 Online Engagement

2.3.1 Social Media and Digital Outreach

To complement in-person engagement, BSA developed and shared over 50 social media posts across its platforms, such as LinkedIn, Facebook, Instagram and X. These posts included:

- Control Project updates
- Public meeting announcements
- Educational content
- Links to resources and translated materials

Screen shares of public posts are included in ***Appendix E***.

2.3.2 Webpage Development

A dedicated interactive website (buffaloqccw.org) launched in March of 2025 to serve as a central hub for public information. Key features include:

- Clear explanations of Control Project changes and rationale
- A calendar of public meetings with accessibility accommodations
- A public comment and question submission form
- A survey form to receive feedback on engagement preferences
- An interactive map showing project locations and neighborhood-specific impacts
- Document repositories
- Frequently Asked Questions

Additionally, the official BSA website (buffalosewer.org) was updated to include a subpage for the QCCW Control Projects that includes:

- Contact information for project managers, including designated office hours
- Downloadable written materials, including translated versions
- A list of organizations represented by the SAC members
- Document repositories

2.4 Queen City Clean Waters Fair

BSA hosted its inaugural Queen City Clean Waters Fair (QCCW Fair, Fair) on Friday, August 29, 2025, from 4:00 PM to 7:00 PM at Hoyt Lake in Delaware Park. This free, family-friendly event was open to the public and was designed to celebrate community engagement while educating attendees about Buffalo's QCCW initiative.

The QCCW Fair featured overviews of the Control Projects for each Council District shown on nine large maps and provided the opportunity for participants to ask questions directly to project leads. Additionally, the Fair included water and environment educational activities for all ages, including interactive watershed demonstrations, virtual tours of clean water projects, and guided tours of BSA's sewer maintenance fleet.

The Fair included games and prizes, bookbag and book giveaways, food, and music to provide a festive and informative atmosphere for learning about the improvements to public health, environmental resilience, and quality of life across Buffalo.

A few highlights from the QCCW Fair include:

- 127 families or individuals signed in via the registration forms
- 110 book bags were distributed to participants who completed multiple activity stations
- Over 60 volunteers from BSA, PMT and Buffalo Community
- 35 TV and Radio placements yielding 455,000 impressions
- 15 STEAM Activities hosted by community partners
- 9 Council District Project Demonstrations

The QCCW Fair led to an increase in engagement activity on the QCCW interactive website. From the month of April to August, the website engagement spiked to:

- 2, 666 views (the total number of times a page is viewed)
- 1,966 visits (unique visits to the website)
- 1,318 visitors (unique visitors to the website)
- 64 Survey Respondents

Not only was the Fair used to inform the public community at large, but it was also successful at informing and collaborating with community partners in the city of Buffalo and community volunteers. Participating partners that hosted STEAM activity tables included:

- University at Buffalo Engineers for a Sustainable World – Precious plastics and Eco-brick construction
- Buffalo Niagara Waterkeeper – Watershed demonstration
- Aquarium of Niagara – Water testing and animal demonstration
- Buffalo Area Engineering Awareness for Minorities (B.E.A.M) – Design a water tower
- Phoenix Innovation Group – creativity and water resilience activity
- Stantec – Storm water management demonstration
- Erie County Department of Environment and Planning (ECDEP) – Soil pots and Importance of trees
- Resource Waste Solutions (RWS) – Environmental pollution and waste management
- Northland Workforce Training Center – Workforce Development information
- Erie County Low-Income Program for Sustainable Energy (ECLIPSE) – Solar panels
- U.S. Fish and Wildlife Service – Environmental conservation and Buffalo waterways
- Buffalo 34 and More Recycles – Activity sheets and reusable shopping bags

Additional vendors were culturally relevant, community-centered and family-focused:

- Second Chapter Bookstore – Reading and distribution of the book "Celeste Saves the City" (civil engineering focused books previously purchased by BSA)
- Yoga Me Blac – Water and Sound Bowls Activity
- Twisted Icee – flavored iced slushies

- Moneybag dumplings – variety of halal dumplings and Asian cuisine
- Half Luna Empanadas – variety of empanadas and Hispanic cuisine

These partnerships helped amplify outreach efforts, provided educational resources, and strengthened the understanding of the Proposed Amended LTCP for these community representatives. Copies of the visual information distributed at the fair can be found in ***Appendix G.***

2.5 Public Communications Campaign

Throughout the PPP implementation period, the Queen City Clean Waters initiative (Proposed Amended LTCP) was featured in a variety of television and radio placements:

Table 4: QCCW Fair Television and Radio Placements

Outlet	Date	Title	Local Viewership
WIVB-BUF (CBS)	Thursday, August 28, 2025	Daytime Buffalo	5,823
WIVB-BUF (CBS)	Friday, August 29, 2025	Wake Up 5am	16,819
CW 23	Friday, August 29, 2025	Wake Up 5am	3,279
WIVB-BUF (CBS)	Friday, August 29, 2025	Wake Up 6am	25,996
CW 23	Friday, August 29, 2025	Wake Up-7AM	22,490
CW 23	Friday, August 29, 2025	Wake Up-7AM	21,326
CW 23	Friday, August 29, 2025	Wake Up 9am	15,676
CW 23	Friday, August 29, 2025	Daytime Buffalo	6,896
WIVB-BUF (CBS)	Friday, August 29, 2025	News 4 at Noon	41,555
WBFO-FM (Radio)	Friday, August 29, 2025	N/A	41,000
Spectrum News Buffalo	Friday, August 29, 2025	Time Warner Cable News Buffalo	1,491
WIVB-BUF (CBS)	Friday, August 29, 2025	News 4 at 11	36,137
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	1,344
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	3,493
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	5,499
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	2,479
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	3,865
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	1,099
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	4,243
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	1,079
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	2,513
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	1,445

Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	3,117
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	2,824
Spectrum News Buffalo	Saturday, August 30, 2025	Time Warner Cable News Buffalo	3,883
WGRZ-BUF (NBC)	Monday, August 25, 2025	Ch 2 News First at Four	6,773
WGRZ-BUF (NBC)	Monday, August 25, 2025	Ch 2 News First at Four	7,686
WGRZ-BUF (NBC)	Monday, August 25, 2025	Ch 2 News First at Four	7,686
WGRZ-BUF (NBC)	Monday, August 25, 2025	Channel 2 News at 5:30	35,849
WGRZ-BUF (NBC)	Monday, August 25, 2025	Channel 2 News	52,956
WGRZ-BUF (NBC)	Monday, August 25, 2025	Buffalo Nightly News	16,405
WGRZ-BUF (NBC)	Tuesday, August 26, 2025	Early Daybreak	11,079
WGRZ-BUF (NBC)	Tuesday, August 26, 2025	Daybreak	32,940

Throughout the PPP implementation period, the Queen City Clean Waters initiative (Proposed Amended LTCP) was featured in a variety of online and print articles:

Table 5: QCCW Fair Online/Print Coverage

Source	Title	Date	Link
WYRK	Queen City Clean Water Fair – Happening Friday night from 4–7 pm at Hoyt Lake.	Friday, August 29, 2025	https://wyrk.com/things-to-do-buffalo-new-york/
Buffalo News	COMING CLEAN – Thirteen organizations will offer environmental activities and displays at Hoyt Lake.	Wednesday, August 27, 2025	https://buffalonews.com/news/local/column/article_a2a58647-391a-4636-9ec8-899849618ddf.html
WGRZ	Queen City Clean Waters Fair	Monday, August 25, 2025	https://www.wgrz.com/video/news/local/queen-city-clean-waters-fair-this-friday/71-699ee07a-bd96-4188-a4d6-872c13ff4150
Buffalo News	The Queen City Clean Waters Initiative is underway, investing $1 billion in infrastructure.	Tuesday, August 5, 2025	https://buffalonews.com/opinion/article_590ecf25-5203-46ba-8f01-6474378b8b44.html
Buffalo Criterion	Local organizations will be participating in the Queen City Clean Waters Fair.	Wednesday, August 20, 2025	https://www.thebuffalocriterion.com/local-news-1/local-organizations-to-participate-inbuffalo-sewer-queen-city-clean-waters-fairnbsp?rq=Clean%20Waters%20Fair

Additional print ads can be found in ***Appendix F.***

2.6 Community Partnership Program

The Community Partnership Program (CPP) is a long-term investment by Buffalo Sewer that extends the impact of the Proposed Amended LTCP beyond water infrastructure to include social and economic development. A key goal of the program is to connect local community organizations and public schools with the contractors and consultants working on large scale Buffalo Sewer projects, creating pathways for collaboration, education, and opportunity. The CPP began development in 2024 and is expected to launch to the public, contractors, and consultants by the end of 2025.

2.7 Outreach Accessibility

As part of its commitment to transparency and inclusive engagement, Buffalo Sewer implemented a robust strategy to distribute clear, accessible, and multilingual information about the Proposed Amended LTCP projects. This effort ensured that all Buffalo residents, especially those in Environmental Justice and Disadvantaged Communities, were informed, empowered, and able to participate meaningfully in the planning and implementation process.

Buffalo Sewer made language access a central component of its outreach strategy in recognition that approximately 17% of Buffalo residents have limited English proficiency. In partnership with the International Institute of Buffalo, BSA ensured that all public-facing materials were translated into the city's most spoken languages: Spanish, Arabic, Karen, Somali, Burmese, Swahili, Bengali, and French. These translations help ensure that residents from diverse linguistic backgrounds can fully understand and engage with the Proposed Amended LTCP process. In addition to written translations, interpreting services were provided by People Inc. during the Public Participation Forums and the QCCW Fair. These services included interpretation in the languages listed above, as well as American Sign Language (ASL), which ensured that meetings and events were accessible to all members of the community. These materials can be found in ***Appendix C*** of the report.

2.8 Outreach Resources

To support transparency and encourage meaningful public engagement throughout the implementation of the Proposed Amended LTCP, Buffalo Sewer established a network of both physical and digital document repositories where the community could access up-to-date information about the LTCP projects and public participation opportunities.

2.8.1 In-Person Document Repositories

Physical repositories were developed in accessible public facilities across Buffalo, including BSA offices and branches of the Buffalo & Erie County Public Library. These locations were regularly monitored to ensure that sufficient copies of materials were available and that no information was missing. Materials included general LTCP Project brochures, project-specific flyers, public meeting notices, and translated documents. The following facilities were utilized as in-person document repositories:

- Central Library (1 Lafayette Square)
- Crane Branch (633 Elmwood Ave.)
- Dudley Branch (2010 South Park Ave.)
- East Clinton Branch (1929 Clinton Street)
- Elaine M. Panty Branch (633 Elmwood Ave.)
- Frank E. Merriweather, Jr. Branch (1324 Jefferson Ave.)

- Isaias Gonzalez-Soto Branch (280 Porter Ave.)
- Leroy R. Coles, Jr. Branch (1187 E. Delavan Ave.)
- North Park Branch (975 Hertel Ave.)
- BSA Main Office (Room 1038, City Hall, 65 Niagara Square)
- BSA Facility Office (Administrative Building, Base of West Ferry Street)

2.8.2 Online Document Repositories

To expand accessibility, BSA also maintains a comprehensive set of digital resources:

- BSA QCCW Website (https://buffalosewer.org/construction-projects/queen-city-clean-waters/): Includes downloadable QCCW and project specific materials, project updates, public meeting schedules, and contact information.
- QCCW Interactive Website (https://buffaloqccw.org/): Features an interactive map showing the QCCW project locations, QCCW timeline, and frequently asked questions, public forum, community outreach survey, contact information.
- BSA YouTube Channel (https://www.youtube.com/@BuffaloSewer/featured): Hosts recordings of public meetings and forums, allowing residents to stay informed even if they cannot attend in person. Also has the recording of BSA board meetings as well as educational materials.

These online platforms are updated regularly and include screenshots, links, and documentation ensure transparency and ease of access.

SECTION 3 PROJECT SPECIFIC COMMUNITY OUTREACH

As outlined in Section 7 of the approved LTCP PPP, BSA committed to engaging the public on individual projects. When the Proposed Amended LTCP was rebranded as the QCCW Initiative in October 2024, several projects that originated under the Proposed Amended LTCP had already began community engagement outreach. This section highlights project-specific community outreach completed during the reporting period for those individual projects including:

- Scajaquada Creek & Black Rock Canal Projects (SC&BRC)
  - CSO006_2 Gates Circle RTC
  - CSO053_3.3 Bailey & Minnesota SPP254 Modification
- Roosevelt Park OLS (formally known as the Edison Martha OLS)
- East Delevan Sewer Improvements Project (CSO-053_11 SPP 333)

These projects began prior to the QCCW rebrand and continued under the Proposed Amended LTCP scope of work.

3.1 Scajaquada Creek & Black Rock Canal Project

3.1.1 Project Scope

The Scajaquada Creek & Black Rock Canal (SC&BRC) Smart Sewers project covers two primary RTC Smart Sewer sites located at Bailey Avenue & East Amherst Street and Gates Circle & Delaware Avenue, as well as modifications of three ancillary sites: Niagara Metering Station, Quarry Pump Station, and Sewer Patrol Point (SPP) 338 at Bailey Avenue and Kerns Avenue. The RTC sites will operate in conjunction with the ancillary sites that will provide information regarding the available capacity in specific areas of the collection system at any given moment, allowing the main RTC sites to operate effectively. The scope

includes several structural modifications as well as installation of mechanical, electrical, and instrumentation and control equipment.

3.1.2 Community Outreach Events and Materials

Table 6: SC&BRC Outreach Events

Stakeholder	Engagement Method	Date	Material
Ellicott District	QCCW PPP Forum at Pratt Willert Community Center	Tuesday, May 20, 2025	Presentation slide about Gates Circle including project scope, timeline, estimated cost and impacted water body
All Council Districts	QCCW Virtual PPP Forum	Saturday, July 12, 2025	Presentation slide with Ellicott District Projects mapped out. Gates Circle project including project scope and timeline.
All Council Districts	QCCW Fair	Friday, August 29, 2025	Posterboard of the Ellicott District Map that highlights the Gates Circle project. The project information included the project scope and timeline.
Meeting	Direct phone call to Westminster Charter School and the Children's Academy	Wednesday, September 3, 2025	M&T Bank spoke with the schools regarding the traffic plan for Bailey Ave and E. Amherst's work zone.

3.1.3 Digital Platforms

The Scajaquada Creek & Black Rock Canal project webpage (https://buffalosewer.org/construction-projects/black-rock-canal-scajaquada-creek/) on Buffalo Sewer's website has information regarding the project scope, a project map, project timeline and impacts, project costs, and traffic plans.

3.1.4 Outcomes and Next Steps

Feedback received included:

- **Feedback on Gates Circle:** Residents that live near the project site expressed concerns about the duration of work along Delaware Ave and in Gates Circle. Residents brought up concerns regarding the danger and disruptiveness of the construction work.
- **Feedback on Bailey & E Amherst:** M&T Bank, on behalf of Westminster Charter School and the Children's Academy, expressed traffic control concerns on September 3, 2025. With the start of the school year, and an influx of students in the neighborhood, they asked to apply increased fines for speeding in the construction work zones and advanced warning signs on the north and south side of the project construction site. Additionally, they requested additional support regarding parking enforcement as afternoon pickup for the schools as the pickup location was in the work zone. Regarding pedestrian safety, pedestrians crossing at E. Amherst were deemed unsafe due to limited sign distance and high speeds. The existing detour to Westminster Ave remained the safest option and construction crews should help guide pedestrians there as needed. Bus maneuverability

was another concern raised. Buses were struggling to turn from E. Amherst onto Bailey Ave. The suggestion was to remove the Type III barricade and shift the "No Left Turn" sign north to provide more space. Lastly, M&T Bank highlighted that afternoon dismissal will cause traffic on E. Amherst that could back onto Bailey Ave and to monitor this condition and identify any opportunities to improve flow.

3.2 Roosevelt Park Offline Storage Facility

3.2.1 Project Scope

The purpose of the project is to relieve the Edison Avenue Storm Relief Sewer, the downstream Kensington Expressway Sewer at Edison Avenue and the Scajaquada Tunnel Interceptor during wet weather events to reduce CSO discharges to the Scajaquada Tunnel from SPP340. The proposed tank will be constructed on City-owned property in Roosevelt Park. Excess flows will diverge from the Edison Avenue Storm Relief Sewer into the storage tank via a 48-inch diameter Reinforced Concrete Pipe (RCP). The storage tank will dewater via gravity through a 24-inch RCP pipe to the manhole where the Edison Avenue Storm Relief Sewer joins the Kensington Expressway Sewer at Edison Avenue, when there is available capacity in the downstream sewer. The tank will have inlet and outlet gates that will normally be open and be controlled from real time level signals. The outlet gate will be controlled by the level in the Hazelwood in-line-storage (ILS) facility downstream, whereas the inlet gate will be controlled by the tank level in the Roosevelt Park OLS tank itself. The buried tank will include semi-automated cleaning with a tipping bucket system and access will be provided to the tank for maintenance and for additional cleaning should it be required.

3.2.2 Community Outreach Events and Materials

Table 7: Roosevelt Park Outreach Events

Stakeholder	Engagement Method	Date	Material
District Coalition	University District Block Club Coalition	Tuesday, April 15, 2025	Presentation about the overall QCCW Program, the QCCW SAC, and the Roosevelt Park Project Overview. Distribution of Roosevelt Park Project Specific Flyer
University District	QCCW PPP Forum at Northland Workforce Training Center	Monday, April 28, 2025	Presentation Slide about Roosevelt Park OLS including project scope, timeline, estimated cost and impacted water body
All Council Districts	QCCW Virtual PPP Forum	Saturday, July 12, 2025	Presentation Slide with University District Projects mapped out. Roosevelt Park project scope and timeline.

All Council Districts	QCCW Fair	Friday, August 29, 2025	Posterboard of the University District Map that highlights the Roosevelt Park project. The project information included the project scope and timeline. Distribution of Roosevelt Park Project Specific Flyer
Charter School of Inquiry	Meeting with Charter School of Inquiry Staff	Wednesday, September 3, 2025	Presentation about the Roosevelt Park OLS project and proposed impacts on the Charter School of Inquiry's property and operations

3.2.3 Outcomes and Next Steps

Due to the proposed project location impacting The Charter School of Inquiry during construction, the school has expressed major concerns including the following:

- Safety for their children around long-term construction
- Safe and reliable drop-off and pick-up access for parents and guardians
- Bus route availability for drop-off and pick-up
- Parking availability for teachers and staff
- Land acquisition needs
- Potential for utility outages
- Noise during construction
- Odors during and after construction
- Availability to use park land during construction
- Potential for parents and guardians to pull children from class, resulting in financial losses for the school

These concerns have been documented, and modifications are being made to the detailed design of the Roosevelt Park OLS project to better serve the community. These concerns have also impacted the Proposed Amended LTCP, more information can be found in **Section 4.2.4.1.** Presentation materials referencing Roosevelt Park can be found in ***Appendix D.***

3.3 East Delevan Sewer Improvements Project

3.3.1 Project Scope

The East Delevan Sewer Improvements Project (CSO-053_11 SPP 333) involves upgrades to the sewer collection system along East Delevan Avenue, Florida Street, and Spillman Place to control combined sewer overflow discharges to Scajaquada Creek. The Proposed Amended LTCP recommended constructing an offline CSO storage facility along East Delevan Avenue to temporarily store combined sanitary and stormwater via a weir structure. The project was determined to require the preparation of a

Draft Environmental Impact Statement (DEIS), including a public scoping process which allowed government agencies, elected officials, community organizations, groups, and individuals to provide comments to the DEIS. Two design alternatives were presented in the DEIS, which include:

1) construction of an underground storage tunnel; and
2) construction of an underground deep storage tank.

The Preferred Alternative, a Deep Storage Tank, was selected following extensive community outreach and engagement activities aimed at gathering public feedback on both alternatives. Buffalo Sewer will continue to seek community feedback throughout the environmental review process.

3.3.2 Community Advisory Committee

East Delevan project team established a Community Advisory Committee, formally referred to as the East Delevan Advisory Committee (EDAC), to foster open lines of communication and encourage active participation and informed decision-making throughout the project's timeline. The EDAC committee is comprised of a group of community members who reside in the direct project area, along with a group of key stakeholders.

3.3.3 Community Outreach Events and Materials

Buffalo Sewer sought feedback through both the environmental review process (which includes preparation of the DEIS and associated public hearings) and implementation of the project's Enhanced Public Participation Plan (EPPP).

The project's draft scope of work (https://buffalosewer.org/app/uploads/2024/10/East-Delavan-DSOW-Document-2024-10-02.pdf) was published on October 4, 2024, and remained open for community comments until November 1, 2024.

A Community Sentiment Letter outlining the initial community outreach and feedback received, from August 2024 – October 2024, was submitted in November 2024 to the DEC. A response to comments received on the draft scope of work was published by BSA on June 25, 2025 https://buffalosewer.org/app/uploads/2025/07/Response-to-Comments_East-Delavan_Final-June-2025_Printed-Copy.pdf).

3.3.4 Hosted Meetings and Events

Table 8: E. Delavan Outreach Events

Event Type	Event Title	Date
Public Hearing	East Delavan Sewer Improvements – In-person	Tuesday, October 15, 2024
Public Hearing	East Delavan Sewer Improvements – Virtual	Thursday, October 17, 2024
Meeting	Meeting with Mindy Cervoni (Community Services for Every1)	Thursday, January 9, 2025
Celebration	Project Groundbreaking / BSA 90th Anniversary	Saturday, April 19, 2025
Public Hearing	Draft Environmental Impact Statement – In-person	Wednesday, July 23, 2025
Public Hearing	Draft Environmental Impact Statement – Virtual	Thursday, July 24, 2025

Neighborhood Distribution	Distribution of Door Hangers on Florida Street for Construction Updates	Thursday, July 24, 2025
Public Hearing	Draft Environmental Impact Statement – Virtual	Thursday, July 24, 2025
Meeting	EDAC Meeting	Thursday, August 14, 2025
Meeting	EDAC Meeting	Thursday, September 11, 2025
Meeting	Petition to City of Buffalo for Opposition of Speed Hump Re-Installation	Tuesday, September 23-30, 2025

3.3.5 Attended Community Events

Table 9: E. Delavan Project - Attended Community Events

Event Type	Event Title	Date
Community Event	Masten District Breakfast	Saturday, October 19, 2024
Community Event	Oishei Foundation Leaders of Color Meeting	Tuesday, October 22, 2024
Community Event	Jefferson Avenue Friday Night Live	Friday, July 11, 2025
Community Event	716 CommUNITY Day	Wednesday, July 16, 2025
Community Event	Ellicott District Stakeholder's Meeting	Saturday, July 19, 2025
Community Event	Jefferson Avenue Friday Night Live	Friday, July 25, 2025
Community Event	Jefferson Avenue Friday Night Live	Friday, August 8, 2025
Community Event	Pine Grill Jazz Reunion – Week 1	Sunday, August 10, 2025
Community Event	Back-to-School Giveaway at Buffalo Central Terminal	Saturday, August 16, 2025
Community Event	Buffalo Funk Festival Block Party	Friday, August 22, 2025
Community Event	Buffalo Funk Festival	Sunday, August 24, 2025
Community Event	Beverly Road Block Club	Wednesday, August 27, 2025

3.3.6 Digital Platforms

The East Delavan Project webpage(https://buffalosewer.org/eastdelavansewer/) contains information regarding the project scope, an interactive project map, project timeline and impacts, Frequently Asked Questions, updates on the project, community and tree survey, contact information and additional resources such as the Enhanced Public Participation Plan (EPPP), scope of work documents and environmental documentation.

3.3.7 Outcomes and Next Steps

As a result of community input, the Clementine Group submitted a petition to the City of Buffalo for "Opposition of Speed Hump Re-Installation" on September 30, 2025. Residents expressed concern about potential impacts on nearby homes and neighborhoods, the need for pest control measures, and a desire to replace lead service lines during construction.

Community members favored the deep tank option over the tunnel alternative and prioritized neighborhood beautification as part of project restoration.

The preferred deep tank location was identified as Spillman Place Parking lot at Canisius University. During ongoing land acquisition discussions, leadership at Canisius University transitioned, and the new administration requested compensation for land use. As a result, the project management team is reassessing the design of this project. Presentation materials referencing the East Delavan Project can be found in ***Appendix D.***

SECTION 4 ENGINEERING PARTICPATION PROCESS

4.1 Background

The 2014 LTCP was approved after significant study in prior years. Following the approval, BSA began implementing some of the projects included in the 2014 LTCP while continuing to improve upon the plan, including maximizing use of existing assets using real time control, or "Smart Sewer" solutions.

At the request of NYSDEC, BSA continued to improve their understanding of the collection system by performing a complete update and recalibration of the collection system model, including the use of new flow monitoring. The model update was completed and subsequently approved by NYSDEC on October 6, 2021. The updated collection system model resulted in new, previously unforeseen issues with the 2014 LTCP proposed projects including: projects that did not achieve the expected level of control, projects that could be further optimized, and additional projects required to achieve the level of control.

Following the update of the collection system model, BSA conducted an LTCP Optimization project. A list of potential project revisions and new projects were compiled in a collaborative exercise with BSA and consultants familiar with BSA's collection system for further consideration. The list included both new projects and projects from the 2014 LTCP which had not been ruled infeasible or unnecessary. Significant consideration was applied to identify sites owned by the City of Buffalo and other public entities in an effort to avoid acquisition of private property. An optimization process, which employed cloud computing and optimization algorithms, was then used to evaluate the impacts of implementing different variations and combinations of these projects with the goal of minimizing both CSO activations and construction costs. The project also optimized the globally coordinated control strategy for existing and proposed assets in the collection system to maximize asset utilization. The result of this optimization study was a new set of proposed projects, known as Control Projects, and a Control Project Schedule that is included in the Proposed Amended LTCP.

In 2024, and in cooperation with NYSDEC, BSA hired a Program Management Team (PMT) to immediately begin implementation of the Proposed Amended LTCP projects. The PMT prime consultant brought an independent perspective to the Proposed Amended LTCP, having no prior work experience in the 2014 LTCP or the more recent LTCP Optimization project. The PMT team encountered numerous and substantial challenges with the preliminary design of the projects launched in 2024 and early 2025 which

culminated in an LTCP Validation task initiated in the late Spring of 2025. The PMT has continued to work collaboratively to analyze the Proposed Amended LTCP projects as well as considering new projects to identify updates that are necessary to meet the targeted level of control for the LTCP.

The insights gained in the initial design efforts, along with a more detailed review of the overall performance of the Control Projects has resulted in highly impactful technical feedback on the Proposed Amended LTCP.

4.2 Preliminary Proposed Amended LTCP Projects Implementation

Preliminary design was initiated for six Sewer Patrol Point (SPP) modification projects and two OLS projects in 2024. Two additional OLS tanks, thirteen SPP modification projects, and an in-line storage (ILS) project started preliminary design in 2025. Project feasibility, project costs, and performance concerns were identified with these first projects planned for implementation early in the Proposed Amended LTCP schedule. ***Appendix H*** summarizes the feedback and findings encountered in preliminary design leading to the LTCP Validation task that is described in **Section 4.3**.

4.2.1 Proposed Amended LTCP SPP Projects

The LTCP Optimization study characterized the SPP projects as simple, low-cost improvements that would reduce bottlenecks in the sewer network and increase conveyance of wet weather flows. The modeling evaluation upsized relatively short sections of pipe, proposed new conduits to transfer more flow from SPP subcatchments to nearby intercepting sewers, and made modifications to weir structures. From a performance standpoint in the model, each project was effective in mitigating the sewer overflows from the targeted SPPs. However, many initial project scopes and cost estimates lacked field review and underestimated complexity of construction. This resulted in scope expansions to include the addition of several vortex-style drop shafts. Scope increases coupled with adjusted cost escalations provided reason to perform a more detailed project evaluation for the remaining LTCP projects.

Initially, the SPP projects were only evaluated in the hydraulic model. The collection system model is the tool for evaluating the effectiveness or performance of collection system modifications and additions, and it does not provide insight into the constructability or feasibility of a project. Projects must be evaluated for constructability and feasibility prior to inclusion in a recommended plan. The SPP projects were not evaluated for constructability nor feasibility when they were included in the Proposed Amended LTCP. Additionally, the SPP projects were assumed to be low-cost projects and each was assigned a $60,000 construction cost estimate. The design phase quickly identified issues with these scope and cost assumptions, including:

- SPP337 Modification (Colorado) called for an upsized connection from the SPP to the Scajaquada Tunnel Interceptor (STI). The STI is deep underground interceptor requiring the construction of a tunnel shaft to achieve the outcome intended in the Proposed Amended LTCP. This resulted in a major cost increase.
- SPP338 Modification (Bailey and Kerns) required scope changes to address a lack of manhole access and unforeseen field conditions, increasing the project costs significantly.
- SPP341A Modification (Genesee) is similar to the SPP337 project in that it also requires a deep tunnel shaft with vortex structure. This resulted in the cost increasing significantly.
- SPP339 Modification requires another tunnel dropshaft and vortex structure increasing the estimated construction cost significantly.

- SPP340 Modification requires another tunnel dropshaft and vortex structure increasing the estimated construction cost significantly.
- SPP304 Modification was revised after field investigation identified greater field complexity and required scope changes, increasing the estimated construction cost significantly.
- SPP326 Modification was identified as a significant pipe upsizing and replacement project with construction costs rising significantly.
- SPP024 Modification was eliminated after it was determined to require significant construction directly under Interstate 190 which was deemed not feasible. This was discussed with NYSDEC in early 2025 after the conflict with the interstate highway was identified.
- SPP137 Modification was revised after field investigation identified greater project complexity, significantly increasing the estimated construction cost.

The following SPP Modifications that were planned early in the Proposed Amended LTCP schedule only required cost increases to account for inflation and were determined to be reasonable to the assumptions in the LTCP Optimization study:

- SPP336B, SPP175, SPP176, and SPP 177 did not identify any significant scope modifications and have only had cost increases applied to account for inflation.
- SPP165B Modification was determined to be already completed upon field investigation, mitigating the $60k estimated construction costs.

Overall, preliminary design of the SPP projects has yielded substantial scope and cost changes to achieve the performance outcomes required under the Proposed Amended LTCP. All future SPP projects were assigned a construction cost estimate of $1M until further investigation can be completed to perform appropriate AACE Class 5 construction cost estimates for each project.

These findings contributed to the decision to implement the LTCP Validation task discussed in **Section 4.3**.

4.2.2 Proposed Amended LTCP Northern Relief Sewer Interceptor Project

A Northern Relief Sewer Interceptor Project has existed in several forms, including a version in the 2014 LTCP. The need to increase conveyance capacity to bring flows from the northern part of the collection system to Bird Island WWTF has been consistent. The proposed approach has varied from a large diameter open cut sewer to various tunnel considerations. The Proposed Amended LTCP includes a 12-foot diameter shallow tunnel.

Serious constructability concerns were raised with the Northern Relief Sewer Interceptor as it was presented in the Proposed Amended LTCP. As proposed, it is a shallow tunnel with only two tunnel diameters of cover in some locations. A significant portion of the tunnel is proposed in soft ground in a highly developed urban area. The shallow depth and soft ground conditions create a high risk of damaging nearby buildings and structures and undermining existing buried infrastructure. Furthermore, a portion of the tunnel is a mixed face condition required mining in both rock and soft ground at the same time. As proposed, the tunnel required three separate launch locations which would significantly add to the cost. This was something to evaluate further as the tunnel design start date approached.

During the evaluation of SPP024, SPP023, and SPP296, the PMT identified a discrepancy between the scope of the Northern Relief Sewer Interceptor project in the Proposed Amended LTCP and what was modeled in the collection system model. The model contained a shallow, open cut sewer better characterized as a parallel relief sewer. The diameter varied along its length and was smaller than the shallow tunnel, the length was much shorter than the proposed tunnel, and connections to the existing sewer network differed from the proposed tunnel.

The Northern Relief Sewer Interceptor in all forms is one of the most impactful projects included in the LTCP. The Northern Relief Sewer Interceptor significantly impacts the size and scope of all other projects in the collection system model. Once the model was updated to reflect the proposed 12-foot diameter shallow tunnel, the model did not reach the level of control necessary for compliance with the level of control. The proposed tunnel was then upsized to a 15-foot diameter shallow tunnel, the largest it could be, and the level of control was still not achieved.

The PMT revisited the Northern Relief Sewer Interceptor as it was initially modeled, as an open cut parallel relief sewer. Although this version of the Northern Relief Sewer Interceptor met the level of control required in the model, it was determined to be infeasible and not constructable due to the risk it posed on existing above and below ground infrastructure, as well as the significant impacts it would have on the community during construction.

For these reasons, the Northern Relief Sewer Interceptor required further evaluation under the LTCP Validation task.

4.2.3 Proposed Amended LTCP ILS Project

The Proposed Amended LTCP recommended one inline storage (ILS) project, CSO-064 ILS, early in its implementation. A later field investigation identified greater project complexity resulting in a 20-percent increase in cost.

4.2.4 Proposed Amended LTCP OLS Projects

4.2.4.1 Roosevelt Park (Edison Martha) OLS

The Roosevelt Park (Edison Martha) OLS project and the Sidney Lark OLS project were the first two OLS projects initiated in 2024. In 2025, the Waterfront Park (Erie Basin Marina) OLS project and Schiller Park OLS project were initiated. Significant feasibility and project effectiveness issues were identified quickly for three of the four OLS projects.

The Roosevelt Park OLS design effort began with a more detailed review of the basis of design assumed in the Proposed Amended LTCP. An initial finding was the model used a weir that was 1-inch above the existing sewer invert and 100-feet long. The weir was allowing dry weather flow to be diverted into the sewer on a regular basis. Furthermore, it was deemed impractical to construct a structure large enough to accommodate a 100-foot-long weir in Edison Avenue. Testing was completed and a revised 5-inch by 20-foot weir was employed for further evaluation in the preliminary design. OLS operation was assessed next using a full review of the OLS utilization in a typical year. The next significant concern identified was that the globally coordinated control logic resulted in excessively long periods of time, up to 6 days, before the tank would drain back into the collection system. The control logic concerns were raised with BSA's Smart Sewer consultant and subsequently revised, resulting in more reasonable holding times in the Roosevelt Park OLS tank. Still, concerns existed with the frequency of tank activations which were occurring with nearly every rain event in the typical year using the revised weir height. Preliminary testing of a local reactive control strategy using a gate to control tank inflow reduced activations to approximately 12 times in the typical year. It was recommended that a dynamic tank control strategy be considered in detailed design.

At the conclusion of the Roosevelt Park OLS preliminary design, a revised total project estimate was prepared accounting for engineering costs, professional services during construction costs, and other "soft" costs along with a revised construction cost estimate. The Proposed Amended LTCP only included estimates for construction costs. The updated budget for the Roosevelt Park OLS project saw a 127%

increase including cost escalation factors to the mid-point of construction. The Roosevelt Park OLS design is continuing into final design. The challenges encountered during preliminary design have created schedule risks and have contributed to overall concerns with the OLS projects identified in the Proposed Amended LTCP.

4.2.4.2 Sidney Lark OLS/RTC

The Sidney Lark OLS project entered preliminary design alongside the Roosevelt Park OLS project. After significant investigation and progress was made on designing the Sidney Lark OLS tank, it was determined that it was substantially oversized for the targeted level of control. The proposed tank had a capacity of 3.3 MG, while the model showed that the project location could meet the level of control utilizing a tank with a capacity of less than 1 MG. The relatively small tank volume led to more investigation that sought to use a real time control type of solution that would eliminate the tank altogether. The evaluation into project type exhausted the time allotted for preliminary design of the proposed OLS. BSA discussed the changes in project type and schedule with NYSDEC, and the changes to the project have yielded an estimated $10.4M in savings. Schedule concerns remain as more concepts for the RTC configuration were identified in the detailed design procurement process. Overall, the Sidney Lark OLS project has undergone significant scope changes that contributed to the decision to conduct the LTCP Validation task discussed in **Section 4.3**.

4.2.4.3 Schiller Park OLS

The Schiller Park OLS project started preliminary design in early 2025. The Proposed Amended LTCP defined the project as an 8 MG storage tank that captured flow at the upstream end of the Scajaquada Tunnel Interceptor. Further investigation of the model configuration and control logic ensued. Around the same time, design of SPP projects 341A, 340, 339, 338, and 337 began. As modifications were made to the collection system model because of the SPP project designs, the team began questioning the impact that the Schiller Park OLS project would have on the system. A test was performed in which the Schiller OLS project was removed from the model. The typical year systemwide performance was evaluated against the targe activation levels, and the results indicated that three sites increased in activations by one event above the target level. The total overflow volume from the three sites in that one event was approximately 1.3 MG. At this point, more testing was performed to confirm the results. It was determined that another solution should be investigated as it did not make sense to build 8 MG of storage to solve 1.3 MG of overflow.

The Schiller Park OLS was the final project that contributed to the decision to conduct the LTCP Validation task. The Schiller Park OLS project is not recommended as a project to address combined sewer overflows as it is extremely costly for the benefit derived.

The Schiller OLS project currently remains in the Proposed Amended LTCP at this time for reasons that extend beyond the typical year level of control required. SPP projects 341A, 340, 339, 338, and 337 are substantially increasing the total volume of water managed by the STI which will increase the frequency of excessive surcharge in the STI. A detailed study is underway by the PMT and in cooperation with the University of Auburn to evaluate transients and air releases from the STI and nearby structures. An overall transient and air release analysis is underway to support the designs of every project along the STI. The Schiller Park OLS project is under consideration as a possible project to mitigate the high hydraulic grade lines (HGLs) experienced in storms much larger than encountered in a typical year.

4.2.4.4 Erie Basin Marina (Waterfront Park) OLS

Waterfront Park OLS is the second most impactful in the Proposed Amended LTCP. The Waterfront Park OLS project began preliminary design in 2025. Given the proximity of the SPP206A&B RTC, it was combined with the Waterfront Park OLS design. Preliminary design has been postponed in schedule while the Proposed Amended LTCP projects are reevaluated under the LTCP Validation Task.

4.3 Projects Validation

In June of 2025, BSA's Program Management Team recommended a system-wide analysis of the Proposed Amended LTCP projects. This analysis centered around evaluation of the utilization, feasibility, constructability, and community impact associated with the proposed OLS projects.

4.3.1 Utilization Assessment

This system-wide analysis discovered that a number of the OLS tanks were oversized and could be optimized. The results of this analysis are summarized in the table below.

Table 10: OLS Utilization Report

Project	Target Activations	Oversized Based on Analysis
Schiller Park OLS	Achieved	Yes - Not Required
Military Road OLS	Achieved	No
Collins Park OLS	Achieved	No
Bass Alley OLS	Achieved	No
Waterfront Park OLS	Achieved	No
Clinton Street OLS	Achieved	Yes
Bailey & Regent OLS	Achieved	Yes
Hopkins & Osage OLS	Achieved	No
East Delevan/Canisius OLS	Achieved	Yes
Roosevelt Park OLS	Achieved	Yes

4.3.2 Feasibility Assessment

Incorporating stakeholder feedback from Canisius OLS and Roosevelt Park OLS projects, analysis centered around minimizing community impact during construction while achieving the required level of control. Feasibility studies utilized a scoring matrix, weighing constructability, community impact, and land acquisition needs to assign scores. Parcel owners were identified, and it was determined that many of the projects would require negotiations with private property owners. A critical aspect of the review involved site visits to evaluate the constructability of the proposed projects. This included both accessibility to the proposed sites, their practicality and constructability.

The following feasibility criteria were assessed:

Table 11: Project Feasibility Assessment Criteria

Attribute	Criteria
Land Acquisition Requirements	City of Buffalo versus Private Ownership Number of Acquisitions Temporary versus Permanent Easements
Constructability Impacts	Environemental Contraints (Slope, Contamination, etc.) Local Roadway, Interstate, Thruway, RR Impacts
Community Impacts	Affected Neighborhoods (Homes, Businesses) Affected Community Centers (Schools, Parks, etc.) Noise, dust, parking, transportation disruptions
Operations & Maintenance Impacts	Additional Pump Station Requirements

The results of the feasibility analysis are as follows:

Table 12: Project Feasibility Results Summary

	Feasibility Assessment Results				
	Land Acquisition Requirements	**Constructability Impacts**	**Community Impacts**	**Operations & Maintenance Impacts**	**Result**
Schiller Park OLS	OLS Facility Not Required				
Military Road OLS	Temporary easement	Eliminate School Parking Lot Access for 3 years Temporary Easements	School closed 2-3 years Residential Impacts	Pump Station Required	**Not Constructable due to Community Impact**
Collins Park OLS [(1)]	Purchase 17 properties	Steep slope Excavation near interstate	Park closed 2-3 yrs I-190 Impacts	No Pump Station Required	**Not Constructable with proposed configuration**
Bass Alley OLS	Purchase 5 properties	Steep slope near CSX Rail Road	Division St Closure 2-3 years Residential Impacts during construction	Pump Station Required	**Not Constructable due to Land Acquisition**

Erie Basin (Waterfront Park) OLS	No Impact	Contaminated Site	Park closed 2-3 years Residential Impacts during construction	Pump Station Required	Constructable
Clinton Street OLS	No Impact	No Significant Challenges	Park closed 2-3 years Historic Places	Pump Station Required	Constructable
Bailey & Regent OLS	OLS Facility Can be Eliminated				
Hopkins & Osage OLS	No Impact	No Significant Challenges	Park Closed 2-3 years Residential Impacts during construction	Pump Station Required	Constructable
East Delevan/Canisius OLS	In Design Phase				
Edison Martha (Roosevelt Park) OLS	In Design Phase				

(1) Note: OLS could be reconfigured, with deeper tank, adding pump station, to decrease easement requirements north of park.

4.4 Alternatives Analysis

4.4.1 Alternatives Overview

Alternatives presented also considered tradeoffs, such as capital cost, community impact, land acquisition, constructability, and operation and maintenance, needed to achieve the goals.

Three main alternatives progressed and are summarized below:

Table 13: Summary of Proposed Alternatives

Project	Alternative		
	1	2	3
Deep North Sewer Interceptor	✓	✓	✓
Schiller Park OLS	✗	✗	✗
Military Road OLS	✗	✗	✗
Collins Park OLS	⚙	⚙	✗
Bass Alley OLS	⚙	⚙	✗
Erie Basin (Waterfront Park) OLS	⚙	✗	✗
Clinton Street OLS	⚙	⚙	✗
Bailey & Regent OLS	✗	✗	✗
Hopkins & Osage OLS	⚙	⚙	✓
East Delevan/Canisius OLS	⚙	⚙	✓
Edison Martha (Roosevelt Park) OLS	⚙	⚙	✓

Key:

✓ Project Required

✗ Project Eliminated

⚙ Project Size and Utilization Adjusted

4.4.2 Recommended Alternative

After a number of workshops and collaboration, Alternative 3 was selected as the most desirable alternative. This alternative minimized the community impact, property acquisition, while also reducing construction costs and the total required O&M complexity. It is anticipated that this alternative be further refined over the next few months to fully develop and seek public participation for the proposed alternative.

4.5 Outcomes

4.5.1 Proposed Amended LTCP Impacts

The Alternative LTCP projects would reduce the negative impacts on the public as compared to the numerous OLS facilities currently in the Proposed Amended LTCP. Shifting from OLS facilities to a storage and conveyance sewer interceptor will decrease the size and disruption of the needed excavations. This approach will significantly reduce excavations in public parks, near schools, and in other places that bring value to the community.

4.6 Next Steps

4.6.1 Revised Bridging Document and Amended LTCP

As a result of this process, preliminary changes to Control Projects have been identified while validation of proposed alternatives and further refinement of Control Project scopes is ongoing. Buffalo Sewer Authority is working toward submission of a Revised Bridging Document, reflecting the findings of the Proposed Amended LTCP projects validation and proposed modifications to Control Projects scope and schedule. The Revised Bridging Document will provide a detailed comparison of the projects remaining from the 2014 LTCP and the Proposed Amended LTCP, as well as new Control Projects. The justification for maintaining, modifying, removing or replacing LTCP projects will be presented in terms of cost, schedule, water quality goals, community impact, and other site-specific considerations.

BSA remains committed to achieving compliance and improving the environment for citizens of Buffalo. Over the next six months, BSA will further refine the hydraulic model with inclusion of the Recommended Alternative project to evaluate impacts to remaining projects and to ensure equal or better achievement of the 2014 LTCP activations by receiving water body. Detailed investigations of proposed locations for launch, exit and drop shafts associated with the Recommended Alternative project will be initiated under the guidance of experienced tunneling resources. In development of these locations, BSA will look to maximize available parcels owned by City of Buffalo.

APPENDIX A: CERTIFICATION OF COMPLETION

APPENDIX A: CERTIFICATION OF COMPLETION

"I hereby certify that BSA has complied with all requirements of the approved Public Participation Plan in accordance with DEC issued Commissioner Policy-29 Environmental Justice and Permitting (CP-29) to address environmental justice concerns and ensure community participation in the DEC environmental permit review process. BSA has completed all activities pursuant to the plan. BSA understands that certifying false, incorrect or inaccurate information is a violation of the CP-29 and of the referenced permit."

Rosaleen Nogle, PE, Principal Sanitary Engineer	Date

APPENDIX B : CERTIFICATION STATEMENT

APPENDIX B: CERTIFICATION STATEMENT

"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."

Rosaleen Nogle, PE, Principal Sanitary Engineer

Date

APPENDIX C: PUBLIC NOTIFICATIONS

BUFFALO
SEWER AUTHORITY

Consultant, Contractor, and Vendor
Informational Session for Upcoming BSA Capital Projects Solicitations



QUEEN CITY CLEAN WATERS

Between Fall 2024-Summer 2025, Buffalo Sewer Authority (BSA) will be requesting proposals and soliciting bids for several consultant and construction contracts as part of its Queen City Clean Waters program.

Design consultants, construction contractors, and vendors interested in learning more about upcoming capital projects opportunities are encouraged to attend this Informational "Open House" Session (virtual) scheduled for Wednesday, October 16, 2024 at 10:00 am EST.

In particular, BSA aims to create space for Disadvantaged, Woman, and Minority Business Enterprise (D/W/MBE) firms to connect with Primes and other partners, advancing our mission of community impact and local job creation.

The agenda of this meeting will provide a detailed overview of the upcoming projects and an opportunity for potential proposers/bidders to ask questions, understand contract requirements, and build relationships between potential prime/subcontractors and vendors.

- Bird Island Treatment Facility Upgrades
- Combined Sewer Overflow (CSO) Storage
- Real-Time Control Smart Sewers
- Sewer Improvements & Modifications

Wednesday, October 16th
10:00 - 11:30 am EST

via Microsoft Teams

(An invitation with meeting details will be sent after registering)

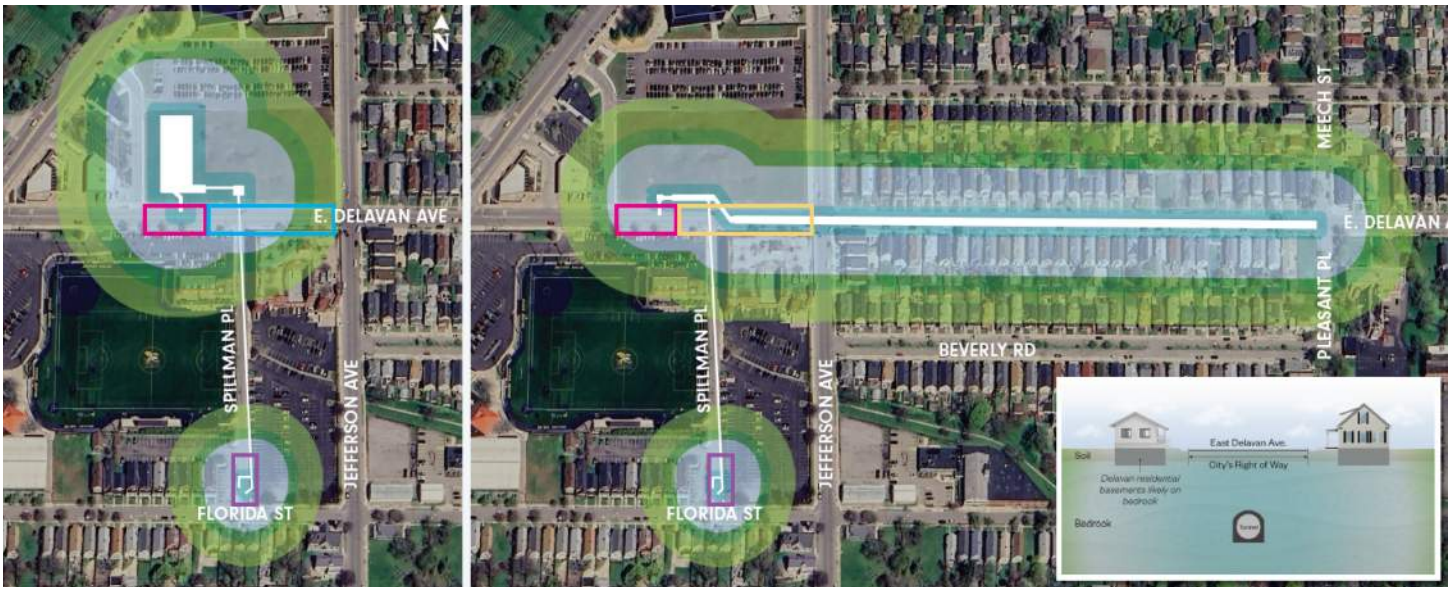
Register to Attend:

Scan the QR code to the right or go to forms.office.com/r/Bv6xJVN5eD

EAST DELAVAN SEWER IMPROVEMENTS

DRAFT SCOPE OF WORK

Notice of Public Hearing



ABOUT THE PROJECT

The project will reduce the number and volume of Combined Sewer Overflows into Scajaquada Creek.

Two design options are being considered:
(1) construction of an underground storage tunnel;
(2) construction of a deep storage tank.

DRAFT SCOPE OF WORK ACCESS

IN-PERSON

Buffalo Sewer Authority Main Office
Room 1038 City Hall
65 Niagara Square, Buffalo, NY 14202

Central Library
1 Lafayette Square, Buffalo, NY 14203

ONLINE

www.buffalosewer.org/eastdelavansewer/

SUBMIT WRITTEN COMMENTS BY 11/1/24 TO:

Regina Harris, EIT, Senior Engineer
Buffalo Sewer Authority
Room 1038 City Hall
65 Niagara Square Buffalo, NY 14202
716-851-4664
QueenCityCleanWaters@buffalosewer.org

AT NORTHLAND

TUESDAY, OCTOBER 15, 2024
6:00 PM - 8:00 PM
Northland Workforce Training Center
683 Northland Ave
Buffalo, NY 14211

Dinner by Manna.
Childcare & activities for ages 5-12
Spanish and American Sign Language interpretation services will be provided.
Se habla español.

ON ZOOM

THURSDAY, OCTOBER 17, 2024
12:00 PM - 2:00 PM

Virtual Public Hearing link can be found on or after October 4th at:

BUFFALO SEWER AUTHORITY

Hazen

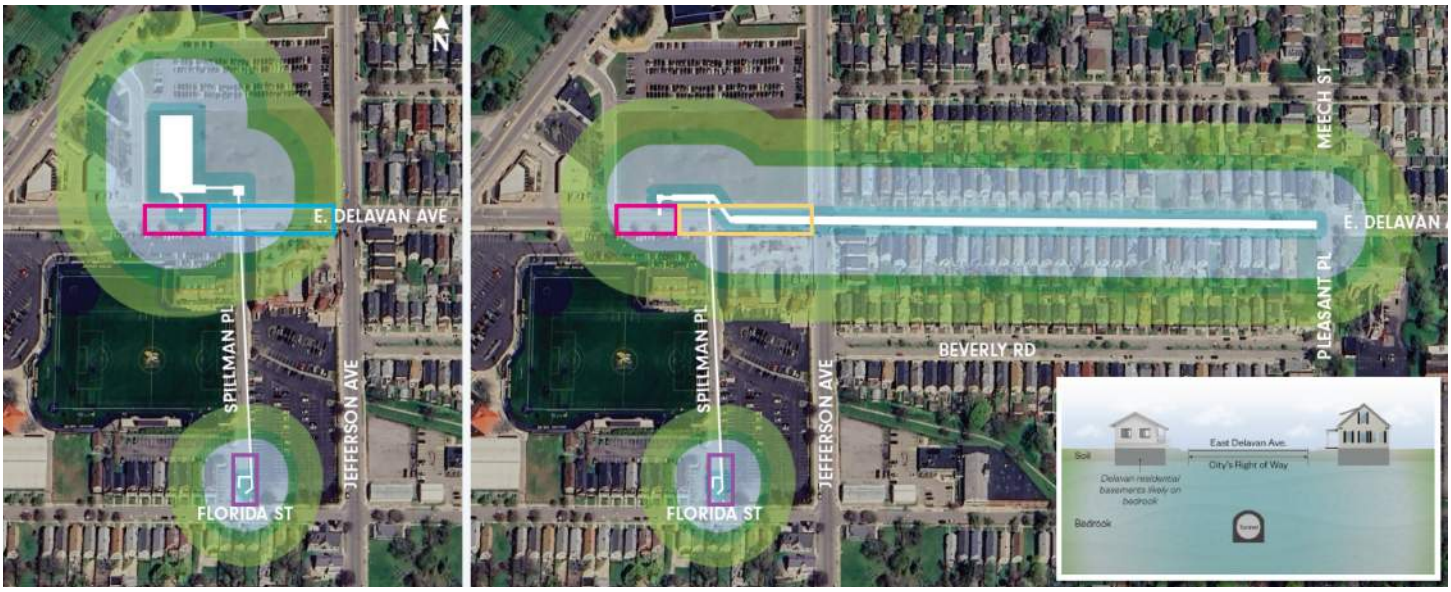
Clementine Gold Group

buffalosewer.org/eastdelavansewer

EAST DELAVAN SEWER IMPROVEMENTS

DRAFT SCOPE OF WORK

Notice of Public Hearing



ABOUT THE PROJECT

The project will reduce the number and volume of Combined Sewer Overflows into Scajaquada Creek.

Two design options are being considered:
(1) construction of an underground storage tunnel;
(2) construction of a deep storage tank.

DRAFT SCOPE OF WORK ACCESS

IN-PERSON

Buffalo Sewer Authority Main Office
Room 1038 City Hall
65 Niagara Square, Buffalo, NY 14202

Central Library
1 Lafayette Square, Buffalo, NY 14203

ONLINE

www.buffalosewer.org/eastdelavansewer/

SUBMIT WRITTEN COMMENTS BY 11/1/24 TO:

Regina Harris, EIT, Senior Engineer
Buffalo Sewer Authority
Room 1038 City Hall
65 Niagara Square Buffalo, NY 14202
716-851-4664
QueenCityCleanWaters@buffalosewer.org

AT NORTHLAND

TUESDAY, OCTOBER 15, 2024
6:00 PM - 8:00 PM
Northland Workforce Training Center
683 Northland Ave
Buffalo, NY 14211

Dinner by Manna.
Childcare & activities for ages 5-12
Spanish and American Sign Language interpretation services will be provided.
Se habla español.

ON ZOOM

THURSDAY, OCTOBER 17, 2024
12:00 PM - 2:00 PM

Virtual Public Hearing link can be found on or after October 4th at:

BUFFALO SEWER AUTHORITY

Hazen

Clementine Gold Group

buffalosewer.org/eastdelavansewer



FLORIDA STREET SEWER RECONSTRUCTION

This project is part of Buffalo Sewer's continuing efforts to reduce water pollution into Scajaquada Creek and improve the air and water quality in your neighborhood.

Anticipated Construction:
Fall 2024 - Spring 2025

- This estimated $2.3 million project is funded through New York State and federal grants and loans and you the ratepayer.
- Traffic detours will be posted during the work day.
- Construction crews with safety vests and flags may direct traffic on Florida Street during daytime hours. You will still be able to enter and exit your home with guidance from the construction crews.
- New sewer pipes and water pipes will be provided.
- A public meeting is being scheduled in the near future in your community!

Contact us:

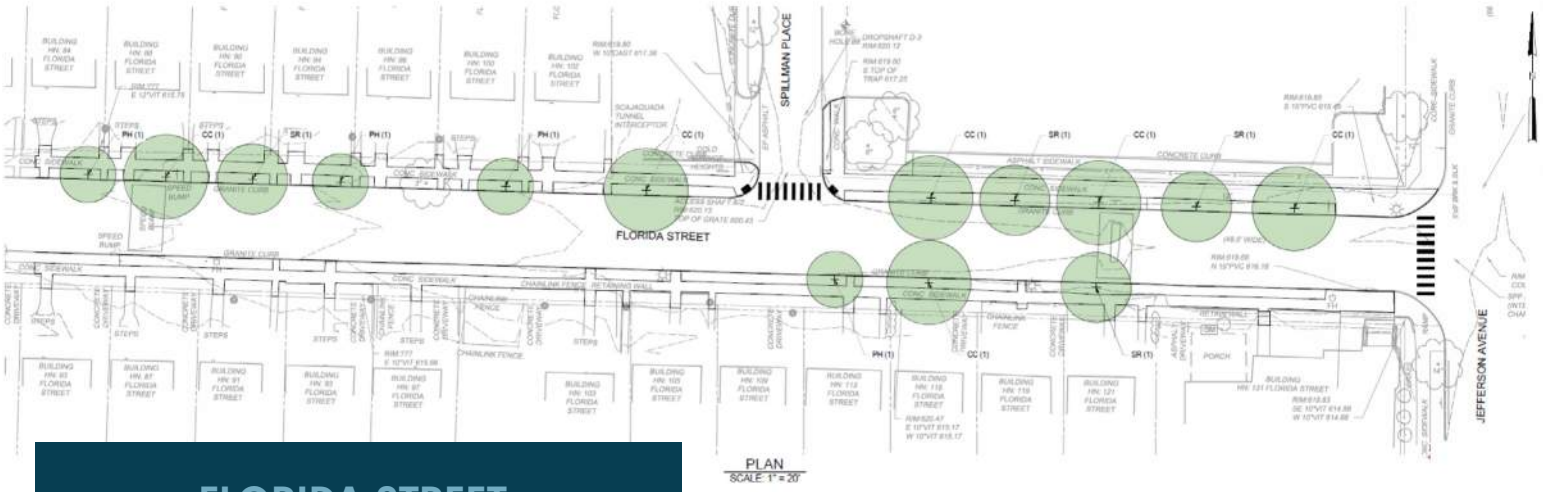
If you have any questions or comments about this project, please contact:
Regina Harris, Senior Engineer
rharris@buffalosewer.org
716-851-4664 ext. 4227

BUFFALO SEWER AUTHORITY

Hazen

Clementine Gold Group

buffalosewer.org/eastdelavansewer



FLORIDA STREET SEWER RECONSTRUCTION

TREE SURVEY

Dear Resident,

A tree located within the City of Buffalo public right-of-way near your residence will be removed as part of sewer upgrades in your neighborhood. Buffalo Sewer will plant a new tree on your street once sewer construction is completed, and they would like your input!

City arborists have determined that the three tree species listed at right are best for this neighborhood. Without creating a monoculture (where a single species dominates) residents may help determine which trees are replanted.

Planting will take place during the spring or fall season. Wooden stakes and ties will be installed to help the trees grow and mature during the first year that they are planted and will be removed after the first year.

Thank you!

Which tree do you like best?



Eastern redbud
Cercis canadensis



Spire cherry
Prunus x hilleri "Spire"



Japanese tree lilac
Syrginga reticulata "Ivory Silk"

Contact us:

If you have any questions or comments about this project, please contact:
Regina Harris, Senior Engineer
rharris@buffalosewer.org
716-851-4664 ext. 4227

BUFFALO SEWER AUTHORITY

Hazen

Clementine Gold Group

buffalosewer.org/eastdelavansewer

EAST DELAVAN
SEWER IMPROVEMENTS

WE'LL BE WORKING IN YOUR NEIGHBORHOOD OCTOBER 14-18, 2024

BUFFALO
SEWER AUTHORITY

Hazen · Clementine Gold Group · Lu Engineers

buffalosewer.org/eastdelavansewer

EAST DELAVAN
SEWER IMPROVEMENTS

Collecting data on air quality, noise, and traffic in your neighborhood.

As part of the East Delavan Sewer Improvements project, contractors with Buffalo Sewer will be monitoring air, quality, noise and traffic in your neighborhood. The goal of data gathering is to analyze existing conditions to understand the temporary impacts to the community that could occur during construction.

You may see workers counting vehicles or inspecting monitors, or you may notice devices mounted to light poles or tripods throughout the project area. The data gathered will be included in a formal Environmental Impact Statement which will be available to the public for review and comment.

BUFFALO
SEWER AUTHORITY

For more information about the project, see our website or contact:

Regina Harris, Senior Engineer
rharris@buffalosewer.org
716-851-4664 ext. 4227

EAST DELAVAN
SEWER IMPROVEMENTS

CONSTRUCTION COUNTDOWN: FINAL TOUCHES AHEAD!

Hazen | BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY | Clementine Gold Group

buffalosewer.org/eastdelavansewer

EAST DELAVAN
SEWER IMPROVEMENTS

CONSTRUCTION COUNTDOWN: FINAL TOUCHES AHEAD!

Hazen | BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY | Clementine Gold Group

buffalosewer.org/eastdelavansewer

EAST DELAVAN
SEWER IMPROVEMENTS

CONSTRUCTION COUNTDOWN: FINAL TOUCHES AHEAD!

Hazen | BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY | Clementine Gold Group

buffalosewer.org/eastdelavansewer

EAST DELAVAN
SEWER IMPROVEMENTS

CONSTRUCTION COUNTDOWN: FINAL TOUCHES AHEAD!

Hazen | BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY | Clementine Gold Group

buffalosewer.org/eastdelavansewer

EAST DELAVAN
SEWER IMPROVEMENTS

What's happening?

- Crews will be repaving the street and replacing sidewalks throughout August and early September 2025.
- Preparation work for road paving began the week of August 4th.
- Driveway and sidewalk access will be limited due to this work and it may be necessary to park your vehicle on the street at times.
- Landscaping and tree planting work will occur throughout September and October.
- We appreciate residents' continued patience during this beautification phase of street restoration.

For more information about the project, see our website or contact:

Regina Harris, Senior Engineer
Buffalo Sewer Authority
rharris@buffalosewer.org
716-851-4664 ext. 4227

EAST DELAVAN
SEWER IMPROVEMENTS

What's happening?

- Crews will be repaving the street and replacing sidewalks throughout August and early September 2025.
- Preparation work for road paving began the week of August 4th.
- Driveway and sidewalk access will be limited due to this work and it may be necessary to park your vehicle on the street at times.
- Landscaping and tree planting work will occur throughout September and October.
- We appreciate residents' continued patience during this beautification phase of street restoration.

For more information about the project, see our website or contact:

Regina Harris, Senior Engineer
Buffalo Sewer Authority
rharris@buffalosewer.org
716-851-4664 ext. 4227

EAST DELAVAN
SEWER IMPROVEMENTS

What's happening?

- Crews will be repaving the street and replacing sidewalks throughout August and early September 2025.
- Preparation work for road paving began the week of August 4th.
- Driveway and sidewalk access will be limited due to this work and it may be necessary to park your vehicle on the street at times.
- Landscaping and tree planting work will occur throughout September and October.
- We appreciate residents' continued patience during this beautification phase of street restoration.

For more information about the project, see our website or contact:

Regina Harris, Senior Engineer
Buffalo Sewer Authority
rharris@buffalosewer.org
716-851-4664 ext. 4227

EAST DELAVAN
SEWER IMPROVEMENTS

What's happening?

- Crews will be repaving the street and replacing sidewalks throughout August and early September 2025.
- Preparation work for road paving began the week of August 4th.
- Driveway and sidewalk access will be limited due to this work and it may be necessary to park your vehicle on the street at times.
- Landscaping and tree planting work will occur throughout September and October.
- We appreciate residents' continued patience during this beautification phase of street restoration.

For more information about the project, see our website or contact:

Regina Harris, Senior Engineer
Buffalo Sewer Authority
rharris@buffalosewer.org
716-851-4664 ext. 4227

EAST DELAVAN SEWER IMPROVEMENTS

Collecting Data on Air Quality, Noise, and Traffic

What Is Buffalo Sewer Measuring?

As part of this project, Buffalo Sewer is monitoring air quality, noise levels, and traffic volume. The goal of data gathering is to analyze existing air, noise, and traffic conditions to understand the temporary impacts to the community that could occur during construction.

You may see workers counting vehicles or inspecting monitors, or you may notice devices mounted to light poles or tripods throughout the project area. The data gathered will be included in a formal Environmental Impact Statement which will be available to the public for review and comment.

AIR QUALITY MONITORING

To understand the existing air quality in your neighborhood, air quality monitoring stations will be set up in secure locations for one or two days. Workers will set up monitors and return to inspect them at least once per hour. Workers will also use identical hand-held meters that measure air quality throughout the project area.

The monitors:

- Require less than 5 minutes to set up and take down,
- Do not emit any noise or odors,
- Are battery operated, and
- Electronically record data.

Air quality data collection will be performed by **Lu Engineers, a local Certified Minority-owned Business Enterprise (MBE) in the City of Buffalo.**

NOISE MONITORING

Outdoor noise levels will be gathered in your neighborhood.

- Noise monitoring equipment will be temporarily mounted to light poles near the project site.
- These units are battery operated.
- They are measuring overall background noise levels, not recording voices or other street noises.

Noise monitoring will be performed by **Watts Architecture and Engineering, a local Certified Minority-owned Business Enterprise (MBE) in the City of Buffalo.**

TRAFFIC COUNTS

The number of cars passing by will be counted as part of this project.

- Workers will install strips across the roads in your neighborhood.
- You may see a worker with a clipboard nearby verifying those numbers.

Traffic counting will be performed by **Azar Design Co. (formerly Foit-Albert Associates), a local Certified Minority-owned Business Enterprise (MBE) in the City of Buffalo.**



Air quality monitoring equipment

Contact us:

If you have any questions or comments about this project, please contact:
Regina Harris, Senior Engineer
rharris@buffalosewer.org
716-851-4664 ext. 4227

BUFFALO SEWER AUTHORITY

Hazen

Clementine Gold Group

buffalosewer.org/eastdelavansewer

EAST DELAVAN SEWER IMPROVEMENTS

Collecting Data on Air Quality, Noise, and Traffic



Monitoring Location Area

BUFFALO
SEWER AUTHORITY

UPCOMING WORK
IN THE
UNIVERSITY COMMON COUNCIL DISTRICT

Buffalo Sewer through its Queen City Clean Waters program **is tackling stormwater challenges in Buffalo.**

In the next month, our team will be **mapping** sites in your neighborhood for projects that are part of this Plan.

Our crews will wear yellow vests and hardhats as they work at:

1. **Edison Ave from Millicent Ave to bridge over Kensington Expressway**
2. **Roosevelt Park and Charter School of Inquiry**

For more information please contact:
Rosaleen Nogle, Principal Sanitary Engineer
Buffalo Sewer Authority
rnogle@buffalosewer.org.



BUFFALO
SEWER AUTHORITY

UPCOMING WORK
IN THE
LOVEJOY COMMON COUNCIL DISTRICT

Buffalo Sewer through its Queen City Clean Waters program **is tackling stormwater challenges in Buffalo.**

This month, our team will be **conducting drilling boring** sites in your neighborhood for projects that are part of this ~~Plan~~.

Our crews will wear yellow vests and hardhats as they drill borings:

1. **In the grass area on the Southwest corner of Genesee St and Countess Ave, Northwest of the Schiller Park Senior Center.**

For more information please contact:
Rosaleen Nogle, Principal Sanitary Engineer
Buffalo Sewer Authority
rnogle@buffalosewer.org.
(716) 851-4664 Ext. 4203



BUFFALO
SEWER AUTHORITY

UPCOMING WORK
IN THE
MASTEN COMMON COUNCIL DISTRICT

Buffalo Sewer through its Queen City Clean Waters program **is tackling stormwater challenges in Buffalo.**

This month, our team will be **conducting drilling boring** sites in your neighborhood for projects that are part of this Plan.

Our crews will wear yellow vests and hardhats as they drill borings:

1. **At the Northeast corner of the Scajaquada St and Colorado St intersection. Borings are in the grass area along the east side of Colorado Ave.**
2. **Along the East side of Humboldt Pkwy, between Northland Ave and East Delavan Ave.**
    a. **One traffic lane on Humboldt Pkwy will be closed between Northland Ave and East Delavan Ave.**

For more information please contact:
Rosaleen Nogle, Principal Sanitary Engineer
Buffalo Sewer Authority
rnogle@buffalosewer.org.
(716) 851-4664 Ext. 4203



BUFFALO
SEWER AUTHORITY

UPCOMING WORK
IN THE
UNIVERSITY COMMON COUNCIL DISTRICT

Buffalo Sewer through its Queen City Clean Waters program **is tackling stormwater challenges in Buffalo.**

This month, our team will be **conducting drilling boring** sites in your neighborhood for projects that are part of this Plan.

Our crews will wear yellow vests and hardhats as they drill borings:

1. **Along the North, South, and West sides of the Charter School of Inquiry. All borings will be in the grass or lawn areas.**
2. **On the lawn east of the Roosevelt Park.**
3. **Between the street and sidewalk along Lark St.**
4. **Along the north side of the road on Sidney St.**
    a. **One traffic lane on Sidney St. will be closed between Lark St and Humboldt Pkwy for two weeks.**

For more information please contact:
Rosaleen Nogle, Principal Sanitary Engineer
Buffalo Sewer Authority
rnogle@buffalosewer.org.
(716) 851-4664 Ext. 4203



BUFFALO
SEWER AUTHORITY

UPCOMING WORK
IN THE
NIAGARA COMMON COUNCIL DISTRICT

Buffalo Sewer through its Queen City Clean Waters program **is tackling stormwater challenges in Buffalo.**

This month, our team will be **conducting drilling boring** sites in your neighborhood for projects that are part of this Plan.

Our crews will wear yellow vests and hardhats as they drill borings:

1. **In the grass area along the East side of West Ave from Breckenridge St to Lafayette Ave.**
2. **In the grass area along the South side of Breckenridge St from Dewitt St to Herkimer St.**

For more information please contact:
Rosaleen Nogle, Principal Sanitary Engineer
Buffalo Sewer Authority
rnogle@buffalosewer.org.
(716) 851-4664 Ext. 4203



BUFFALO
SEWER AUTHORITY

UPCOMING WORK
IN THE
FILLMORE COMMON COUNCIL DISTRICT

Buffalo Sewer, through its Queen City Clean Waters projects, **is addressing stormwater challenges across the city.**

In **May 2025**, our team will be conducting soil investigations in your neighborhood by drilling small holes in the ground to gather essential data for these projects.

Here's what you need to know:

- **Location:** Our crews, identifiable by yellow vests and hard hats, will be working in the following areas:
  - **The grassy area at the East end of Conway Park, along Louisiana St., from Mackinaw St. to Republic St. intersections.**
- **Purpose:** To assess underground conditions for upcoming improvements.
- **Process:** We will drill small holes to collect soil and rock samples for testing. Once drilling is complete, the area will be restored. If monitoring wells are needed, they will be installed flush with the surface and securely capped.
- **Impact:** You might notice some noise during the work, but we will take precautions to minimize any inconvenience.

For more information please contact:
Rosaleen Nogle, Principal Sanitary Engineer
Buffalo Sewer Authority
rnogle@buffalosewer.org.
(716) 851-4664 Ext. 4203



SCAJAQUADA CREEK & BLACK ROCK CANAL SMART SEWERS PROJECT

AT GATES CIRCLE

- Project work and pavement restoration on Delaware Ave will be completed by Thanksgiving.
- Project work and site restoration within the Gates Circle northeast field will be completed by Christmas Day.
- Final landscaping work will be completed in Spring of 2026 after the snow melts.

BUFFALO SEWER AUTHORITY

TYLin | JMDavidson Engineering, D.P.C. | MARK CERRONE INC.

buffalosewer.org/construction-projects/black-rock-canal-scajaquada-creek

SCAJAQUADA CREEK & BLACK ROCK CANAL SMART SEWERS PROJECT

AT GATES CIRCLE

Thank you for your patience as we complete these important sewer improvements!

When the work at Delaware Avenue and Gates Circle site is completed, this project overall will help improve water quality and prevent approximately 30 million gallons of combined sewer overflows from flowing into Scajaquada Creek and the Black Rock Canal each year!

Find additional information on our website or get in touch:

Buffalo Sewer Authority
QueenCityCleanWaters@buffalosewer.org
716-851-4664 | buffalosewer.org

BSA's Proposed Project Schedules (GI Projects not included)

Project Name and Tag	Start - Completion
WWTF NFA Phase I	9/27/22 - 5/25/30
WWTF NFA Phase II	7/23/26 - 12/26/31
WWTF NFA Phase III	1/13/28 - 9/3/31
CSO053_11, 1.5 MG Canisius/Jefferson Delavan OLS	9/7/28 - 4/9/32
CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC	5/28/25 - 7/6/28
CSO010_1 Breckenridge Niagara RTC	8/26/25 - 1/31/29
CSO006_2 Gates Circle RTC	4/8/25 - 5/17/28
CSO053_10 SPP229A RTC	10/22/24 - 7/19/26
CSO053_3.3 Bailey & Minnesota SPP254 Modification	10/22/24 - 7/19/26
CSO053_2.5 SPP337 Modification	4/24/26 - 11/20/27
CSO053_3.1 SPP338 Modification	4/23/27 - 6/1/30
CSO053_8 SPP341A Modification	4/24/26 - 11/20/27
CSO053_1.5 SPP336B Modification	4/24/26 - 11/20/27
CSO053_1.4, 3.26 MG Sidney OLS	6/18/27 - 5/29/32
CSO053_13 SPP165B Modification	4/24/26 - 11/20/27
CSO053_14 SPP175 Modification	4/24/26 - 11/20/27
CSO053_5.2 Edison Martha OLS	6/18/27 - 4/30/33
CSO014_1.1 SPP206A&B RTC	2/25/28 - 2/9/30
System_2 Schiller Park OLS	6/16/28 - 5/28/33
System_2_3 SPP339 Modification	4/23/27 - 11/18/28
System_2_4 Schiller Park OLS SPP340 Modification	4/23/27 - 4/7/29
CSO013_1 SPP304 Modification	4/22/28 - 11/18/29
CSO012_1.2 SPP023 Modification	4/22/28 - 11/18/29
CSO012_2.1 SPP296 Modification	4/22/28 - 11/18/29
CSO017_8 SPP326 Modification	4/22/28 - 11/18/29
CSO014_1.2 5.55 MG Erie Basin Marina OLS	3/24/29 - 3/5/34
CSO011_1.2 SPP024 Modification	4/22/28 - 11/18/29
CSO026_1.3 Collins Park OLS	6/18/30 - 5/30/35
CSO027_1 SPP 317 Modification	4/24/29 - 11/20/30
CSO027_2 Babcock PS Weir Modification	4/24/29 - 4/9/31
CSO055_1.5 11.55 MG Military Rd OLS	12/12/30 - 1/2/37
System_1 Northern Relief Tunnel	6/23/33 - 6/1/40
CSO017_9 SPP059 Modification	4/25/31 - 11/20/32
CSO027_3 SPP097 Modification	4/25/31 - 11/20/32
CSO033_2 Clinton St OLS	2/27/32 - 3/8/36
CSO033_3 SPP104 Modification	4/25/31 - 11/20/32
CSO017_10 SPP051 Modification	4/25/31 - 11/20/32
CSO006_3 Delavan Drain Weir Raising & RTC	2/25/33 - 4/5/36
CSO064_1.1 CSO-064 ILS	3/25/33 - 3/10/35
CSO064_1.2 SPP 137, Modification	4/23/32 - 11/19/33
CSO028_1, 0.95 MG Hopkins & Osage OLS	3/24/34 - 3/5/39
CSO017_6 Bass Alley OLS	3/24/34 - 3/5/39
CSO033_1 Bailey & Regent OLS (Moreland Park)	3/24/35 - 3/4/40
CSO064_2 Perry Street Sanitary Sewer	3/26/36 - 6/3/38
CSO017_1.1 SPP054 Sewer Separation	3/26/36 - 6/3/38
CSO055_1.1 Hertel North East ILS	4/23/37 - 6/1/40

WATER BODY IMPACTED LEGEND

Scajaquada Creek · Erie Basin Marina · Niagara River · Black Rock Canal · Buffalo River



50+ SITES

$1 BILLION

15 YEARS

How does this project impact the City of Buffalo?

This project will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river.

The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

Why is this work being done?

Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year.

Queen City Clean Waters will reduce these events.

We want to hear from you!

Scan the QR code to share your feedback.

CONTACT US

Buffalo Sewer Authority
1038 City Hall
65 Niagara Square
Buffalo, NY 14202

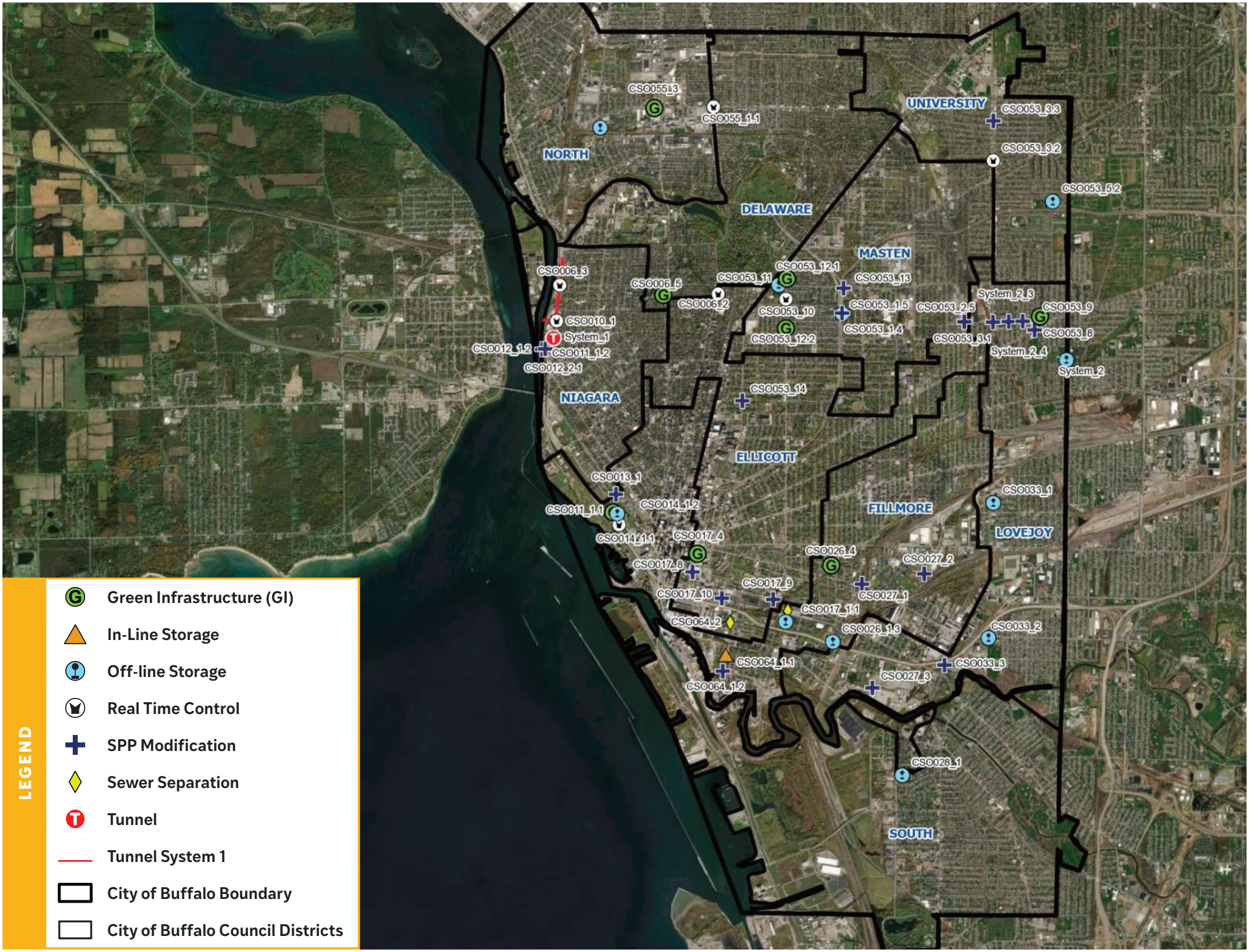
buffalosewer.org
716-851-4664

BUFFALO
SEWER AUTHORITY



QUEEN CITY CLEAN WATERS

- Bird Island Treatment Facility Upgrades
- Combined Sewer Overflow (CSO) Storage
- Green Infrastructure (GI)
- Real-Time Control Smart Sewers
- Sewer Improvements & Modifications


CSO055_3
CSO055_1.1
NORTH
UNIVERSITY
CSO053_3.3
CSO053_3.2
CSO053_5.2
DELAWARE
MASTEN
CSO053_12.1
CSO053_13
CSO053_11
CSO053_10
CSO053_1.5
CSO053_2.5
System_2_3
CSO053_9
CSO053_8
CSO053_1.4
CSO053_12.2
CSO053_3.1
System_2_4
System_2
CSO006_3
CSO006_5
CSO006_2
CSO010_1
System_1
CSO012_1.2
CSO011_1.2
CSO012_2.1
NIAGARA
CSO053_14
ELLICOTT
CSO013_1
CSO011_1.1
CSO014_1.2
CSO014_1.1
CSO017_4
CSO017_8
CSO017_10
CSO017_9
CSO064_2
CSO064_1.1
CSO064_1.2
CSO026_4
CSO027_2
CSO027_1
CSO017_1.1
CSO026_1.3
CSO033_1
FILLMORE
LOVEJOY
CSO033_2
CSO033_3
CSO027_3
CSO028_1
SOUTH
LEGEND
Green Infrastructure (GI)
In-Line Storage
Off-line Storage
Real Time Control
SPP Modification
Sewer Separation
Tunnel
Tunnel System 1
City of Buffalo Boundary
City of Buffalo Council Districts

QUEEN CITY CLEAN WATERS

- Bird Island Treatment Facility Upgrades
- Combined Sewer Overflow (CSO) Storage
- Green Infrastructure (GI)
- Real-Time Control Smart Sewers
- Sewer Improvements & Modifications

BUFFALO SEWER AUTHORITY

How does this project impact the City of Buffalo?

This project will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river.

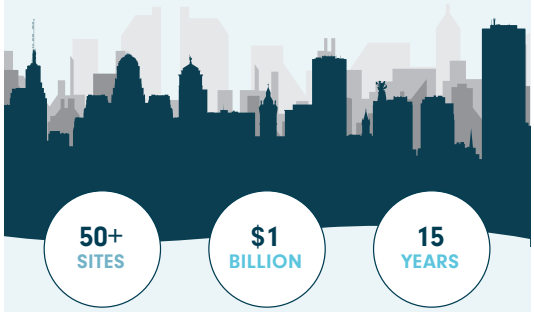
The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250 million in treatment facility upgrades.

Why is this work being done?

Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year.

Queen City Clean Waters will reduce these events.

We want to hear from you! Scan the QR code to share your feedback.

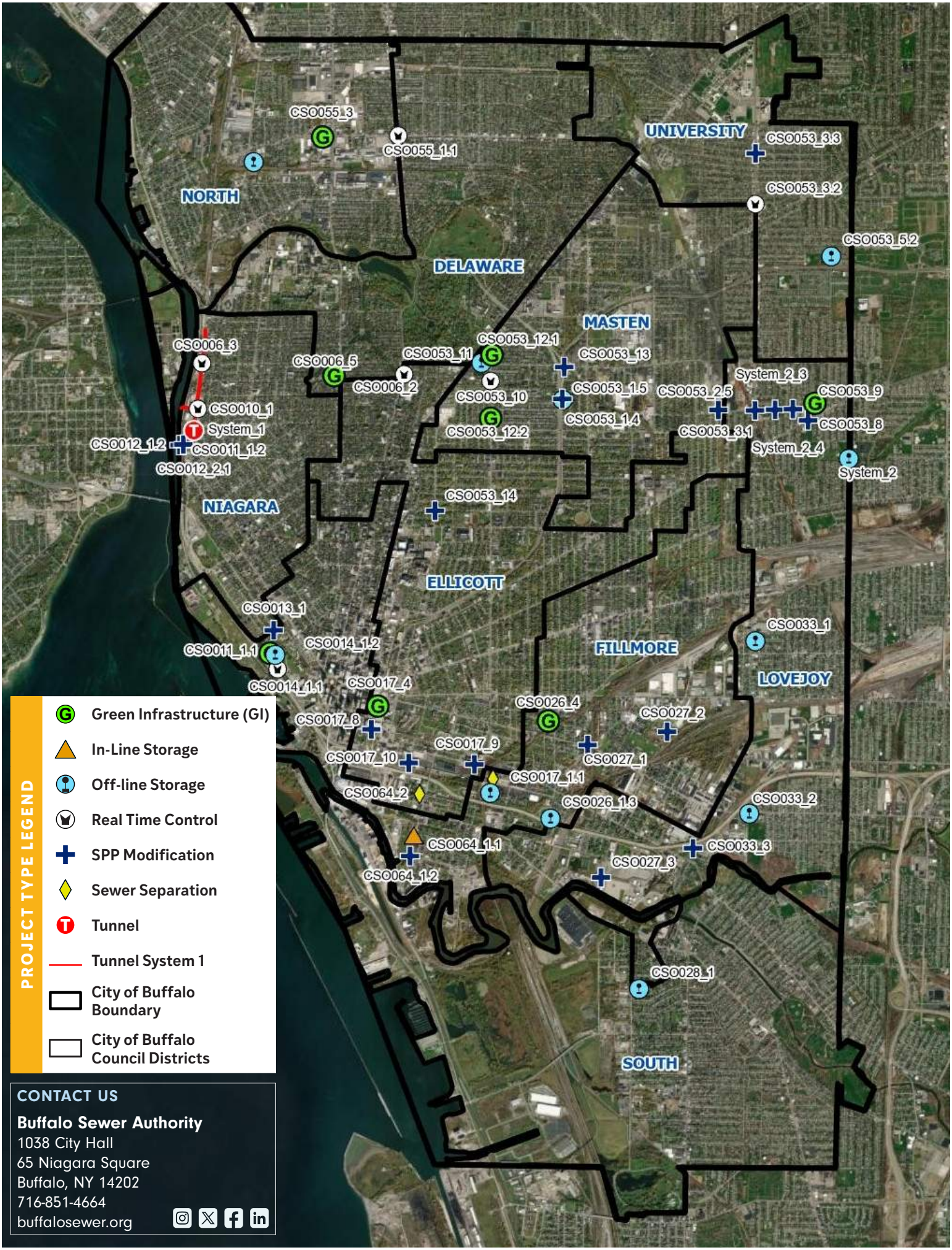


BSA's Proposed Project Schedules (GI Projects not included)

Project Name and Tag	Start - Completion
WWTF NFA Phase I	9/27/22 - 5/25/30
WWTF NFA Phase II	7/23/26 - 12/26/31
WWTF NFA Phase III	1/13/28 - 9/3/31
CSO053_11, 1.5 MG Canisius/Jefferson Delavan OLS	9/7/28 - 4/9/32
CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC	5/28/25 - 7/6/28
CSO010_1 Breckenridge Niagara RTC	8/26/25 - 1/31/29
CSO006_2 Gates Circle RTC	4/8/25 - 5/17/28
CSO053_10 SPP229A RTC	10/22/24 - 7/19/26
CSO053_3.3 Bailey & Minnesota SPP254 Modification	10/22/24 - 7/19/26
CSO053_2.5 SPP337 Modification	4/24/26 - 11/20/27
CSO053_3.1 SPP338 Modification	4/23/27 - 6/1/30
CSO053_8 SPP341A Modification	4/24/26 - 11/20/27
CSO053_1.5 SPP336B Modification	4/24/26 - 11/20/27
CSO053_1.4, 3.26 MG Sidney OLS	6/18/27 - 5/29/32
CSO053_13 SPP165B Modification	4/24/26 - 11/20/27
CSO053_14 SPP175 Modification	4/24/26 - 11/20/27
CSO053_5.2 Edison Martha OLS	6/18/27 - 4/30/33
CSO014_1.1 SPP206A&B RTC	2/25/28 - 2/9/30
System_2 Schiller Park OLS	6/16/28 - 5/28/33
System_2_3 SPP339 Modification	4/23/27 - 11/18/28
System_2_4 Schiller Park OLS SPP340 Modification	4/23/27 - 4/7/29
CSO013_1 SPP304 Modification	4/22/28 - 11/18/29
CSO012_1.2 SPP023 Modification	4/22/28 - 11/18/29
CSO012_2.1 SPP296 Modification	4/22/28 - 11/18/29
CSO017_8 SPP326 Modification	4/22/28 - 11/18/29
CSO014_1.2 5.55 MG Erie Basin Marina OLS	3/24/29 - 3/5/34
CSO011_1.2 SPP024 Modification	4/22/28 - 11/18/29
CSO026_1.3 Collins Park OLS	6/18/30 - 5/30/35
CSO027_1 SPP 317 Modification	4/24/29 - 11/20/30
CSO027_2 Babcock PS Weir Modification	4/24/29 - 4/9/31
CSO055_1.5 11.55 MG Military Rd OLS	12/12/30 - 1/2/37
System_1 Northern Relief Tunnel	6/23/33 - 6/1/40
CSO017_9 SPP059 Modification	4/25/31 - 11/20/32
CSO027_3 SPP097 Modification	4/25/31 - 11/20/32
CSO033_2 Clinton St OLS	2/27/32 - 3/8/36
CSO033_3 SPP104 Modification	4/25/31 - 11/20/32
CSO017_10 SPP051 Modification	4/25/31 - 11/20/32
CSO006_3 Delavan Drain Weir Raising & RTC	2/25/33 - 4/5/36
CSO064_1.1 CSO-064 ILS	3/25/33 - 3/10/35
CSO064_1.2 SPP 137, Modification	4/23/32 - 11/19/33
CSO028_1, 0.95 MG Hopkins & Osage OLS	3/24/34 - 3/5/39
CSO017_6 Bass Alley OLS	3/24/34 - 3/5/39
CSO033_1 Bailey & Regent OLS (Moreland Park)	3/24/35 - 3/4/40
CSO064_2 Perry Street Sanitary Sewer	3/26/36 - 6/3/38
CSO017_1.1 SPP054 Sewer Separation	3/26/36 - 6/3/38
CSO055_1.1 Hertel North East ILS	4/23/37 - 6/1/40

WATER BODY IMPACTED LEGEND

Scajaquada Creek | Black Rock Canal | Erie Basin Marina | Buffalo River | Niagara River



CONTACT US

Buffalo Sewer Authority
1038 City Hall
65 Niagara Square
Buffalo, NY 14202
716-851-4664
buffalosewer.org

BUFFALO
SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

- Bird Island Treatment Facility Upgrades
- Combined Sewer Overflow (CSO) Storage
- Green Infrastructure (GI)
- Real-Time Control Smart Sewers
- Sewer Improvements & Modifications

How does this project impact the City of Buffalo?

This project will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river.

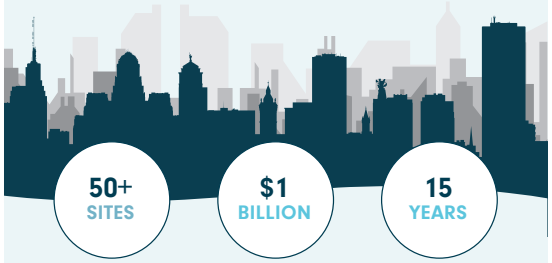
The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250 million in treatment facility upgrades.

Why is this work being done?

Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year.

Queen City Clean Waters will reduce these events.

We want to hear from you! Scan the QR code to share your feedback.

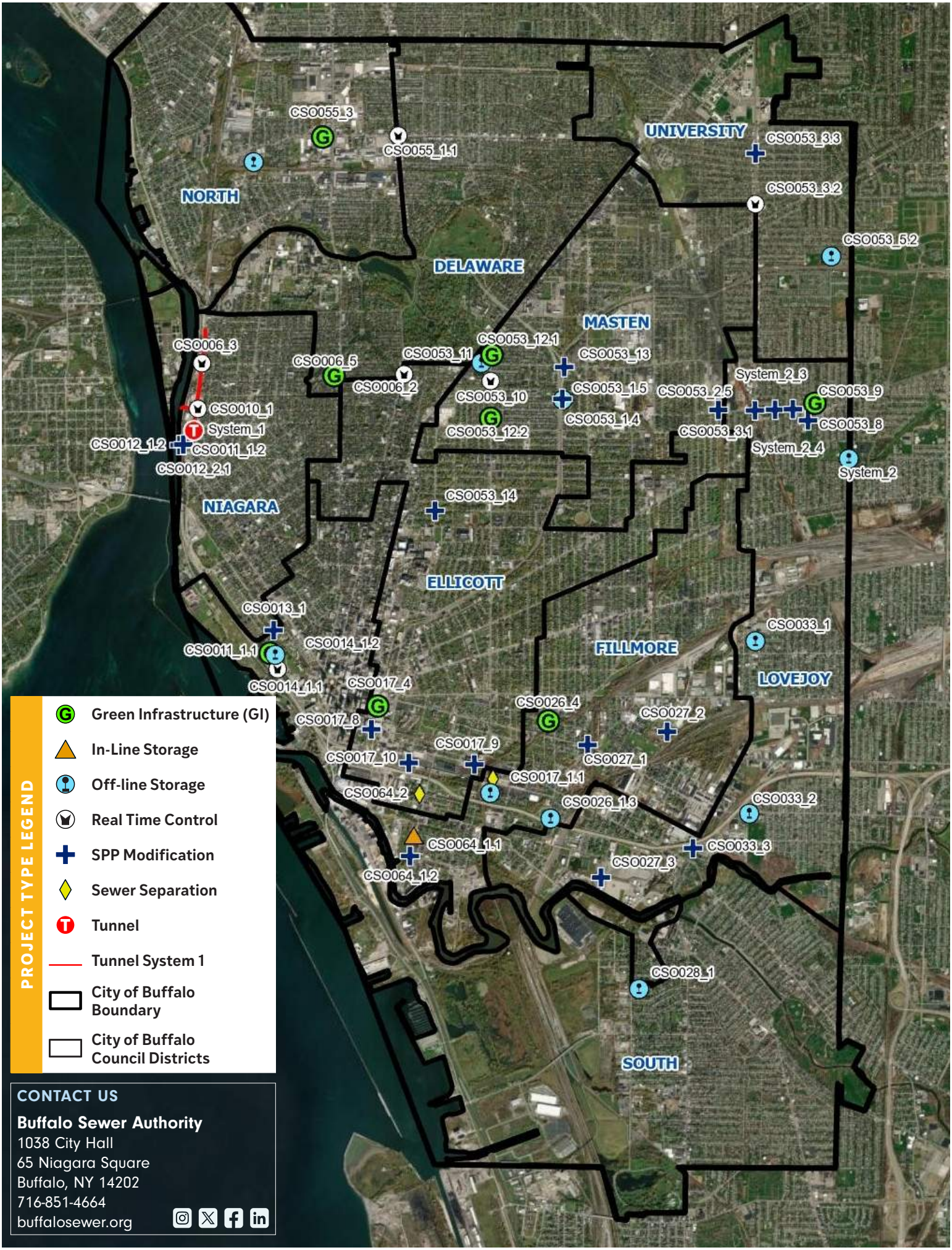


BSA's Proposed Project Schedules (GI Projects not included)

Project Name and Tag	Start - Completion
WWTF NFA Phase I	9/27/22 - 5/25/30
WWTF NFA Phase II	7/23/26 - 12/26/31
WWTF NFA Phase III	1/13/28 - 9/3/31
CSO053_11, 1.5 MG Canisius/Jefferson Delavan OLS	9/7/28 - 4/9/32
CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC	5/28/25 - 7/6/28
CSO010_1 Breckenridge Niagara RTC	8/26/25 - 1/31/29
CSO006_2 Gates Circle RTC	4/8/25 - 5/17/28
CSO053_10 SPP229A RTC	10/22/24 - 7/19/26
CSO053_3.3 Bailey & Minnesota SPP254 Modification	10/22/24 - 7/19/26
CSO053_2.5 SPP337 Modification	4/24/26 - 11/20/27
CSO053_3.1 SPP338 Modification	4/23/27 - 6/1/30
CSO053_8 SPP341A Modification	4/24/26 - 11/20/27
CSO053_1.5 SPP336B Modification	4/24/26 - 11/20/27
CSO053_1.4, 3.26 MG Sidney OLS	6/18/27 - 5/29/32
CSO053_13 SPP165B Modification	4/24/26 - 11/20/27
CSO053_14 SPP175 Modification	4/24/26 - 11/20/27
CSO053_5.2 Edison Martha OLS	6/18/27 - 4/30/33
CSO014_1.1 SPP206A&B RTC	2/25/28 - 2/9/30
System_2 Schiller Park OLS	6/16/28 - 5/28/33
System_2_3 SPP339 Modification	4/23/27 - 11/18/28
System_2_4 Schiller Park OLS SPP340 Modification	4/23/27 - 4/7/29
CSO013_1 SPP304 Modification	4/22/28 - 11/18/29
CSO012_1.2 SPP023 Modification	4/22/28 - 11/18/29
CSO012_2.1 SPP296 Modification	4/22/28 - 11/18/29
CSO017_8 SPP326 Modification	4/22/28 - 11/18/29
CSO014_1.2 5.55 MG Erie Basin Marina OLS	3/24/29 - 3/5/34
CSO011_1.2 SPP024 Modification	4/22/28 - 11/18/29
CSO026_1.3 Collins Park OLS	6/18/30 - 5/30/35
CSO027_1 SPP 317 Modification	4/24/29 - 11/20/30
CSO027_2 Babcock PS Weir Modification	4/24/29 - 4/9/31
CSO055_1.5 11.55 MG Military Rd OLS	12/12/30 - 1/2/37
System_1 Northern Relief Tunnel	6/23/33 - 6/1/40
CSO017_9 SPP059 Modification	4/25/31 - 11/20/32
CSO027_3 SPP097 Modification	4/25/31 - 11/20/32
CSO033_2 Clinton St OLS	2/27/32 - 3/8/36
CSO033_3 SPP104 Modification	4/25/31 - 11/20/32
CSO017_10 SPP051 Modification	4/25/31 - 11/20/32
CSO006_3 Delavan Drain Weir Raising & RTC	2/25/33 - 4/5/36
CSO064_1.1 CSO-064 ILS	3/25/33 - 3/10/35
CSO064_1.2 SPP 137, Modification	4/23/32 - 11/19/33
CSO028_1, 0.95 MG Hopkins & Osage OLS	3/24/34 - 3/5/39
CSO017_6 Bass Alley OLS	3/24/34 - 3/5/39
CSO033_1 Bailey & Regent OLS (Moreland Park)	3/24/35 - 3/4/40
CSO064_2 Perry Street Sanitary Sewer	3/26/36 - 6/3/38
CSO017_1.1 SPP054 Sewer Separation	3/26/36 - 6/3/38
CSO055_1.1 Hertel North East ILS	4/23/37 - 6/1/40

WATER SOURCE LEGEND

Scajaquada Creek · Black Rock Canal · Erie Basin Marina · Buffalo River · Niagara River



CONTACT US

Buffalo Sewer Authority
1038 City Hall
65 Niagara Square
Buffalo, NY 14202
716-851-4664
buffalosewer.org

BUFFALO SEWER AUTHORITY

Breckenridge Street CSO Control

ABOUT THE BRECKENRIDGE STREET COMBINED SEWER OVERFLOW (CSO) CONTROL PROJECT

Why is Buffalo Sewer doing this project?

- Buffalo Sewer is working diligently to improve the City's existing sewer infrastructure in a cost-effective manner that will reduce combined sewer overflows (CSOs) impacting local waterways.
- This project will replace and rehabilitate sewers that are over 100 years old and redirect them on a different path to the wastewater treatment plant, while reducing CSOs to the Black Rock Canal.

What is included in this project?

West Ave. *(from Breckenridge St. to Lafayette Ave.):*

- New combined sewer main
- Replace combined sewers on each side
- Reconnect house / building laterals
- New lead-free water main
- Replacement of any existing lead water services with new copper services
- New road pavement from curb to curb

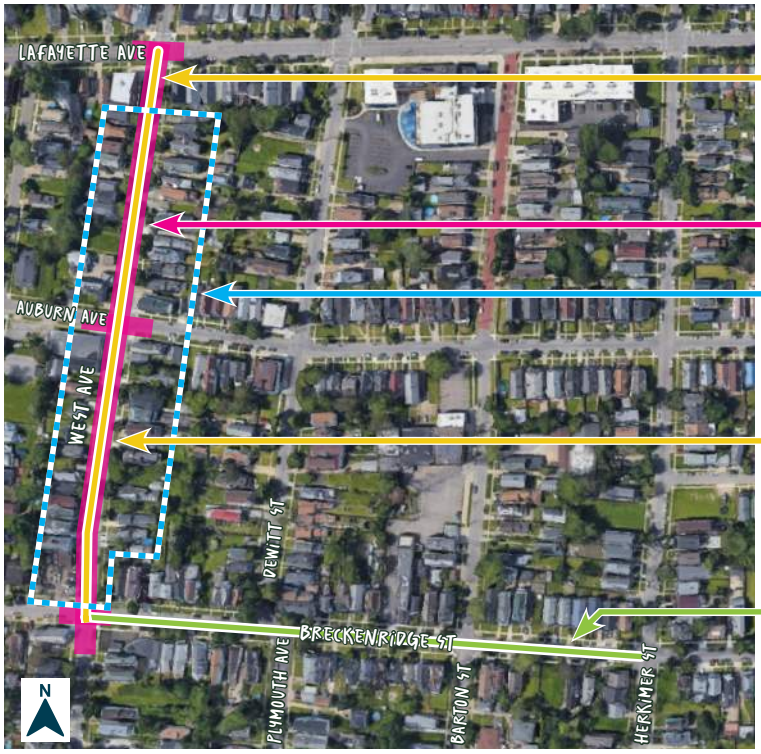
Breckenridge St. *(from West Ave. to Herkimer St.):*

- Lining and repair of the existing combined sewer

WHAT ARE THE BENEFITS?

- ☑ Reduce the Amount of Nutrients Flowing Into The Black Rock Canal During Storm Events and Improve Water Quality
- ☑ 8 Million Gallons of Combined Sewer Overflows Prevented to the Black Rock Canal in a Typical Year

PROJECT AREA



New Combined (Storm and Sanitary) Sewer in the center of **West Ave.** between **Lafayette Ave.** and **Breckenridge St.**, and a New Water Main

Limits of New Road Pavement

Reconnect Building Sewers and Replace Lead Water Services to Existing Building (both sides of **West Ave.**; approximate houses shown)

Replace Combined Sewer on Each Side of **West Ave.** between **Lafayette Ave.** and **Breckenridgedge St.**

Install a Liner in the Existing Sewer in the Center of **Breckenridge St.** between **West Ave.** and **Herkimer St.**

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

WILL THERE BE CHANGES TO PARKING OF PUBLIC TRANSPORTATION DURING CONSTRUCTION?

Temporary changes to parking and public transportation may occur during construction, but services will continue with re-routed routes. Updates will be provided in advance.

TRAFFIC IMPACTS

During construction, residents can expect to see construction equipment in the road and new traffic patterns in place, including:

- Partial or full road closures
- Sidewalk closures
- Limited street parking
- Possible detours

The photos to the right show examples from previous Buffalo Sewer projects of what the traffic controls may look like.









LAFAYETTE AVENUE AND WEST AVENUE CLOSURE DETOUR

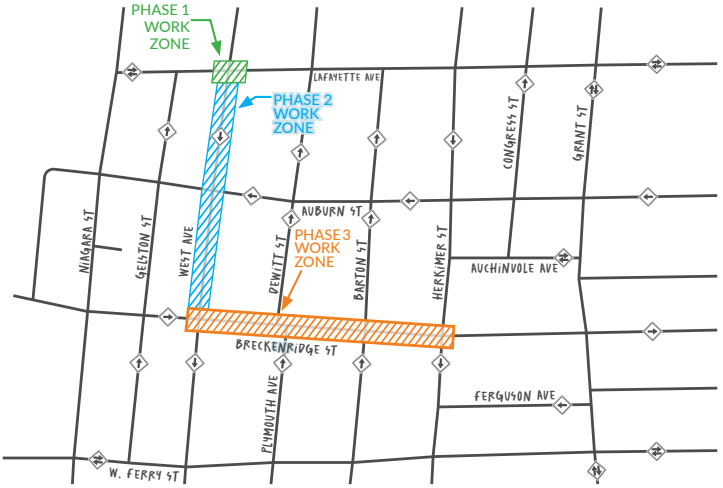
When construction reaches the intersection of Lafayette Avenue and West Avenue, the intersection will need to be closed for several weeks for construction of a new chamber and drop shaft. A detour will be in place during this time, as shown below.



EXPECTED TIMELINES

Construction is scheduled to start in Spring 2026 and finish by the end of 2028. It is expected that construction will be completed in sections (generally one block at a time) as shown in the graphic below. **The phased approach will help minimize temporary disruptions in the neighborhood, such as noise and dust, as much as possible.**

Notices will be hand-delivered to residents at least one week before construction starts with more detailed information.



HOW WILL THIS WORK BE FUNDED?

Buffalo Sewer will pay for this project with low interest loans, and will seek New York State grant funds to supplement the project funding.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Scan the QR code for more information and schedule updates during construction.

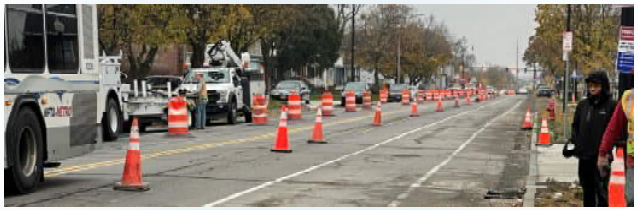
CONTACT: 716.851.4664 QueenCityCleanWaters@buffalosewer.org www.buffalosewer.org

What can I expect during construction?

Construction will be completed in sections (one block at a time) so that temporary disruptions in the neighborhood, such as noise and dust, will be minimized as much as possible. Sewage odors will NOT be present in homes, but may be present outside.

During construction, residents can expect to see equipment in the road and new traffic patterns in place, as listed and shown below:

- Partial or full road closures
- Sidewalk closures
- Limited street parking
- Possible detours





Will my service be affected?

Residents may experience temporary sewer and water service interruption / limited use. Residents will be notified of construction in advance and details will be provided at that time.

How is this project being funded?

Buffalo Sewer will pay for this project with low interest loans, and will seek New York State grant funds to supplement the project funding.

Where can I find more information?

For further information, please call / email Buffalo Sewer or scan the QR code below to see our website for information about this and other current projects.

716-851-4664
QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

BUFFALO
SEWER AUTHORITY

1038 City Hall
65 Niagara Square
Buffalo, NY 14202

BUFFALO
SEWER AUTHORITY

Breckenridge Street CSO Control

PROJECT INFORMATION



Why is Buffalo Sewer doing this project?

Buffalo Sewer is working diligently to improve the City's existing sewer infrastructure in a cost-effective manner that will reduce combined sewer overflows (CSOs) impacting surface waters. This project will replace / rehabilitate sewers that are over 100 years old and redirect them on a different path to the wastewater treatment plant. A water line on West Ave. will also be replaced, and any lead water services encountered with be replaced with copper pipe.

What is included in this project?

West Ave. (from Breckenridge St. to Lafayette Ave.):

- New combined sewer main
- Replace combined sewers on each side
- Reconnect house / building laterals
- New water main
- Replacement of any lead water services with new copper services
- New road pavement from curb to curb

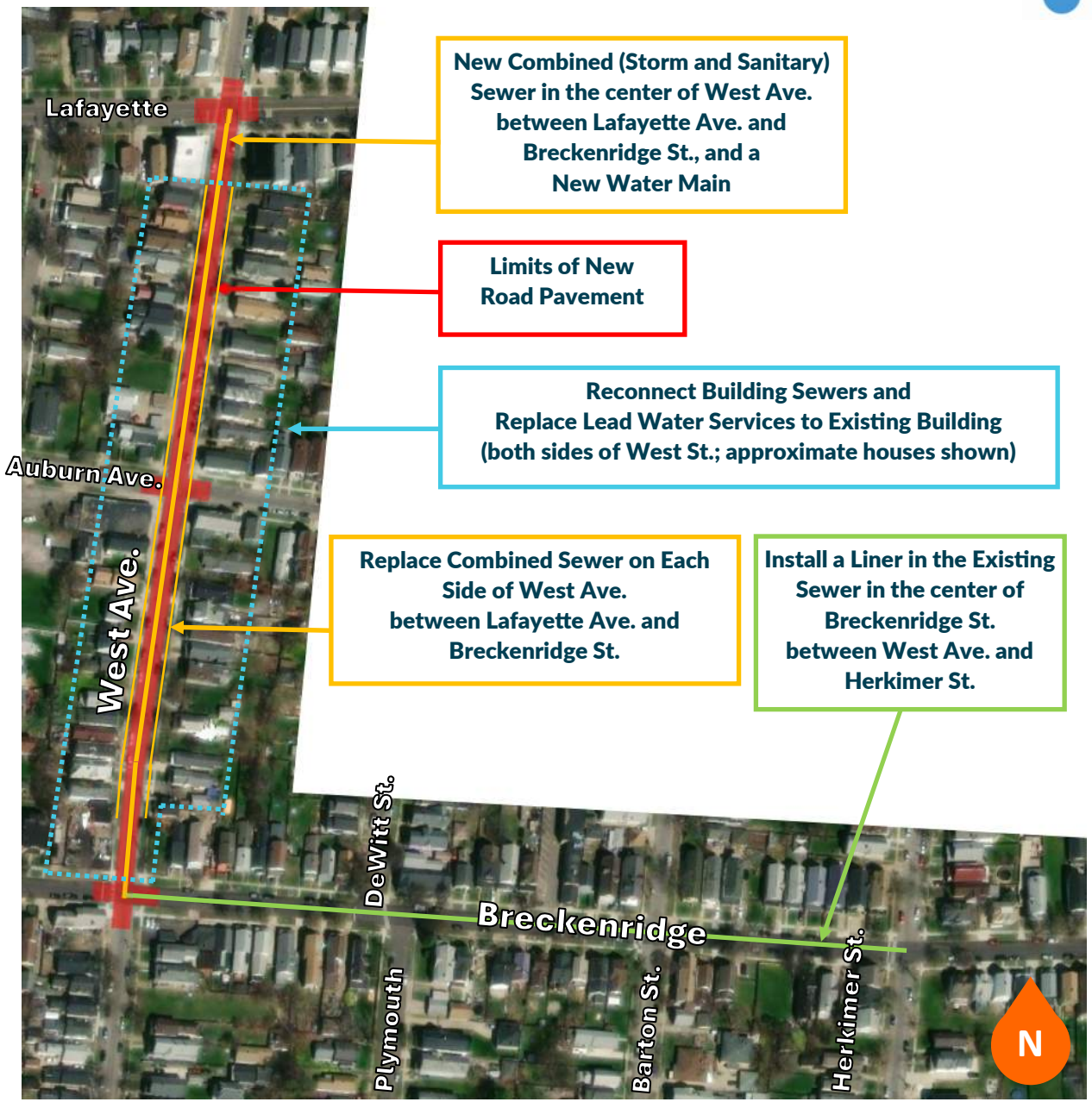
Breckenridge St. (from West Ave. to Herkimer St.):

- Line existing combined sewer

When will construction begin?

- Construction is scheduled to start in Spring 2026 and finish by the end of 2028.
- Notices will be hand-delivered to residents at least one week before construction starts.

Project Area



© Google Maps—Image Source

BRECKENRIDGE STREET

COMBINED SEWER OVERFLOW (CSO) CONTROL PROJECT

WE'LL BE
WORKING
IN YOUR
NEIGHBORHOOD
MONTH XX - XX, 202X

BUFFALO
SEWER AUTHORITY

TYLin | JMDavidson Engineering, D.P.C. | MARK CERRONE INC.

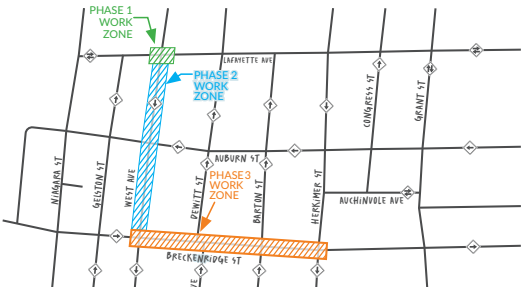
buffalosewer.org/construction-projects/queen-city-clean-waters

BRECKENRIDGE STREET

COMBINED SEWER OVERFLOW (CSO) CONTROL PROJECT

We will be doing pre-construction surveys

Buffalo Sewer will be looking at the current status of houses, sidewalks and streets along West Avenue and Breckenridge Street. You may see workers counting cars and trucks or putting boxes on light poles in the area.



Find additional information on our website or get in touch:

Buffalo Sewer Authority
QueenCityCleanWaters@buffalosewer.org
716-851-4664 | buffalosewer.org

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Roosevelt Park Offline Storage Facility

ABOUT THE ROOSEVELT PARK OFFLINE STORAGE FACILITY

Why is Buffalo Sewer doing the Queen City Clean Waters initiative?

- Reduce the number and volume of Combined Sewer Overflows, also known as CSOs, during large wet weather events
- Help flow reach the Bird Island Wastewater Treatment Facility during Wet Weather during those wet weather events, instead of Buffalo's waterways.

The project is currently in the early design stage. Buffalo Sewer has evaluated several potential solutions and is advancing the design of:

Offline Storage (OLS):

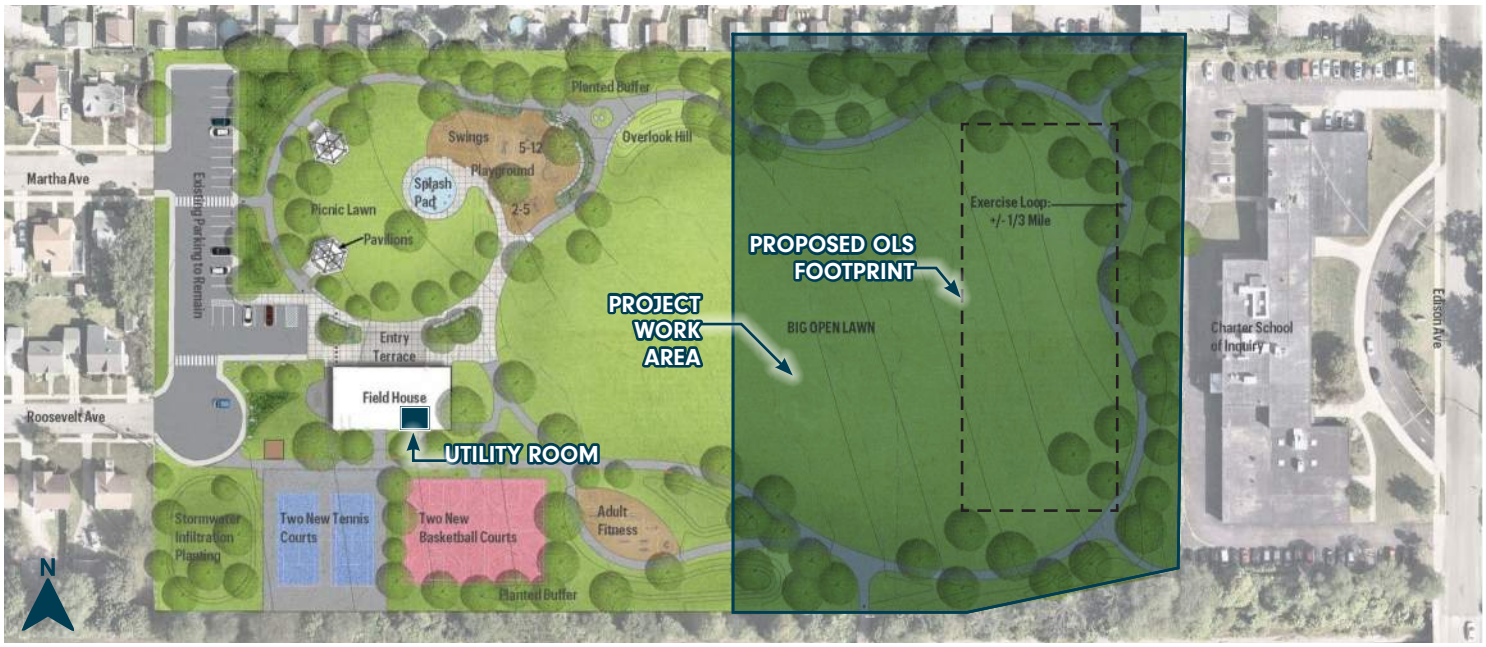
A tank designed to temporarily hold excess combined sewage when the sewer system is full. Once capacity becomes available at the Bird Island Wastewater Treatment Facility, the stored sewage would be gradually drained and treated. Community input is important, and there will be opportunities to share feedback and help shape the final design.

Buffalo Sewer is actively seeking community feedback to help shape the final design.

WHAT ARE THE BENEFITS?

- ☑ Reduce the amount of discharge flowing into the Scajaquada Creek during storm events and improve water quality
- ☑ 36 million gallons of combined sewer overflows diverted from the Scajaquada Creek in a typical year
- ☑ Reduce future flood events

PROJECT AREA



PROJECTED TIMELINE

Construction is estimated to start in Summer 2027 and finish by Summer 2033. Preconstruction surveys will be performed.

Temporary disruptions in the neighborhood, such as noise and dust, will be minimized as much as possible.

Future meetings will occur with further updates and opportunities for stakeholder feedback/questions.

HOW WILL THIS WORK BE FUNDED?

Buffalo Sewer will pay for this project with low interest loans and will seek New York State grant funds to supplement the project funding.

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

Roosevelt Park Offline Storage Facility

WHAT IS INCLUDED IN THIS PROJECT?

- New combined sewer infrastructure that diverts flow from and connects to the Scajaquada Tunnel.
- Installation of a concrete underground storage tank equipped with self-cleaning system and mechanical systems for flow control and monitoring.
- Opportunities for Charter School of Inquiry students to learn about and engage with the project.
- Landscaping, parking lot, and roadway improvements.
- Replacement of connected lead water services and reconnecting with new lead-free service line.
- Repair of sidewalks and curbs removal with replacement of sidewalks as necessary.
- Landscaping improvements and roadway repairs.

TRAFFIC IMPACTS

During construction, residents can expect to see construction equipment in the road and new traffic patterns in place, including:

- Partial or full road closures
- Sidewalk closures
- Limited street parking
- Possible detours

The photos to the right show examples from previous Buffalo Sewer projects of what the traffic controls may look like.









MORE INFORMATION

Scan the QR code for more information and schedule updates during construction.

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

SOUTH DISTRICT PROJECTS

PUBLIC PARTICIPATION FORUM

To learn more about the upcoming projects in the University District

WHEN:
Thursday, April 17, 2025
6:00 - 8:00 PM EST

WHERE:
Buffalo Irish Center
245 Abbott Rd
Buffalo, NY 14220

Dinner will be served. Translation and American Sign Language services will be provided.

ZOOM MEETING:
Saturday, July 12, 2025
10:00 AM - 12:00 PM EST

Please scan the QR code to register for the virtual Public Participation Session, to be held in July 2025.

WHY IS BUFFALO SEWER DOING THE QUEEN CITY CLEAN WATERS INITIATIVE?

- Reduce the number and volume of Combined Sewer Overflows, also known as CSOs, during large wet weather events, and
- Improve the water quality in the Niagara River, Scajaquada Creek, Black Rock Canal, and other local waters.

HOW DOES QUEEN CITY CLEAN WATERS BENEFIT ME?

The projects will support the overall health of the community and protect our environment by:

- Reducing pollution entering our waterways and
- Reducing future flooding events.

It also includes community betterment initiatives, like:

- New sewer and lead-free water pipes, and
- Community partnership and Workforce development opportunities.

SOUTH DISTRICT AREA PROJECTS



Kelly 'F' Pump Station Rehabilitation
Construction: Fall 2025 - Summer 2026

South Buffalo Pump Station Upgrades
Construction Phase I: Spring 2026 - Fall 2028

Hopkins & Osage Offline Storage
Construction: Summer 2034 - Fall 2039

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

MASTEN DISTRICT PROJECTS

PUBLIC PARTICIPATION FORUM

To learn more about the upcoming projects in the University District

WHEN:
Monday, April 28, 2025
6:00 - 8:00 PM EST

WHERE:
Northland Workforce Training Center
683 Northland Ave
Buffalo, NY 14211

Dinner will be served. Translation and American Sign Language services will be provided.

ZOOM MEETING:
Saturday, July 12, 2025
10:00 AM - 12:00 PM EST

Please scan the QR code to register for the virtual Public Participation Session, to be held in July 2025.

WHY IS BUFFALO SEWER DOING THE QUEEN CITY CLEAN WATERS INITIATIVE?

- Reduce the number and volume of Combined Sewer Overflows, also known as CSOs, during large wet weather events, and
- Improve the water quality in the Niagara River, Scajaquada Creek, Black Rock Canal, and other local waters.

HOW DOES QUEEN CITY CLEAN WATERS BENEFIT ME?

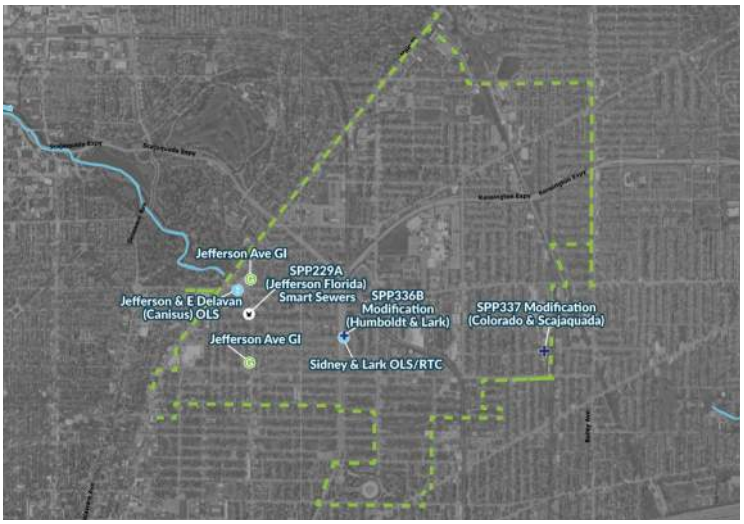
The projects will support the overall health of the community and protect our environment by:

- Reducing pollution entering our waterways and
- Reducing future flooding events.

It also includes community betterment initiatives, like:

- New sewer and lead-free water pipes, and
- Community partnership and Workforce development opportunities.

MASTEN DISTRICT AREA PROJECTS



Jefferson Ave Green Infrastructure
Construction: Spring 2025 – Spring 2028

SPP337 Modification (Colorado & Scajaquada)
Construction: Winter 2026 – Winter 2028

SPP 336B Modification (Humboldt & Lark)
Construction: Summer 2026 – Winter 2027

SPP229A (Jefferson & Florida) Smart Sewers
Construction: Spring 2025 – Summer 2026

Sidney & Lark Offline Storage/Real Time Control
Construction: Winter 2027 - Winter 2032

Jefferson & E Delavan (Canisus) Offline Storage
Construction: Fall 2026 – Spring 2032

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

UNIVERSITY DISTRICT PROJECTS

PUBLIC PARTICIPATION FORUM

To learn more about the upcoming projects in the University District

WHEN:
Thursday, April 24, 2025
6:00 - 8:00 PM EST

WHERE:
Gerard Place
2515 Bailey Ave
Buffalo, NY 14215

Dinner will be served. Translation and American Sign Language services will be provided.

ZOOM MEETING:
Saturday, July 12, 2025
10:00 AM - 12:00 PM EST

Please scan the QR code to register for the virtual Public Participation Session, to be held in July 2025.

WHY IS BUFFALO SEWER DOING THE QUEEN CITY CLEAN WATERS INITIATIVE?

- Reduce the number and volume of Combined Sewer Overflows, also known as CSOs, during large wet weather events, and
- Improve the water quality in the Niagara River, Scajaquada Creek, Black Rock Canal, and other local waters.

HOW DOES QUEEN CITY CLEAN WATERS BENEFIT ME?

The projects will support the overall health of the community and protect our environment by:

- Reducing pollution entering our waterways and
- Reducing future flooding events.

It also includes community betterment initiatives, like:

- New sewer and lead-free water pipes, and
- Community partnership and Workforce development opportunities.

UNIVERSITY DISTRICT AREA PROJECTS



Bailey & Minnesota SPP254 Modification
Construction: Summer 2024 (Completed)

Amherst & Bailey Real Time Control
Construction: July 2024 - November 2025

Edison & Martha Offline Storage
Construction: Spring 2027 - Spring 2033

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

LOVEJOY DISTRICT PROJECTS

PUBLIC PARTICIPATION FORUM

WHERE:
Schiller Park Senior Center
2057 Genesee St.
Buffalo, NY 14211

WHEN:
Tuesday, May 13, 2025
6:00 - 8:00 PM EST

WHAT:
To learn more about the upcoming projects in the Lovejoy District

Dinner will be served. Translation and American Sign Language services will be provided.



WHY:
Buffalo Sewer is planning $1 Billion in sewer projects over the next 15 years to reduce wet weather discharges of sewage and improve our community.

ZOOM MEETING:
Saturday, July 12, 2025
10:00 AM - 12:00 PM EST

Please scan the QR code to register for the virtual Public Participation Session, to be held in July 2025.

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

FILLMORE DISTRICT PROJECTS

PUBLIC PARTICIPATION FORUM

WHERE:
Matt Urban Human Services Center
1081 Broadway
Buffalo, NY 14212

WHEN:
Wednesday, May 14, 2025
6:00 - 8:00 PM EST

WHAT:
To learn more about the upcoming projects in the Fillmore District

Dinner will be served. Translation and American Sign Language services will be provided.



WHY:
Buffalo Sewer is planning $1 Billion in sewer projects over the next 15 years to reduce wet weather discharges of sewage and improve our community.

ZOOM MEETING:
Saturday, July 12, 2025
10:00 AM - 12:00 PM EST

Please scan the QR code to register for the virtual Public Participation Session, to be held in July 2025.

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

NIAGARA DISTRICT PROJECTS

PUBLIC PARTICIPATION FORUM

WHERE:
The Belle Center
104 Maryland St.
Buffalo, NY 14201

WHEN:
Thursday, June 12, 2025
6:00 - 8:00 PM EST

WHAT:
To learn more about the upcoming projects in the Niagara District

Dinner will be served. Translation and American Sign Language services will be provided.



WHY:
Buffalo Sewer is planning $1 Billion in sewer projects over the next 15 years to reduce wet weather discharges of sewage and improve our community.

ZOOM MEETING:
Saturday, July 12, 2025
10:00 AM - 12:00 PM EST

Please scan the QR code to register for the virtual Public Participation Session, to be held in July 2025.

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

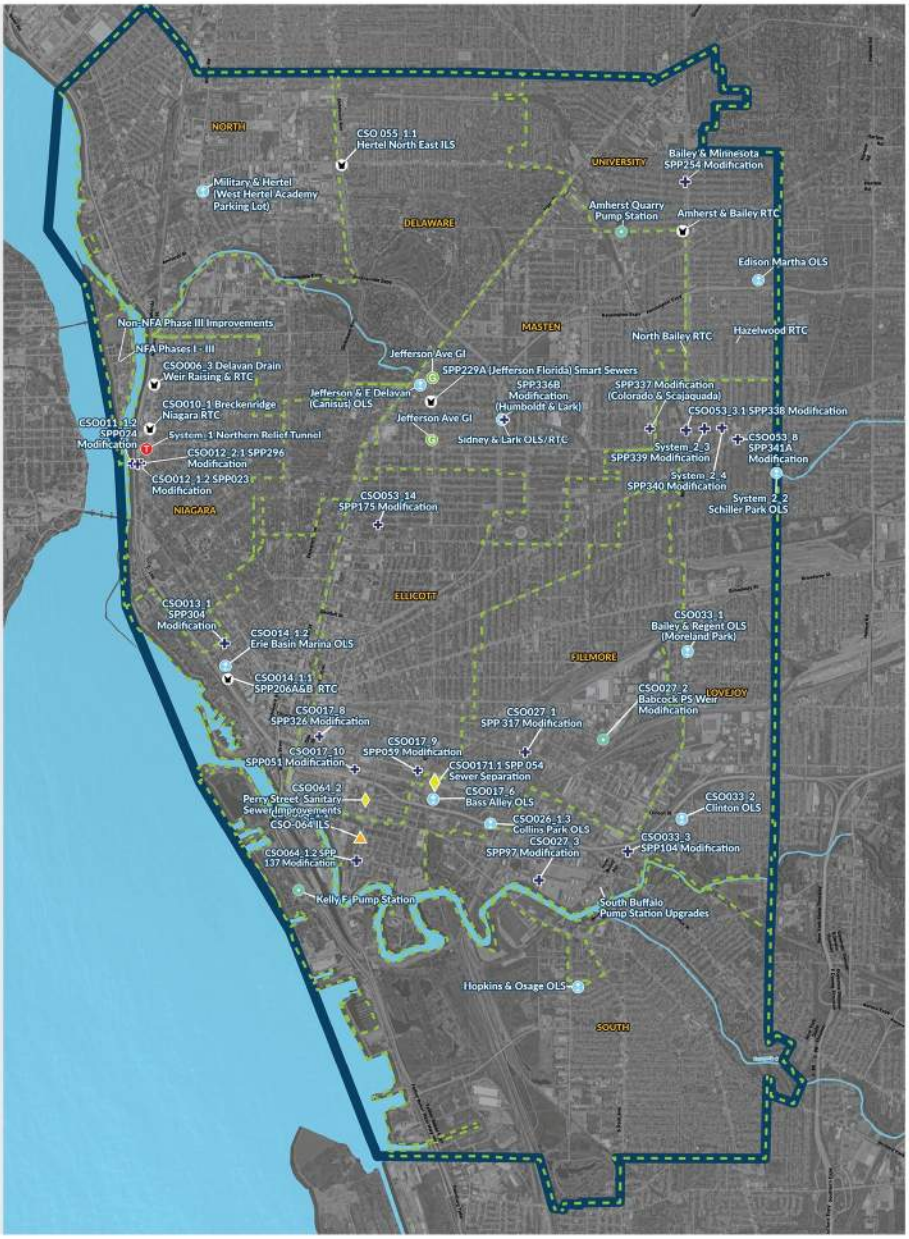
716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

QUEEN CITY CLEAN WATERS
ALL COUNCIL DISTRICTS

VIRTUAL PUBLIC PARTICIPATION FORUM

Buffalo Sewer is planning $1B in sewer projects over the next 15 years to reduce wet weather discharges of sewage and to improve our community.



LEARN MORE

A virtual Public Participation Forum will be held on:

Saturday, July 12, 2025
10:00 AM - 12:00 PM ET
(Online event)

REGISTER

https://rb.gy/a9sq5w

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffaloqccw.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

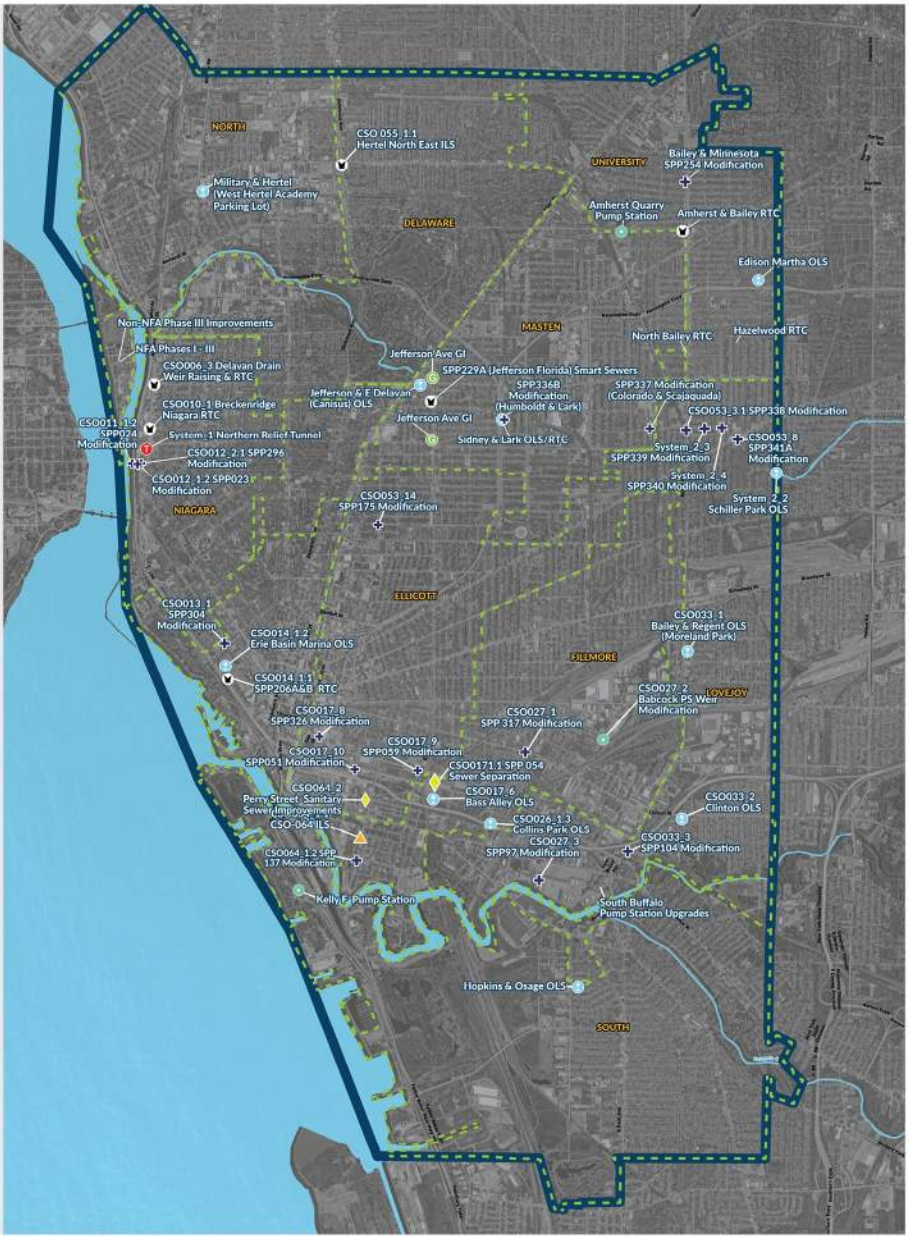
716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

QUEEN CITY CLEAN WATERS
ALL COUNCIL DISTRICTS

VIRTUAL PUBLIC PARTICIPATION FORUM

Buffalo Sewer is planning $1B in sewer projects over the next 15 years to reduce wet weather discharges of sewage and to improve our community.



LEARN MORE

A virtual Public Participation Forum will be held on:

Saturday, July 12, 2025
10:00 AM - 12:00 PM ET
(Online event)

REGISTER

https://rb.gy/a9sq5w

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffaloqccw.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

Arabic

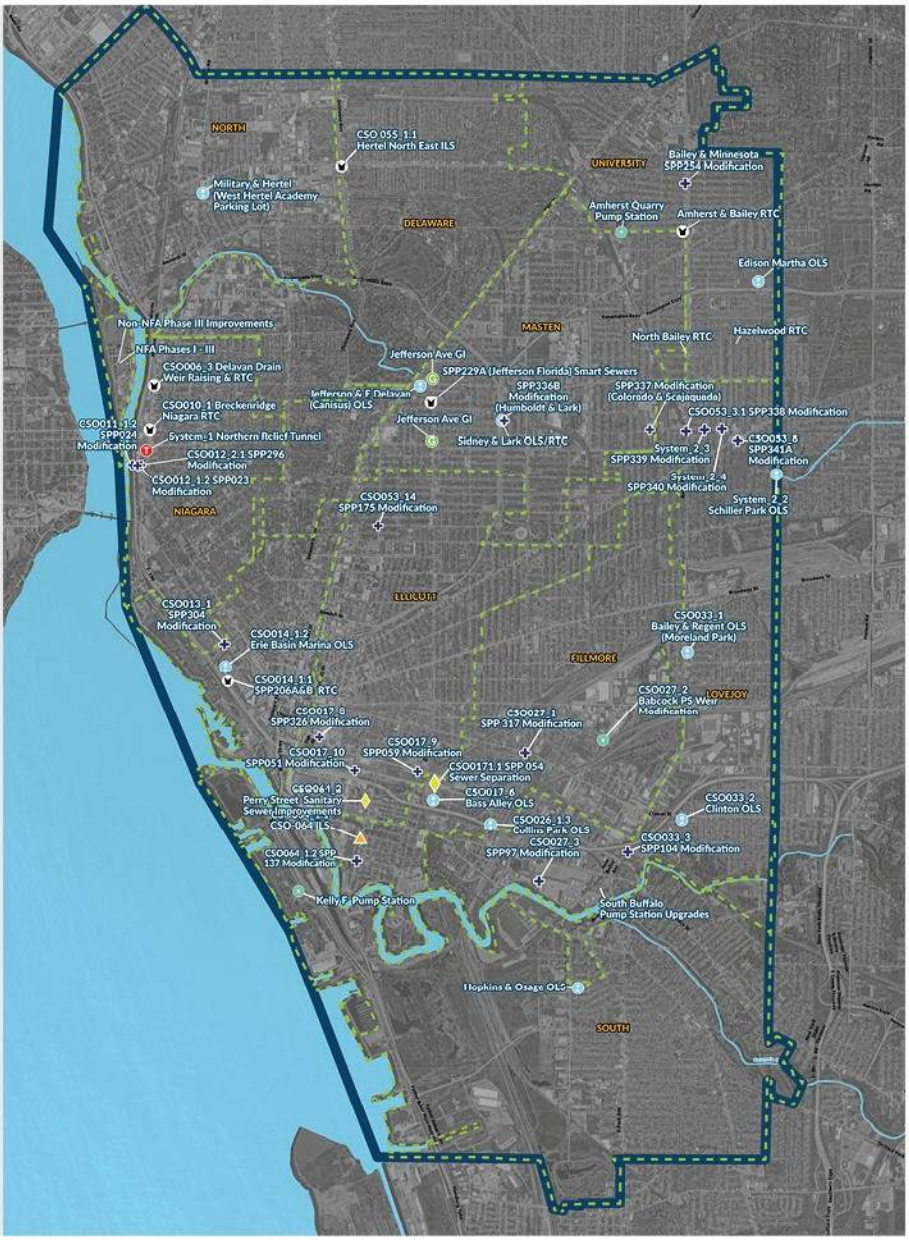
BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

كوين سيتي كلين ووترز

جميع المناطق التابعة للمجلس

المنتدى الافتراضي للمشاركة العامة

تعتزم هيئة بافلو للصرف الصحي تنفيذ مشاريع للصرف الصحي تُقدّر قيمتها بمليار دولار أميركي على مدى السنوات الخمس عشرة القادمة، بهدف الحدّ من تصريف مياه الصرف الصحي أثناء الطقس الماطر وتحسين مجتمعنا



لمعرفة المزيد

ينعقد المنتدى الافتراضي للمشاركة العامة في:

السبت، في 12 يوليو 2025

10 صباحًا – 12 ظهرًا بالتوقيت الشرقي

(فعالية عبر الإنترنت)

تَسجَّل

https://rb.gy/a9sq5w

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffaloqccw.org

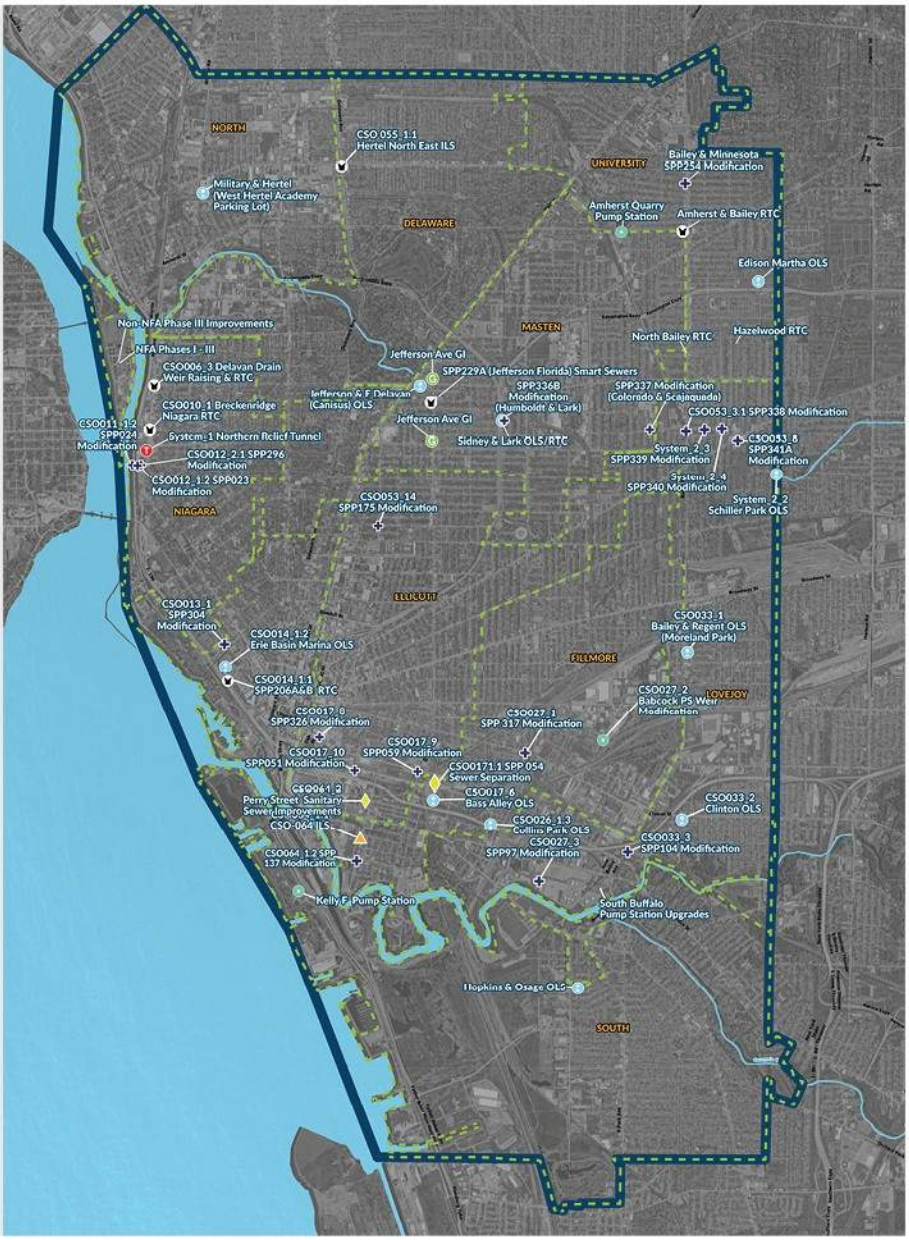
City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202
716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

কুইন সিটি ক্লিন ওয়াটারস
সমস্ত কাউন্সিল জেলা

ভার্চুয়াল জনসম্পৃক্তি ফোরাম

বাফেলো পয়ঃনিষ্কাশন কর্তৃপক্ষ আগামী ১৫ বছরে ১ বিলিয়ন মার্কিন ডলারের পয়ঃনিষ্কাশন প্রকল্প বাস্তবায়নের পরিকল্পনা গ্রহণ করেছে, যার উদ্দেশ্য হলো বর্ষাকালে বৃষ্টির পানির সাথে মিশ্রিত পয়ঃবর্জ্য নিষ্কাশন হ্রাস করা এবং আমাদের সম্প্রদায়ের পরিবেশগত মানোন্নয়ন।



বিস্তারিত জানুন

একটি ভার্চুয়াল জনসম্পৃক্তি ফোরাম অনুষ্ঠিত হবে:

শনিবার, ১২ জুলাই, ২০২৫
সকাল ১০টা থেকে দুপুর ১২টা
(ইস্টার্ন সময় অনুযায়ী)
(অনলাইন আয়োজন)

নিবন্ধন করুন

https://rb.gy/a9sq5w

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffaloqccw.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202
716-851-4664

Burmese

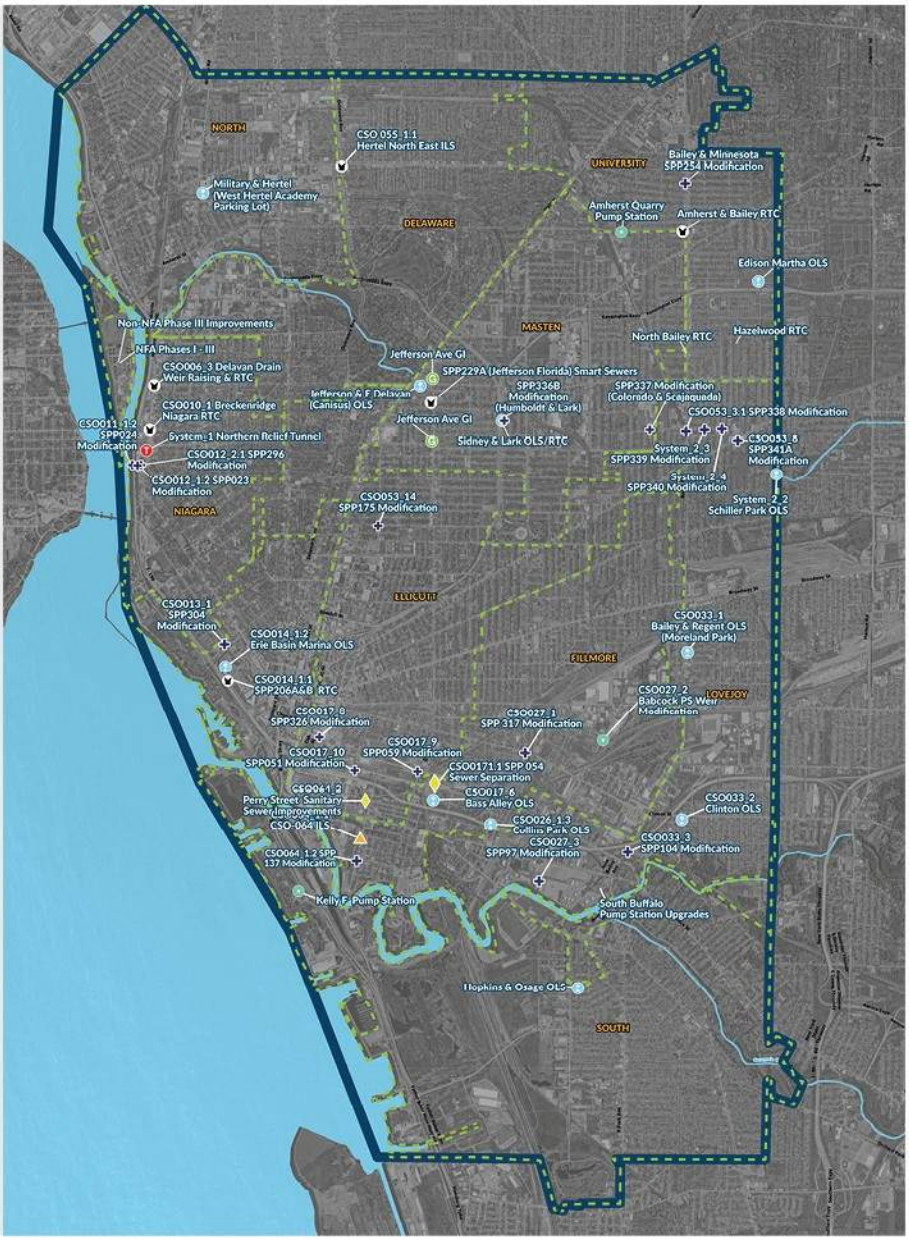
BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

ကွင်းစီးတီး ရေသန့်ရှိရေး ကောင်စီခရိုင်အားလုံး

ဗာကျူရယ်ပြည်သူများပူးပေါင်းဆောင်ရွက်ရေးဖိုရမ်

ဘတ်ဖလိုရေမြောင်းဌာနသည် လွန်ခဲ့သော ၁၅နှစ်ကတည်းက စိုစွတ်ရာသီတွင်ဖြစ်တတ်သော ရေမြောင်းပိတ်ဆို့မှုများနှင့် တိုးတက်ပြောင်းလဲမှုများရှိစေရန် ရေမြောင်းပရောဂျက်များအတွက် ငွေ ၁ ဘီလီယံအသုံးပြုရန် ပြင်ဆင်ထားပါသည်။



ပိုမိုလေ့လာလိုပါက

ဗာကျူရယ်ပြည်သူများပူးပေါင်းဆောင်ရွက်ရေးဖိုရမ် ကျင်းပမည်မှာ-

စနေနေ့၊ဂျူလိုင်လ ၁၂ရက်၊ ၂၀၂၅ နံနက် ၁၀:၀၀ - နေ့လည် ၁၂:၀၀ ET

(အွန်လိုင်းအခမ်းအနား)

စာရင်းသွင်းရန်

https://rb.gy/a9sq5w

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffaloqccw.org

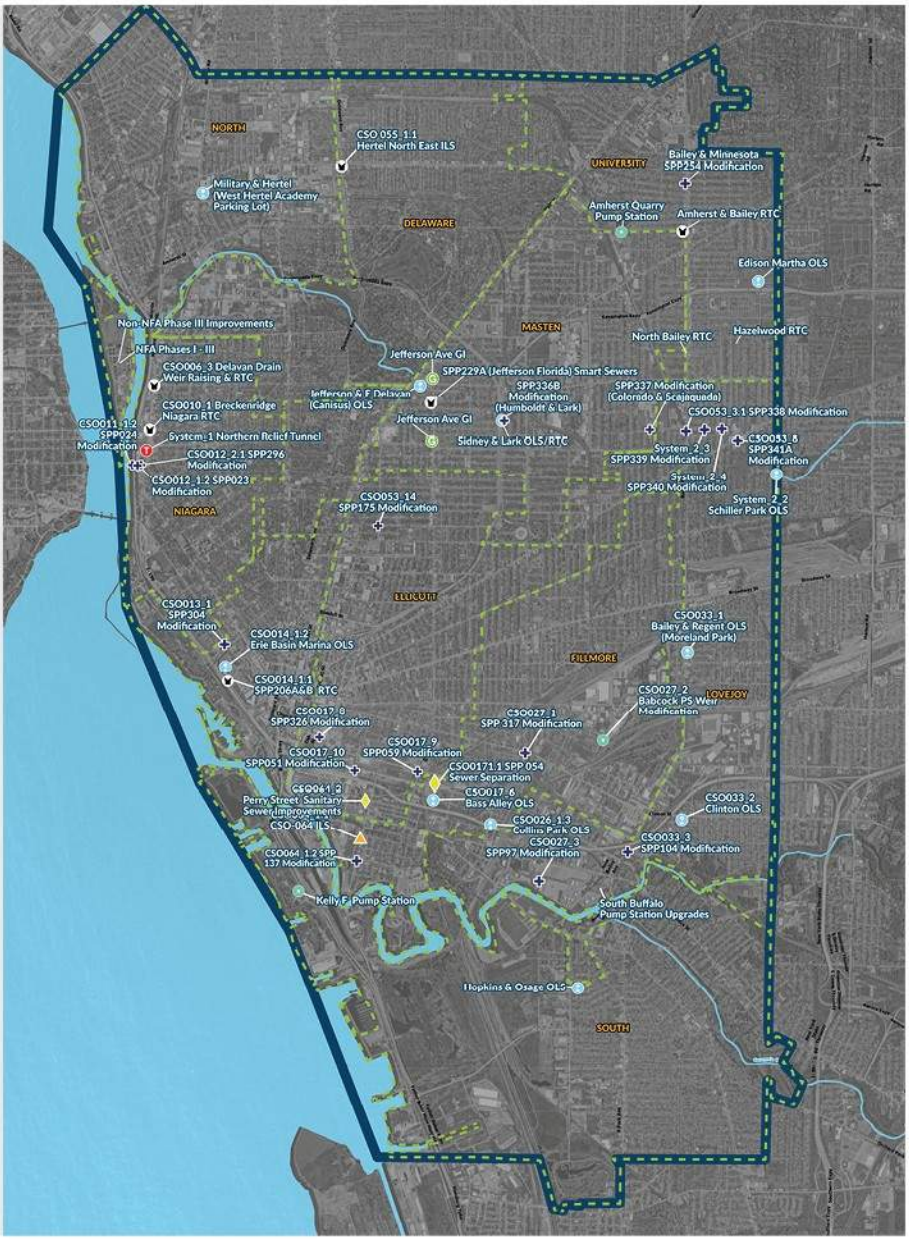
City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202
716-851-4664

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

NADIIFINTA BIYAHA QUEEN CITY
DHAMAAN DEGMOOYINKA GOLAHA

MADASHA KA QAYBGALKA DADWEYNAHA EE FOGAAN-ARAGG AH

Bullaacada Buffalo waxay qorshaynaysaa $1B inay ku bixiso mashaariicda bullaacadaha 15ka sano ee soo socda si loo dhimo in marka uu roob badan da'o ay biyaha bullaacadaha dibedda ku qulqulaan iyo in la hagaajiyo bulshadeena.



WAX BADAN OGOW

Madasha Ka-qaybgalka Dadweynaha ee Fogaan-araga ah ayaa la qaban doonaa:

Sabtida, Luulo 12, 2025
10:00 SUBAXNIMO - 12:00 DUHURNIMO
(Munaasabad Onlayn ah)

ISKA-DIIWAANGELI

https://rb.gy/a9sq5w

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffaloqccw.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202
716-851-4664

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Roosevelt Park Offline Storage Facility

ABOUT THE ROOSEVELT PARK OFFLINE STORAGE FACILITY

Why is Buffalo Sewer doing the Queen City Clean Waters initiative?

- Reduce the number and volume of Combined Sewer Overflows, also known as CSOs, during large wet weather events
- Help flow reach the Bird Island Wastewater Treatment Facility during Wet Weather during those wet weather events, instead of Buffalo's waterways.

The project is currently in the early design stage. Buffalo Sewer has evaluated several potential solutions and is advancing the design of:

Offline Storage (OLS):

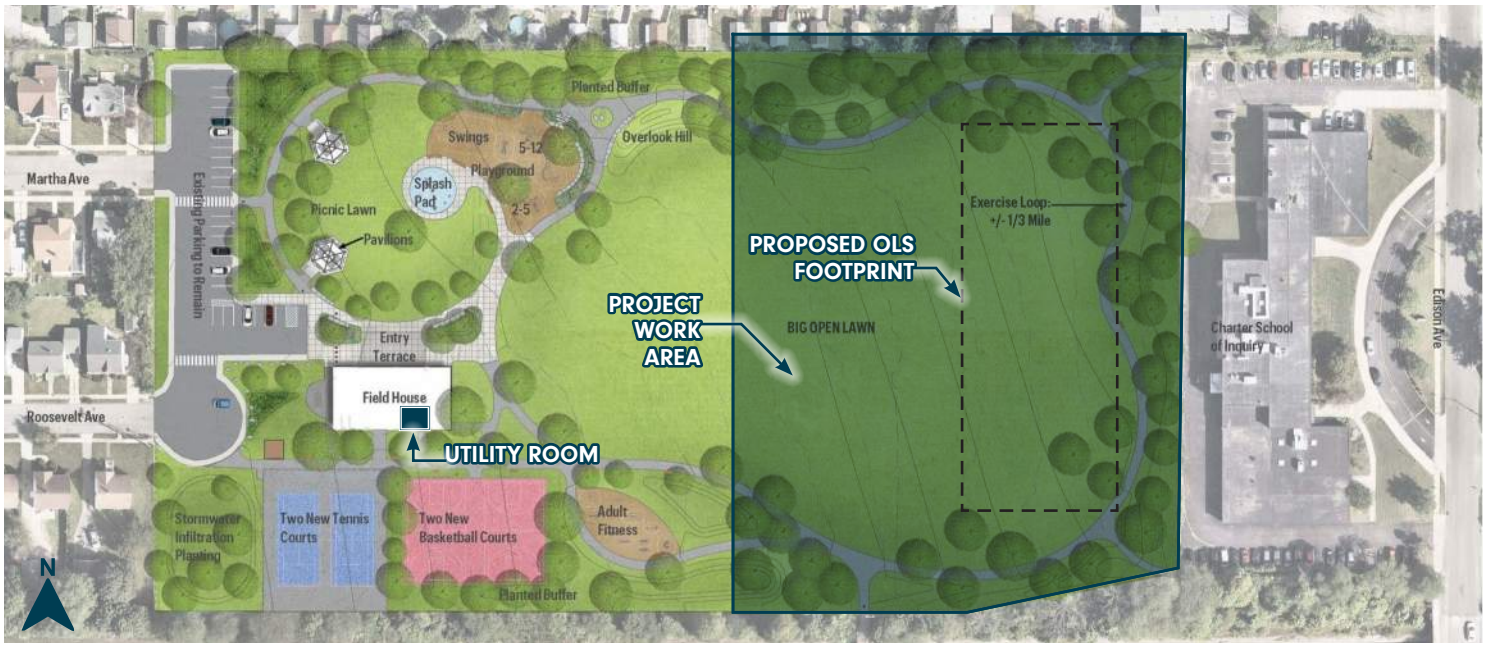
A tank designed to temporarily hold excess combined sewage when the sewer system is full. Once capacity becomes available at the Bird Island Wastewater Treatment Facility, the stored sewage would be gradually drained and treated. Community input is important, and there will be opportunities to share feedback and help shape the final design.

Buffalo Sewer is actively seeking community feedback to help shape the final design.

WHAT ARE THE BENEFITS?

- ☑ Reduce the amount of discharge flowing into the Scajaquada Creek during storm events and improve water quality
- ☑ 36 million gallons of combined sewer overflows diverted from the Scajaquada Creek in a typical year
- ☑ Reduce future flood events

PROJECT AREA



PROJECTED TIMELINE

Construction is estimated to start in Summer 2027 and finish by Summer 2033. Preconstruction surveys will be performed.

Temporary disruptions in the neighborhood, such as noise and dust, will be minimized as much as possible.

Future meetings will occur with further updates and opportunities for stakeholder feedback/questions.

HOW WILL THIS WORK BE FUNDED?

Buffalo Sewer will pay for this project with low interest loans and will seek New York State grant funds to supplement the project funding.

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

Roosevelt Park Offline Storage Facility

WHAT IS INCLUDED IN THIS PROJECT?

- New combined sewer infrastructure that diverts flow from and connects to the Scajaquada Tunnel.
- Installation of a concrete underground storage tank equipped with self-cleaning system and mechanical systems for flow control and monitoring.
- Opportunities for Charter School of Inquiry students to learn about and engage with the project.
- Landscaping, parking lot, and roadway improvements.
- Replacement of connected lead water services and reconnecting with new lead-free service line.
- Repair of sidewalks and curbs removal with replacement of sidewalks as necessary.
- Landscaping improvements and roadway repairs.

TRAFFIC IMPACTS

During construction, residents can expect to see construction equipment in the road and new traffic patterns in place, including:

- Partial or full road closures
- Sidewalk closures
- Limited street parking
- Possible detours

The photos to the right show examples from previous Buffalo Sewer projects of what the traffic controls may look like.









MORE INFORMATION

Scan the QR code for more information and schedule updates during construction.

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

City Hall Room 1038
65 Niagara Square
Buffalo, NY 14202

716-851-4664

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Program

Projects in the Ellicott Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

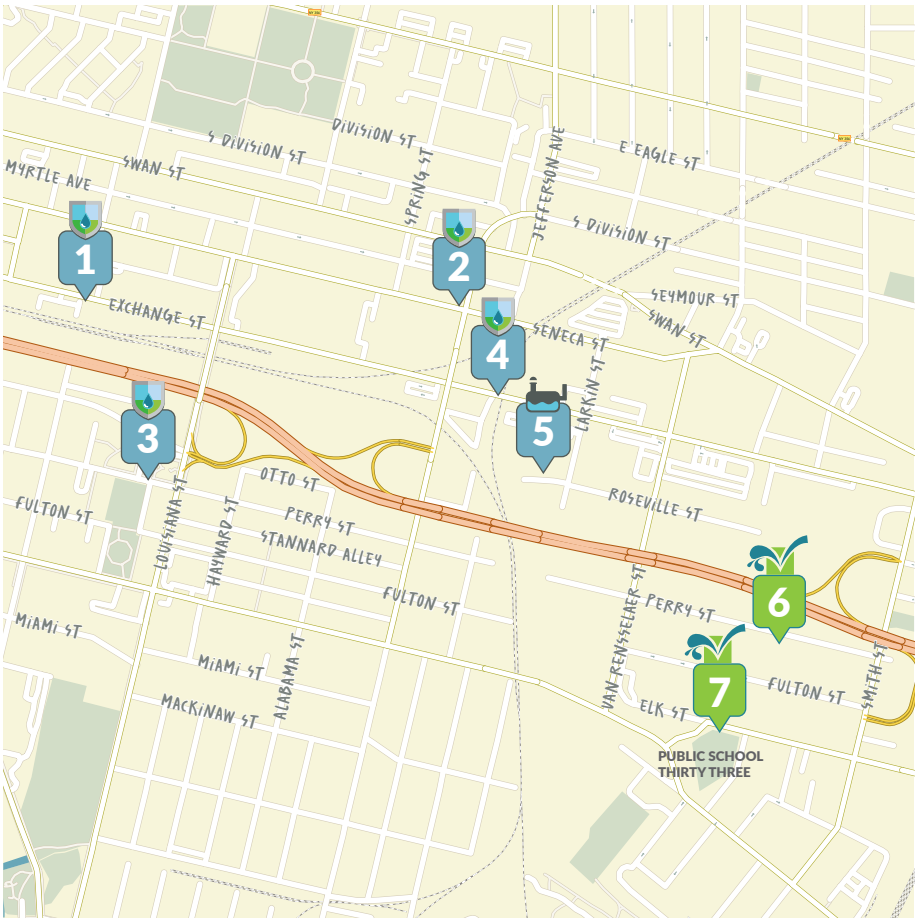
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE ELLICOTT PLANNING NEIGHBORHOOD:

1. **SPP 051 Modifications**
   (Construction: Spring 2031 - Fall 2032)
2. **SPP 059 Modifications**
   (Construction: Spring 2031 - Fall 2032)
3. **Perry Street Sewer Improvements**
   (Construction: Spring 2036 - Spring 2038)
4. **SPP 054 Sewer Separation**
   (Construction: Spring 2036 - Spring 2038)
5. **Bass Alley Off-line Storage**
   (Construction: Spring 2036 - Spring 2039)
6. **Perry Street Green Infrastructure**
   (Construction: Spring 2026 - Spring 2028)
7. **P.S. 33/Elk Street Green Infrastructure**
   (Construction: Spring 2026 - Spring 2028)



BUFFALO SEWER AUTHORITY

CONTACT:
716-851-4664
QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

Scan the QR code for more information and schedule updates during construction.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Initiative

Projects in the Fillmore-Leroy Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

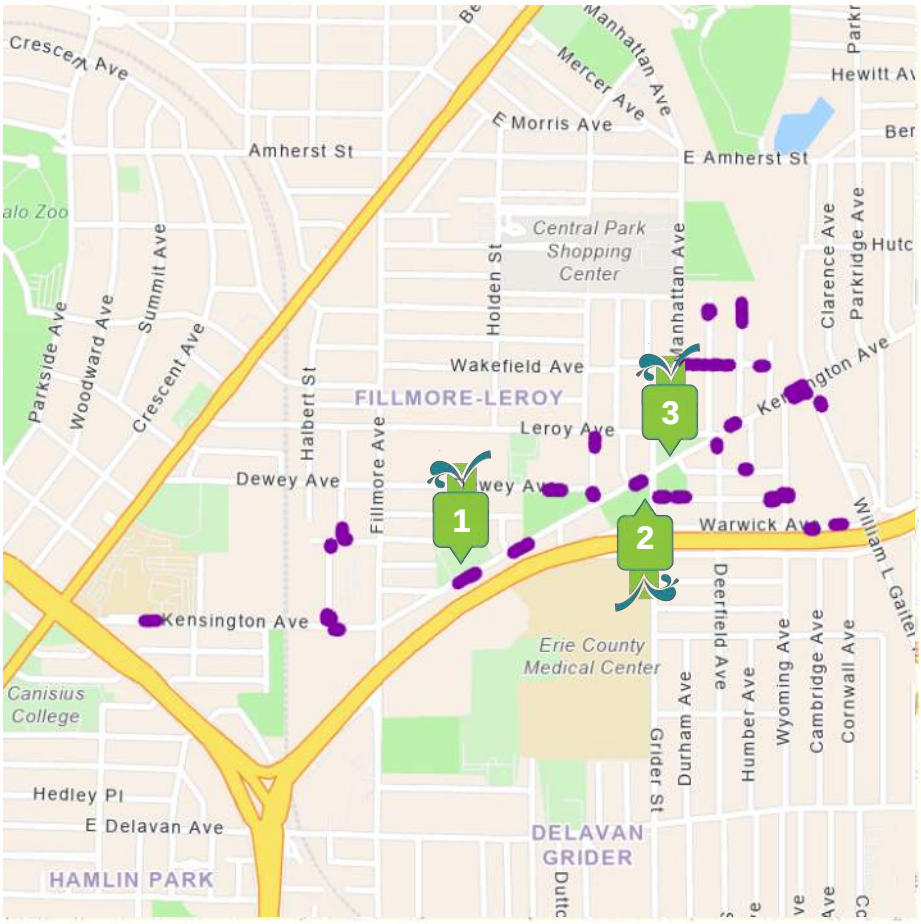
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE FILLMORE-LEROY PLANNING NEIGHBORHOOD:

1. **Burgard High School Rain Gardens**
   (Construction: Spring 2026 – Spring 2028)
2. **Kensington Ave Stormwater Planters**
   (Construction: Spring 2026 – Spring 2028)
3. **Arthur O. Eve School Porous Asphalt and Rain Garden**
   (Construction: Spring 2026 - Spring 2028)
4. **Assorted Stormwater Tree Trenches**
   (Construction: Spring 2026 – Spring 2028)
   Represented by small purple boxes:



BUFFALO SEWER AUTHORITY

CONTACT:
716-851-4664
QueenCityCleanWaters@buffalosewer.org
buffalosewer.org or buffaloqccw.org

Scan the QR code for more information and schedule updates during construction.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Initiative

Projects in the Seneca Babcock Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

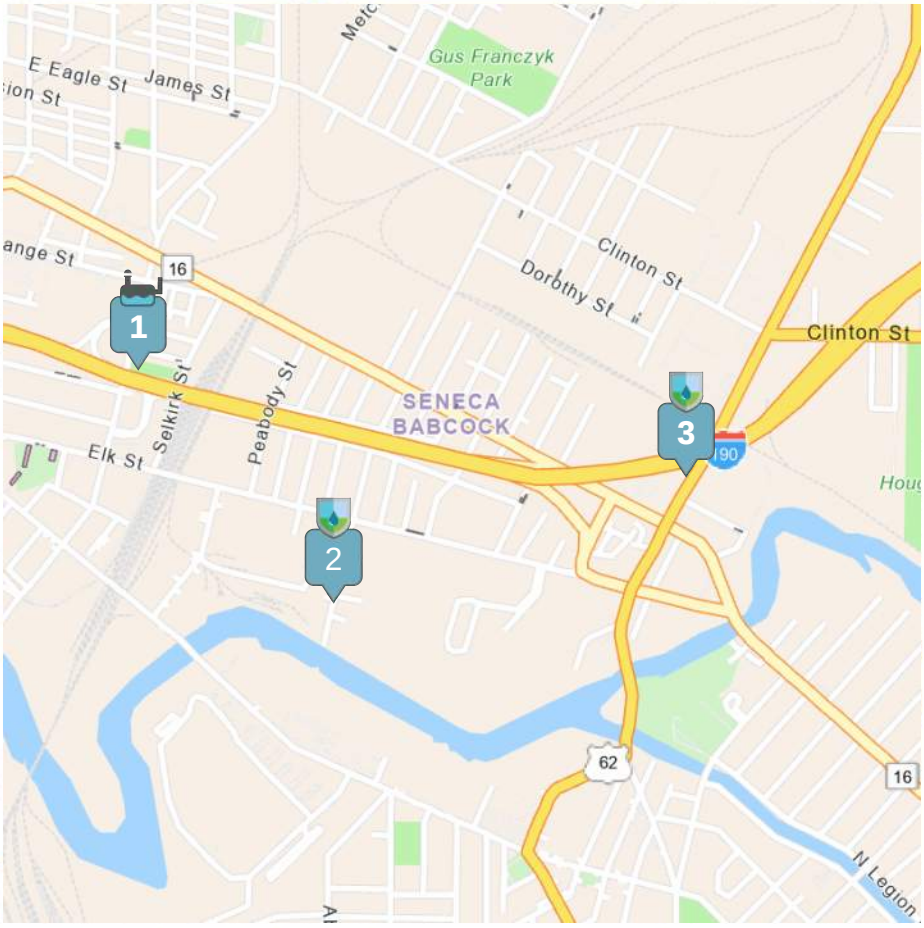
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE SENECA BABCOCK PLANNING NEIGHBORHOOD:

1. **Collins Park Off-Line Storage**
   (Construction: Summer 2030 - Winter 2035)
2. **SPP 97 Modification**
   (Construction: Summer 2031 – Summer 2033)
3. **SPP 104 Modification**
   (Construction: Summer 2031 - Winter 2032)



BUFFALO SEWER AUTHORITY

CONTACT:
716-851-4664
QueenCityCleanWaters@buffalosewer.org
buffalosewer.org or buffaloqccw.org

Scan the QR code for more information and schedule updates during construction.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Initiative

Projects in the Kenfield Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

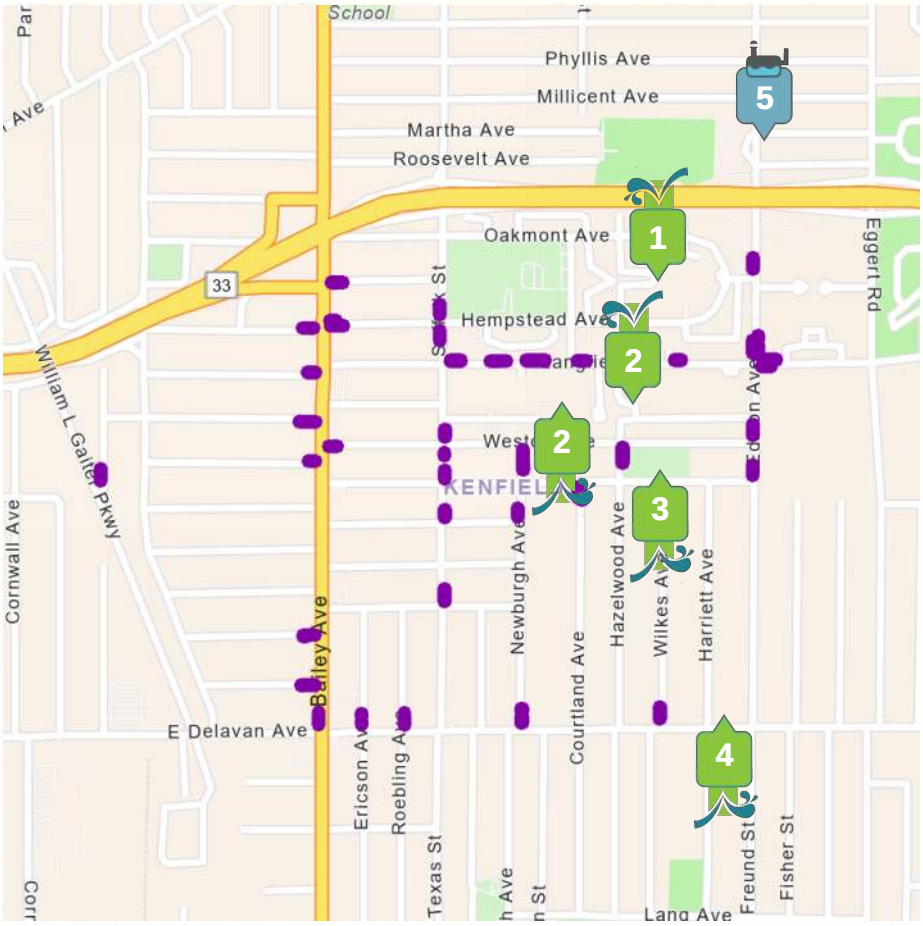
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE KENFIELD PLANNING NEIGHBORHOOD:

1. **Buffalo Municipal Housing Authority Porous Asphalt and Roof Leader Disconnection**
   (Construction: Spring 2026 – Spring 2028)
2. **Pavement Removal Near Tower Street South of Langfield Drive**
   (Construction: Spring 2026 – Spring 2028)
3. **Ronald Peoples School of Scholars Rain Gardens and Porous Asphalt**
   (Construction: Spring 2026 – Spring 2028)
4. **E Delavan Ave Buffalo Public School Porous Asphalt**
   (Construction: Spring 2026 - Spring 2028)
5. **Edison Martha Off-Line Storage**
   (Construction: Summer 2027 – Summer 2033)
6. **Assorted Stormwater Tree Trenches**
   (Construction: Spring 2026 – Spring 2028)
   Represented by small purple boxes:



BUFFALO SEWER AUTHORITY

CONTACT:
716-851-4664
QueenCityCleanWaters@buffalosewer.org
buffalosewer.org or buffaloqccw.org

Scan the QR code for more information and schedule updates during construction.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Initiative

Projects in the Central Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

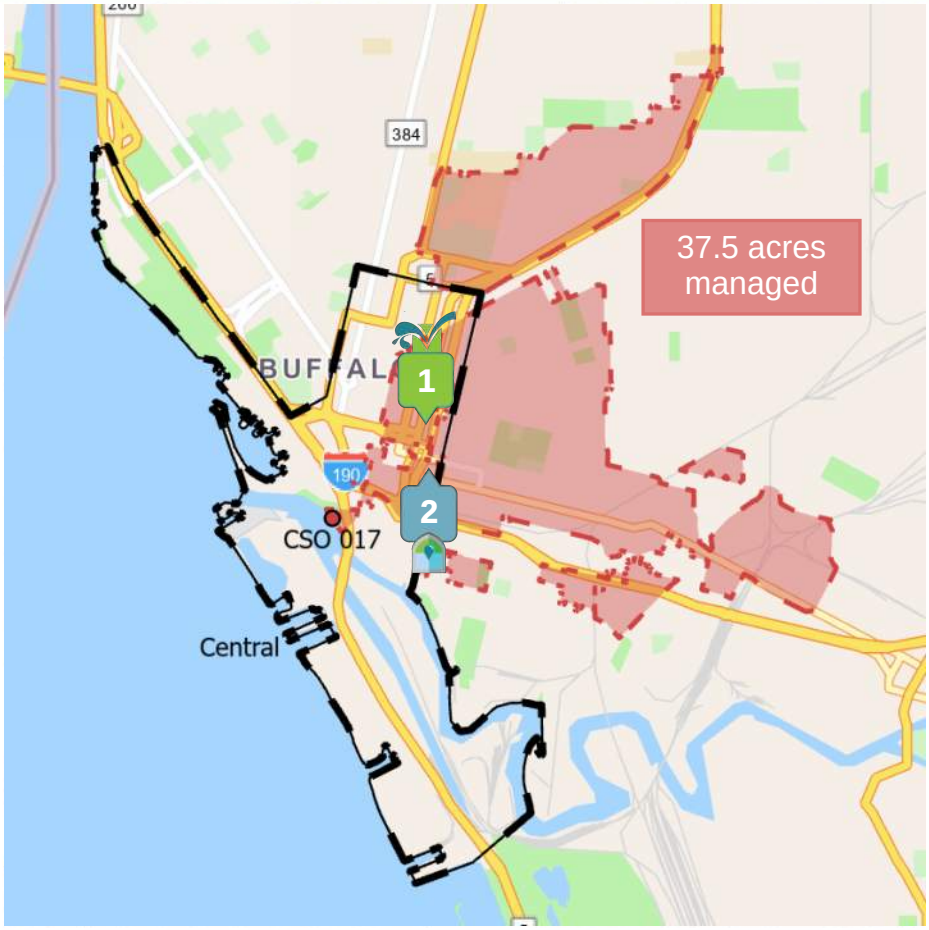
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE CENTRAL PLANNING NEIGHBORHOOD:

1. **CSO 017 20% Green Infrastructure**
   (Construction: Spring 2032 – Spring 2039)
2. **SPP 326 Modification**
   (Construction: Summer 2029 – Winter 2030)



BUFFALO SEWER AUTHORITY

CONTACT:
716-851-4664
QueenCityCleanWaters@buffalosewer.org
buffalosewer.org or buffaloqccw.org

Scan the QR code for more information and schedule updates during construction.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Initiative

Projects in the West Side Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

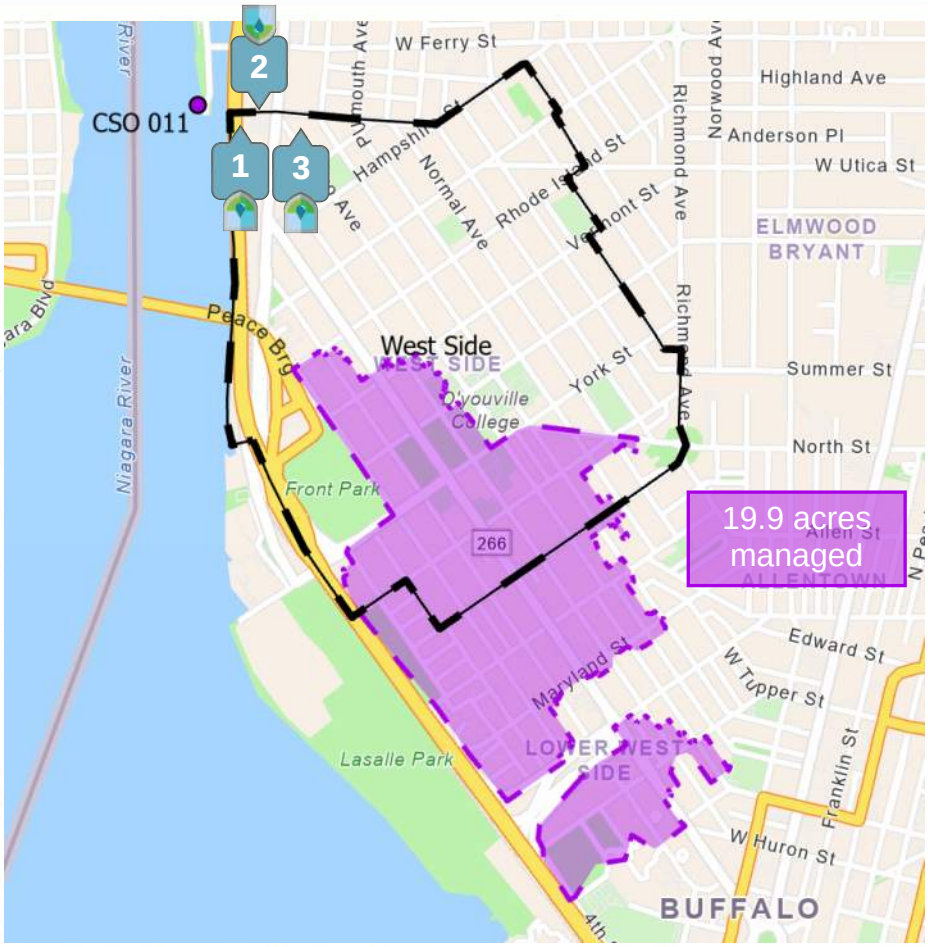
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE WEST SIDE PLANNING NEIGHBORHOOD:

1. **SPP 024 Modification**
   (Construction: Summer 2030 – Winter 2032)
2. **SPP 296 Modification**
   (Construction: Summer 2030 – Winter 2032)
3. **SPP 023 Modification**
   (Construction: Summer 2030 – Winter 2032)



BUFFALO SEWER AUTHORITY

CONTACT:

716-851-4664

QueenCityCleanWaters@buffalosewer.org

buffalosewer.org or buffaloqccw.org

Scan the QR code for more information and schedule updates during construction.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Program

Projects in the Lower West Side Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

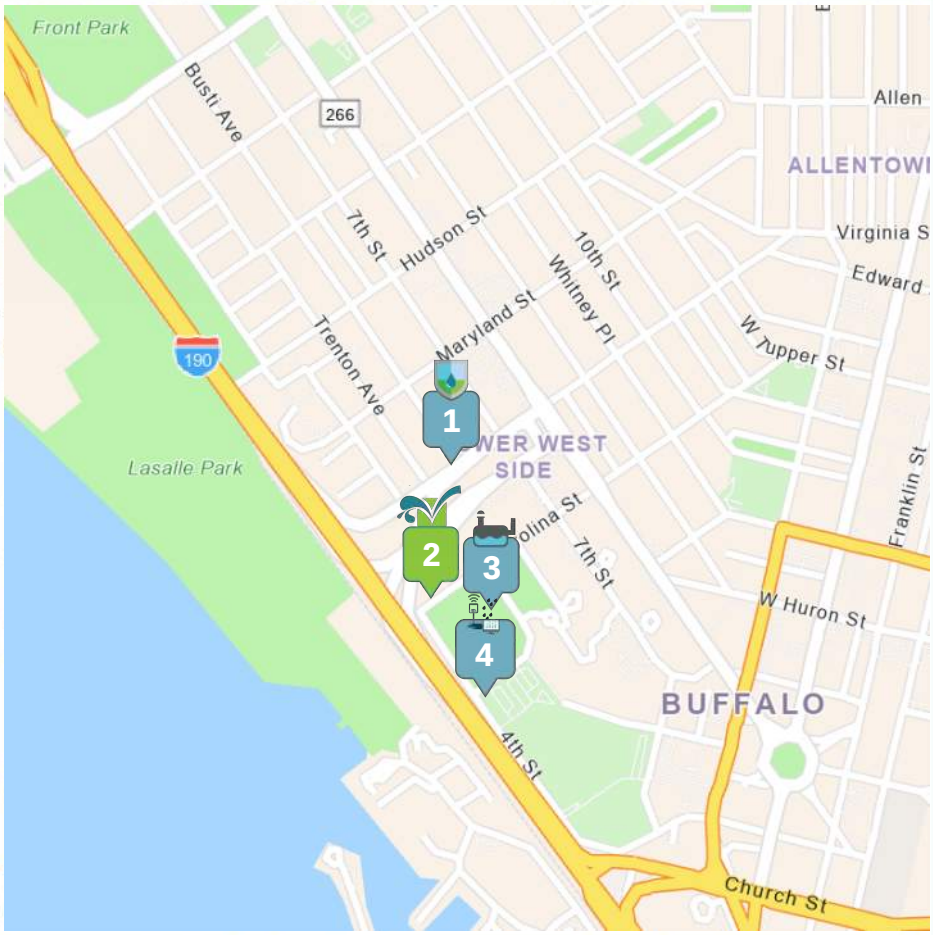
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE LOWER WEST SIDE PLANNING NEIGHBORHOOD:

1. **SPP 304 Modifications**
   (Construction: Summer 2028 - Winter 2029)
2. **Green Infrastructure Implementation**
   (Construction: Spring 2032 - Spring 2040)
3. **Erie Basin Marina Off-Line Storage**
   (Construction: Fall 2028 - Winter 2033)
4. **SPP 206 Inline Storage and Real-Time Control**
   (Construction: Fall 2028 - Winter 2030)



BUFFALO SEWER AUTHORITY

CONTACT:
716-851-4664
QueenCityCleanWaters@buffalosewer.org
www.buffalosewer.org

Scan the QR code for more information and schedule updates during construction.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Queen City Clean Waters Initiative

Projects in the North Park Planning Neighborhood

WHAT IS QUEEN CITY CLEAN WATERS?

This initiative will reduce overflows from the City's sewers by helping flow reach the Bird Island Wastewater Treatment Facility during wet weather, instead of entering Buffalo's creeks and river. The implementation of this project, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

WHY IS THIS WORK BEING DONE?

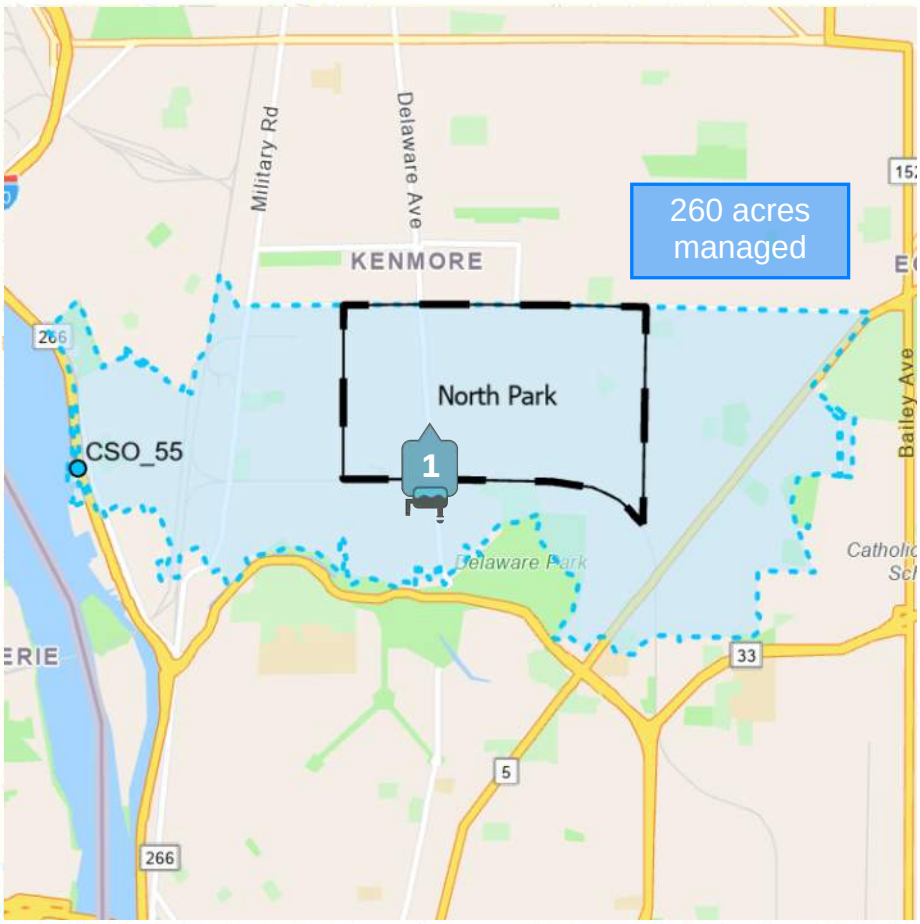
Hundreds of millions of gallons of storm water mixed with sanitary sewage overflows to the waterways of Western New York during rainfall and snow melt periods each year. Queen City Clean Waters will reduce these events.

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

UPCOMING PROJECTS IN THE NORTH PARK PLANNING NEIGHBORHOOD:

1. **Hertel North East In-Line Storage**
   (Construction: Summer 2037 – Winter 2040)
2. **Proposed GI Projects**
   (Construction: Spring 2032 – Spring 2040)



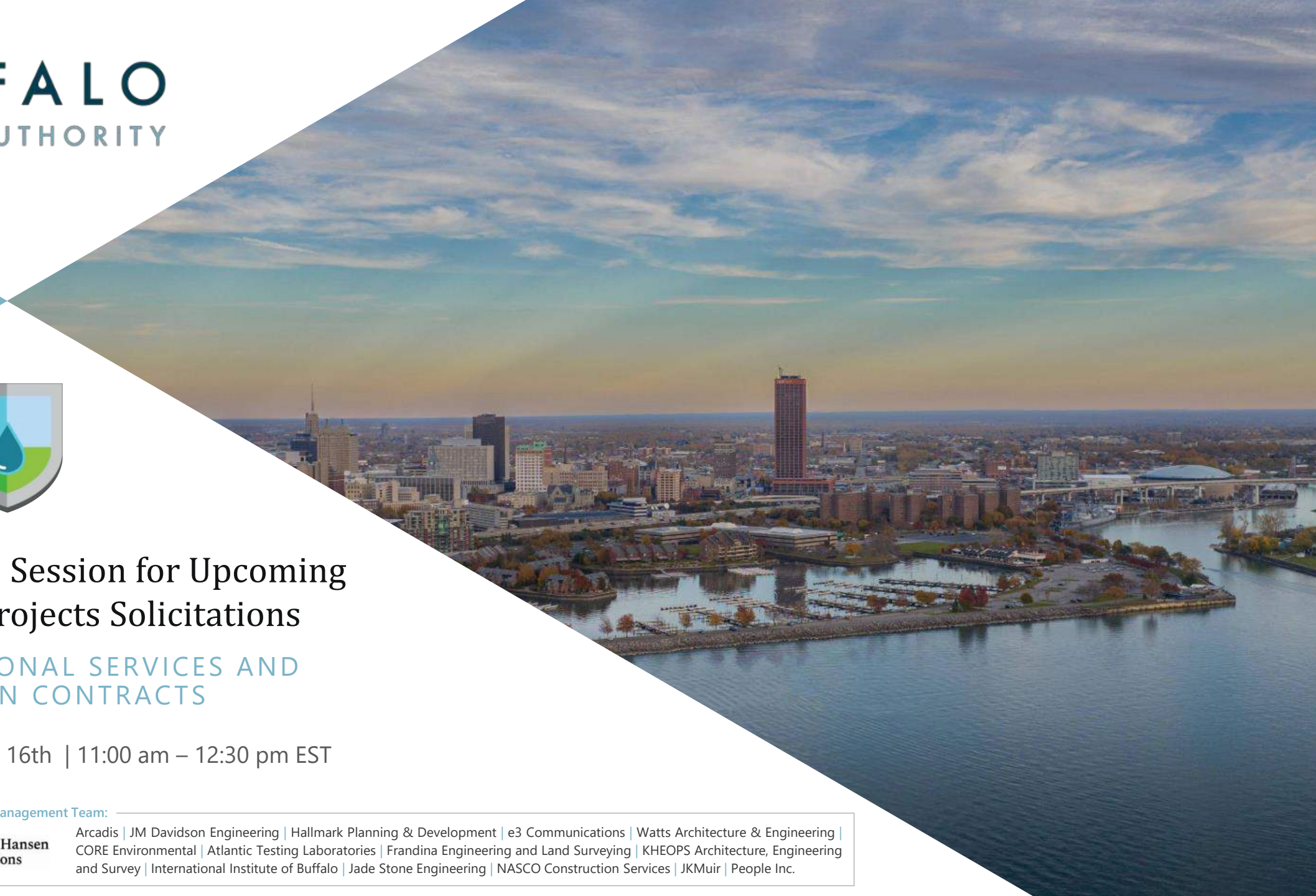
BUFFALO SEWER AUTHORITY

CONTACT:
716-851-4664
QueenCityCleanWaters@buffalosewer.org
buffalosewer.org or buffaloqccw.org

Scan the QR code for more information and schedule updates during construction.

APPENDIX D: OUTREACH PRESENTATIONS

BUFFALO
SEWER AUTHORITY



Informational Session for Upcoming BSA Capital Projects Solicitations

FOR PROFESSIONAL SERVICES AND CONSTRUCTION CONTRACTS

Wednesday, October 16th | 11:00 am – 12:30 pm EST

BSA Capital Projects Program Management Team:

TYLin | Greeley and Hansen Water Solutions

Arcadis | JM Davidson Engineering | Hallmark Planning & Development | e3 Communications | Watts Architecture & Engineering | CORE Environmental | Atlantic Testing Laboratories | Frandina Engineering and Land Surveying | KHEOPS Architecture, Engineering and Survey | International Institute of Buffalo | Jade Stone Engineering | NASCO Construction Services | JKMuir | People Inc.

Agenda

- Opening Remarks
- Buffalo Sewer Authority's Queen City Clean Waters Overview
- Upcoming Capital Projects
- D/M/WBE Requirements & Certifications
- Community Benefits Program
- Consultant Proposals & Requirements
- Construction Bid Solicitations & Requirements
- Feedback and Q&A Session

Opening Remarks



Online Meeting



Microphones Muted



Utilize the Chat Feature



Live Q&A



Recorded Meeting



Closed Caption

The presentation and attendee list will be shared with all attendees.

Presenters

OWNER

BUFFALO SEWER AUTHORITY

Rosaleen Nogle, PE, BCEE
Principal Sanitary Engineer

PROGRAM MANAGEMENT TEAM

TYLin

Walt Walker, PE, ENV SP
Program Director

JMDavidson Engineering, D.P.C.

Jaime Davidson, PE
Collections System Advisor

Buffalo Sewer's *Queen City Clean Waters*

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

VISION

Clean waters and a resilient Buffalo.

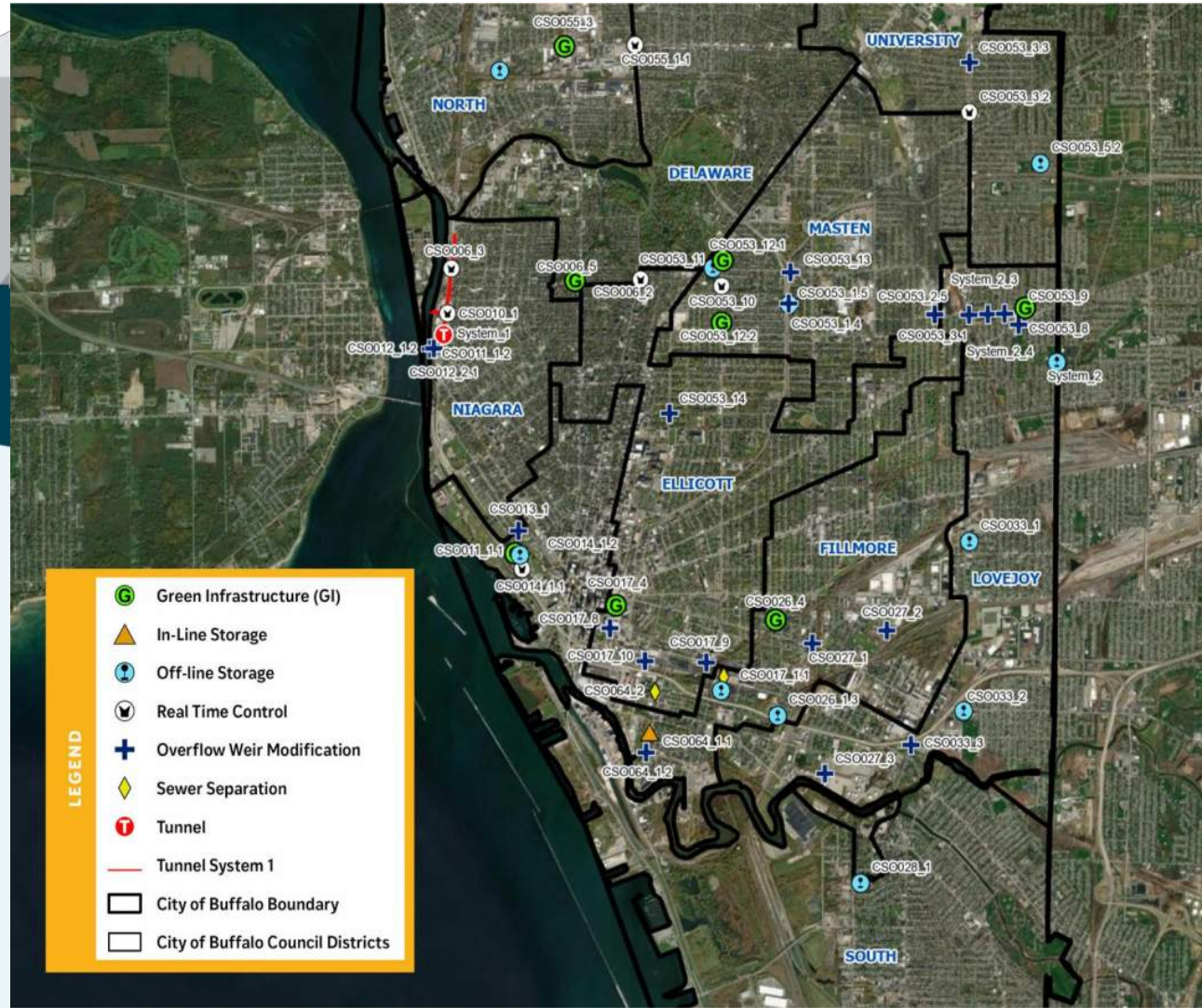
MISSION

To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in the City of Buffalo.

Queen City Clean Waters

PROGRAM OVERVIEW





buffalosewer.org/construction-projects/queen-city-clean-waters/

Types of QCCW Projects

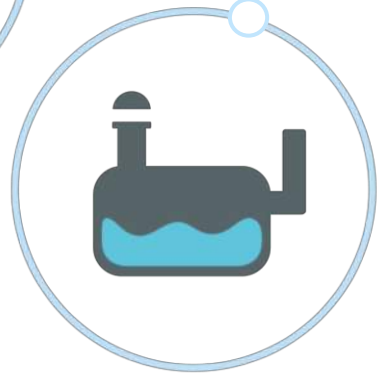
$

Projects to be funded through a combination of:

Federal and state funding administered through NYSEFC and NYSDEC (grants, zero to low interest loans), Environmental Impact Bond, and BSA capital budget

Bird Island Treatment Facility Upgrades





Combined Sewer Offline Storage



Real-time Control Smart Sewers and Sewer Improvements & Modifications



Green Infrastructure (GI)

BUFFALO SEWER AUTHORITY

Upcoming QCCW Capital Projects for 2024 - 2025

- **PROFESSIONAL SERVICES (DESIGN CONSULTANT RFP)**
- **CONSTRUCTION SERVICES (INVITATION TO BID)**

Upcoming Projects – Overflow Weir (Sewer Patrol Point) Modifications

PROJECT NAME	LOCATION	TYPE OF CONTRACT	ESTIMATED DATE OF ADVERTISEMENT	OPINION OF PROBABLE CONSTRUCTION COST	PROJECT DESCRIPTION
CSO053_2.5 SPP337 Modification	Colorado & Scajaquada	Construction	Q3 2025	$12,000,000	• New diversion chamber • 50'+ drop shaft
CSO053_8 SPP341A Modification	Kerns & Genesee	Construction	Q3 2025	$6,500,000	• Additional of 18" diameter underflow pipe • Raise overflow weir • 50'+ drop shaft
CSO053_3.1 SPP338 Modification	Bailey & Kerns	Construction (Multiple sites as a single contract)	Q3 2025	$4,000,000	• Underflow orifice would be enlarged • Raise overflow weir & length increased to 30 ft
CSO053_1.5 SPP336B Modification	Humboldt & Lark				• Remove orifice plate • Raise overflow weir
CSO053_13 SPP165B Modification	Humboldt & Delavan				• Upsize underflow orifice / new junction chamber • Upsize underflow pipe to 36" (~1,000LF) • Raise overflow weir
CSO053_14 SPP175/ 176/ 177 Modification	Michigan & Dodge- Riley-Glenwood				• Raise 3 weirs

CSO053_2.5 SPP337 Modification

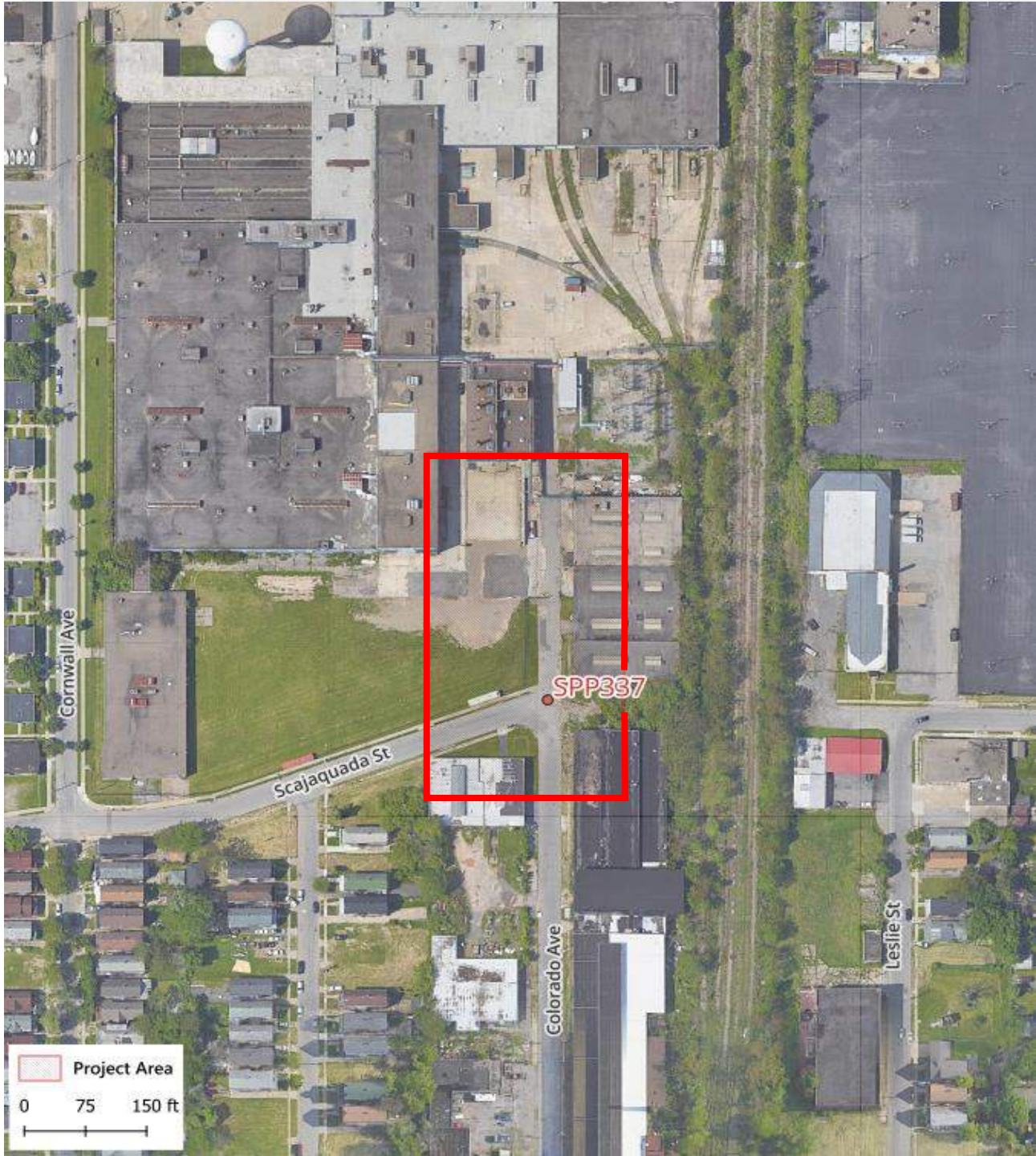
Location: Colorado & Scajaquada

Project Description:

– New diversion chamber

– New drop shaft ~50-55 ft deep to Scajaquada Tunnel.

Bid Release Date: Q3 2025



CSO053_8 SPP341A Modification

Location: Kerns & Genesee

Project Description:

– Additional 18” underflow pipe

– Raise the overflow weir

– New drop shaft ~50-55 ft deep to Scajaquada Tunnel.

Bid Release Date: Q3 2025



CSO053_3.1 SPP338 Modification

Location: Bailey & Kerns

Project Description:

– Enlarge underflow orifice

– Raise and lengthen weir

Bid Release Date: Q3 2025



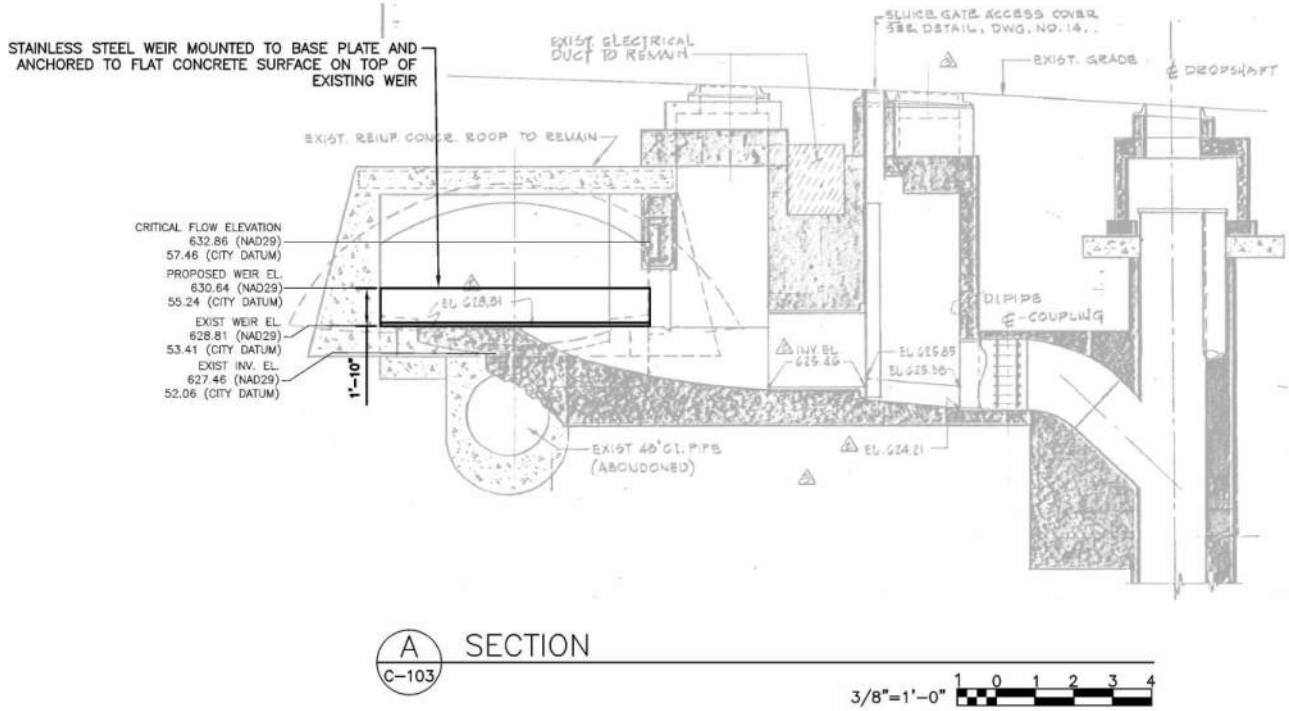
CSO053_1.5 SPP336B Modification

Location: Humbolt & Lark

Project Description:

- Remove the underflow orifice plate
- Raise the overflow weir

Bid Release Date: Q3 2025



*Sketch for illustrative purposes only and not representative of final design.

BUFFALO SEWER AUTHORITY

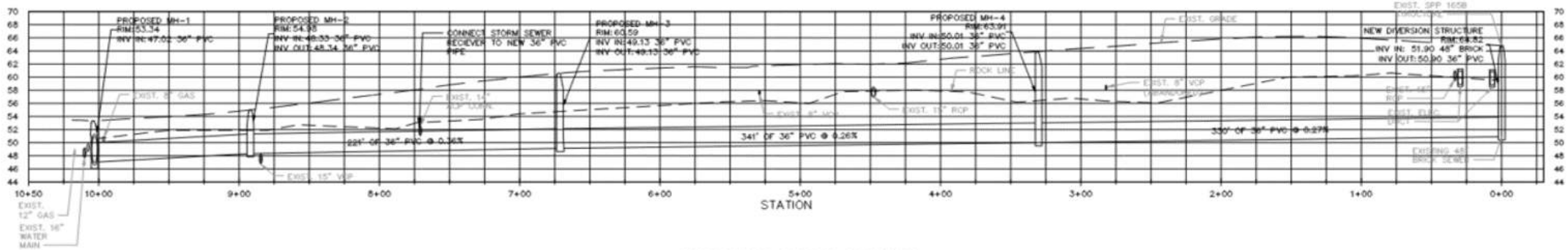
CSO053_13 SPP165B Modification

Location: Humboldt & Delavan

Project Description:

- Install new junction chamber
- Upsize the underflow pipe (on East side Humboldt from E. Delavan to Northland)
- Raise the overflow weir

Bid Release Date: Q3 2025



PROPOSED SEWER PROFILE

HORIZONTAL: 1"=40'

VERTICAL: 1"=5'

CSO053_14 SPP175/ 176/ 177 Modification

Location: Michigan & Dodge – Riley – Glenwood

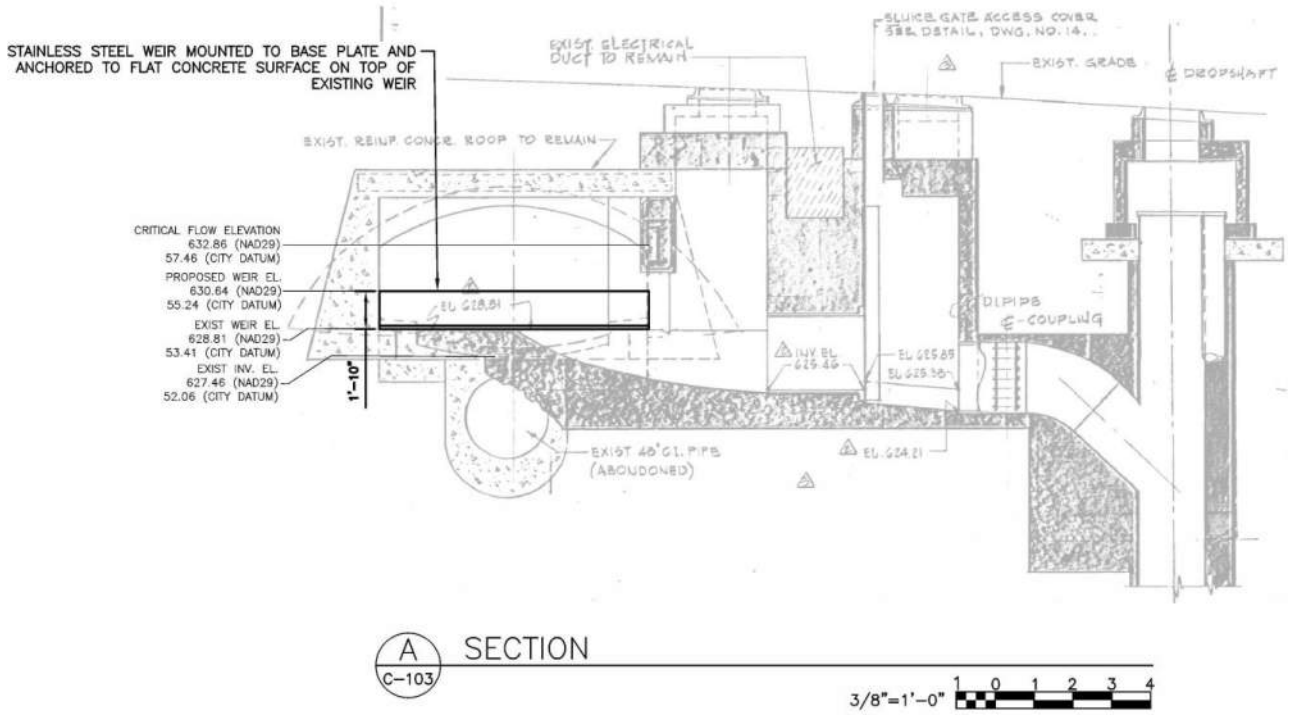
Project Description:
Raise weirs at:

– SPP175 (Dodge St & Michigan Ave)

– SPP176 (Michigan Ave & Riley St)

– SPP177 (Michigan & Glenwood Aves)

Bid Release Date: Q3 2025



*Sketch for illustrative purposes only and not representative of final design.

BUFFALO SEWER AUTHORITY

Upcoming Projects – Facility and Offline Storage

PROJECT NAME	LOCATION	TYPE OF CONTRACT	ESTIMATED DATE OF RFP/ BID ADVERTISEMENT	OPINION OF PROBABLE CONSTRCTION COST	PROJECT DESCRIPTION
Sidney & Lark Offline Storage (OLS)	Sidney St & Lark St	Design	Q4 2024	$27,720,000	• 3.26 MG Tank under city-owned vacant lots • Dewater via gravity to the Scajaquada Tunnel Interceptor
Edison & Martha Offline Storage (OLS)	Edison & Martha	Design	Q1 2025	$37,240,000	• 2.61 MG tank under Roosevelt Park • Dewater via gravity to the Edison Avenue trunk sewer.
Breckenridge St CSO Control Project	Breckenridge St & West Ave	Construction	Q1 2025	$20,000,000 - $25,000,000	• Replace and reverse slope of Breckenridge St sewer to discharge to new sewer on West Ave • New West Ave line will connect to a new drop-pipe manhole structure at Scajaquada Tunnel at West Ave and Lafayette Ave. • New Breckenridge St line will reroute to Herkimer St to West Ave
Raw Wastewater (RWW) & Settled Wastewater (SWW) Pump Station Rehab	Bird Island WWTF	Construction	Phase 1: Q1 2025 Phase 2: Q3 2025	$15,000,000-$20,000,000 each	Pump and valve rehabilitation, impeller replacements, roof repairs, instrumentation & control improvements, electrical upgrades
South Buffalo Pump Station Rehab	Bailey Ave & Old Bailey Ave	Construction	Q3/Q4 2025	$20,000,000-$25,000,000	Process mechanical, structural, architecture, HVAC, electrical, sitework
Primary Treatment Renovation – Contract B (Rebid)	Bird Island WWTF	Construction	Q3 2025	$60,000,000 - $70,000,000	New High-Rate Disinfection Chlorine Contact Tank, High-Rate Disinfection Building, renovations to the existing Outfall Structure 001, HRD Influent and Effluent Conduits, modifications to the existing Bypass and Control Chamber and Primary Bypass Junction Chamber and gates.

CSO053_1.4 3.26 MG Sidney & Lark OLS

Location: Sidney St & Lark St

Project Description:

- 3.26 MG underground tank
- Corner of Sidney Street and Lark Street (city owned vacant lots)
- Dewater via gravity to the Scajaquada Tunnel Interceptor

RFP Release Date: Q4 2024



CSO053_5.2
Edison & Martha OLS

Location: Edison Ave & Martha Ave

Project Description:

– 2.61 MG buried concrete tank

– Diversion structure

– Tank inlet and outlet sewers

RFP Release Date: Q1 2025





Breckenridge St CSO Control Project

(FORMERLY BRECKENRIDGE & NIAGARA RTC)

Location: Breckenridge St & West Ave to Lafayette Ave & West Ave

Project Description:

- Replace and reverse slope of Breckenridge St sewer to discharge to new sewer on West Ave
- New West Ave line will connect to a new drop-pipe manhole structure at Scajaquada Tunnel at West Ave and Lafayette Ave.
- New Breckenridge St line will reroute to Herkimer St to West Ave

Bid Advertisement Date: Q2 2025

Estimated Cost: $20M-$25M

BUFFALO SEWER AUTHORITY

South Buffalo Pump Station Upgrades

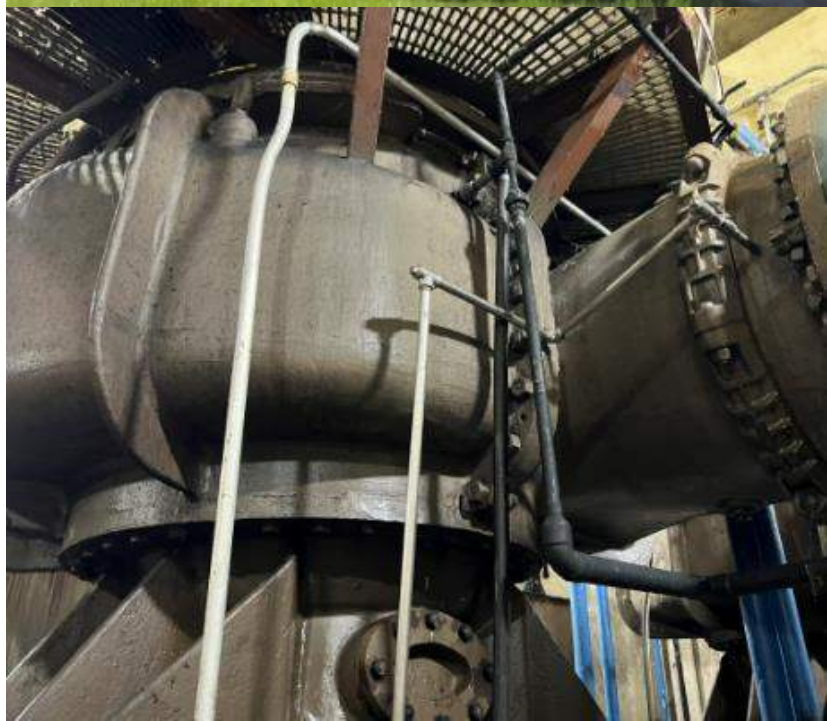
Project Description:

- Pump rehabilitation
- Seal water improvements
- Discharge chamber improvements
- HVAC system replacement
- Comprehensive structural & architectural rehabilitation
- Control room improvements
- Enhanced equipment removal
- Comprehensive control system upgrades
- Supporting plumbing, site, and electrical work

Bid Advertisement Date: Q3/Q4 2025

Estimated Cost: $20M - $25M





BUFFALO
SEWER AUTHORITY

Raw Wastewater (RWW) & Settled Wastewater (SWW) Pump Station Upgrades Phase 1 & Phase 2

Project Description:

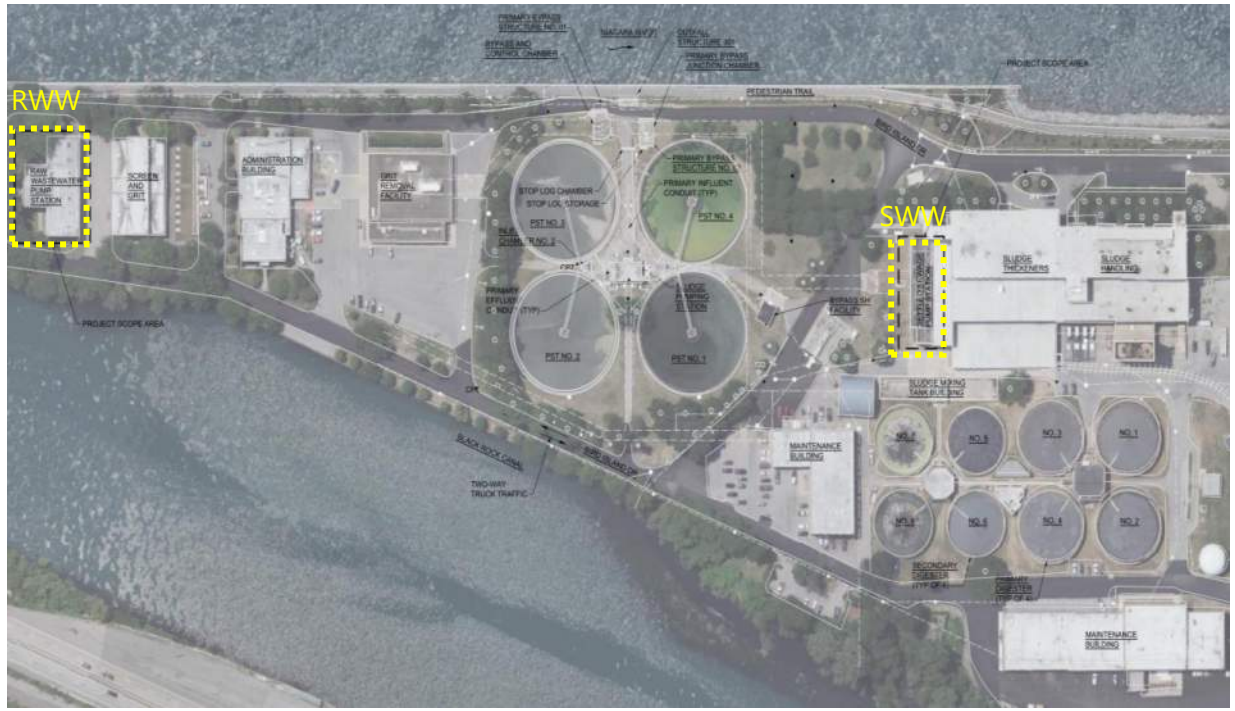
The Bird Island Wastewater Treatment Facility, including the RWW operational since 1938, initially served as a primary treatment plant.

Secondary treatment facilities, including SWW were added in the late 1970s due to the Clean Water Act and became operational in 1981.

The project's goal is to restore full pump capacity to these aging pump stations.

Work includes the following:

- Mechanical – Pump and Valve Rehab and Vacuum Priming System
- Electrical – Motor Rehab;
- Instrumentation & Controls – Pump Controls upgrade; and
- Structural/Architectural – Roof Replacement/repair



Bid Advertisement Date: Phase 1 – Q1 2025 | Phase 2 – Q 3 2025

Estimated Cost: Phase 1 - $15M - $20M | Phase 2 - $15M - $20M

BUFFALO SEWER AUTHORITY

Primary Treatment Renovation – Contract B (Rebid)

- New High-Rate Disinfection (HRD) Chlorine Contact Tank and High-Rate Disinfection (HRD) Pump Station Building
- New connection and renovations to the existing Outfall Structure 001, HRD Influent and Effluent Conduits
- Modifications to the existing Bypass and Control Chamber and Primary Bypass Junction Chamber
- Replacement of gates at the Bypass and Control Chamber, Primary Bypass Structure No. 1 and 2.
- Update: Gate WW-17 replacement now to be performed under a separate contract.
- **Bid Advertisement Date:** Q3 2025
- **Estimated Cost:** $60M-$70M

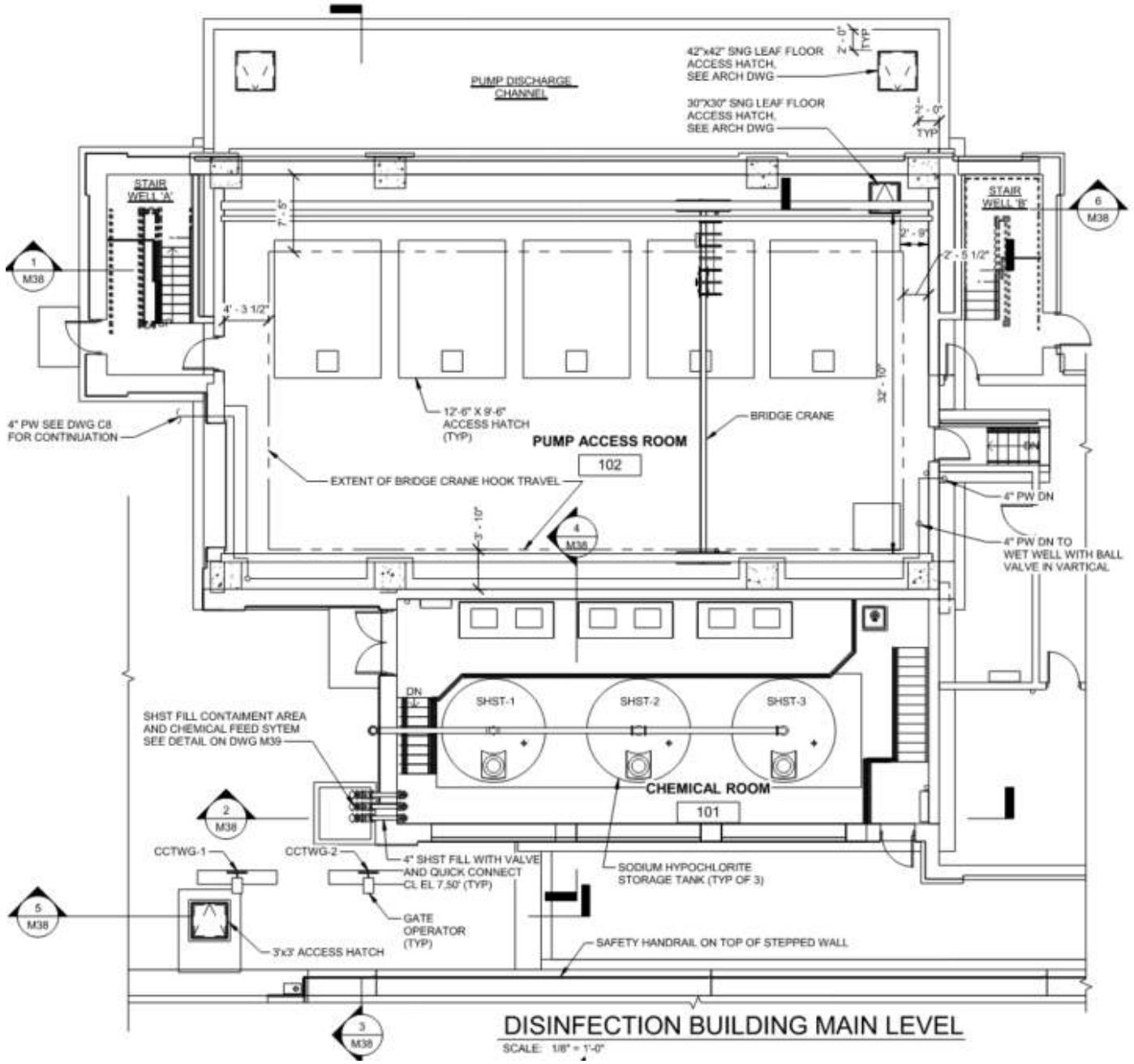


Future Rendering of New HRD Facility (left side) at Bird Island WWTF

BUFFALO SEWER AUTHORITY

HRD Pump Station

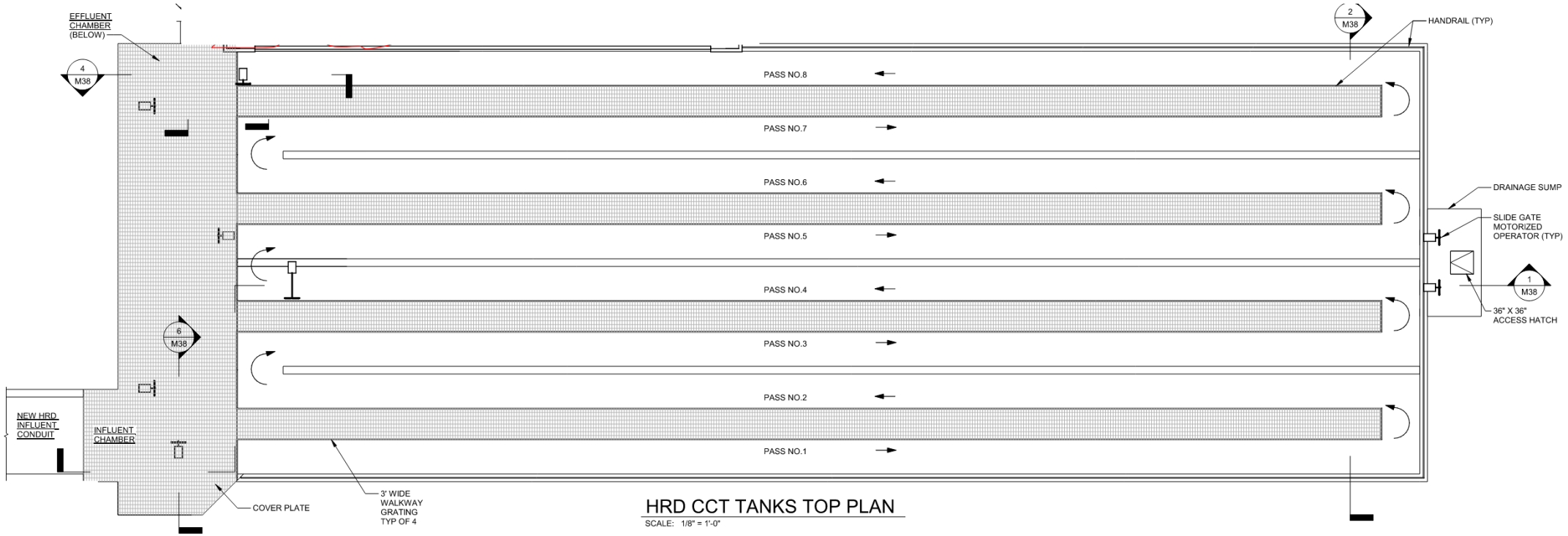
- Pumping Station
  - 160 MGD firm capacity
  - Five (5) 40 MGD Submersible Pumps
  - 3 Pumps on VFD, 2 constant speed
- Chemical Feed and Storage
  - Three (3) 11,200 gallon storage tanks
  - Chemical feed pumps

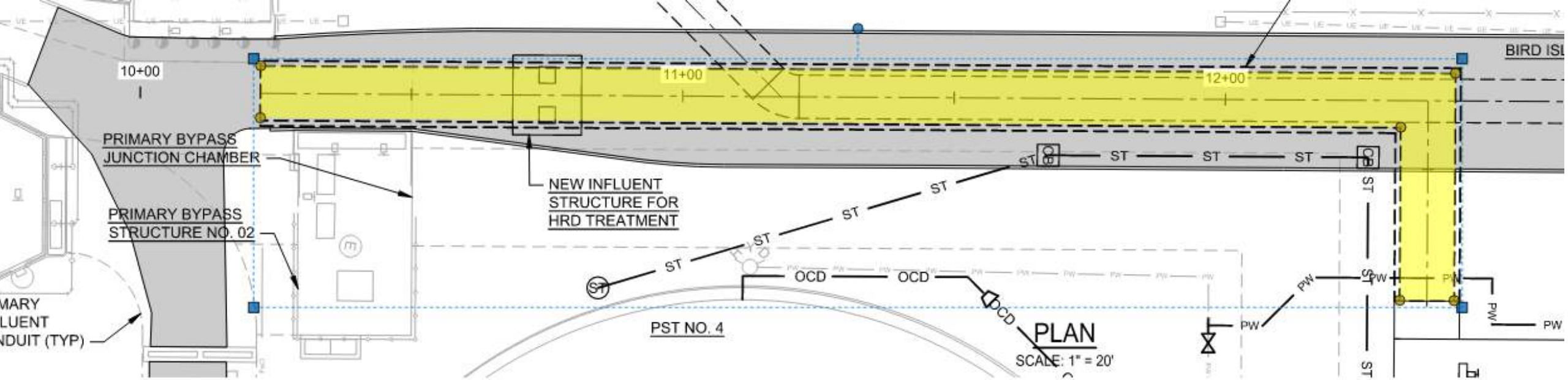


BUFFALO SEWER AUTHORITY

HRD Chlorine Contact Tank

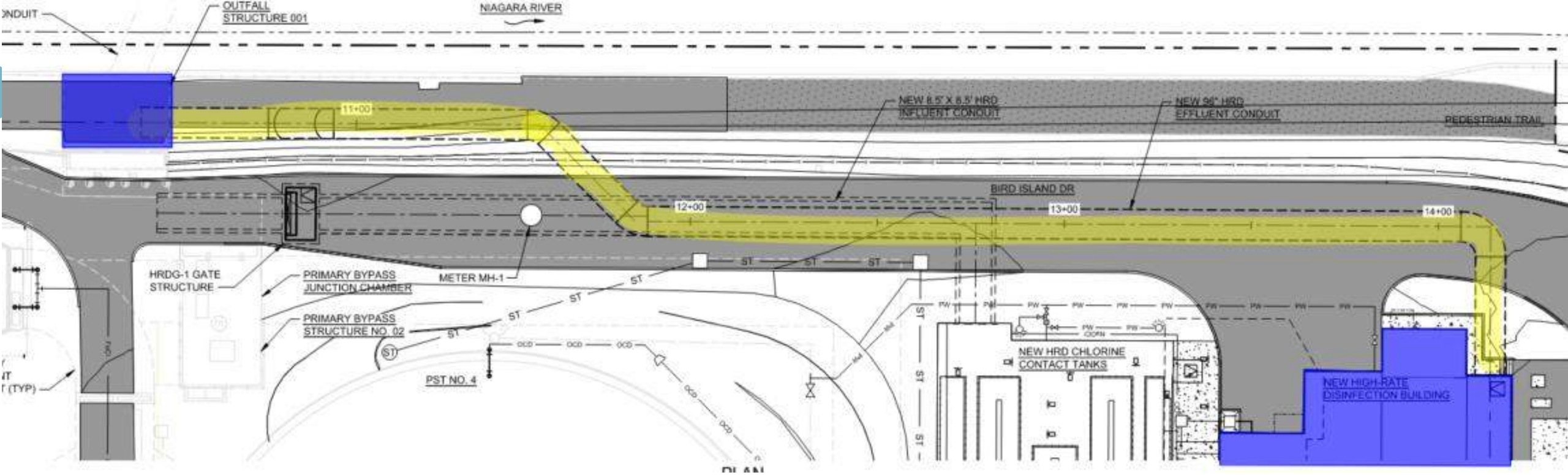
- 5-minute contact time:
  - Channel Width: 6 ft
  - Channels Length: 120 ft
  - Water Depth: ~13 ft





Influent to HRD Conduit

- Flow
  - Gravity
  - Average Flow: 74 MGD
  - Max Flow: 160 MGD
- Size
  - 8.5’x8.5’
- Structural
  - Material: Cast in Place Concrete
  - Steel piles



Outfall 001 Repair and Connection to HRD

- The HRD Pumping Station force main will tie into the existing Outfall 001 structure.
- The existing Outfall 001 overflow structure and conduit was inspected to verify they are structurally competent to facilitate the proposed renovation.

Primary Treatment Renovation
Scope of Work – Potential Schedule of Quantities

NO.	ITEM	QUANTITY	UNIT
1B	Construction of a new Chlorine Contact Tank, High-Rate Disinfection Building, a new connection and renovations to the existing Outfall Structure 001, HRD Influent and Effluent Conduits, modifications to the existing Bypass and Control Chamber and Primary Bypass Junction Chamber, replacement of gates at the Bypass and Control Chamber, Primary Bypass Structure No. 1 and 2, and associated equipment, material and labor.	1	Lump Sum
2B	Negotiated Price: Emerson equipment and integration for the equipment associated with the High-Rate Disinfection System.	1	Lump Sum
3B	Allowance for the handling, removal, and legal disposal of unanticipated hazardous and non-hazardous (regulated) waste.	1	Lump Sum
4B	Allowance for the handling, removal, and legal disposal of unanticipated impacted soil and groundwater.	1	Lump Sum
5B	Allowance for the repair of existing pipelines.	1	Lump Sum
6B	Additional earth excavation	1,000	Cubic Yards
7B	Additional select fill	1,000	Cubic Yards
8B	Additional Class B Concrete	1,000	Cubic Yards
9B	Additional Steel Reinforcing	5,000	Pounds
10B	Additional Pile Length	2,000	Linear Feet

Summary: Major Work and Coordination items

- HRD PS and CCT
  - Deep Excavation and Dewatering for Dewatering
  - Electrical power supply from MegaStructure & Substation
  - The new facility itself – Pump station, CCT, and influent and effluent conduit
  - Concrete
  - trucking/delivery
- Coordinating shutdown for portion of Shoreline Trail to facilitate HRD Connection to Outfall 001
- Instrumentation & Controls coordination with Emerson for the Ovation Control System
- Long lead items: HRD pumps, MCC, control panels, WW gates



Future Construction Projects – Estimated Bid Dates

Type 1 (Weir Modifications / Gate Installation)	Cornelius Creek CSO Backwater Gate (2025) SPP 206A&B/ SPP 304 (August 2027) SPP 340 (October 2026) SPPs 023, 024, 296 (October 2027)
Type 2 (Underflow Drop Shaft Modifications)	SPP 339 (October 2026)
Type 3 (Upsized Underflow Pipe)	SPP 326 (October 2027)
Off-Line Storage	East Delavan Sewer Project (December 2026) Schiller Park (8 MG) (December 2027) Erie Basin Marina (5.55 MG) (September 2028)
Bird Island WWTF	Phase III: Secondary System Expansion (2026)
Green Infrastructure	Hennepin Park (Fall 2025) Streetscape and Park Improvements (Fall 2025) Buffalo Public Schools Permeable Pavement and Rain Gardens (Fall 2025)

Professional Services and Construction Bid Requirements

Typical Services Desired for Upcoming BSA Projects

Professional Services

- Engineering
- Civil/Mechanical
- Civil-Site, Structural, Geotechnical, HVAC/Plumbing, Instrumentation
- Underground Storage Tanks
- Deep Tunnels/Pipes
- Green Infrastructure + Landscape Design
- Architecture
- Energy Efficiency
- Community Engagement and Placemaking
- Grant Writing / Funding Support
- Growth, Inclusion and Partnership of Local Workforce and Suppliers

Construction

- General, Mechanical, Electrical Contracting
- Equipment Suppliers
- Electrical and Instrumentation
- Concrete
- Excavation/Dewatering
- Traffic Control
- Document Management
- Gate Installation
- Testing and Inspection
- Surveying and Utility Verification
- Photography
- Pavement Sawcutting
- Trucking and Material Procurement
- Environmental Health & Safety
- Growth, Inclusion and Partnership of Local Workforce and Suppliers

Professional Services: Requests for Proposals (RFPs)

Typical Proposal Components

Cover Letter

Project Approach

Experience

Professional Team (Org Chart + Resumes)

Company Profile

DBE/MWBE Plan

Cost Proposal



BSA Evaluation Criteria

Demonstrated understanding of project requirements

Technical and creative quality of proposed approach, including community engagement and social impacts

Proposed schedule

Experience with comparable projects

Professional team organization and expertise

Company profile

Minorities, Women, and MBE/WBE/DBE firms as a percentage of the professional team

BUFFALO SEWER AUTHORITY

Typical Requirements for Construction Bids

General

- ✓ Bid Sheet(s)
- ✓ Equal Employment Opportunity
- ✓ Tax Exemption
- ✓ Non-Collusive Bidding Certification
- ✓ Insurances
- ✓ List of subcontractors
- ✓ DBE/MWBE Plan

Bonds

- ✓ Performance Bond – 100%
- ✓ Maintenance Bond – 10%

Liquidated Damages

- ✓ $500 per day after time specified for Substantial Completion
- ✓ $1,000 per day beginning 60 days after time specified for Substantial Completion

Supplier Diversity: Meaningful Inclusion of DBE/MWBE Firms

- DBE/MWBE must be certified in New York State
  - Typical DBE Goal: 20%
  - Typical MWBE Goal: 30%
- MWBE Certification in Erie County is a plus
- A DBE/MWBE Utilization Plan must be submitted with your Proposal Package:
  - https://efc.ny.gov/mwbe-forms
- Prime consultant or contractor must utilize DBE/MWBE suppliers/subcontractors that are certified on behalf of the New York State Certification Program:
  - NYS United DBE Certification Program
  - NYS MWBE Certification Program
- Buffalo Sewer is looking for Plans that are:
  - Reflecting a good-faith effort
  - Realistic and meaningful



PURPOSE

- Create economic opportunity for DBE/MBE/WBE firms, including firms who are new to working with BSA and/or the City of Buffalo
- Promote meaningful teaming arrangements, mentorship, and partnership between established, experienced firms and new and/or smaller firms

DBE, MBE, WBE Resources

MINORITY-OWNED BUSINESS ENTERPRISE & WOMEN-OWNED BUSINESS ENTERPRISE

- MWBE - Business Growth Accelerator Program
- Mentor-Protégé Program
- Supply & Demand Utilization Factsheet
- DMWBD Event Speaker Form
- NFTA Diversity Development (DBE)
- BSU - M&WBE Resources
- The MWBE Training Day Conference
- Erie County-COB MWBE Certification

CERTIFICATION RESOURCES:

Buffalo Small Business Administration
*Buffalo Main Office:
130 S. Elmwood Ave., Suite 540, Buffalo, NY 14202
Phone: 716-551-4301

Women's Business Center at Canisius College
1901 Main Street, Science Hall, Buffalo, NY 14208
Phone: 716-888-8280

* **Additional Resources:** Service - Disabled Veteran-Owned Small Business (SDVOB) and other small business resources available at the Buffalo Main Office.

MWBE Training Day Conference – Buffalo, NY

When:
Oct 24th
8 am – 5:00 pm

Where:
Buffalo Convention Center

Ticket Prices:
$40 - $125





Secure your ticket @ The MWBE Training Day Conference Tickets

Get Certified!

MWBE CERTIFICATION SESSIONS

When:

– Oct 22nd
– Oct 29th
– Nov 12th
– Nov 19th

Where:

Innovation Center-BNMC
640 Ellicott St.
Buffalo, NY 14203



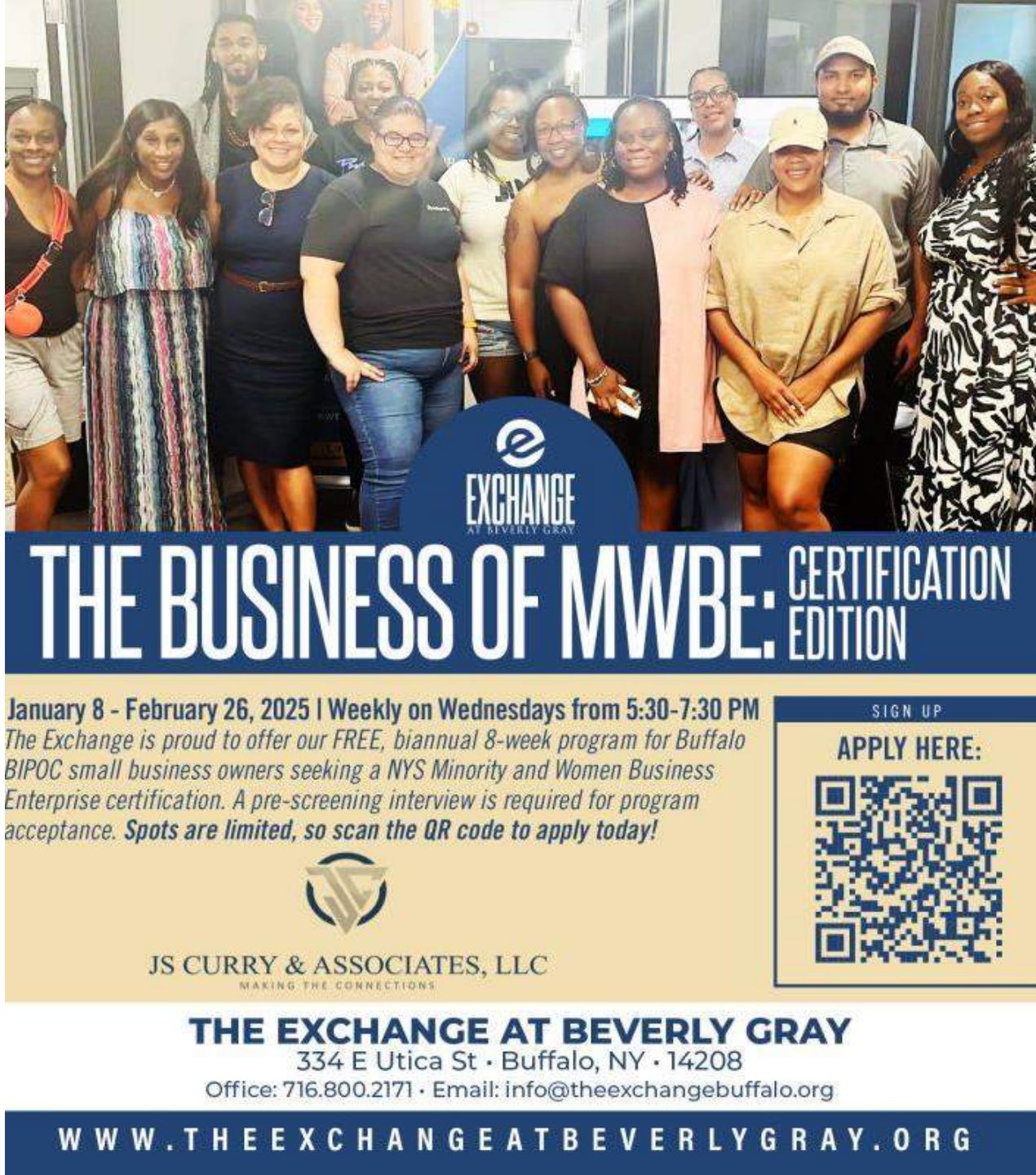
Get Certified!

MWBE CERTIFICATION SESSIONS

Hosted by The Exchange at Beverly Gray

Wednesdays, Jan 8-Feb 26, 2025

- Applications open for our January cohort of The Business of MWBE!
- Apply now as each applicant has to go through an interview process if you meet all qualifications.
- More information will be coming out soon.



Small Business Resources

BUFFALO STATE SMALL BUSINESS DEVELOPMENT CENTER (SBDC)

- Business Plan Development
- Funding Sources
- Exporting of Goods & Services
- Market Plan Development
- Invention Viability
- Compliance with Licensing & Regulation

https://sbdc.buffalostate.edu/sbdc-services



Small Business Resources
(Cont.)

BSU – SBDC SERVICES

– Business Plan Development
– Small Business start ups
– Organizational structure
– Accounting
– Financial Planning
– E-commerce
– Cost analysis
– Loan Information
– Marketing
– Human Resources (HR)
– Employee Training
– And More!



Coming in 2025: Community Benefits Program

WHAT IS A COMMUNITY BENEFITS PROGRAM?



Leverage large scale Buffalo Sewer construction and professional services contracting to deliver positive economic, environmental, and social impacts for residents of our service area.



Elevate and support the work of local nonprofit organizations and schools that support shared education, environmental stewardship, workforce development, and economic goals



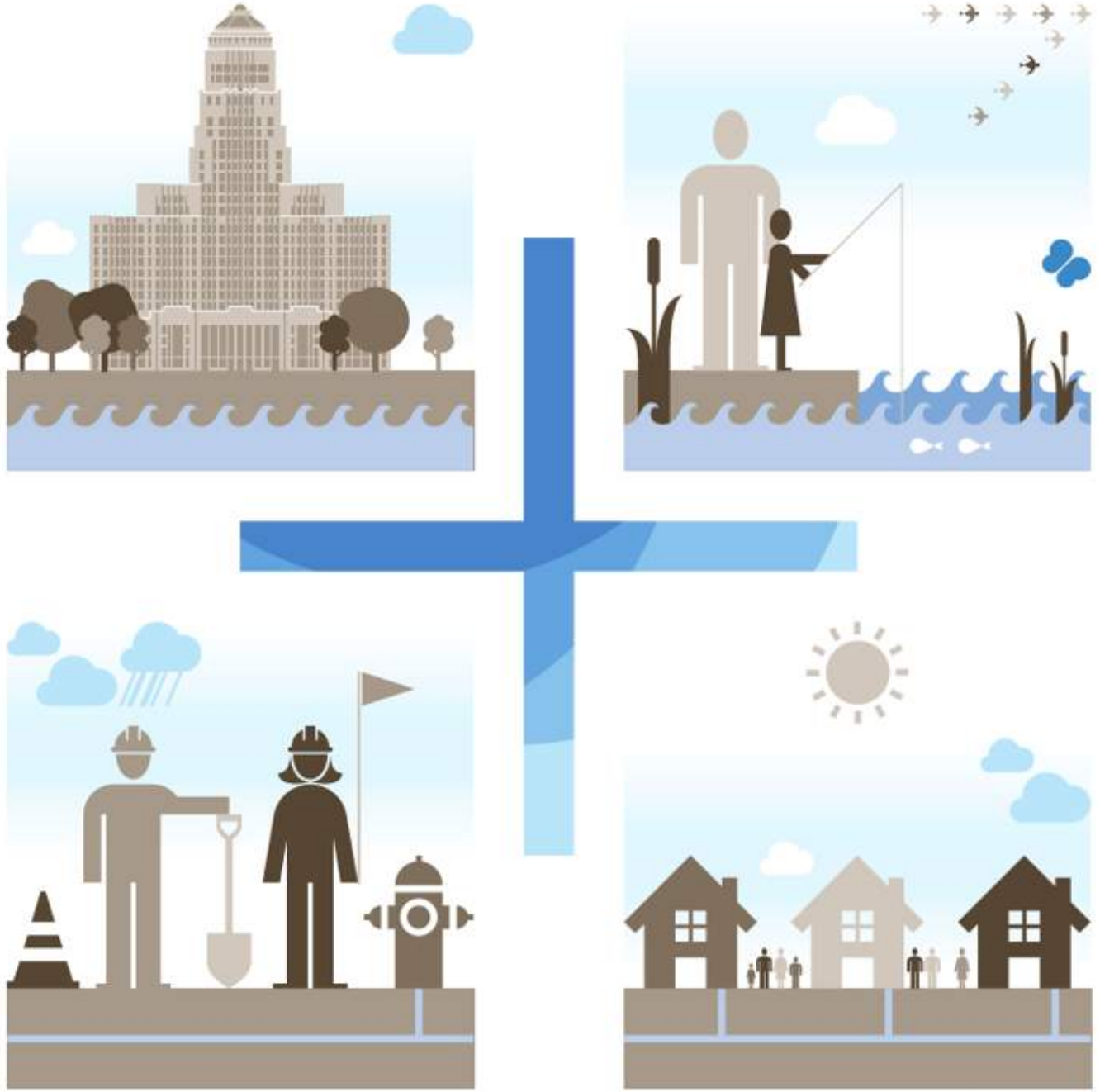
How:
Prime companies contracting with BSA are encouraged to assist nonprofit activity in the Buffalo community through workforce development, contracting, education, community improvements, financial or in-kind contributions, volunteering and more.



Why:
The goal is to continually increase health, equity, sustainability, and opportunities throughout the Buffalo community through economic, environmental, and social impacts for residents

Potential Community Benefits Program Areas

- Workforce Development
- Economic Development
- Education
- Community and Environmental Health



BUFFALO
SEWER AUTHORITY

Q&A

Contact Information

Walt Walker, PE, ENV SP
Program Director, TYLin

walt.walker@tylin.com

Edmund Aplerh-Doku, PE, ENV SP
Program Manager, TYLin

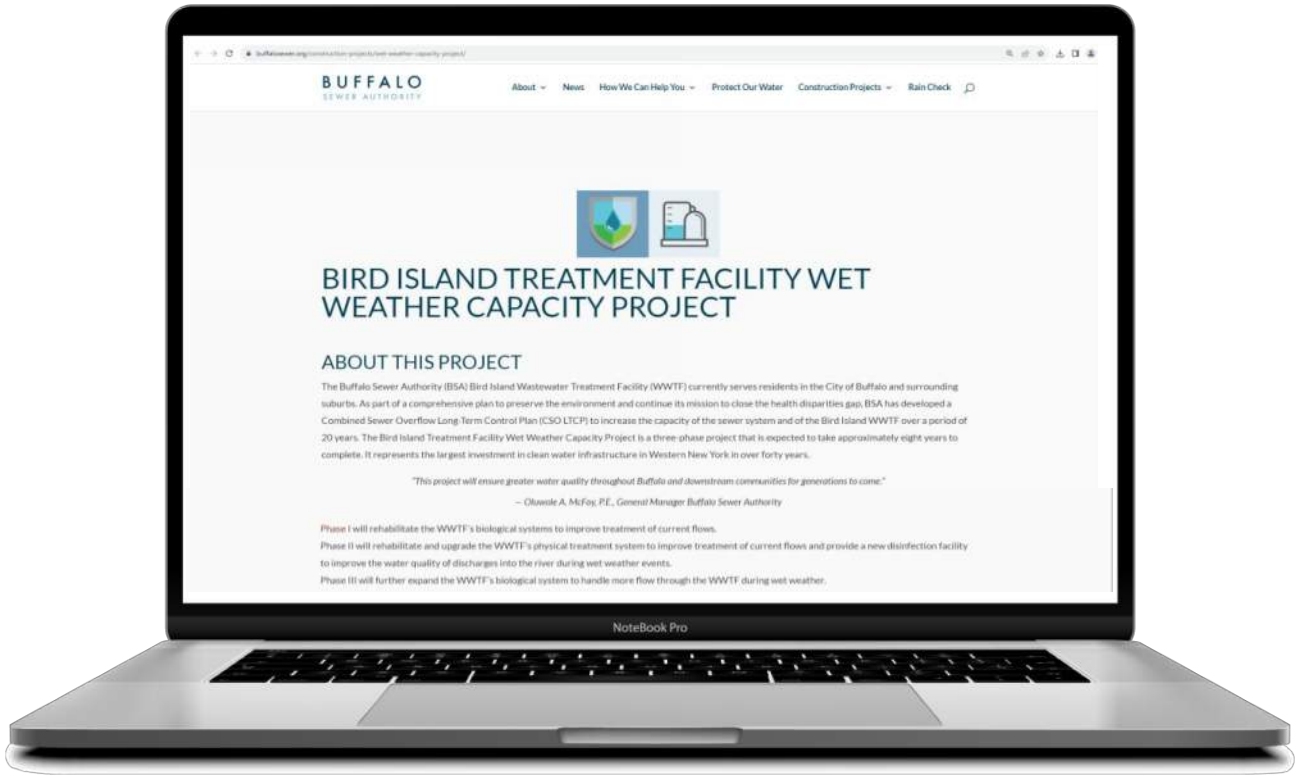
edmund.aplerhdoku@tylin.com

Art Hall
Community Engagement Lead, Hallmark Planning

Rosaleen Nogle, PE, BCEE
Principal Sanitary Engineer, Buffalo Sewer Authority



Buffalo Sewer Authority Website



buffalosewer.org

Your BEST source of information!

- Consultant, Contractor, and Supplier Opportunities
- Construction Updates
- FAQs
- Board Meeting Minutes
- Public Participation Plans

BUFFALO
SEWER AUTHORITY

Thank you!

GET IN TOUCH:

@BuffaloSewer

BuffaloSewer.org

@BuffaloSewer

BuffaloSewerAuthority

BUFFALO SEWER AUTHORITY

TYLin

2025 NYWEA GREATER BUFFALO ENVIRONMENTAL CONFERENCE

Queen City Clean Waters: Leveraging Infrastructure Projects into Community Investment

Rosaleen Nogle, PE, BCEE
Principal Sanitary Engineer, BSA

Walt Walker, PE, ENV SP
TYLin Vice President, Equity Practice Leader
BSA Capital Projects Program Manager



NYWEA
LEADING THE WAY IN WATER QUALITY MANAGEMENT

Program Goals



- Continuing Buffalo Sewer's 90-year mission to protect public health
- Meet all state + federal regulations
- Deliver the Buffalo Sewer's capital projects and Long-Term Control Plan more efficiently, for a more resilient Buffalo
- Manage and Coordinate the delivery of all projects and subprograms
- Optimize interactions and coordination between projects
- Enhance relationships between capital and O&M staff, and the public/community
- Improve customer satisfaction, creating more opportunities for public participation and community engagement
- Standardization of tools, processes and execution across all Buffalo Sewer projects/programs
- Identify and advance specific programmatic opportunities to promote Buffalo policies and strategic priority goals, including financial stability, transparency and accessibility to the public



1994

USEPA CSO Control Policy Issued (Required Development of LTCP)

2004

Submitted Initial LTCP to New York State Department of Environmental Conservation (NYSDEC)

2007

NYSDEC/USEPA Request Additional Evaluations

2009

Negotiation of Consent Decree Begins

2012

Submitted LTCP Update to USEPA/ NYSDEC (as directed by regulatory agency

2014

Final LTCP Report Submitted to USEPA/NYSDEC

2022

Revised collection system model is approved

2023

QCCW (51 proposed projects) submitted to NYSDEC

LTCP Optimization Approach

Globally Coordinated Control Strategy

Real time control (RTC) sites collaborate to prevent overflows and reduce peak flows, regardless of local conditions.

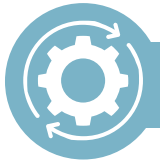
System Evaluation Considerations and Constraints

- Property ownership
- Underground contamination concerns
- Gravity flow vs. pumping
- Prioritization of sewer patrol points (SPP) with low activation requirements and high overflow in baseline projects
- Potential coordination



Original Projects Considered

77 projects including In-line (ILS) and Off-line Storage (OLS), Green Infrastructure, Sewer Separation, and Sewer Patrol Point (SPP) Modification



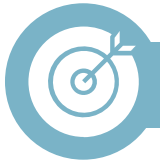
Optimization Rounds

- Project alternatives per SPP
- Full system optimization
- Minimizing cost while achieving compliance



Tools Used

Cloud computing for alternatives analysis



Outcome

51 projects identified as Selected Alternatives

What does that mean for present and future?

- Changing Dynamics with Consultants and the Public
- Centering Public Participation and Community Engagement in the LTCP
- Graying our Green: Concentrating Flows to Increase Affordability
- Greening our Gray: Place Making Instead of Camouflage
- Globalized System Logic Continuous System Monitoring
  - Constant Improvement
  - Commitment to Smart System
- Holistic and watershed thinking over individual CSO
  - Informed by Individual CSO Needs
    - Globalization Opportunities
    - City owned lands
      - Parks, Vacant Lots, Right of Ways
- Synergistic Thinking



Queen City Clean Waters (QCCW) – Mission and Vision

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

VISION

Clean waters and a resilient Buffalo.

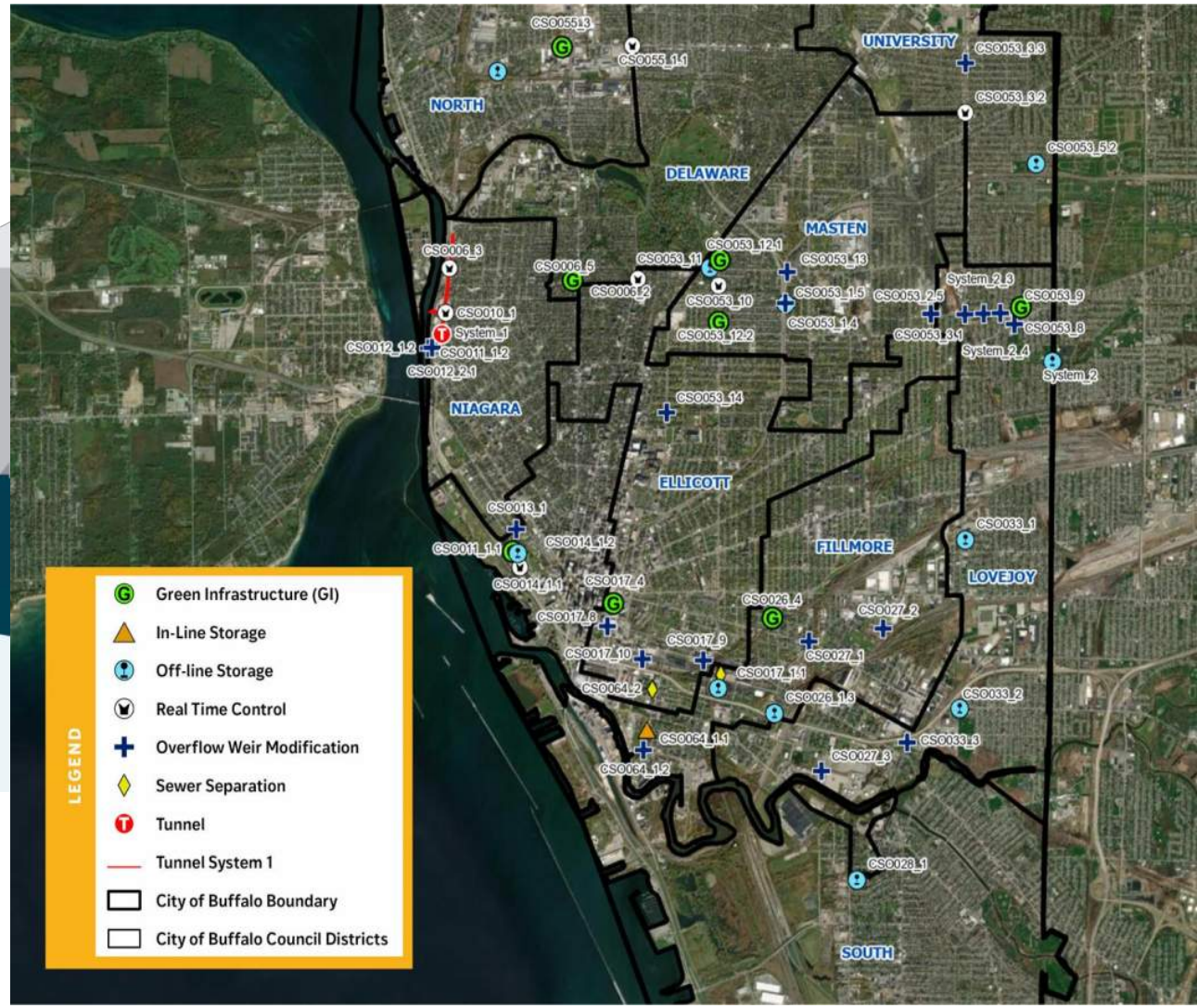
MISSION

To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

Queen City Clean Waters

PROGRAM OVERVIEW





Types of Queen City Clean Waters Projects

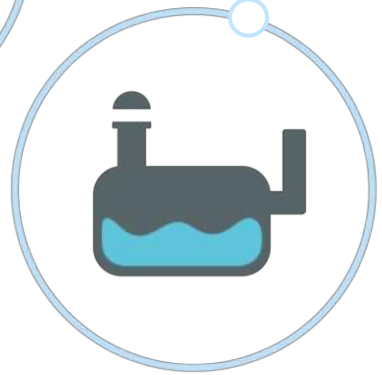
$

Projects to be funded through a combination of:

Federal and state funding administered through NYSEFC and NYSDEC (grants, zero to low interest loans), Environmental Impact Bond, and BSA capital budget



Bird Island Treatment Facility Upgrades



Combined Sewer Offline Storage



Real-time Control Smart Sewers and Sewer Improvements & Modifications



Green Infrastructure (GI)







QCCW Brand Media Launch Event

October 16, 2024

Program Management

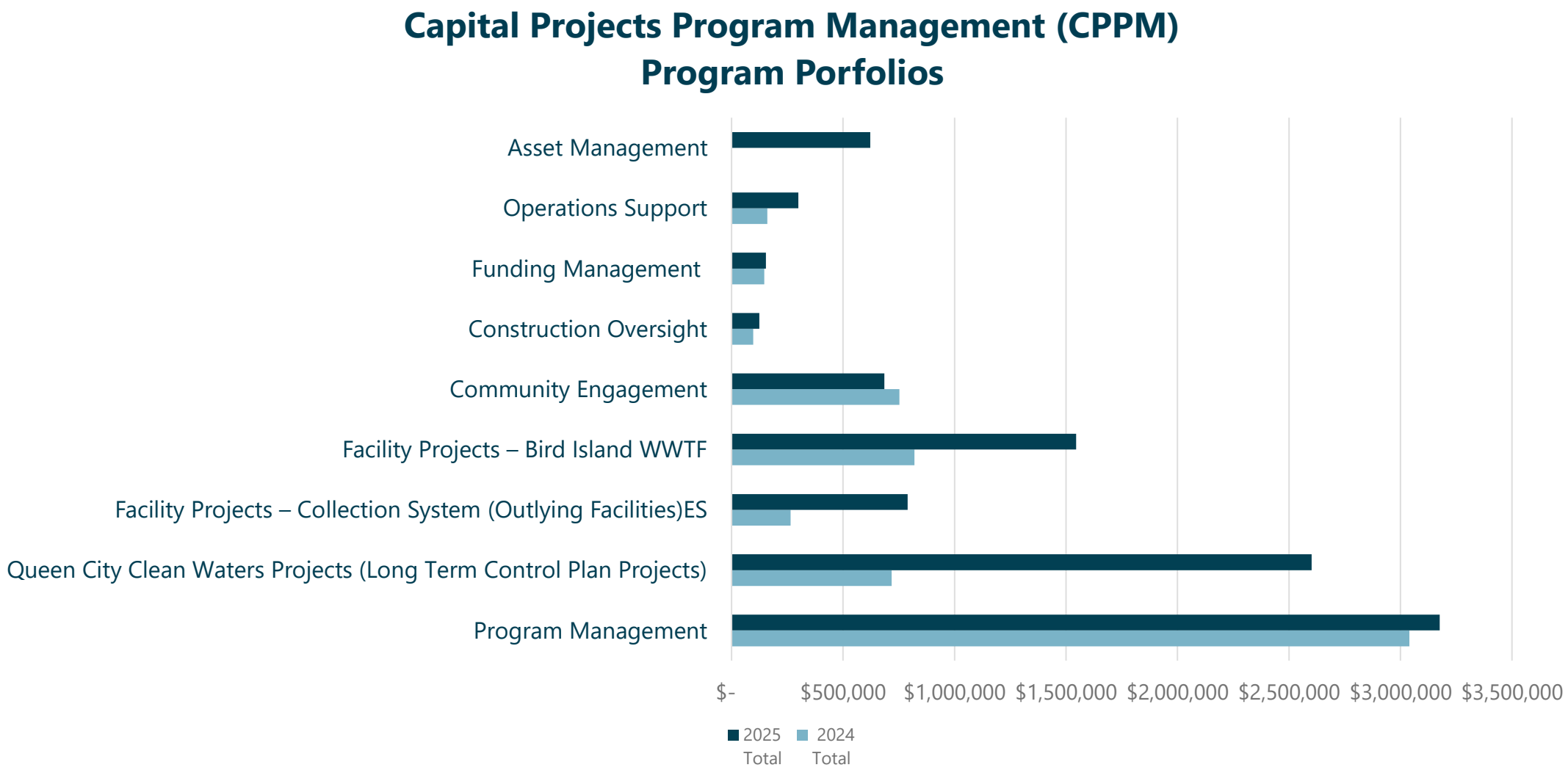
PROGRAM PORTFOLIO AT A GLANCE



- General Program Management
- Queen City Clean Waters Collection System Projects
- Queen City Clean Waters Facilities Projects – Outlying Stations
- Queen City Clean Waters Facilities Projects –WWTP
- Community Partnerships & Public Communications
- Procurement and Workforce
- Funding
- Operations Support
- Asset Management
- Program Controls + PMIS
- Standard Operating Procedures

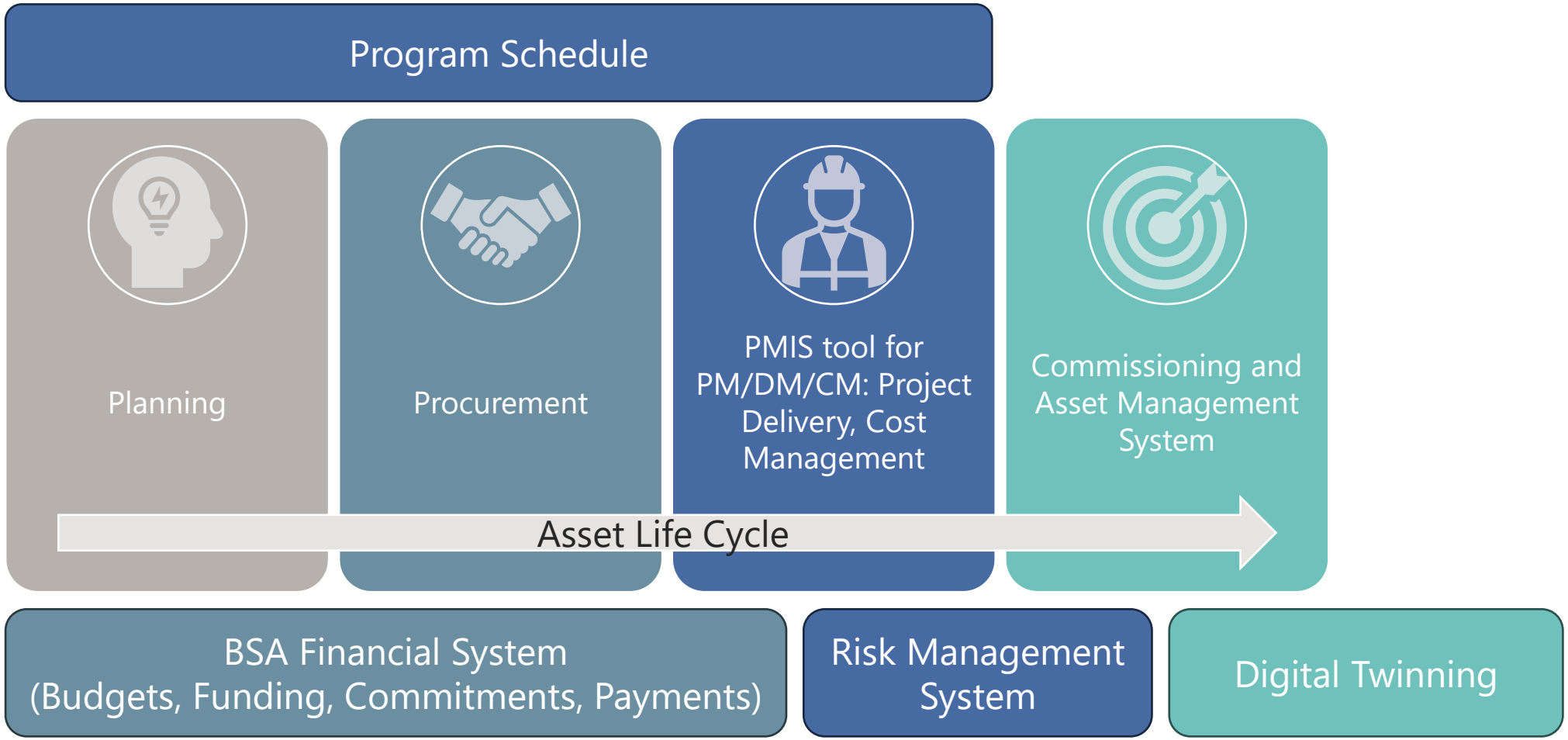
BSA Capital Projects Program Management

BUDGET – BAR CHART



PMIS Roadmap

LEGEND: PMIS Components



Community Engagement & Stakeholder Outreach



Community Engagement on Project Benefits, Construction Impacts, and Mitigation Measures

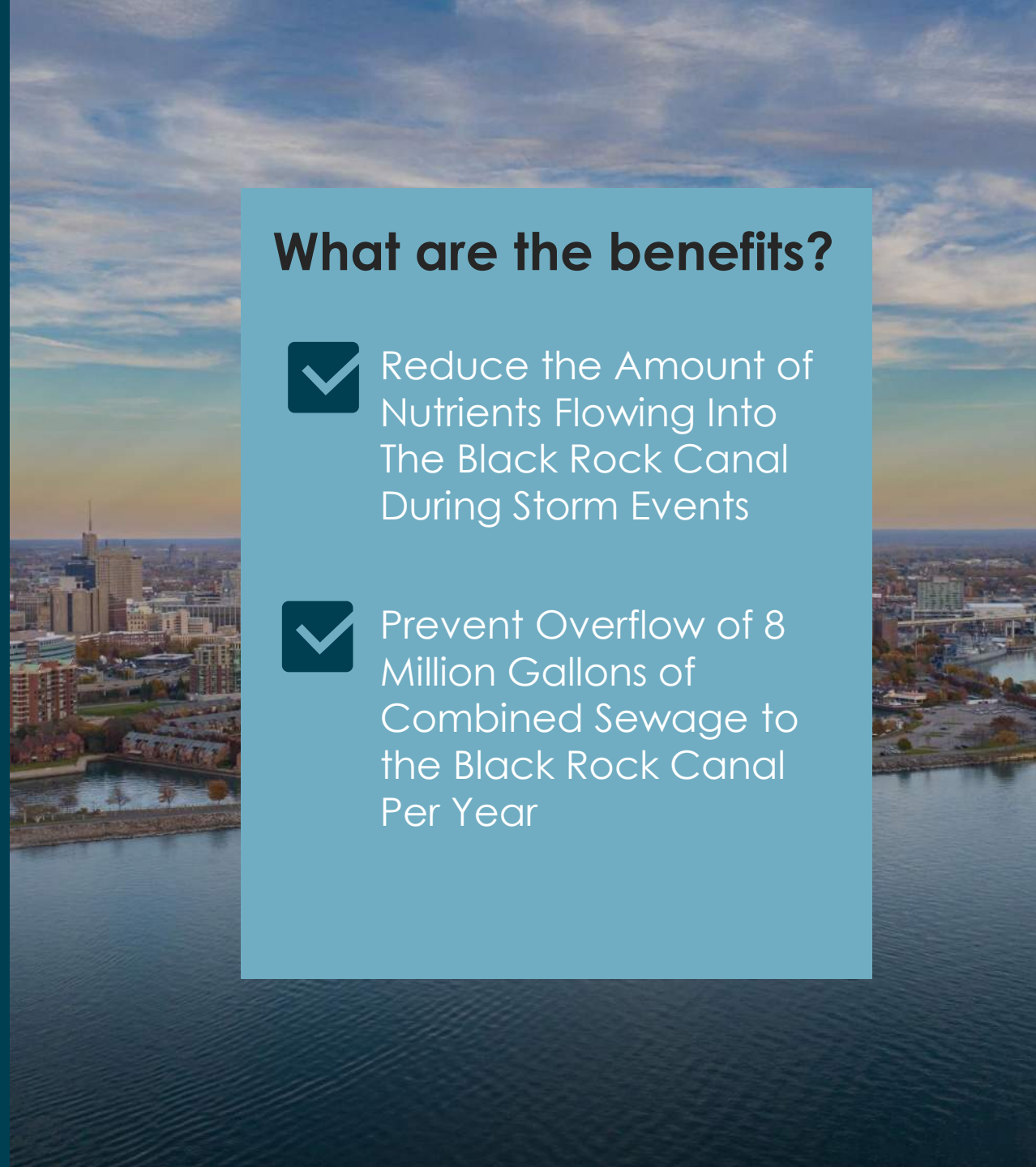
- **Engagement and Outreach early, consistently, and accessible. Meet the community in their community. Consider all impacts to stakeholders.**
- During construction, residents can expect to see equipment and traffic cones off to one side of the road.
- Temporary disruptions, such as noise and dust, will be minimized as much as possible.
- Sewage odors will NOT be present in homes but may be present outside.
- Coordination with city agencies (Buffalo Water, DPW, Parks Dept, National Grid)

BRECKENRIDGE STREET COMBINED SEWER OVERFLOW (CSO) CONTROL PROJECT

Why is Buffalo Sewer doing this project?

- To improve the City's existing sewer infrastructure and reduce combined sewer overflows (CSOs).
- Replace and rehabilitate sewers that are over 100 years old and redirect them on a different path to the wastewater treatment plant.
- Will reduce CSOs to the Black Rock Canal.

BUFFALO
SEWER AUTHORITY

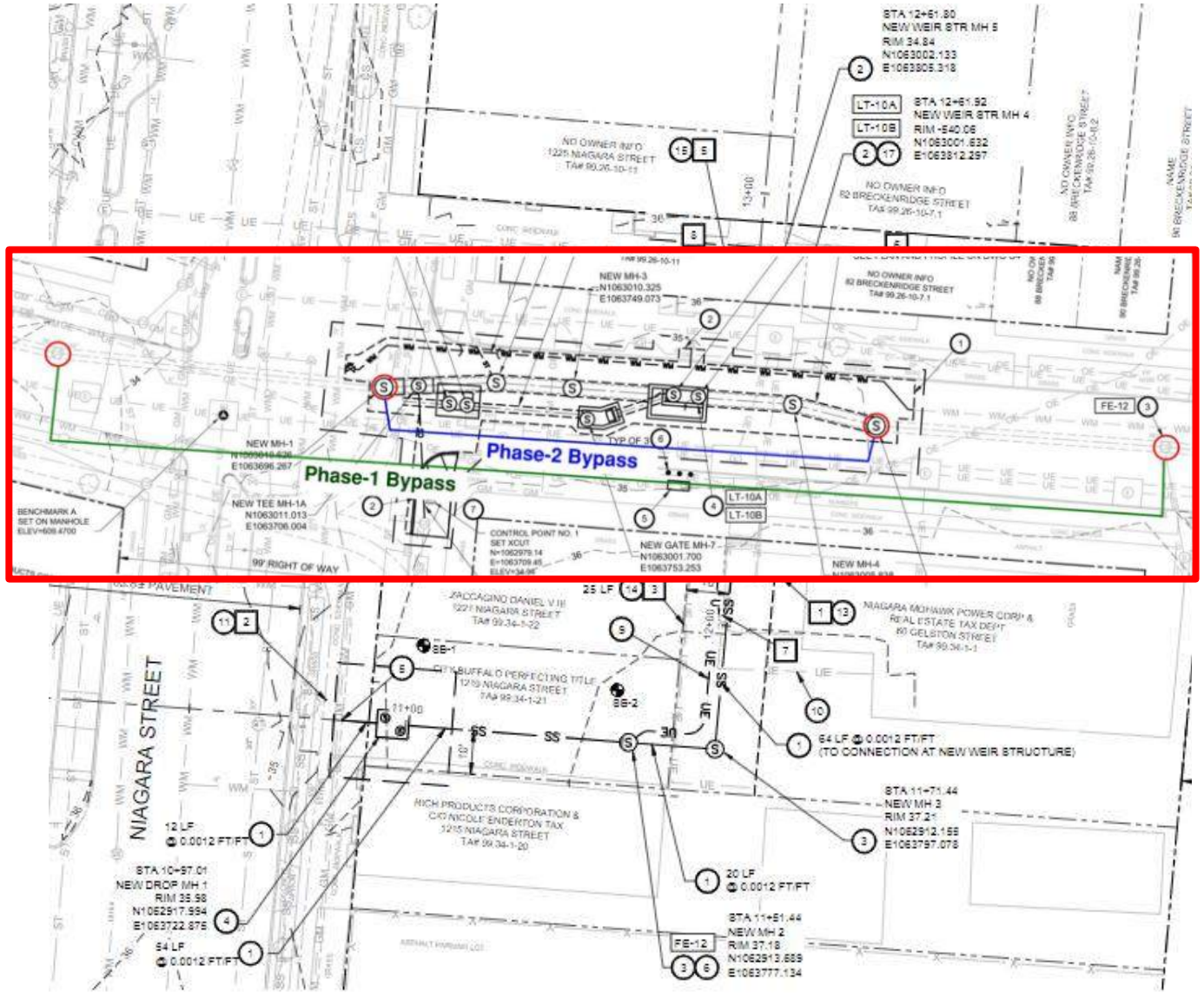


What are the benefits?

- ☑ Reduce the Amount of Nutrients Flowing Into The Black Rock Canal During Storm Events
- ☑ Prevent Overflow of 8 Million Gallons of Combined Sewage to the Black Rock Canal Per Year

Original Concept: Niagara @ Breckenridge Real-Time Controls

ALTERNATIVE REMOVED DUE TO RISK AND CONSTRUCTABILITY



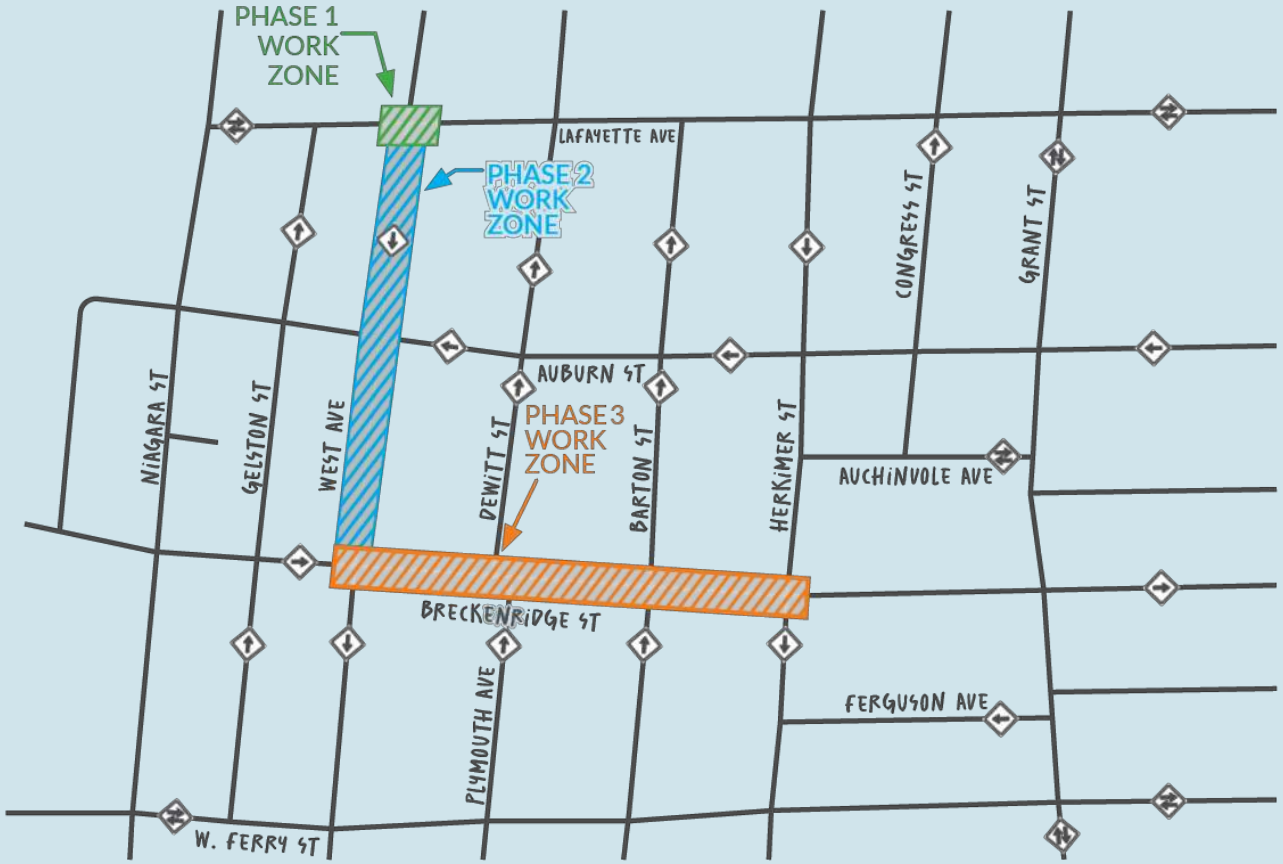
- Design up to 75% involved routing the diversion line through a vacant lot
- Required easement from National Grid and the relocation of substation feeder lines, which was not permitted
- Diverting flow within ROW
- Proximity of aged National Grid electrical infrastructure
- Required additional rock excavation to install gate at intermediate depth
- Bypass sewers unavailable without shutting down Niagara Street, affecting local businesses and adjacent residents

BRECKENRIDGE STREET COMBINED SEWER OVERFLOW (CSO) CONTROL PROJECT



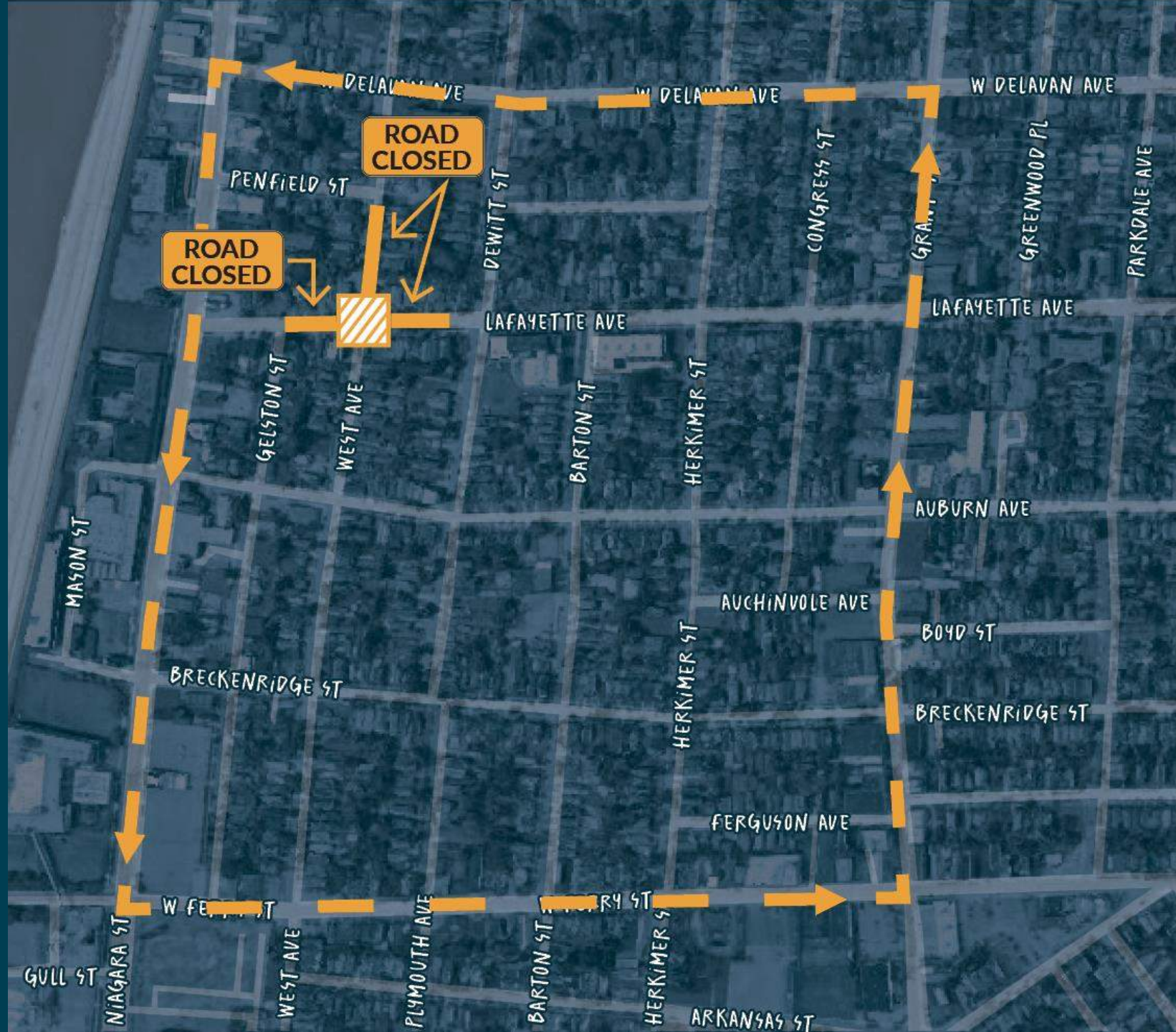
Expected Timelines

- Construction start in Spring 2026 and finish by the end of 2028.
- Construction will be phased (generally one block at a time).
- The phased approach will help minimize temporary disruptions.



BRECKENRIDGE STREET
COMBINED SEWER OVERFLOW
(CSO) CONTROL PROJECT

Lafayette Avenue and West Avenue Closure Detour



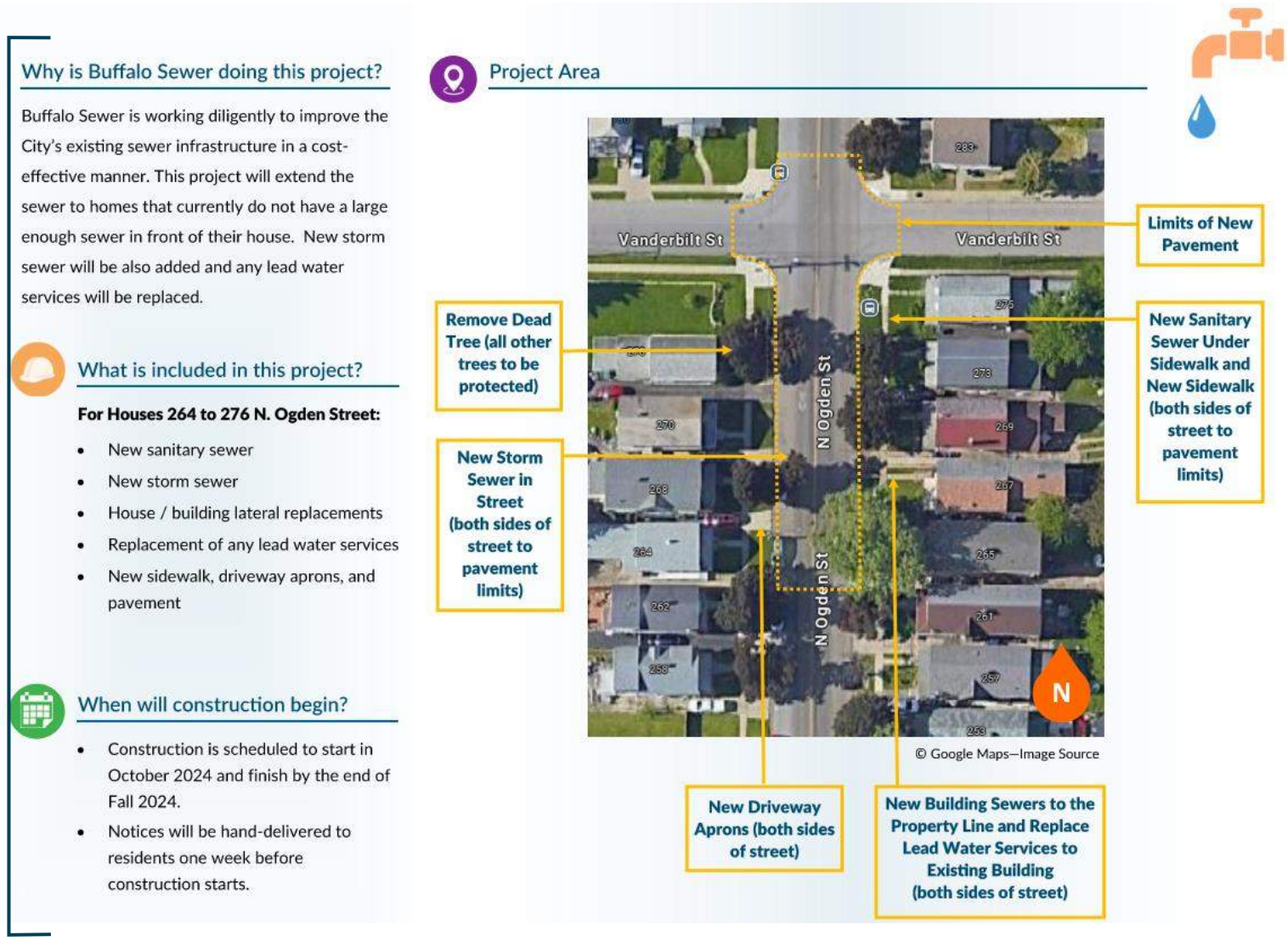
BUFFALO
SEWER AUTHORITY

Construction Impacts and Mitigation Measures

- Residents may experience temporary sewer and water service interruptions for a few hours, with advance notifications provided.

- These interruptions will not last days. We will address concerns about explosives, drilling, dust, and air pollution, and manage environmental hazards like asbestos and PCB-laden soils per best practices.

- New traffic patterns will be in place during construction, including:
  - Partial or full road closures
  - Sidewalk closures
  - Limited street parking
  - Possible detours / relocated bus stop



Queen City Clean Waters Stakeholders

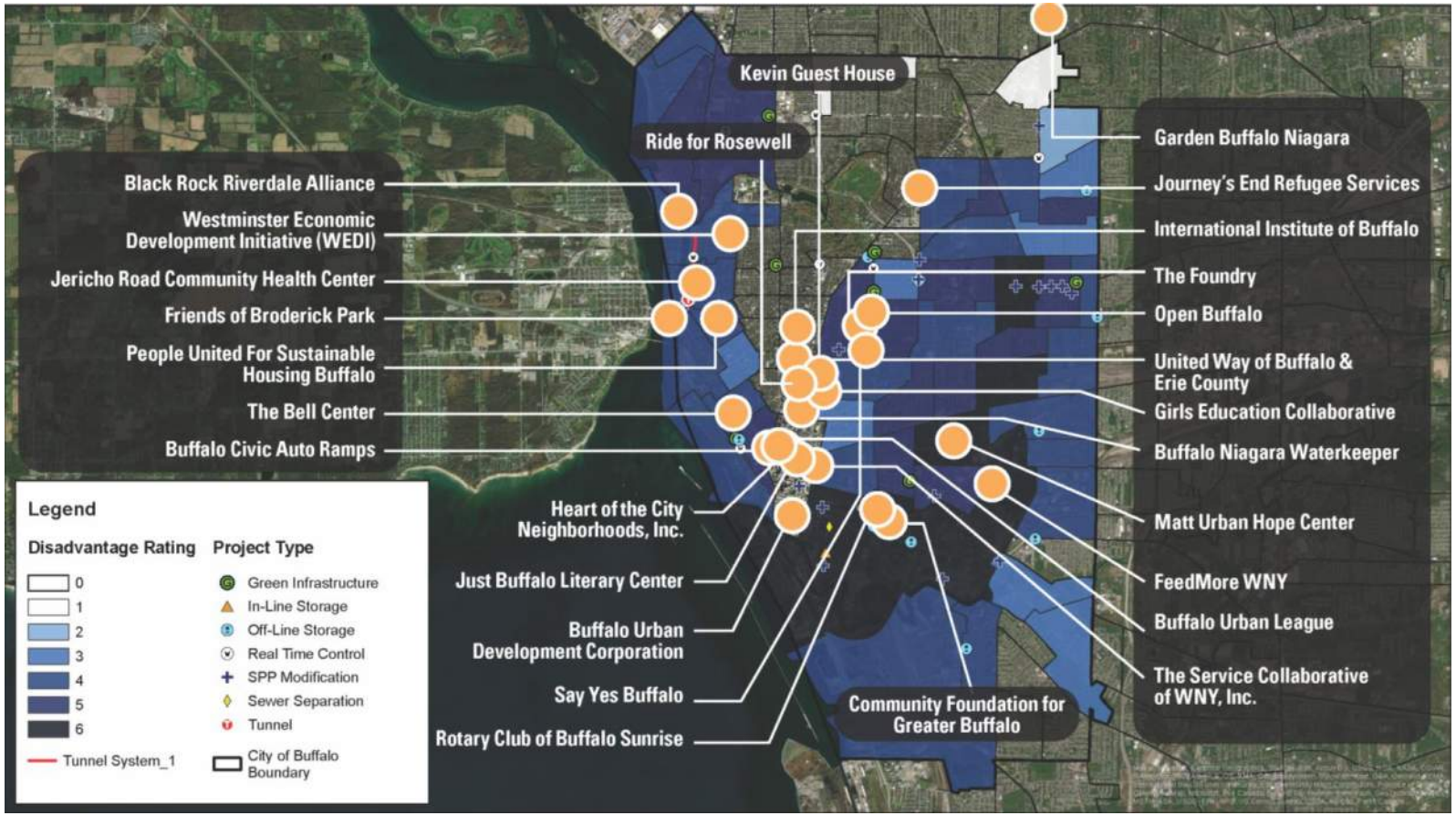
Residents	Delaware, Ellicott, Filmore, Lovejoy, Masten, North, Niagara, South, and University Districts
Local Government Officials	Elected Officials
Community-Based Organizations	Resident advocacy groups, including some in Queen City Clean Water's Stakeholder Advisory Council
Stakeholder Advisory Committee	Northland Workforce Training Center, PUSH Buffalo, Buffalo Urban League, Board of Block Clubs, NAACP, Jericho Road, LISC, Buffalo Niagara Waterkeeper, City of Buffalo Office of Strategic Planning, and Buffalo Center for Health Equity
Businesses	Local businesses that may be affected by construction activities or changes in water rates
Environmental Groups	Organizations focused on water quality and environmental sustainability
City Agencies	Entities responsible for water supply and infrastructure, including parks and recreation, will be involved in implementing the plan

Program Management Impact:
Equity Indicators + Desired Outcomes

1	2	3	4	5	6	7
Community Ownership	Capacity Building	Healthy Communities	Heritage Preservation	Sustainable Wealth Creation	New and Reformed Policy for Sustainable Development	Growth Management and Neighborhood Development

Observation → Discovery → Planning and Application

Partner with Anchor Institutions to Reach the Community



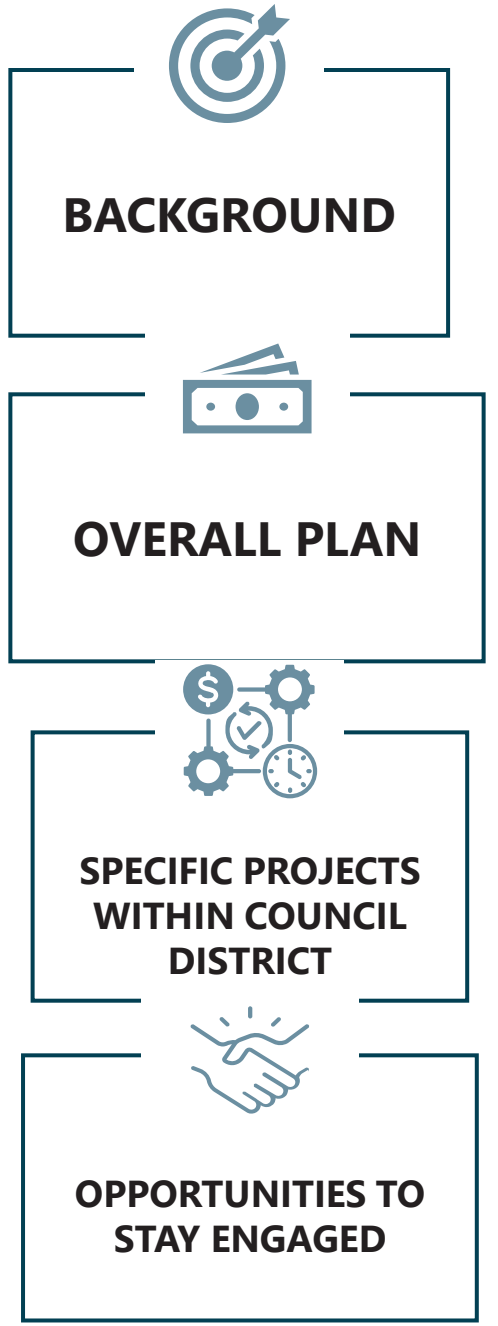
Build a robust **Community Benefits Program** of community partnerships and **Stakeholder Advisory Committee** comprised of community leaders and residents

Accountability + Transparency: Indicators, representation, how are resources distributed and made available

Buffalo Sewer's *Public Participation Plan*

COMPONENTS

- **Stakeholders**
  - Residents Adjacent to the Proposed Project Site
  - Local Elected Officials
  - Community-Based Organizations and Community Residents Located in Potential Environmental Justice Areas
  - Stakeholder Advisory Committee
- **Communications, Information Access, and Events**
- **Public Information Meetings**
  - Common Council Members, Community group Meetings, District Meetings, virtual meetings, SAC Meetings, QCCW Public Meetings
- **Community Partnership Program**



Stakeholder Advisory Committee (SAC)

The purpose of the Stakeholder Advisory Committee (SAC) for the Buffalo Sewer Authority's Queen City Clean Waters Initiative is to serve as a vital bridge between the project team and the diverse communities of Buffalo. The SAC ensures that community perspectives, concerns, and insights are actively incorporated into the initiative's planning, implementation, and evaluation.

Organizations & Agencies Represented:

- Northland Workforce Training Center
- PUSH Buffalo
- Buffalo Urban League
- Board of Block Clubs
- NAACP
- Jericho Road
- Local Initiatives Support Corporation (LISC)
- Buffalo Niagara Waterkeeper
- City of Buffalo Office of Strategic Planning (OSP)
- Buffalo Center for Health Equity



BSA's Commitment to the Inclusion of SBE/DBE/MWBE Firms and Local Workforce

PURPOSE



- Create economic opportunity for Small/Disadvantaged/Minority/ Women – Owned Business Enterprise (S/D/MBE/WBE) and SDVOB firms, including firms who are new to working with BSA and/or the City of Buffalo

- Promote meaningful teaming arrangements, mentorship, and partnership between established, experienced firms and new and/or smaller firms



Buffalo Sewer wants to ensure construction and professional services contracts deliver a positive economic, environmental, and social impacts for residents.

Companies working with Buffalo Sewer are encouraged to support Buffalo nonprofits through volunteerism or financial contributions to defined community partners. The program will be included in contract terms and compliance monitoring to ensure effective participation.

COMMUNITY PARTNERSHIP PROGRAM

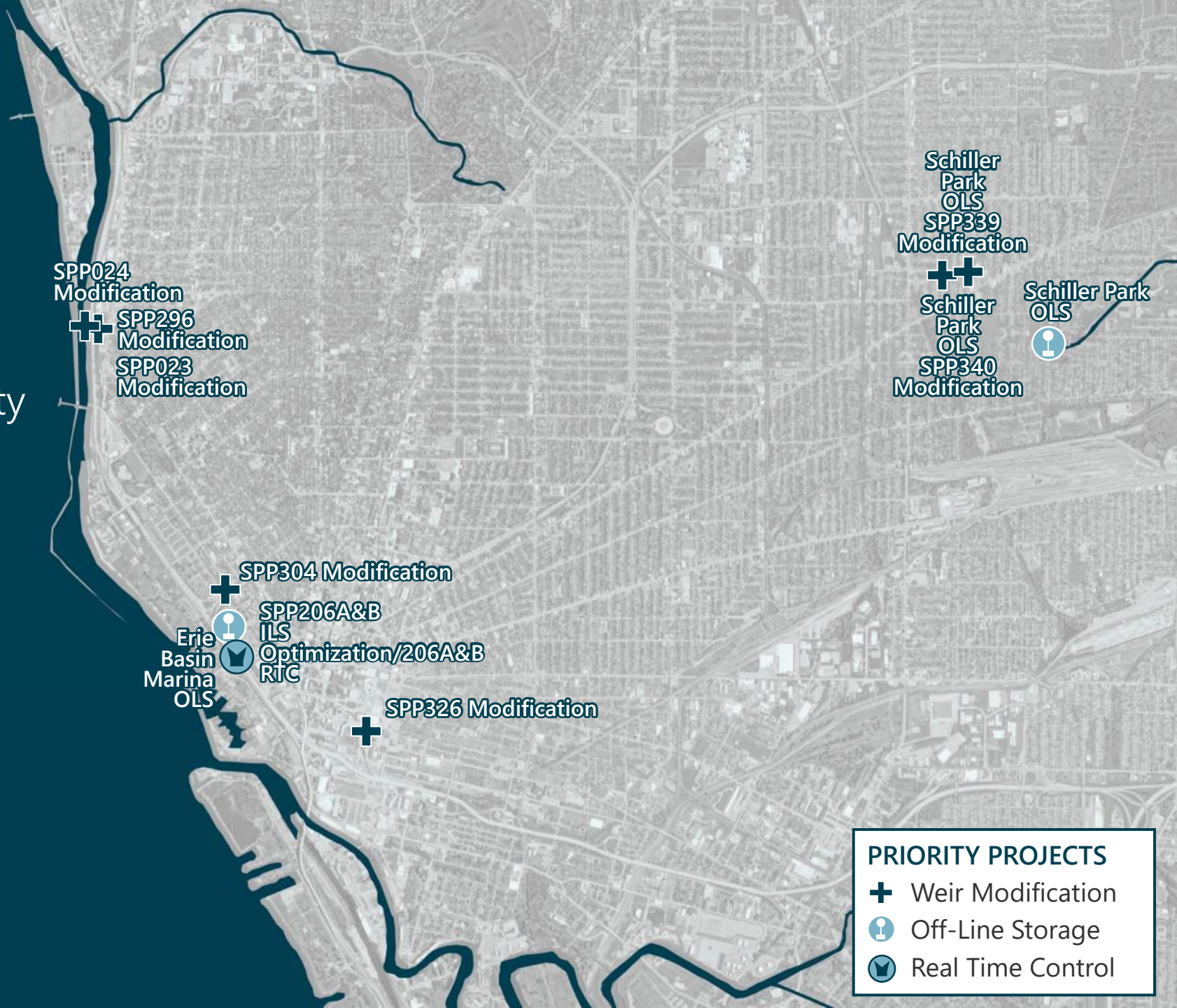
Coming in 2025

What’s Next?

BSA Capital Projects Program Management

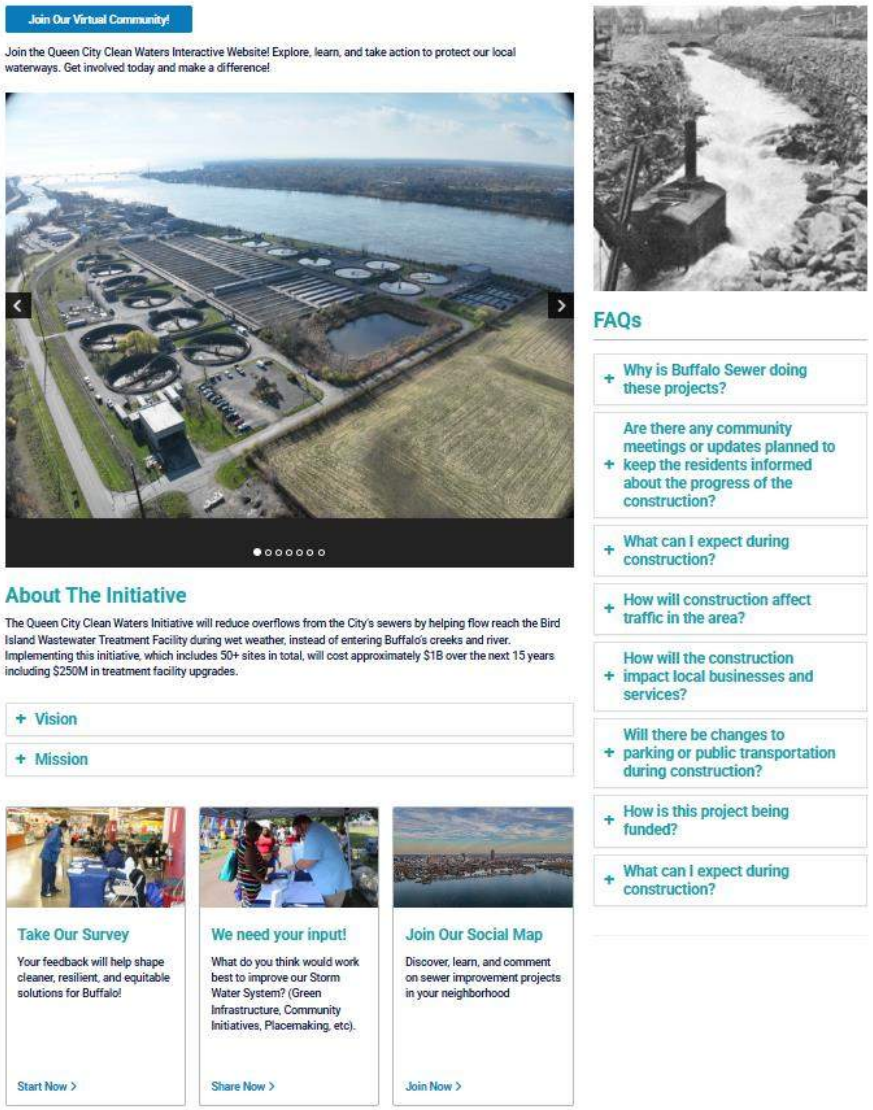
QUEEN CITY CLEAN WATERS COLLECTION SYSTEM 2025 WORK

- Final Design and Bid of Priority SPP Projects
- Off-Line Storage Design
- Progress Next Round of Projects to 30%
- State Funding Applications
- Sewer Maintenance Training
- Asset Management
- Community Partnership Program & Stakeholder Advisory Committee



New! Queen City Clean Waters Interactive Website

BUFFALOQCCW.ORG



FAQs

+ Why is Buffalo Sewer doing these projects?
+ Are there any community meetings or updates planned to keep the residents informed about the progress of the construction?
+ What can I expect during construction?
+ How will construction affect traffic in the area?
+ How will the construction impact local businesses and services?
+ Will there be changes to parking or public transportation during construction?
+ How is this project being funded?
+ What can I expect during construction?



BUFFALO SEWER AUTHORITY

TYLin

NYWEA
LEADING THE WAY IN WATER QUALITY MANAGEMENT

Thank you.

Rosaleen Nogle, PE, BCEE
rnogle@buffalosewer.org

Walt Walker, PE , ENV SP
walt.walker@tylin.com



BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

FEBRUARY 2025

Agenda

1. Overview of SAC
2. W9/MOU
3. Review of In-Person Planning Meeting
4. Overview of Public Participation Program
5. Overview of Community Partnership Program

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Overview of SAC

The purpose of the **Stakeholder Advisory Committee (SAC)** for the Buffalo Sewer Authority's Queen City Clean Waters Initiative is to serve as a vital bridge between the project team and the diverse communities of Buffalo. The SAC ensures that community perspectives, concerns, and insights are actively incorporated into the initiative's planning, implementation, and evaluation.

Organizations & Agencies Represented

- Board of Block Clubs of Buffalo & Erie County
- Buffalo Center for Health Equity
- Buffalo Niagara Waterkeeper
- City of Buffalo Office of Strategic Planning
- Buffalo Urban League
- Jericho Road
- LISC (Local Initiatives Support Corp.)
- Northland Workforce Training Center
- Buffalo NAACP
- PUSH Buffalo









BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

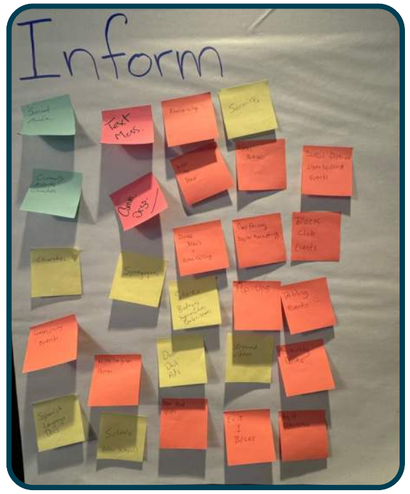
W9/ Memorandum of Understanding (MOU)

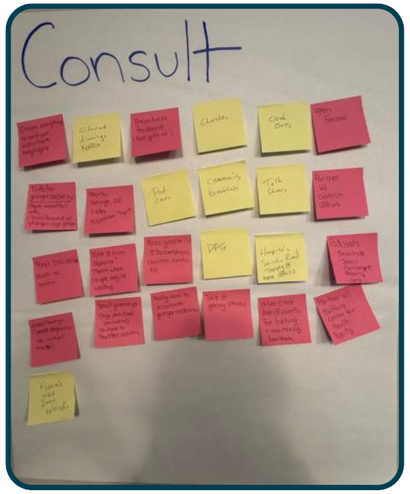
BUFFALO
SEWER AUTHORITY

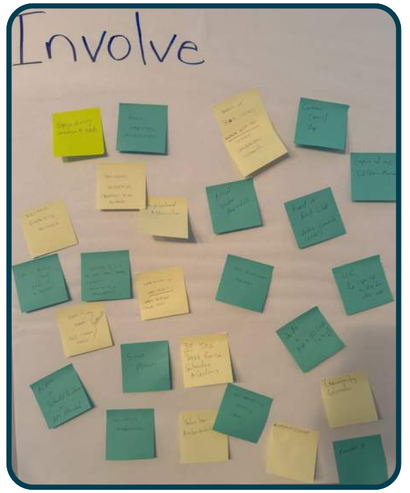
Review of In-Person Planning Meeting

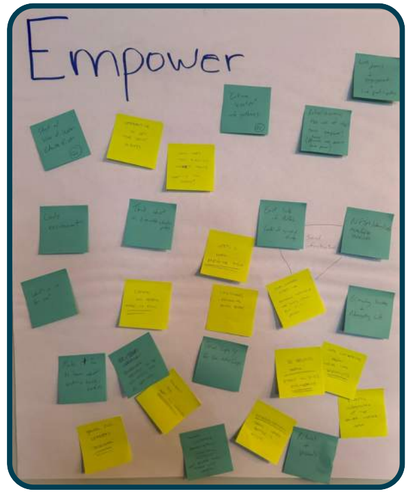
Key Takeaways from In - Person Activity

Inform	Consult	Involve	Collaborate	Empower
Social media outreach	Incentives	Reach out to community organizations/ alliances	Engagement with ongoing planning efforts	Training/education programs
Community events	Visual/interactive displays	Create volunteer opportunities	Partner with City of Buffalo Agencies	Community investment
Multi-Language Communication	Focus groups/panel discussions	Work with museums (Explore & More/Buffalo Science) to have a Buffalo Sewer exhibit	Partner with grassroorts organizations	Create excitment/teach about the value of water
Direct Mail	Survey (visual, short)	Create an urban farm/garden	Partner with nonprofits/community services	Facilitate informal interactions with program leaders (open door policy)









BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Overview of QCCW Public Participation Plan

Buffalo Sewer's *Public Participation Plan*

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS



BACKGROUND



OVERALL PLAN



SPECIFIC PROJECTS WITHIN COUNCIL DISTRICT



OPPORTUNITIES TO STAY ENGAGED

Types of Queen City Clean Waters Projects

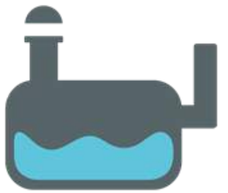
$

Projects to be funded through a combination of:

Federal and state funding administered through NYSEFC and NYSDEC (grants, zero to low interest loans), Environmental Impact Bond, and BSA capital budget

Bird Island Treatment Facility Upgrades





Combined Sewer Offline Storage



Real-time Control Smart Sewers and Sewer Improvements & Modifications

Green Infrastructure (GI)

BUFFALO SEWER AUTHORITY

Buffalo Sewer's *Public Participation Plan*

COMPONENTS

- **Stakeholders**
  - Residents Adjacent to the Proposed Project Site
  - Local Elected Officials
  - Community-Based Organizations and Community Residents Located in Potential Environmental Justice Areas
  - Stakeholder Advisory Committee
- **Communications, Information Access, and Events**
- **Public Information Meetings**
  - Common Council Members, Community group Meetings, District Meetings, virtual meetings, SAC Meetings, QCCW Public Meetings
- **Community Partnership Program**

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

BUFFALO SEWER AUTHORITY

Community Partnership Program





Buffalo Sewer wants to ensure construction and professional services contracts deliver a positive economic, environmental, and social impacts for residents.

Companies working with Buffalo Sewer are encouraged to support Buffalo nonprofits through volunteerism or financial contributions to defined community partners. The program will be included in contract terms and compliance monitoring to ensure effective participation.

COMMUNITY PARTNERSHIP PROGRAM

Coming in 2025

Mission Statement

The Community Partnership Program (CPP) is designed to deliver long-lasting positive economic, environmental, and social impacts in our service area. Buffalo Sewer is dedicated to developing an equitable, inclusive, and comprehensive Community Partnership Program to better serve and foster partnerships within our local communities.

Through local partnerships, volunteering, and financial contributions, our goal is to grow a workforce talent pipeline that supports Buffalo Sewer's core services and ensures City of Buffalo residents experience public benefits, including opportunities for generational wealth creation, workforce/business development, education, and improved environmental health.

BUFFALO
SEWER AUTHORITY

The Why:

Collaboratively, our aim is to create a meaningful and positive impact within the communities and neighborhoods served by the Authority by creating an avenue for community partnerships to form with consultants and contractors of the Buffalo Sewer Authority.

BUFFALO
SEWER AUTHORITY

EDUCATION

Supporting educational programs and initiatives, particularly focusing on Science, Technology, Engineering, Arts, and Mathematics (STEAM). These programs aim to equip individuals with the knowledge and skills necessary to excel in these fields. By fostering a strong foundation in STEAM, the program will inspire the next generation of innovators and problem-solvers who can contribute to the community's growth and sustainability.

WORKFORCE DEVELOPMENT

Support of existing and creation of comprehensive job training programs that prepare individuals for employment. These programs will provide hands-on training, certifications, and career development opportunities. By building a skilled workforce, the program aims to support the local economy and ensure that our community has the expertise needed to maintain and improve essential infrastructure.

ECONOMIC DEVELOPMENT

We are dedicated to promoting local economic growth by supporting infrastructure projects that create jobs and stimulate economic activity. Through strategic partnerships with local businesses, contractors, and community organizations, the program aims to drive economic prosperity and enhance the quality of life for residents. The efforts will focus on sustainable development that benefits both the economy and the environment.

PUBLIC AND ENVIRONMENTAL HEALTH

Improving public health and environmental quality is central to the mission and serves as a key driver for enhancing overall well-being. This program is designed to support both community members and public spaces, fostering their care and development for a sustainable future.

The Who:

- Bidders for Professional Services and Construction Contracts
- Beneficiaries Will Include:
  - A nonprofit organization that has established and maintains valid nonprofit status under Internal Revenue Code Section 501(c)(3), as amended, along with all applicable rules and regulations.
  - Public schools and colleges in the Buffalo Sewer Authority's Service Area.

The When:

- Bidders for Professional Services and Construction Contractors will voluntarily participate in a Community Partnership Proposal through the Buffalo Sewer Authority's Procurement Process with Invitation to Bids over $2,500,000 and Request for Proposals over $500,000.
- Bidder's commitments must adhere to the policies set forth in the Community Partnership Framework Document currently being developed. The results of participation will be measurable and performed over the life of the agreement.

BUFFALO
SEWER AUTHORITY

Status: In Process/Under Review



Framework Document Outlining the Program



Program Flyer



Educational Outreach Plan

BUFFALO
SEWER AUTHORITY


BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

MARCH 2025

Agenda

1. Overview of QCCW Interactive Site
2. Overview of Upcoming Public Meetings
3. Updates from SAC

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

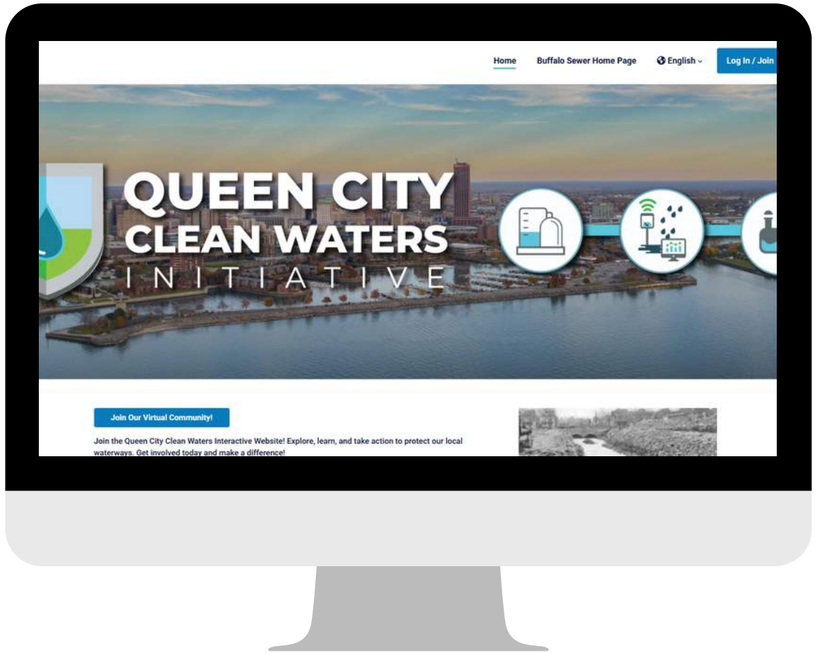
Overview of QCCW Interactive Site

Overview of Queen City Clean Waters Interactive Site

- Link to site: https://buffaloqccw.org/

Features of Site

- Ability to View Project Information in Multiple Languages
- Virtual Community Form
- QCCWI Survey
- Open Discussion Forum
- Interactive Map
- Q & A Section
- Timeline of Upcoming Events





BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

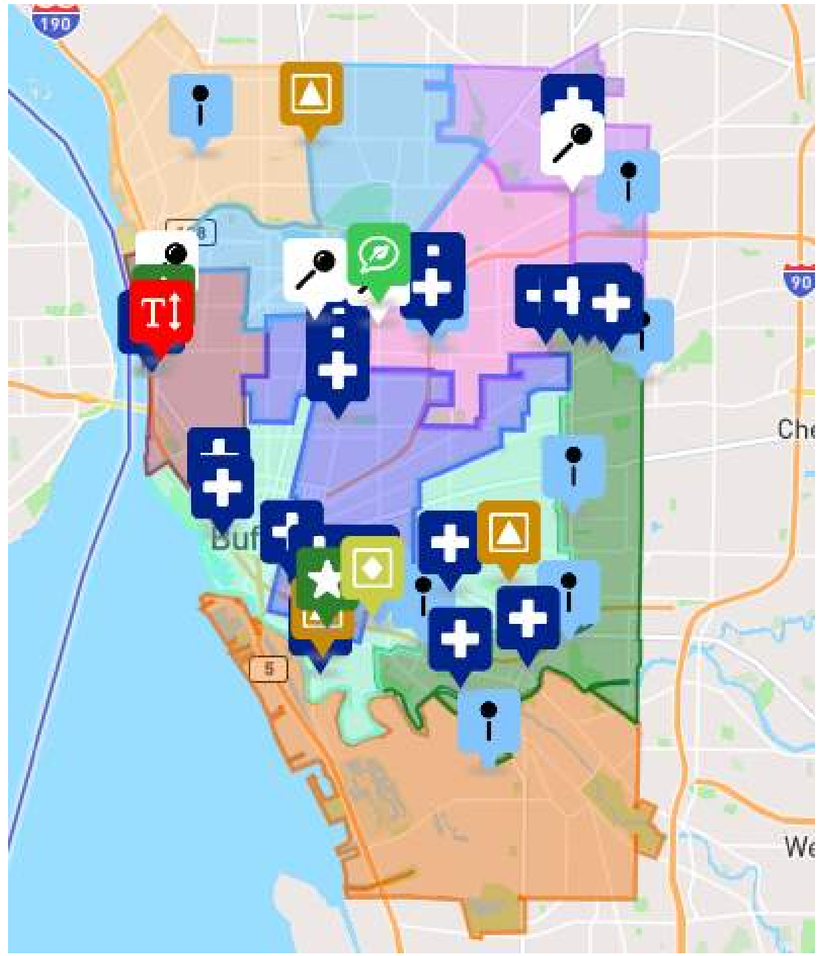
Overview of Upcoming Public Meetings

Overview of Upcoming Public Meetings

- **9** In-Person Meetings
  - 1 per council district
  - Each meeting will highlight projects occurring within their respective districts

- Tentative Schedule:
  - ***April:*** Masten, South, and University District's
  - ***May:*** Delaware, North, and Niagara District's
  - ***June:*** Ellicott, Fillmore, and Lovejoy District's

- **1** Overall City Meeting via Zoom



BUFFALO
SEWER AUTHORITY


BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

APRIL 2025

Agenda

1. Overview of Recent Events
2. Upcoming Council District Meetings
3. Updates from SAC

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Recent Events

Northland Taxpayers Association Meeting



April 8th at the Northland Workforce Training Center

University District Block Club Coalition Meeting



April 15th at 995 Kensington Avenue

Buffalo Sewer's 90th Birthday Celebration / Groundbreaking Ceremony

April 16th at Jefferson & E. Delavan







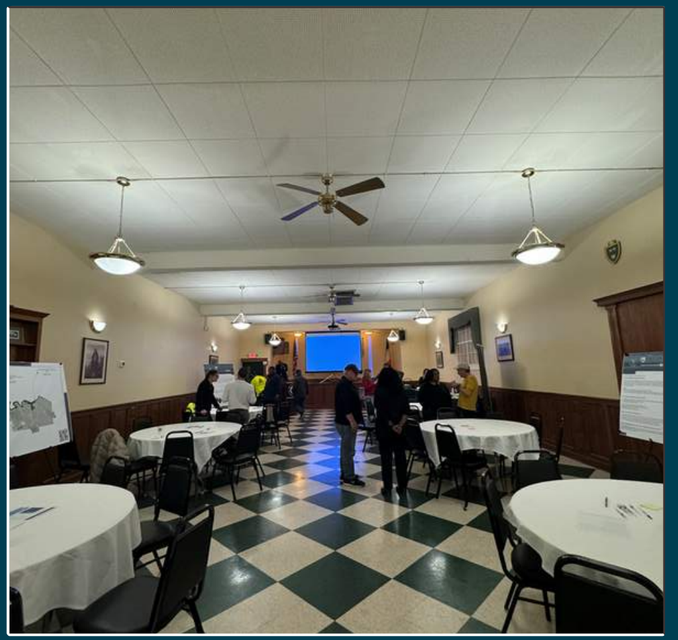
BUFFALO
SEWER AUTHORITY

First Council District Meeting - South District

April 17th at the Buffalo Irish Center







BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

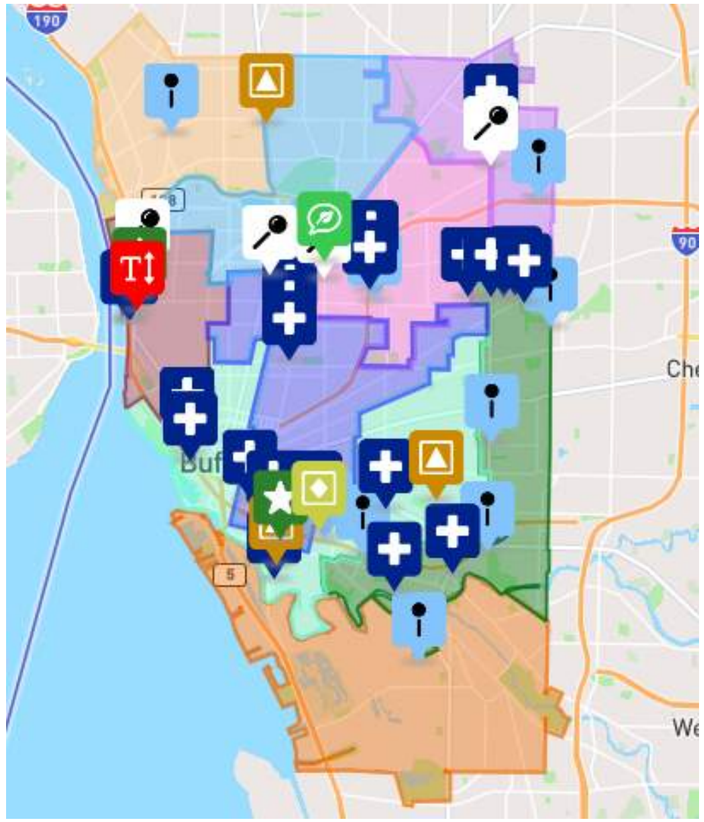
Upcoming Council District Meetings

Upcoming Council District Meetings

- University District: Thursday, **April 24th** 6 PM - 8 PM at the Gerard Place

- Masten District: Monday, **April 28th** 6 PM - 8 PM at the Northland Workforce Training Center

- **9** In-Person Meetings
- Tentative Schedule:
  - ***April*:** Masten, South, and University District's
  - ***May*:** Ellicott, Fillmore, and Lovejoy District's
  - ***June*:** Delaware, North, and Niagara District's
- **1** Overall City Meeting via Zoom



BUFFALO
SEWER AUTHORITY


BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

MAY 2025

Agenda

1. Overview of Council District Meetings and Takeaways
2. Upcoming Council District Meetings
3. QCCW Interactive Website Engagement
4. “Queen City Clean Water Fest”

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Overview of Council District Meetings

Overview of Council District Meetings

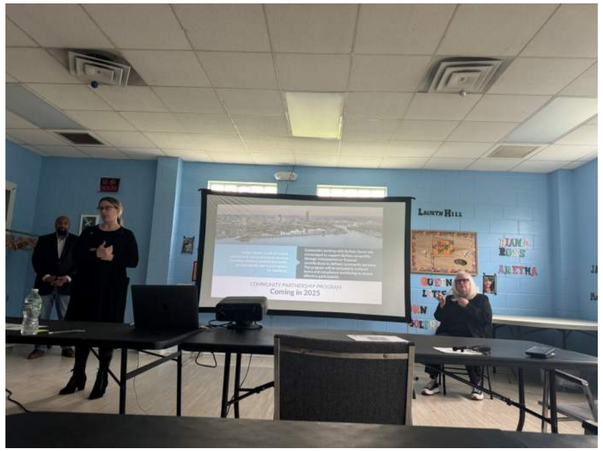
- South District - April 17th
- University District - April 24th
- Masten District - April 28th
- Lovejoy District - May 13th
- Fillmore District - May 14th
- Ellicott District - May 20th















BUFFALO
SEWER AUTHORITY

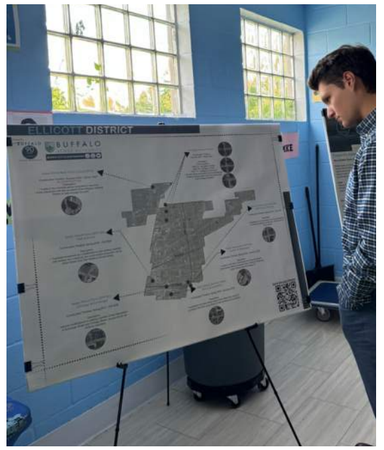
Council District Meetings - Takeaways



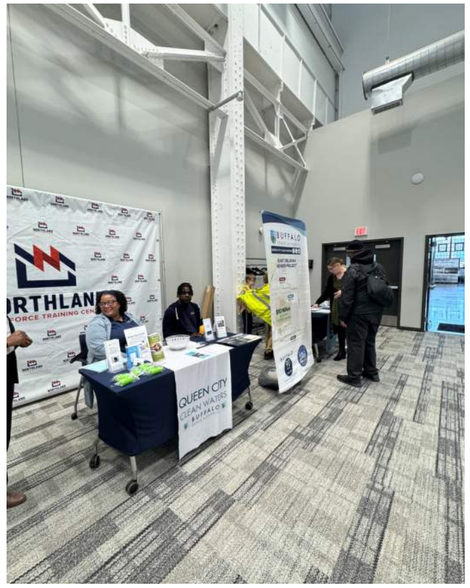


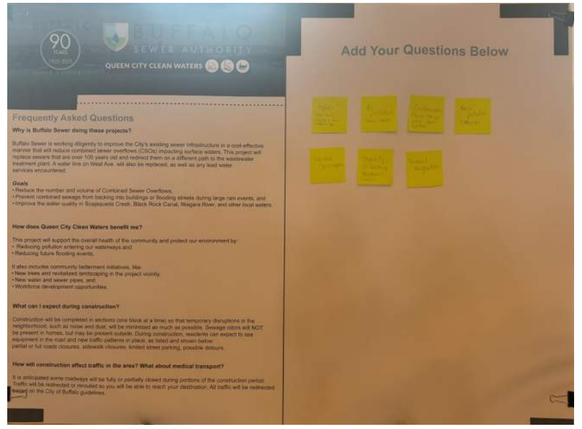
Topics of Residential Concern:

- Brownfield Contamination
- Inclusion of Green Infrastructure
- Keeping intact key features of parks for community use (Ex. football field at Martha Park)
- Construction Timelines
- Clarifying differences between Buffalo Sewer and Buffalo Water
- Potential damage to nearby residential structures during construction
- MWBE/SDVOB Hiring
- Rodent Control
- Traffic
- Air Pollution
- Noise Pollution









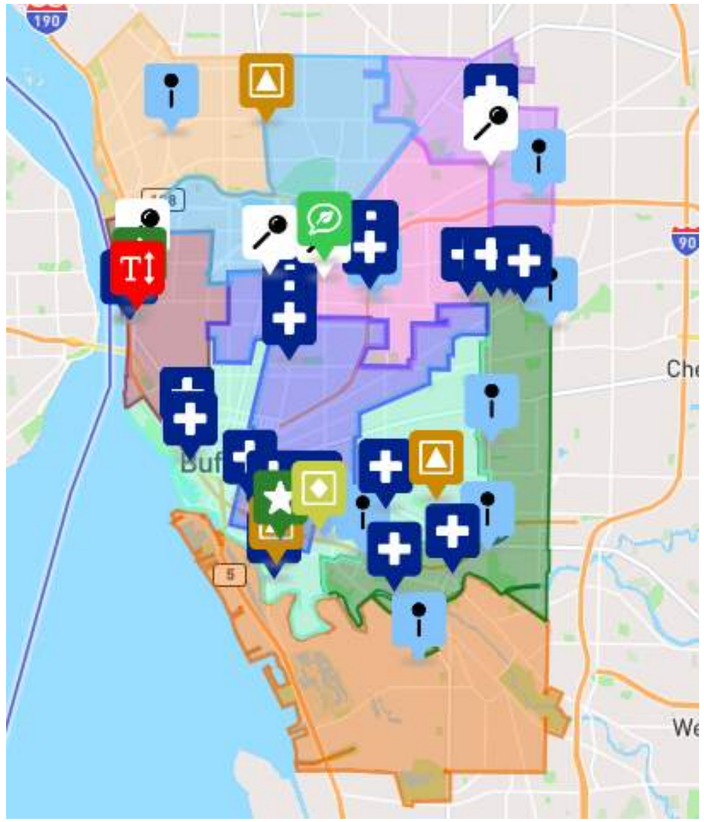
BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Upcoming Council District Meetings

Upcoming Council District Meetings

- **Delaware District:** June 10th from 6 PM to 8 PM at Dash's Market
- **Niagara District:** June 12th from 6 PM to 8 PM at The Belle Center
- **North District:** June 17th from 6 PM to 8PM at the Northwest Buffalo Community Center



- **6** Completed; **3** In-Person Meetings Left
- Schedule:
  - ~~***April:*** Masten, South, and University District's~~
  - ~~***May:*** Ellicott, Fillmore, and Lovejoy District's~~
  - ***June:*** Delaware, North, and Niagara District's
- **1** Overall City Meeting via Zoom - Scheduled for July 12th

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

QCCW Interactive Website Engagement

BUFFALO
SEWER AUTHORITY

April Engagement Activity

Total Views: **548**

Total Visits: **383**

Total Visitors: **263**

Total Contributions: **14**

Views - The number of times a Visitor views any page on a Site.

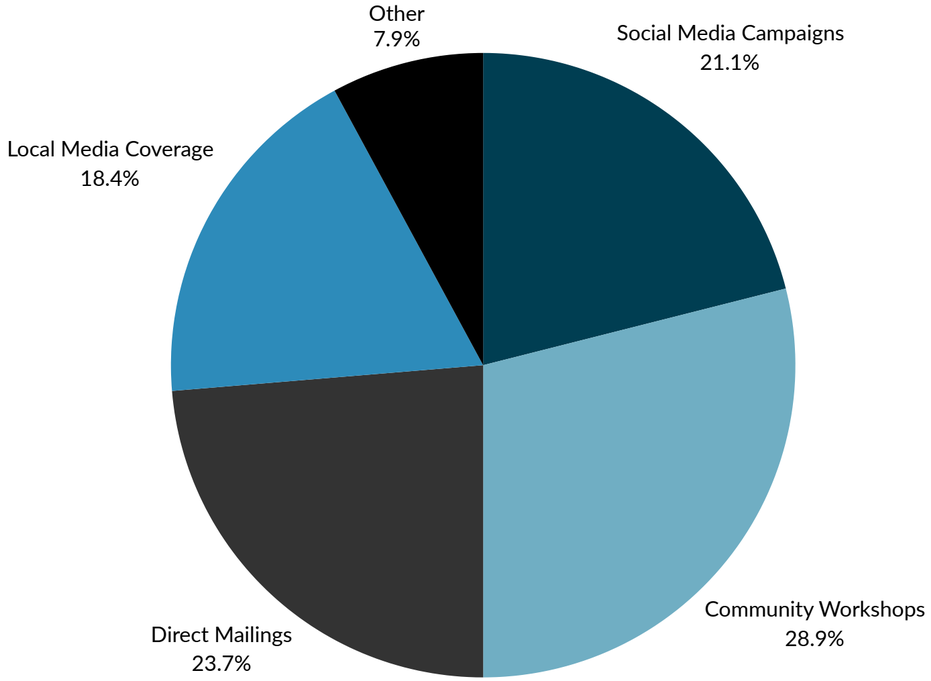
Visits - The number of end-user sessions associated with a single Visitor.

Visitors - The number of unique public or end-users to a Site. A Visitor is only counted once, even if they visit a Site several times in one day.

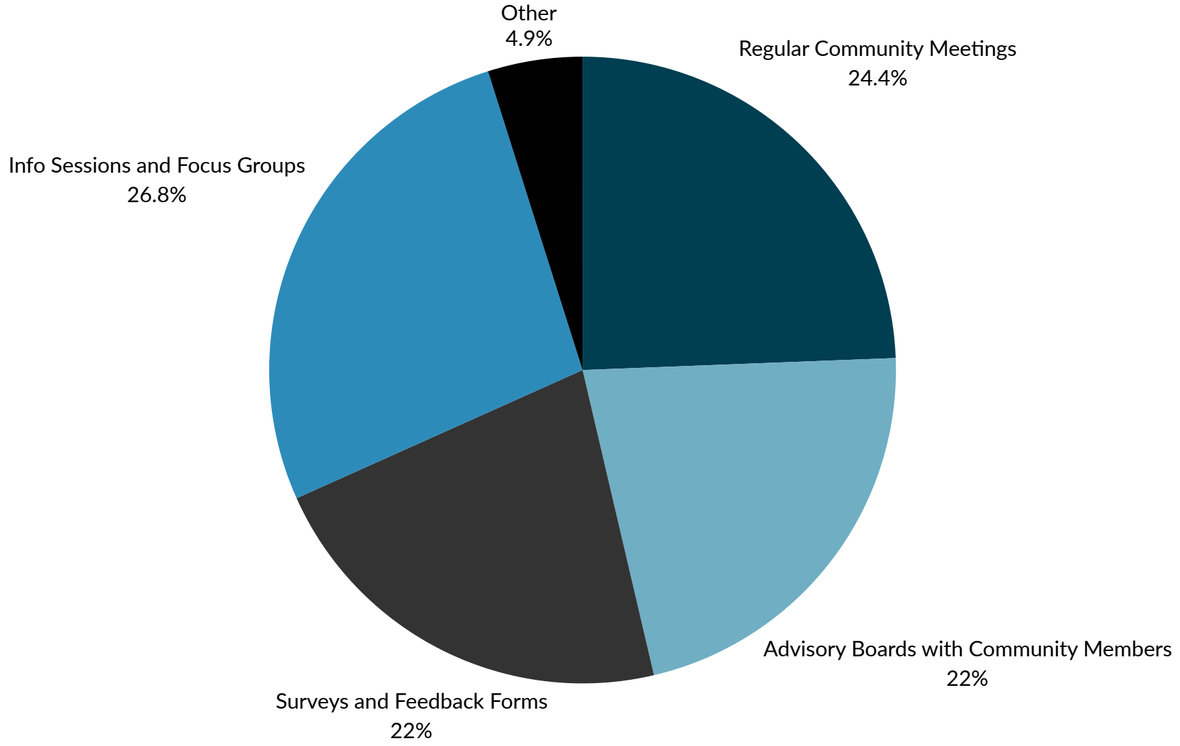
Contributions - The total number of responses or feedback collected through the participation tools.

Survey Results

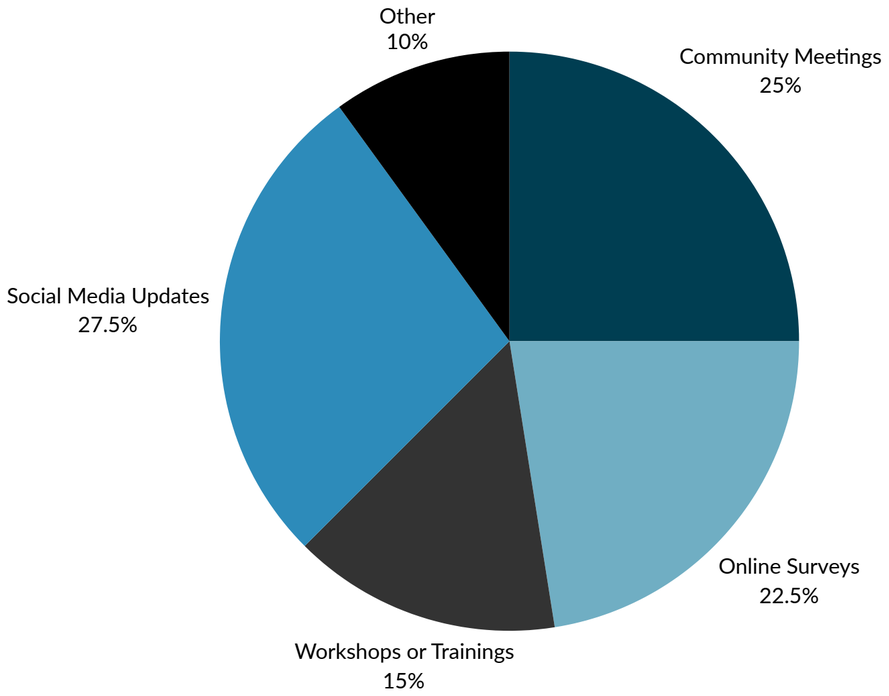
1. What are the best ways to reach and engage the Buffalo community in conversations about sewer infrastructure improvements?



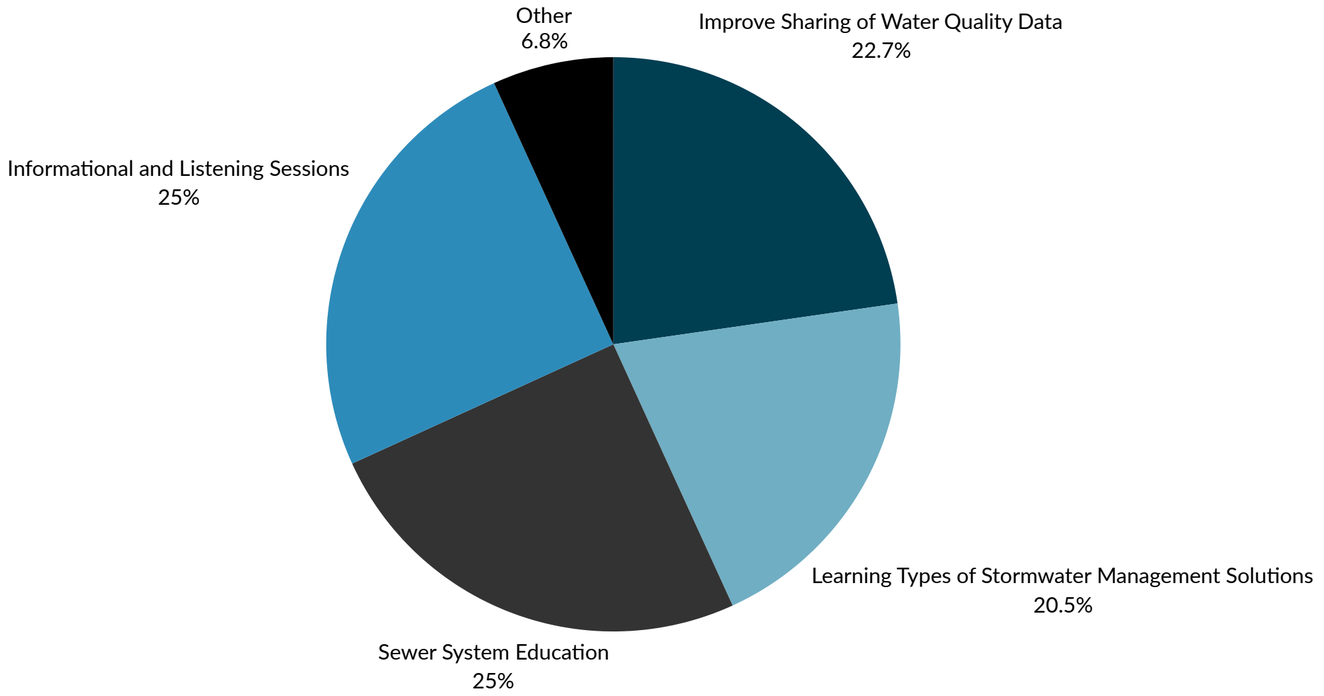
2. How can we ensure that community voices are genuinely represented and valued in the decision-making process?



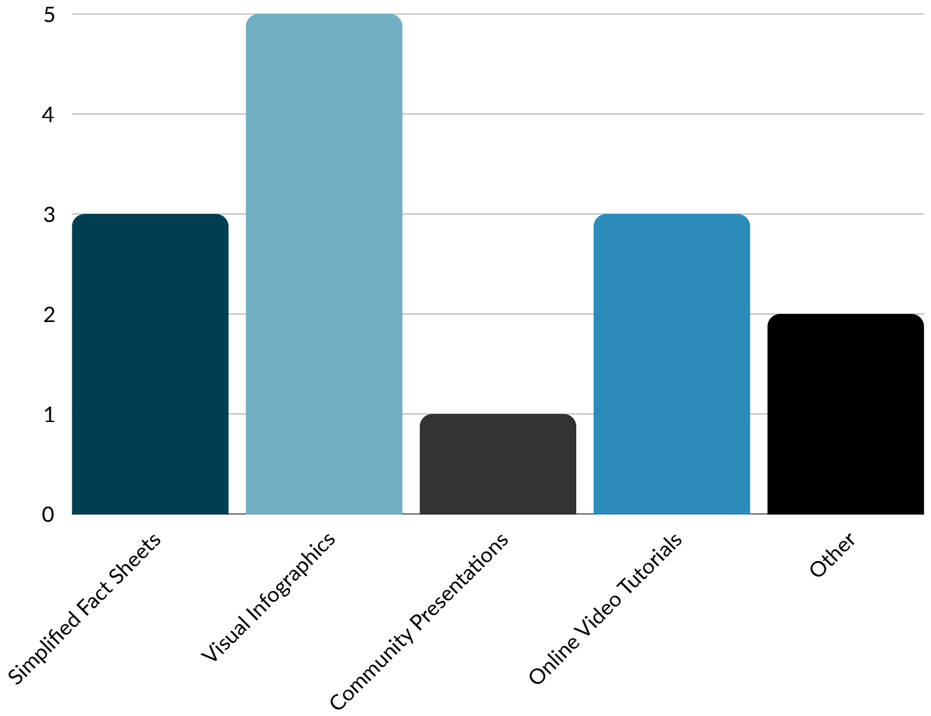
3. How would you prefer to be engaged in future discussions or decision making about sewer infrastructure improvements?



4. What additional resources or support would be most helpful to improve sewer infrastructure and waterways testing/improvements in your community (such as Niagara River and Scajaquada Creek)?



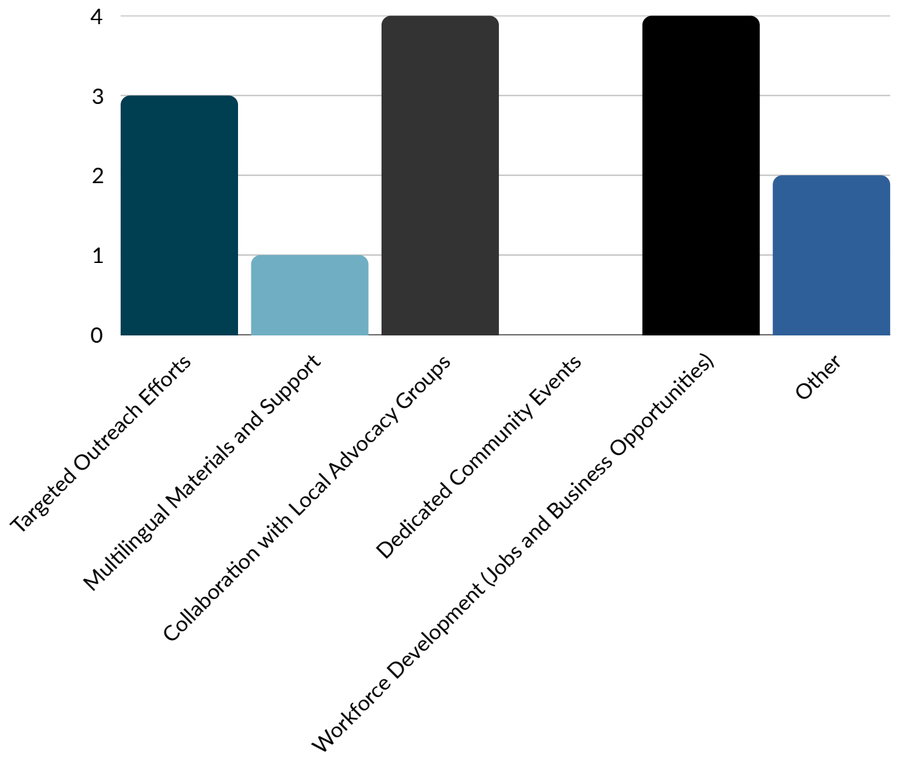
5. How can we make technical information about the Queen City Clean Waters Initiative accessible and easy to understand for everyone?



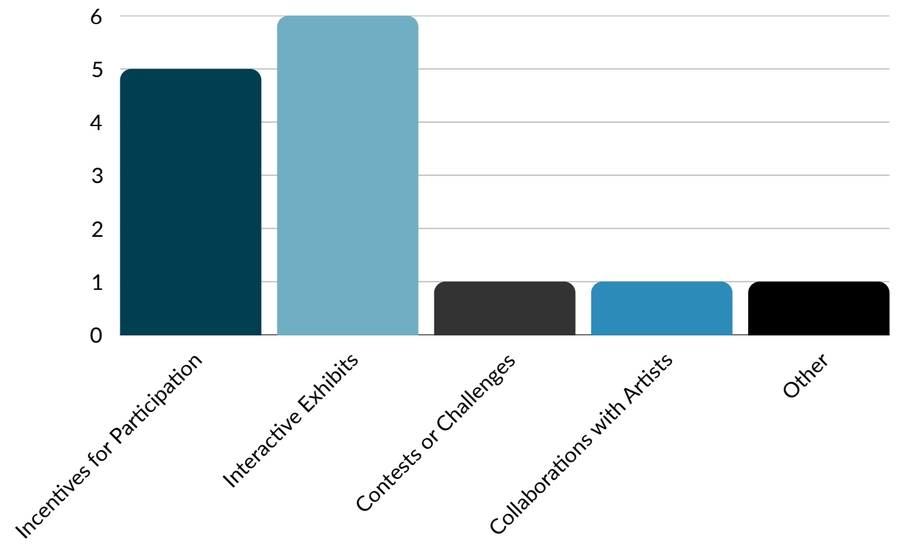
6. What partnerships could help us better connect with the community? (Rank in Order 1 = Least, 5 = Best)

1. **Buffalo Public Schools**
2. Nonprofit Organizations
3. Local Businesses
4. Community Leaders
5. Workforce Development

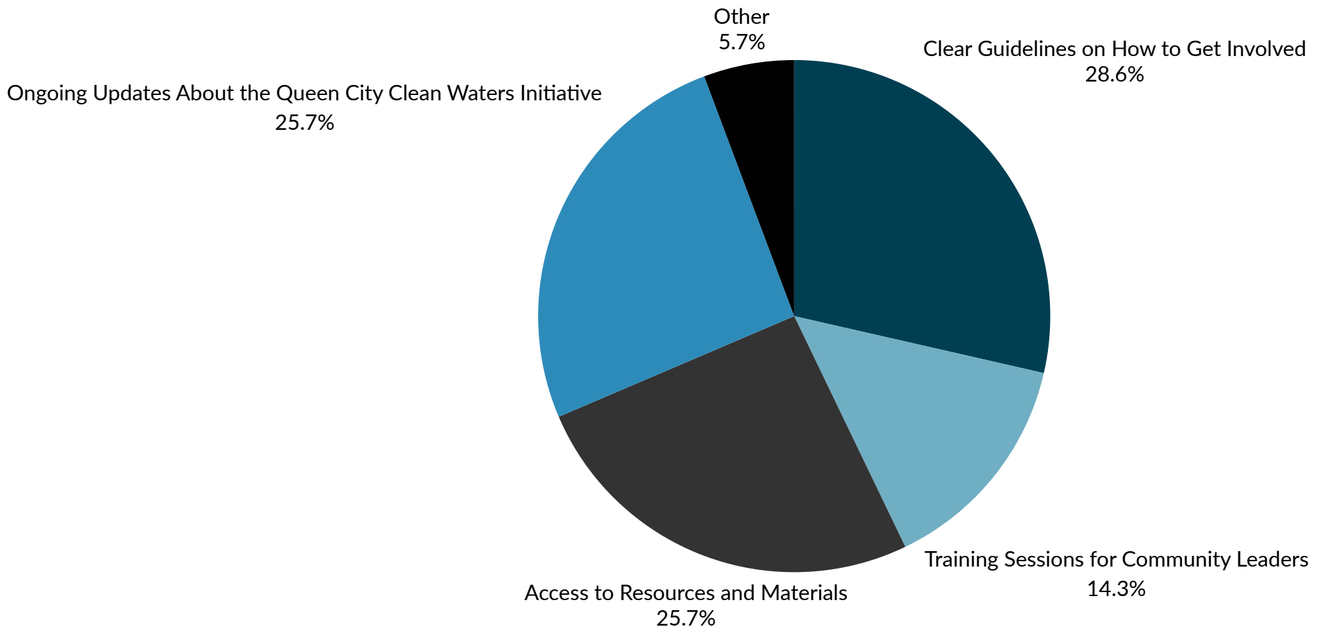
7. How can we engage underrepresented or historically marginalized communities in this process?



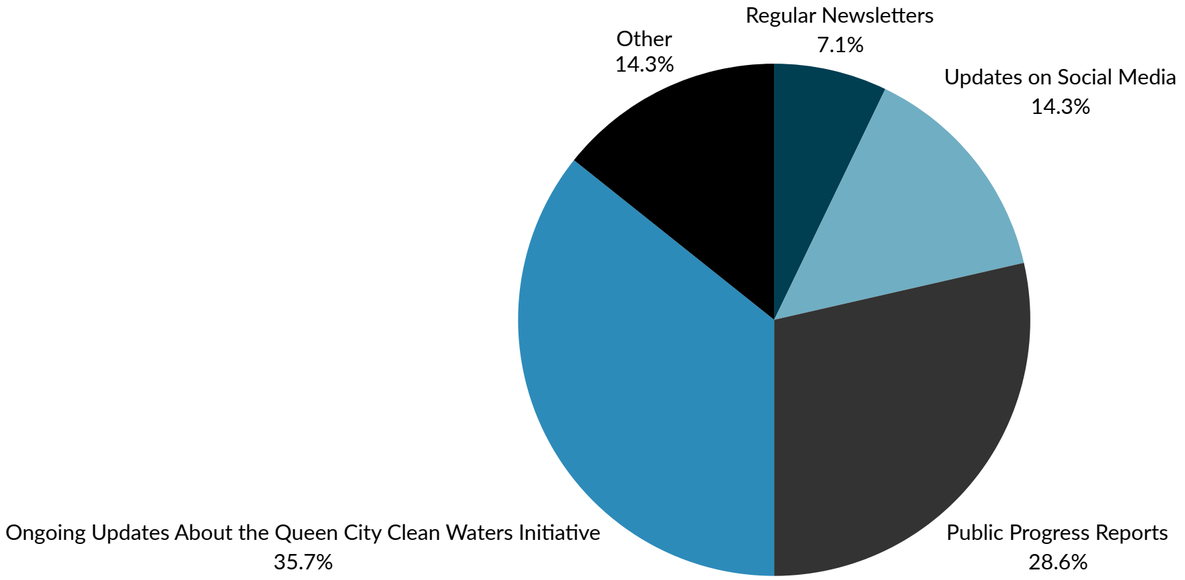
8. What is a creative idea for building public interest and participation in this Queen City Clean Waters Initiative?



9. What information or support would you need to feel empowered to participate in or promote the Queen City Clean Waters initiative?



10. How can we ensure ongoing communication and transparency with the community as the Queen City Clean Waters Initiative progresses?



11. Is there anything else you would like us to know about water quality, health concerns, or community benefits that should be included in the Queen City Clean Waters initiative?

- What is the meaning of "green infrastructure". How would the public schools be involved. Teachers are already swamped with pressures to do things outside of the regular curriculum. I realize clean water is a science issue; topic is not in all grade level.
- Community Benefit commitment/Ensure local business employment inclusion.
- What can be done about the scajaquada creek? Can it be unburied?
- An interactive map that allows city residents to identify things like a smelly man hole and then get a response that's also on the map. The map could include the entire system with the ability to zoom in on a project and get an animation short.
- Educate the public so we all can take responsibility.
- You need to be language inclusive. Many non-English speakers in the city.

BUFFALO
SEWER AUTHORITY

"Queen City Clean Waters Fest"



Photo Credit: Joe Cascio, American Planning Association



Photo Credit: Visit Buffalo Niagara

BUFFALO
SEWER AUTHORITY

Updates from SAC


BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

JUNE 2025

Agenda

1. Overview of Final Council District Meetings and Takeaways
2. QCCW Interactive Website Engagement
3. “Queen City Clean Water Fest”

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Overview of Final Council District Meetings

Overview of Final Council District Meetings

- Delaware District - June 10th
- Niagara District - June 12th
- North District - June 17th

Virtual Overall City Meeting - **Saturday, July 12th at 10 AM**











BUFFALO
SEWER AUTHORITY

Council District Meetings - Takeaways

Topics of Residential Concern:

- Timeline (How the order/schedule of projects was decided)
- Buffalo Sewer's disposal of sludge/waste
- Coordination with partner organizations (such as Buffalo Niagara Waterkeeper
- Storage capacity of Buffalo Sewer's system during significant storm events
- How the project is being funded (concerns over federal funding)







BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

QCCW Interactive Website Engagement

BUFFALO
SEWER AUTHORITY

May Engagement Activity

Total Views: **987**

Total Visits: **651**

Total Visitors: **419**

Total Contributions: **22**
(22 Survey Respondents & 1 Comment on Share Your Insights)

Views - The number of times a Visitor views any page on a Site.

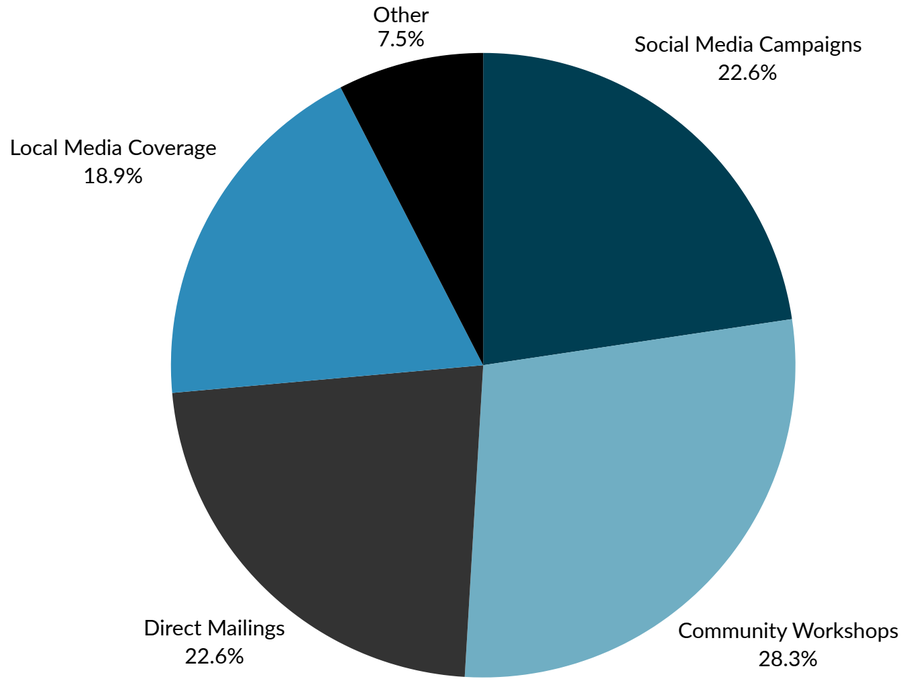
Visits - The number of end-user sessions associated with a single Visitor.

Visitors - The number of unique public or end-users to a Site. A Visitor is only counted once, even if they visit a Site several times in one day.

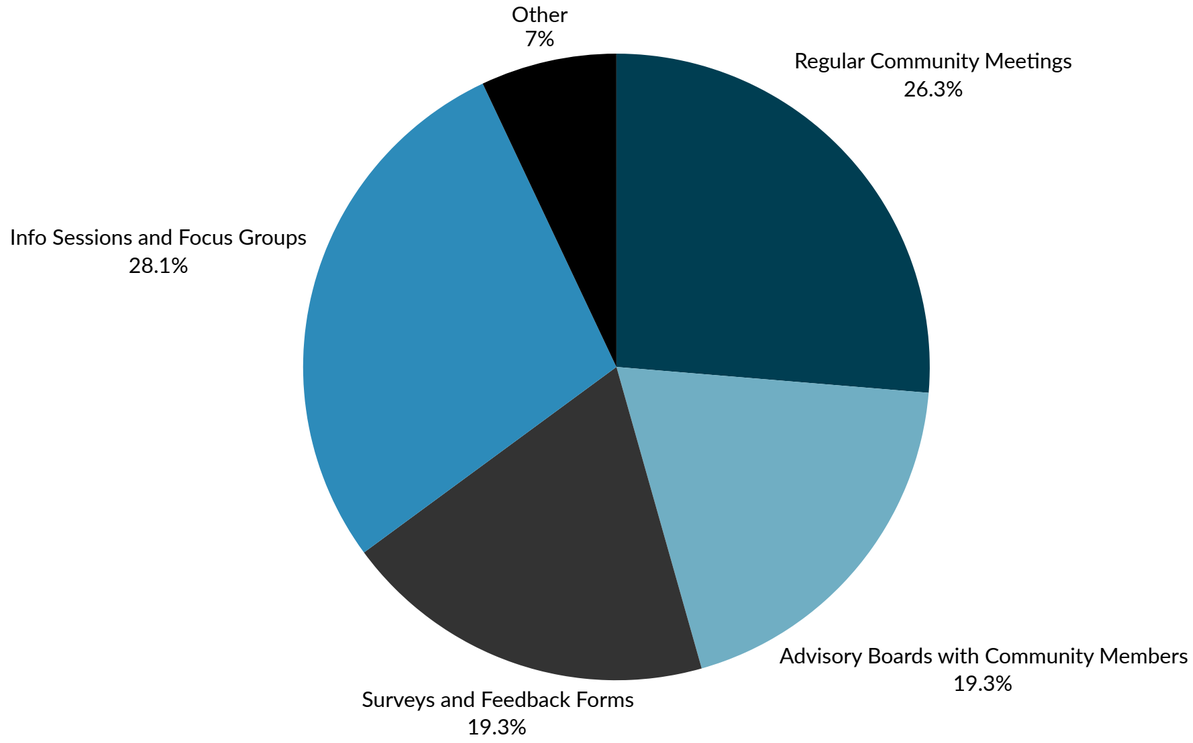
Contributions - The total number of responses or feedback collected through the participation tools.

Survey Results

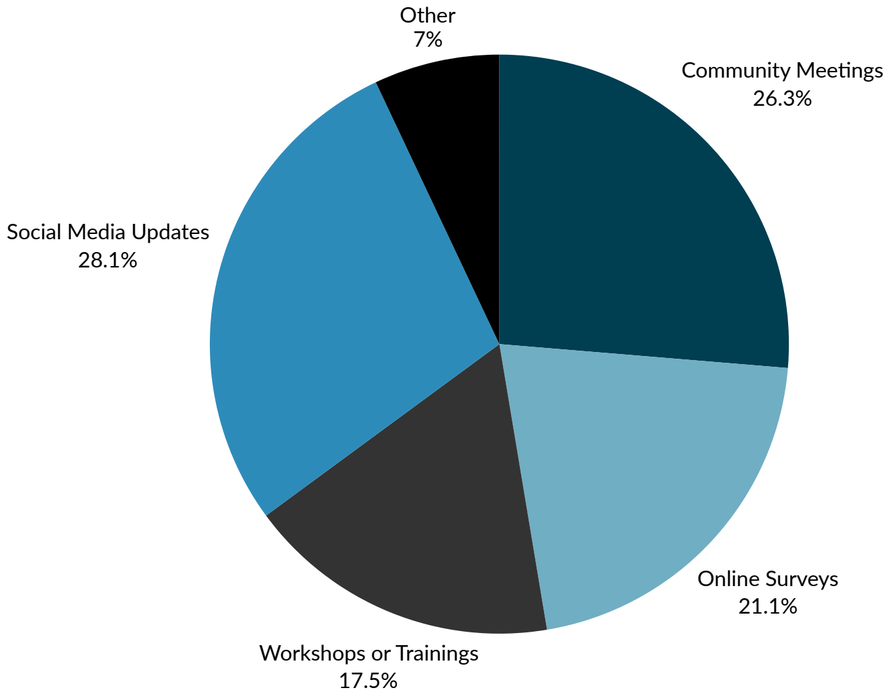
1. What are the best ways to reach and engage the Buffalo community in conversations about sewer infrastructure improvements?



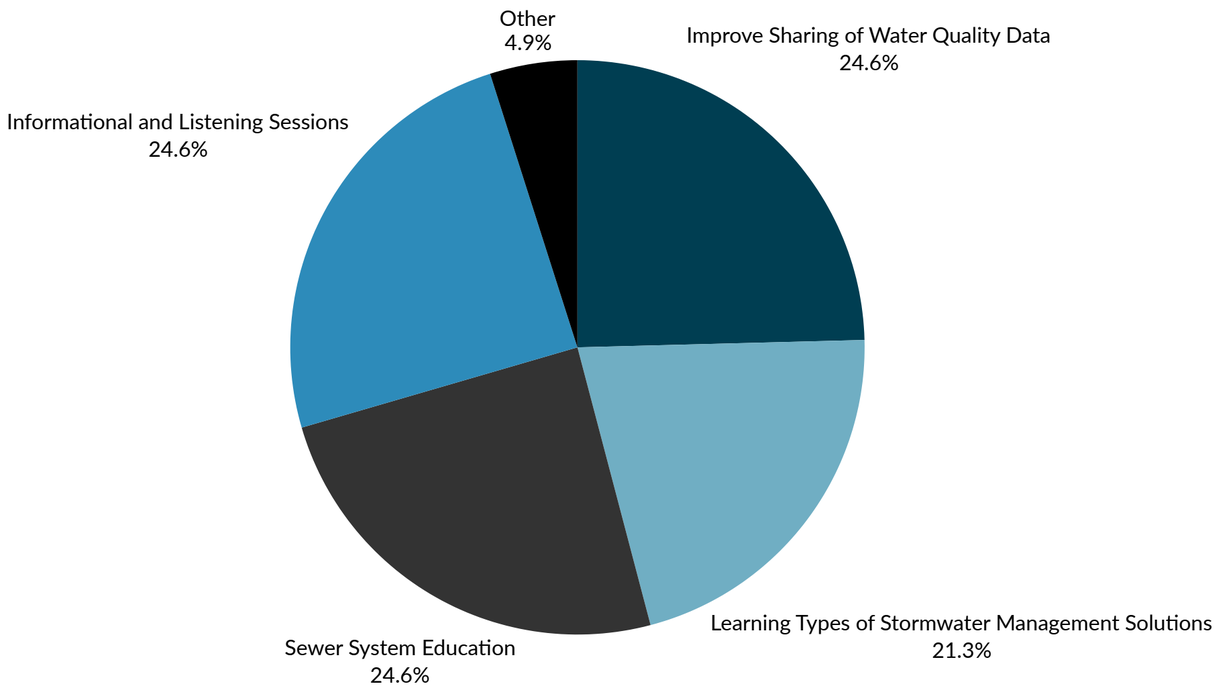
2. How can we ensure that community voices are genuinely represented and valued in the decision-making process?



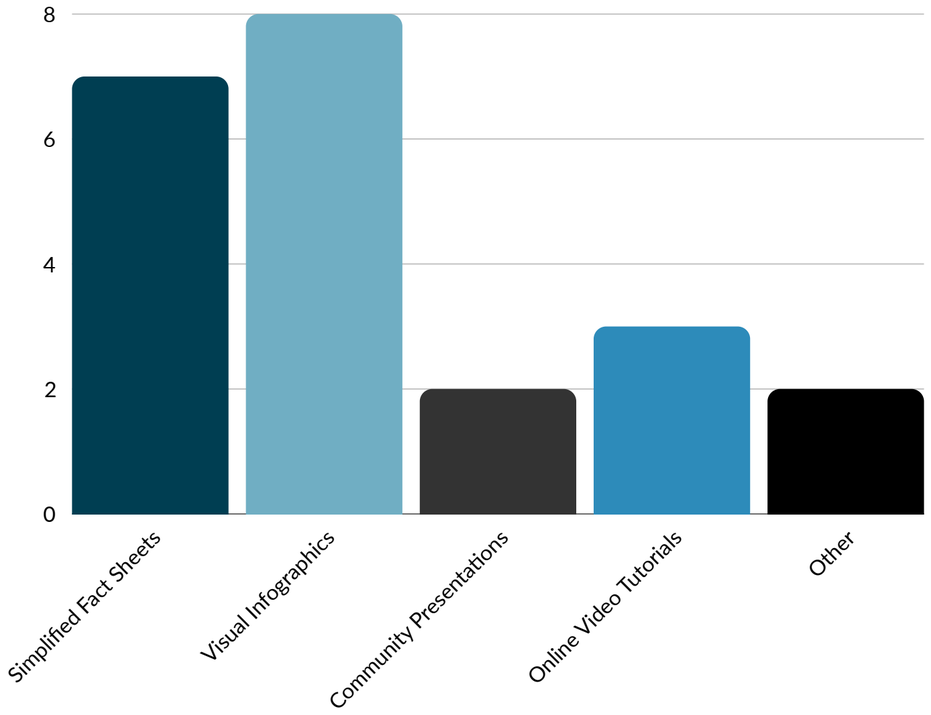
3. How would you prefer to be engaged in future discussions or decision making about sewer infrastructure improvements?



4. What additional resources or support would be most helpful to improve sewer infrastructure and waterways testing/improvements in your community (such as Niagara River and Scajaquada Creek)?



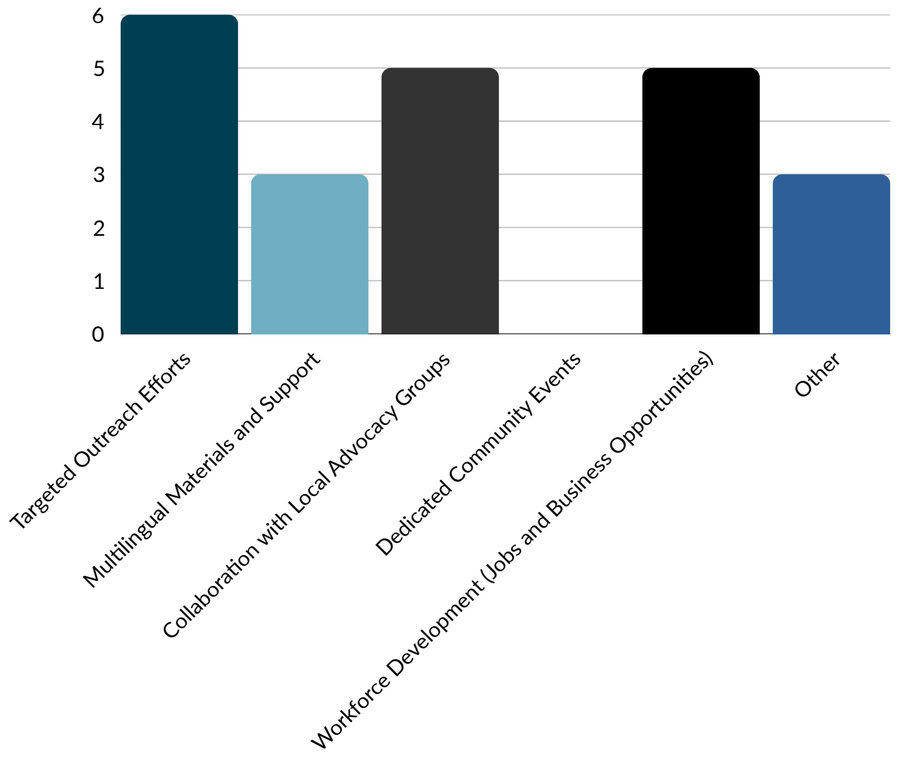
5. How can we make technical information about the Queen City Clean Waters Initiative accessible and easy to understand for everyone?



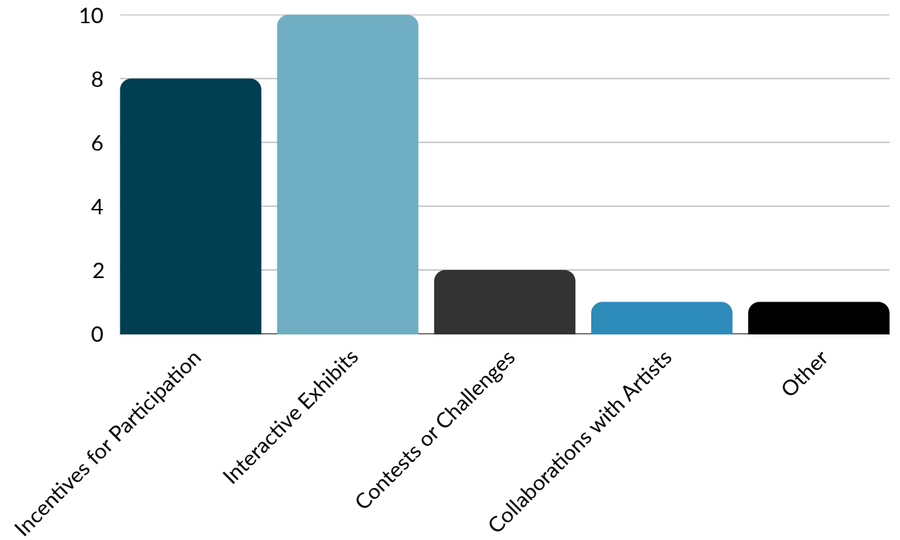
6. What partnerships could help us better connect with the community? (Rank in Order 1 = Least, 5 = Best)

1. **Buffalo Public Schools**
2. Nonprofit Organizations
3. Local Businesses
4. Community Leaders
5. Workforce Development

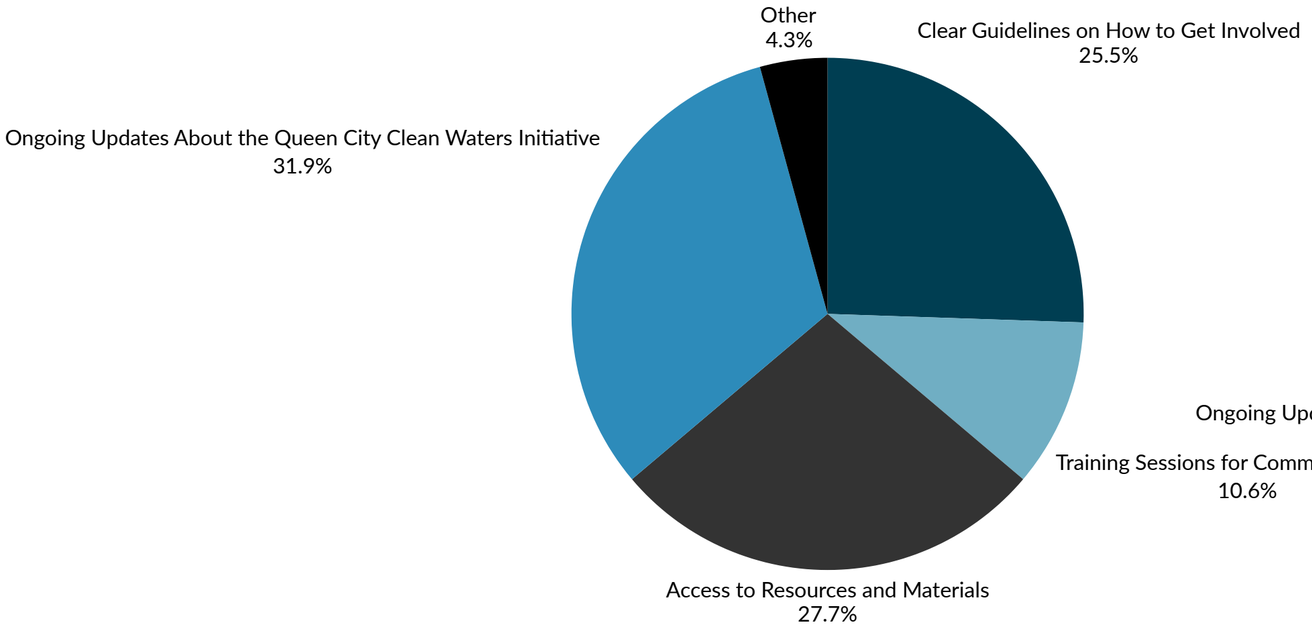
7. How can we engage underrepresented or historically marginalized communities in this process?



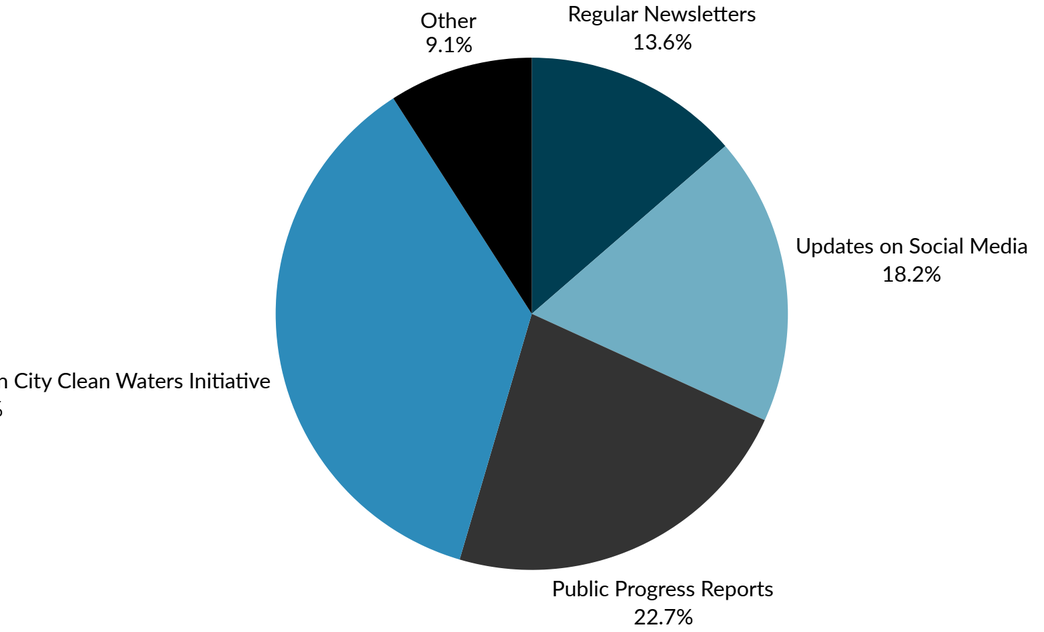
8. What is a creative idea for building public interest and participation in this Queen City Clean Waters Initiative?



9. What information or support would you need to feel empowered to participate in or promote the Queen City Clean Waters initiative?



10. How can we ensure ongoing communication and transparency with the community as the Queen City Clean Waters Initiative progresses?



11. Is there anything else you would like us to know about water quality, health concerns, or community benefits that should be included in the Queen City Clean Waters initiative?

- What is the meaning of "green infrastructure". How would the public schools be involved. Teachers are already swamped with pressures to do things outside of the regular curriculum. I realize clean water is a science issue; topic is not in all grade level.
- Community Benefit commitment/Ensure local business employment inclusion.
- What can be done about the scajaquada creek? Can it be unburied?
- An interactive map that allows city residents to identify things like a smelly man hole and then get a response that's also on the map. The map could include the entire system with the ability to zoom in on a project and get an animation short.
- Educate the public so we all can take responsibility.
- You need to be language inclusive. Many non-English speakers in the city.

BUFFALO
SEWER AUTHORITY

"Queen City Clean Waters Fest"



Photo Credit: Joe Cascio, American Planning Association

BUFFALO
SEWER AUTHORITY

Updates from SAC


BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

JULY 2025

Agenda

1. QCCW Interactive Website Engagement

2. Queen City Clean Water Fair
   - Event Planning Update
   - Volunteering & Organizational Support
   - Marketing

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

QCCW Interactive Website Engagement

BUFFALO
SEWER AUTHORITY

June Engagement Activity

Total Views: **1,257**

Total Visits: **832**

Total Visitors: **520**

Total Contributions: **34**
(33 Survey Respondents & 1 Comment on Share Your Insights)

Views - The number of times a Visitor views any page on a Site.

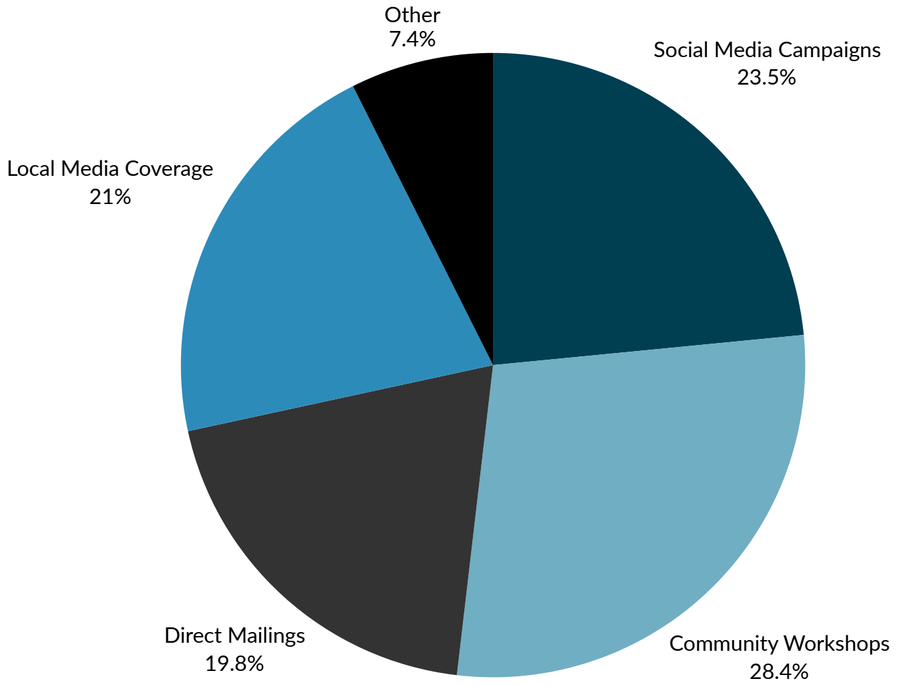
Visits - The number of end-user sessions associated with a single Visitor.

Visitors - The number of unique public or end-users to a Site. A Visitor is only counted once, even if they visit a Site several times in one day.

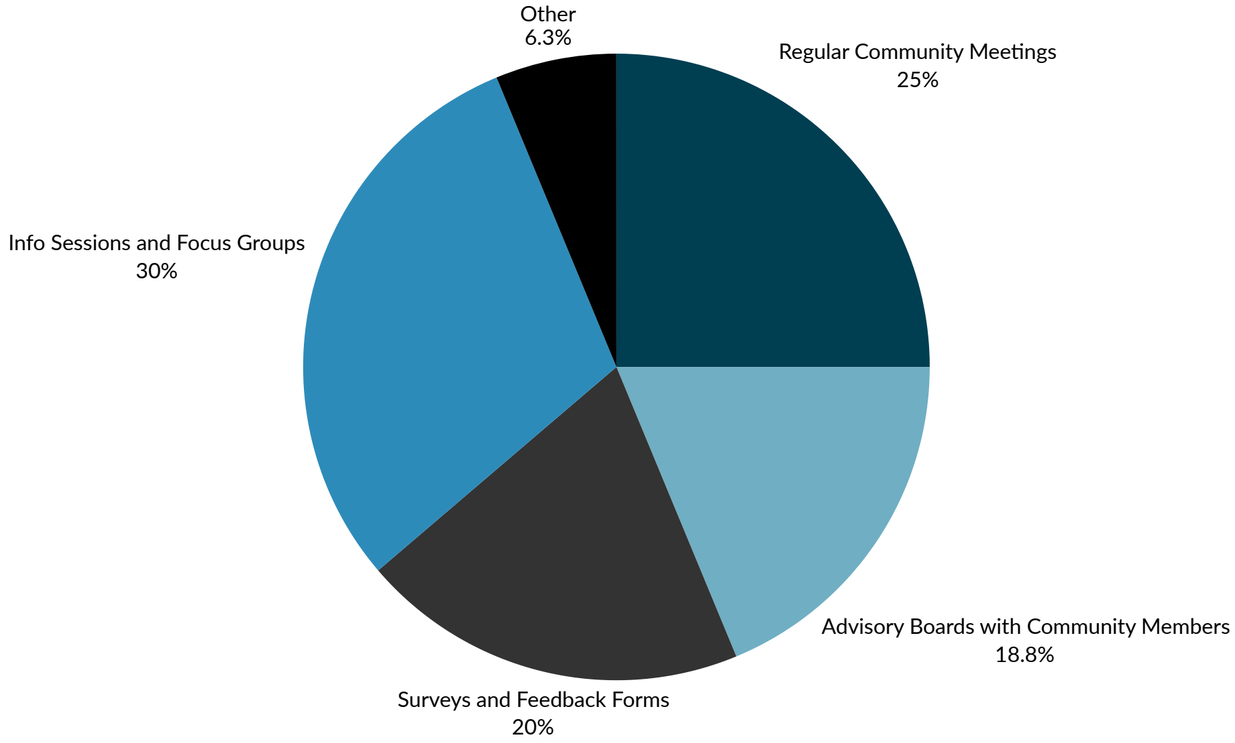
Contributions - The total number of responses or feedback collected through the participation tools.

Survey Results

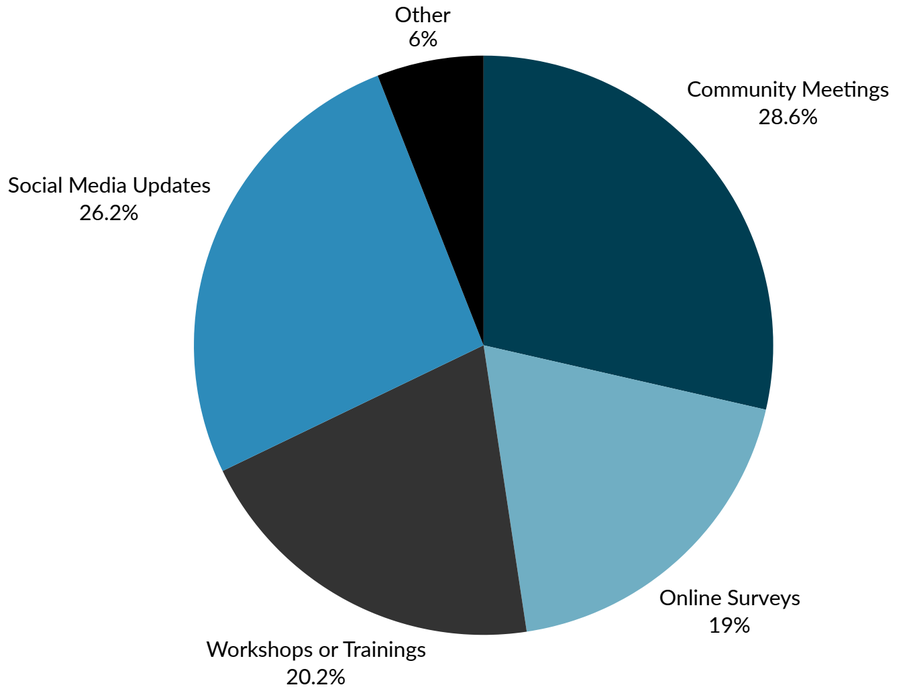
1. What are the best ways to reach and engage the Buffalo community in conversations about sewer infrastructure improvements?



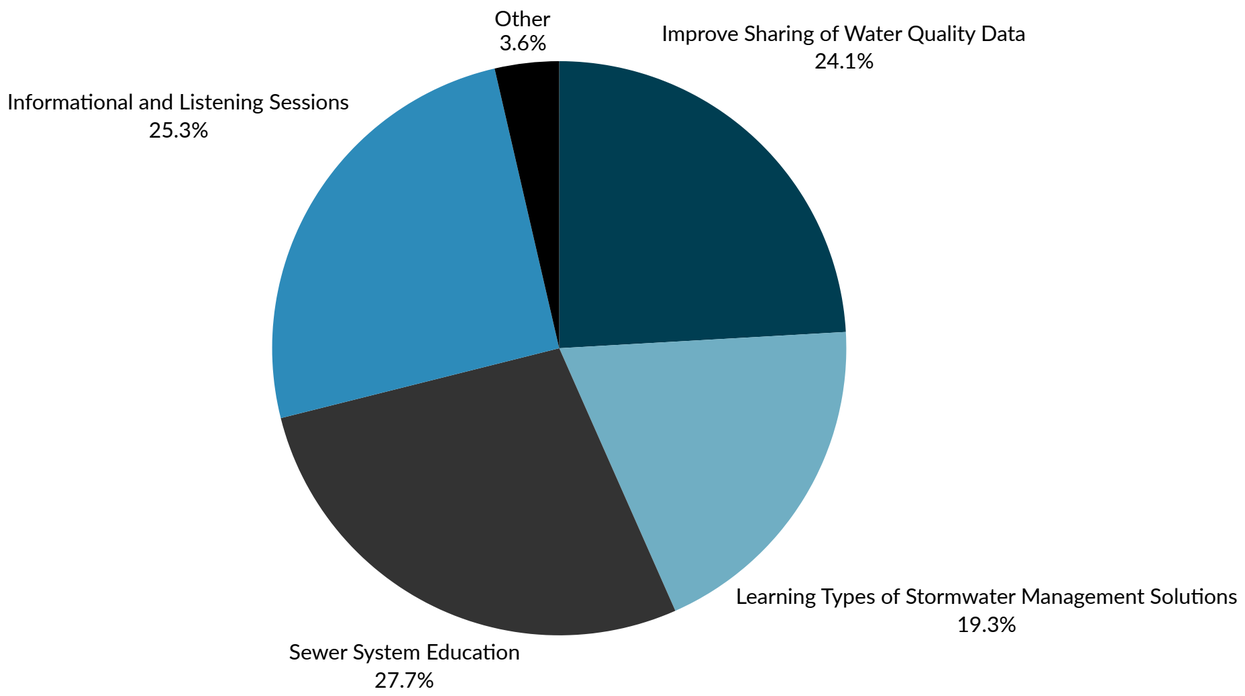
2. How can we ensure that community voices are genuinely represented and valued in the decision-making process?



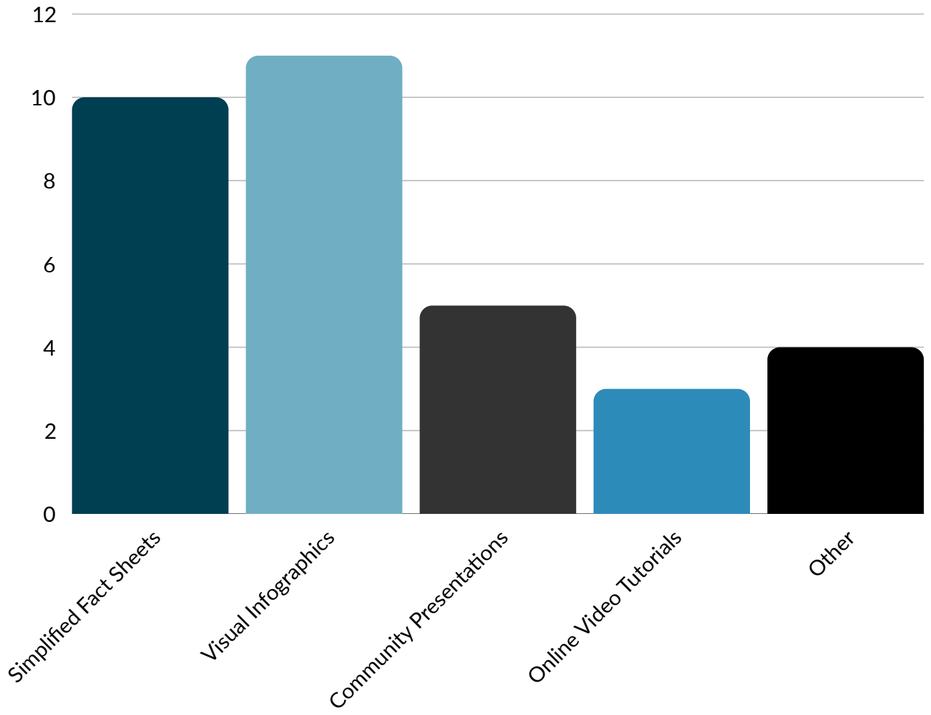
3. How would you prefer to be engaged in future discussions or decision making about sewer infrastructure improvements?



4. What additional resources or support would be most helpful to improve sewer infrastructure and waterways testing/improvements in your community (such as Niagara River and Scajaquada Creek)?



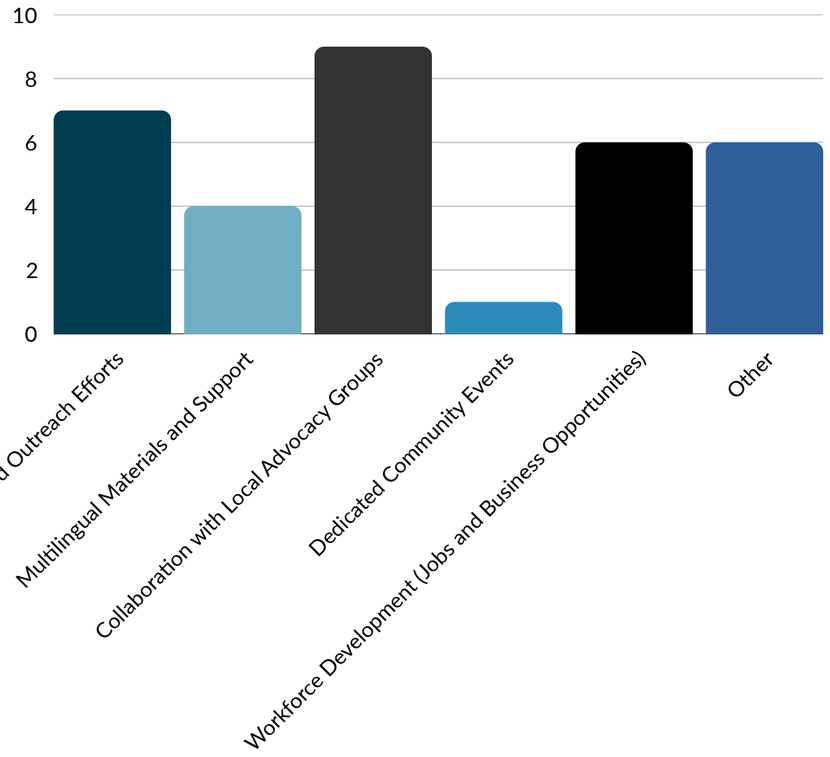
5. How can we make technical information about the Queen City Clean Waters Initiative accessible and easy to understand for everyone?



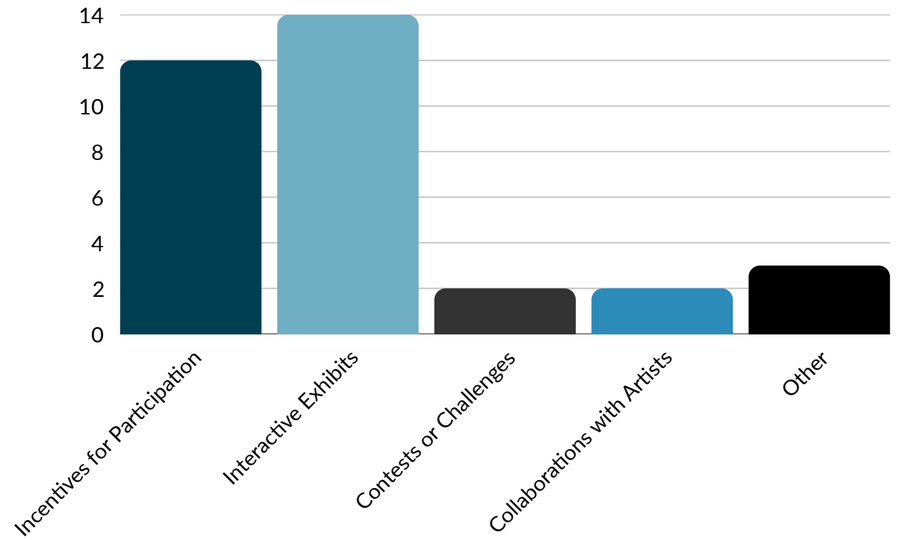
6. What partnerships could help us better connect with the community? (Rank in Order 1 = Least, 5 = Best)

1. **Buffalo Public Schools**
2. Nonprofit Organizations
3. Local Businesses
4. Community Leaders
5. Workforce Development

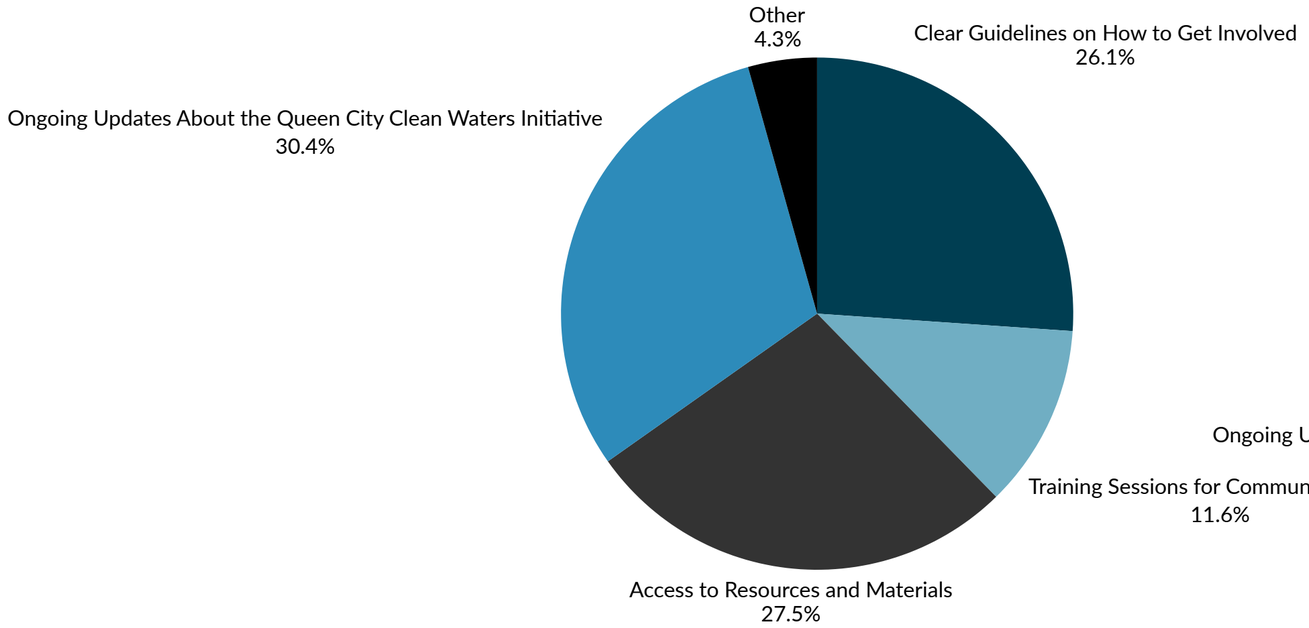
7. How can we engage underrepresented or historically marginalized communities in this process?



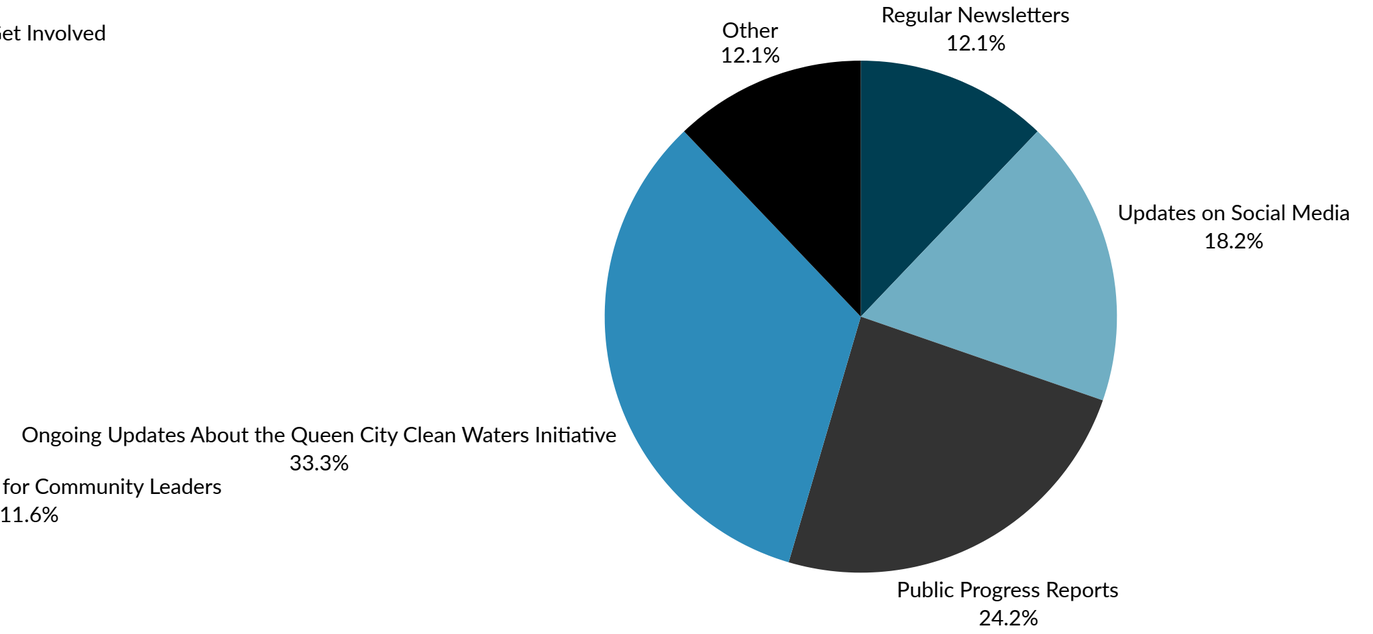
8. What is a creative idea for building public interest and participation in this Queen City Clean Waters Initiative?



9. What information or support would you need to feel empowered to participate in or promote the Queen City Clean Waters initiative?



10. How can we ensure ongoing communication and transparency with the community as the Queen City Clean Waters Initiative progresses?



11. Is there anything else you would like us to know about water quality, health concerns, or community benefits that should be included in the Queen City Clean Waters initiative?

- What is the meaning of "green infrastructure". How would the public schools be involved. Teachers are already swamped with pressures to do things outside of the regular curriculum. I realize clean water is a science issue; topic is not in all grade level.
- Community Benefit commitment/Ensure local business employment inclusion.
- What can be done about the Scajaquada Creek? Can it be unburied?
- An interactive map that allows city residents to identify things like a smelly manhole and then get a response that's also on the map. The map could include the entire system with the ability to zoom in on a project and get an animation short.
- Educate the public so we all can take responsibility
- How does the QCCWI differ from the BSA? One and the same
- You need to be language inclusive. Many non-English speakers in the city.
- Stay ahead of federal chaos and non-fluoridation

BUFFALO
SEWER AUTHORITY

Queen City Clean Waters Fair - Planning Update

- Friday, August 29th 4 PM - 7 PM
- Hoyt Lake in Delaware Park



Please Sign Up to be a Volunteer!!

- Looking for around 30-50 volunteers for the event
- Volunteers will be assisting with:
  - Greeting attendees and registration
  - Ushering attendees throughout the park
  - Event setup and breakdown
  - Administering event activities
- Volunteers needed from 3 PM - 8 PM on August 29th

Register at https://forms.gle/FmUvh7Gi3zzBTYLC7





Marketing the QCCW Fair

- Help us share the flyer!
- Repost Buffalo Sewer's Social Media Pages

@The Buffalo Sewer Authority

@buffalosewerauthority

@Buffalo Sewer Authority

@BuffaloSewer





BUFFALO
SEWER AUTHORITY

Updates from SAC


BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

AUGUST 2025

Agenda

1. QCCW Interactive Website Engagement

2. Queen City Clean Water Fair
   - Event Planning Update
   - Volunteering & Organizational Support
   - Marketing

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

QCCW Interactive Website Engagement

BUFFALO
SEWER AUTHORITY

July Engagement Activity

Total Views: **1,546**

Total Visits: **1,042**

Total Visitors: **620**

Total Contributions: **37**
(35 Survey Respondents & 3 Comment on Share Your Insights)

Views - The number of times a Visitor views any page on a Site.

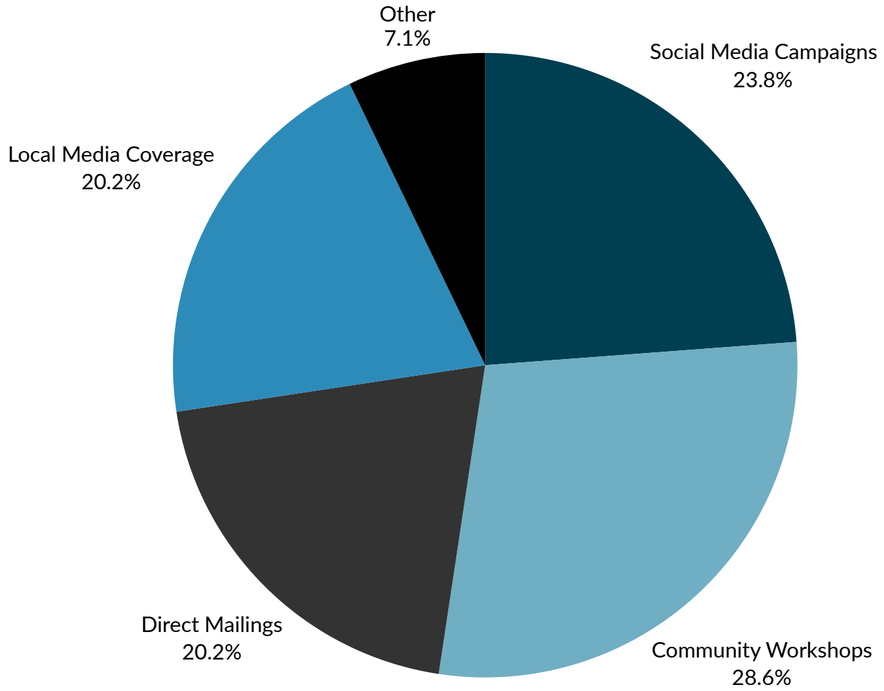
Visits - The number of end-user sessions associated with a single Visitor.

Visitors - The number of unique public or end-users to a Site. A Visitor is only counted once, even if they visit a Site several times in one day.

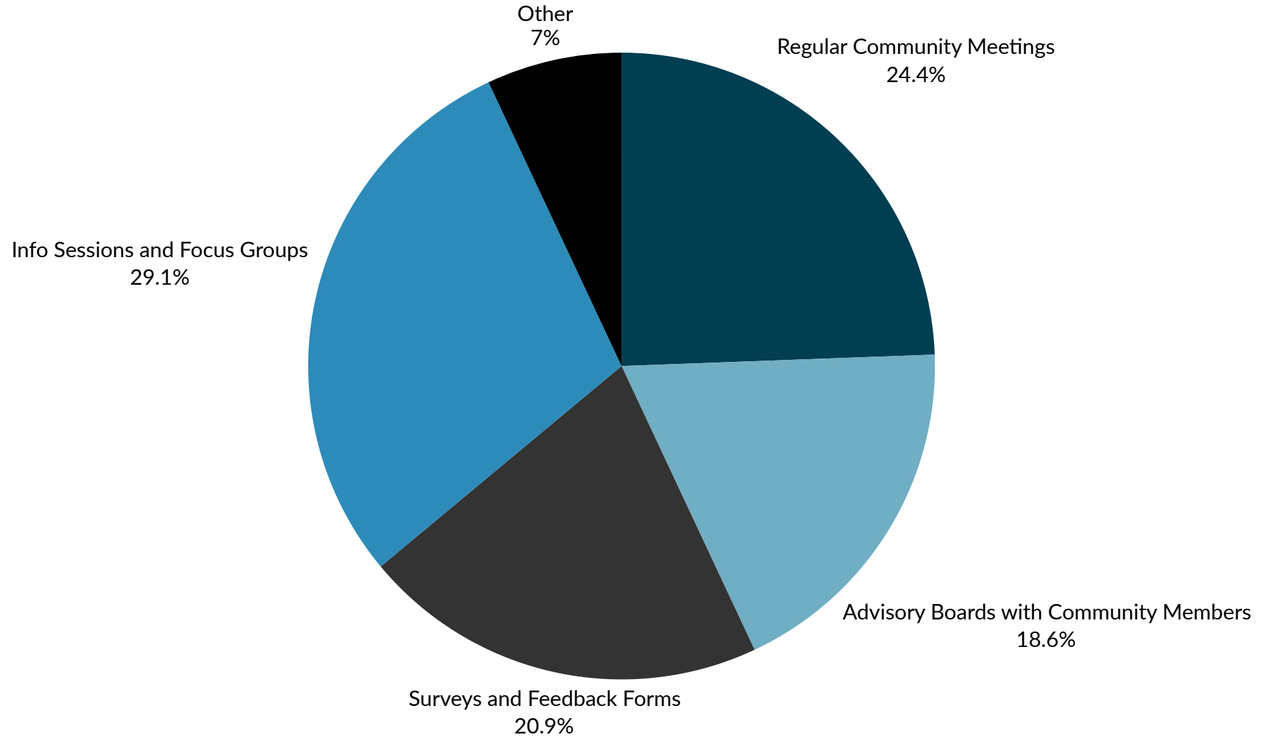
Contributions - The total number of responses or feedback collected through the participation tools.

Survey Results

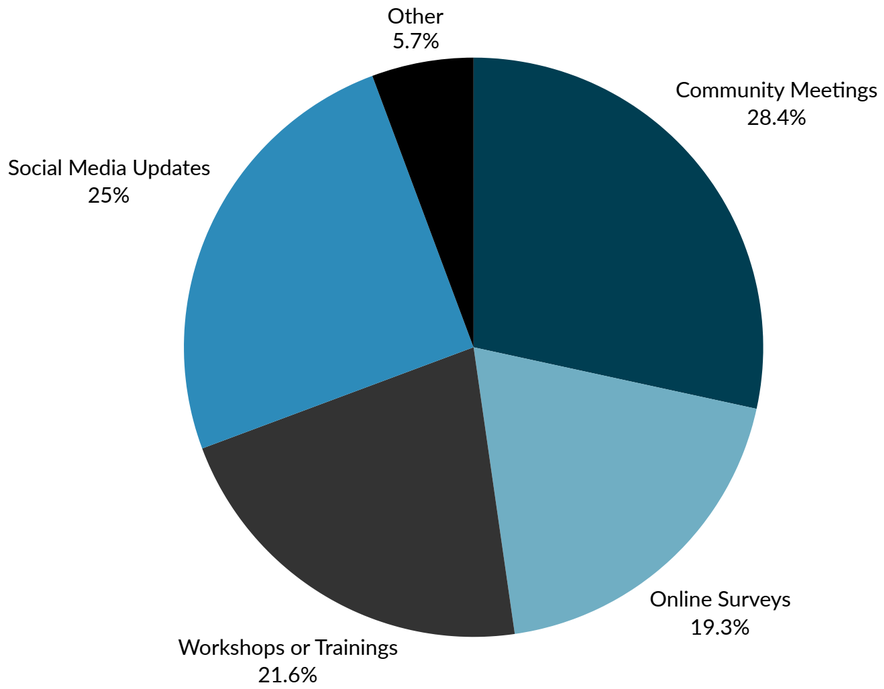
1. What are the best ways to reach and engage the Buffalo community in conversations about sewer infrastructure improvements?



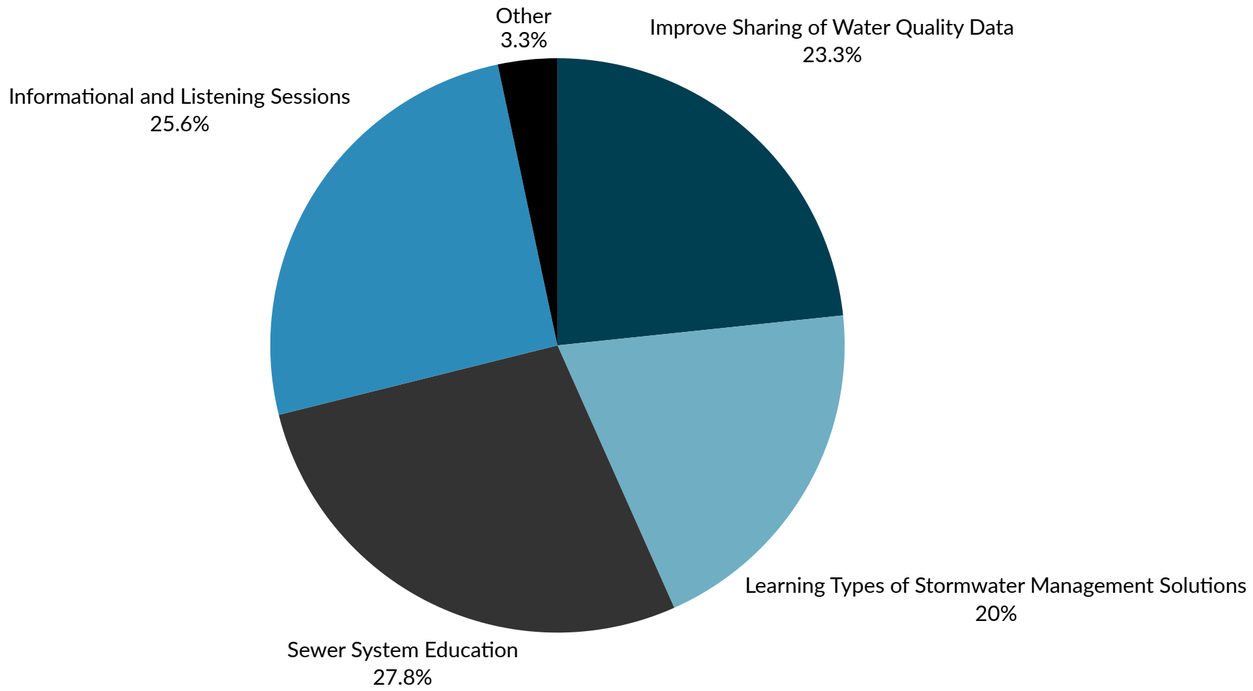
2. How can we ensure that community voices are genuinely represented and valued in the decision-making process?



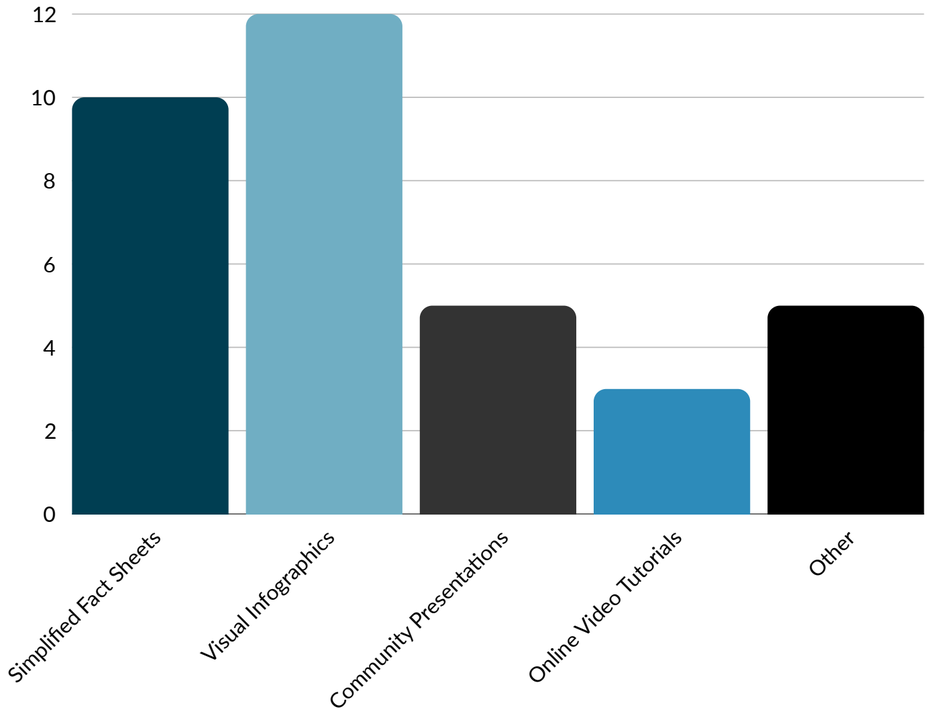
3. How would you prefer to be engaged in future discussions or decision making about sewer infrastructure improvements?



4. What additional resources or support would be most helpful to improve sewer infrastructure and waterways testing/improvements in your community (such as Niagara River and Scajaquada Creek)?



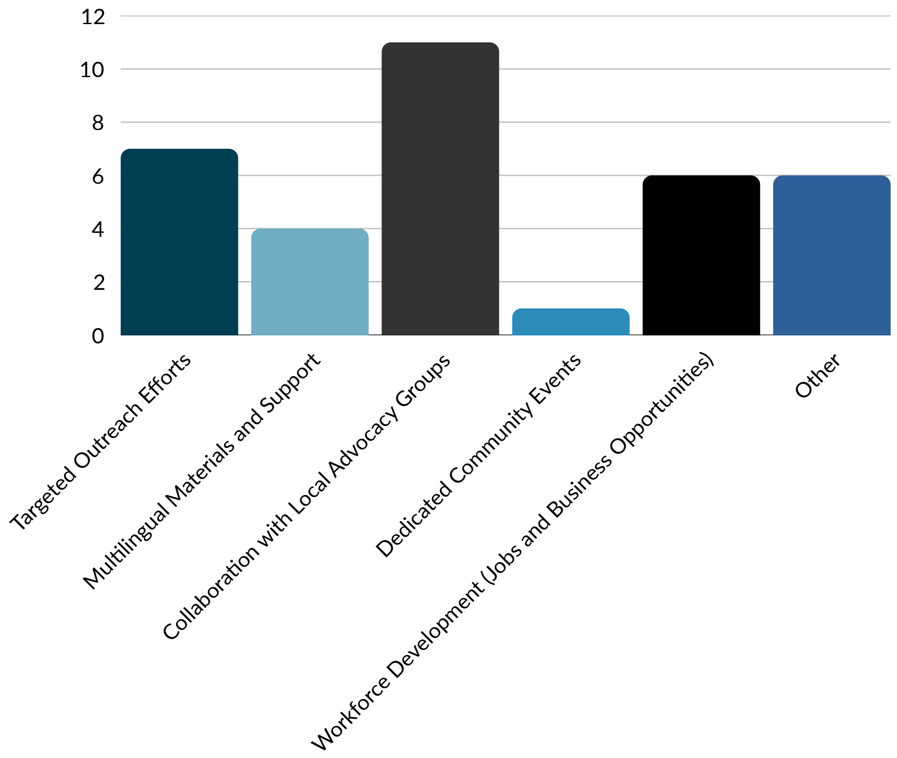
5. How can we make technical information about the Queen City Clean Waters Initiative accessible and easy to understand for everyone?



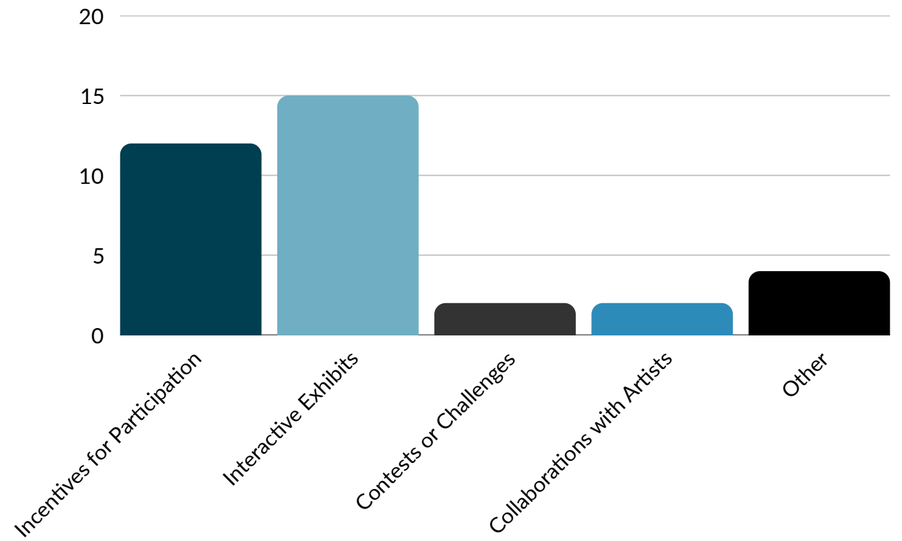
6. What partnerships could help us better connect with the community? (Rank in Order 1 = Least, 5 = Best)

1. **Buffalo Public Schools**
2. Nonprofit Organizations
3. Community Leaders
4. Local Businesses
5. Workforce Development

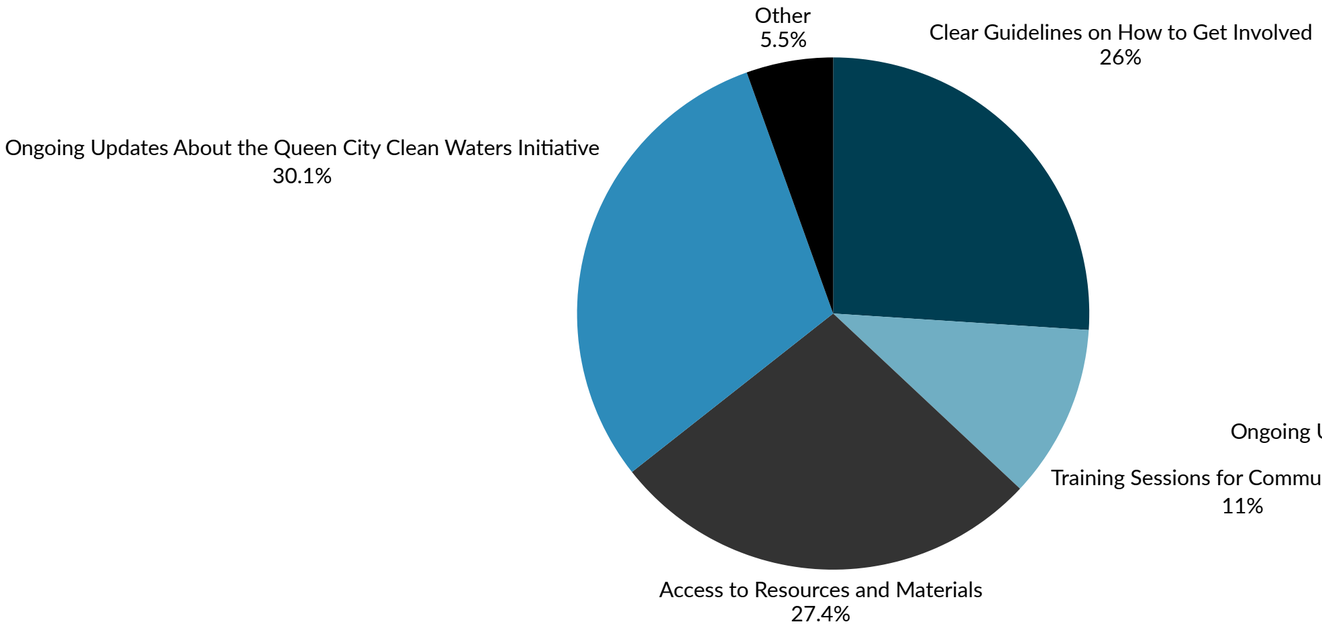
7. How can we engage underrepresented or historically marginalized communities in this process?



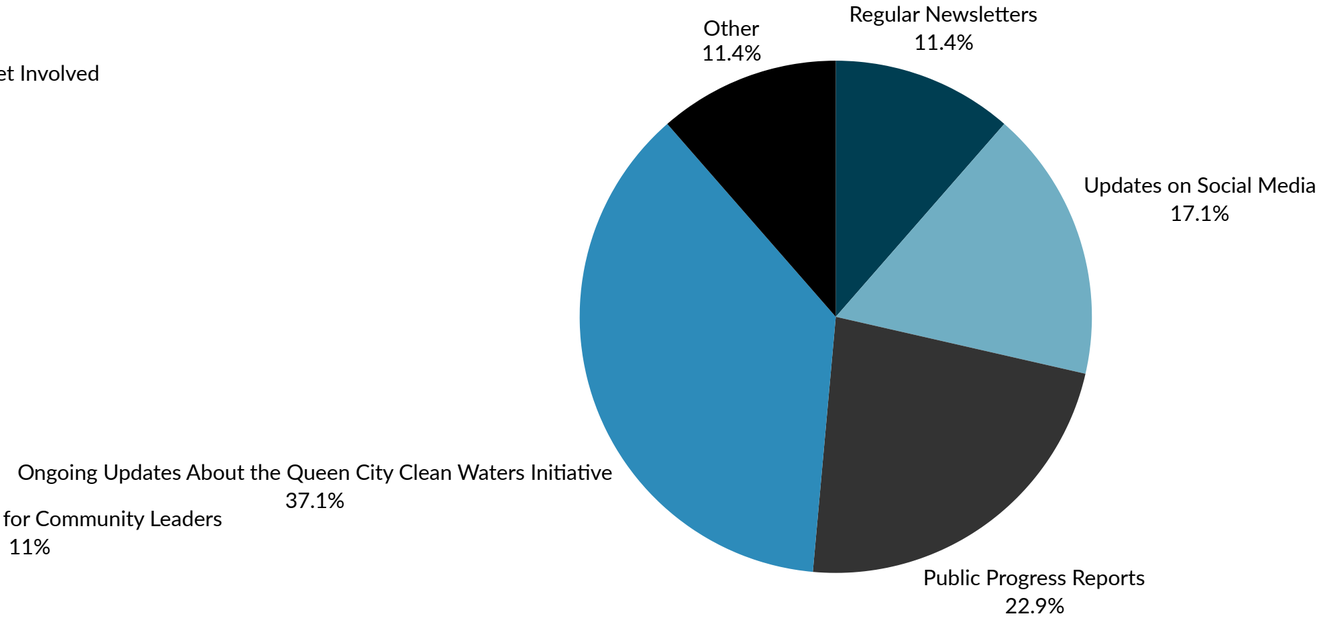
8. What is a creative idea for building public interest and participation in this Queen City Clean Waters Initiative?



9. What information or support would you need to feel empowered to participate in or promote the Queen City Clean Waters initiative?



10. How can we ensure ongoing communication and transparency with the community as the Queen City Clean Waters Initiative progresses?



11. Is there anything else you would like us to know about water quality, health concerns, or community benefits that should be included in the Queen City Clean Waters initiative?

- What is the meaning of "green infrastructure". How would the public schools be involved. Teachers are already swamped with pressures to do things outside of the regular curriculum. I realize clean water is a science issue; topic is not in all grade level.
- Community Benefit commitment/Ensure local business employment inclusion.
- What can be done about the Scajaquada Creek? Can it be unburied?
- An interactive map that allows city residents to identify things like a smelly manhole and then get a response that's also on the map. The map could include the entire system with the ability to zoom in on a project and get an animation short.
- Educate the public so we all can take responsibility
- How does the QCCWI differ from the BSA? One and the same
- You need to be language inclusive. Many non-English speakers in the city.
- Stay ahead of federal chaos and non-fluoridation

BUFFALO
SEWER AUTHORITY

Queen City Clean Waters Fair - Planning Update

- Friday, August 29th 4 PM - 7 PM
- Hoyt Lake in Delaware Park



Event Details



Vendors/Organizations in Attendance

- Buffalo Niagara Waterkeeper
- Erie County Low Income Program
- Aquarium of Niagara
- US Fish and Wildlife Service
- Engineers for a Sustainable World
- Buffalo Engineering Awareness for Minorities
- Phoenix Innovation Group/Foundry
- Northland Workforce Training Center
- West Side Rowing Club
- City of Buffalo Department of Recycling
- Twisted Icee Slushie Bar
- Half Luna Empanadas
- Moneybag Dumplings
- What's Poppin Popcorn

Event Details: Plan B?

- Rain may be in the forecast for Friday; the team is aware that this may impact the fair.



Marketing the QCCW Fair

- Help us share the flyer!
- Repost Buffalo Sewer's Social Media Pages

@The Buffalo Sewer Authority

@buffalosewerauthority

@Buffalo Sewer Authority

@BuffaloSewer





BUFFALO
SEWER AUTHORITY

Updates from SAC


BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

HALLMARK PLANNING & DEVELOPMENT



QCCW Stakeholder Advisory Committee

SEPTEMBER 2025

Agenda

1. Queen City Clean Waters Initiative Update - Rosey
2. QCCW Interactive Website Engagement
3. Queen City Clean Water Fair Recap
   - Strengths/Weaknesses
   - Opportunities for Next Year
4. Community Engagement
5. Updates from SAC

BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Queen City Clean Waters Initiative Update

BUFFALO
SEWER AUTHORITY

QCCW Interactive Website Engagement

BUFFALO
SEWER AUTHORITY

August Engagement Activity

Total Views: **2,666**

Total Visits: **1,966**

Total Visitors: **1,318**

Total Contributions: **68**
(64 Survey Respondents & 4 Comments on Share Your Insights)

Views - The number of times a Visitor views any page on a Site.

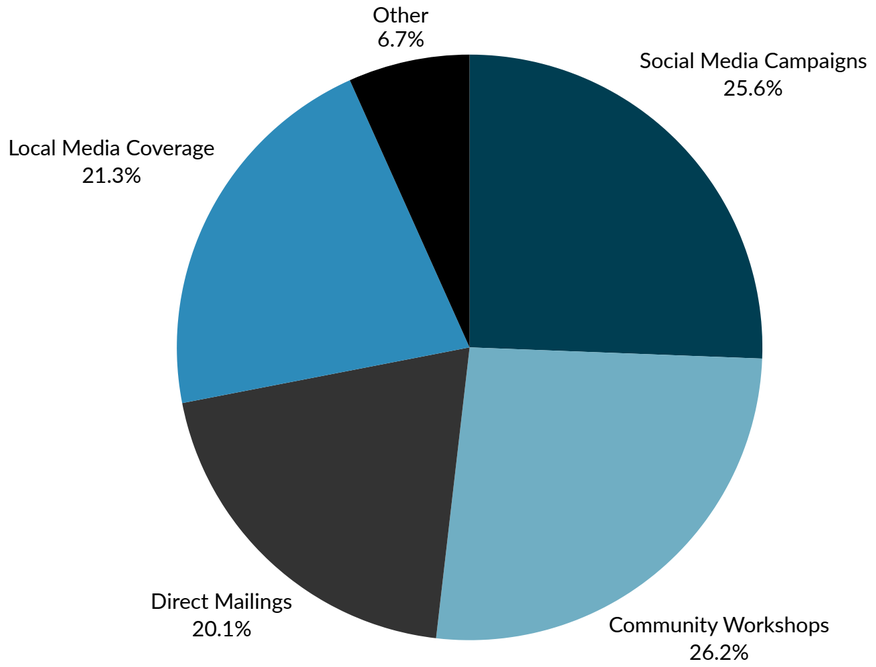
Visits - The number of end-user sessions associated with a single Visitor.

Visitors - The number of unique public or end-users to a Site. A Visitor is only counted once, even if they visit a Site several times in one day.

Contributions - The total number of responses or feedback collected through the participation tools.

Survey Results

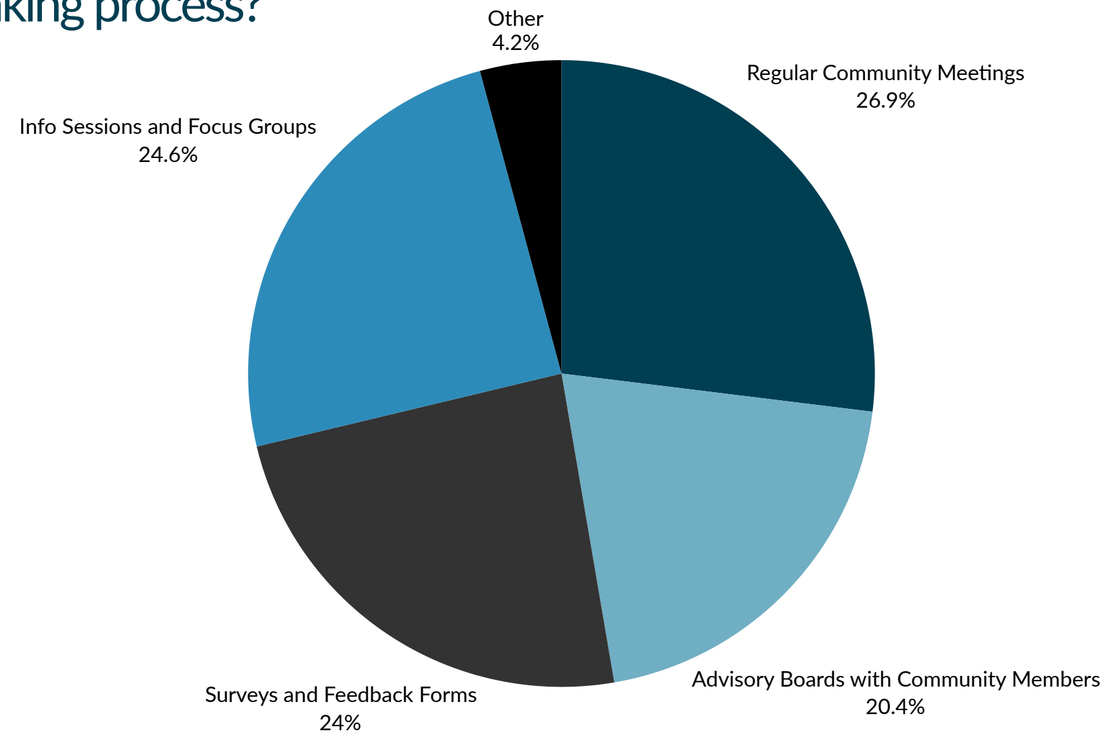
1. What are the best ways to reach and engage the Buffalo community in conversations about sewer infrastructure improvements?



Other:

- BMHA Housing Authority Meeting
- In person events where you talk to people
- Slow Roll
- Radio
- Billboards
- The Buffalo News (paper print editions - especially Sundays)
- Use not for profits to spread word
- Door to Door
- Local Block Club attendance and frequent site location billboard "coming to your area"!
- billboard advertising on bus sides, signage at intersections, community tent sittings in neighborhood (on site)

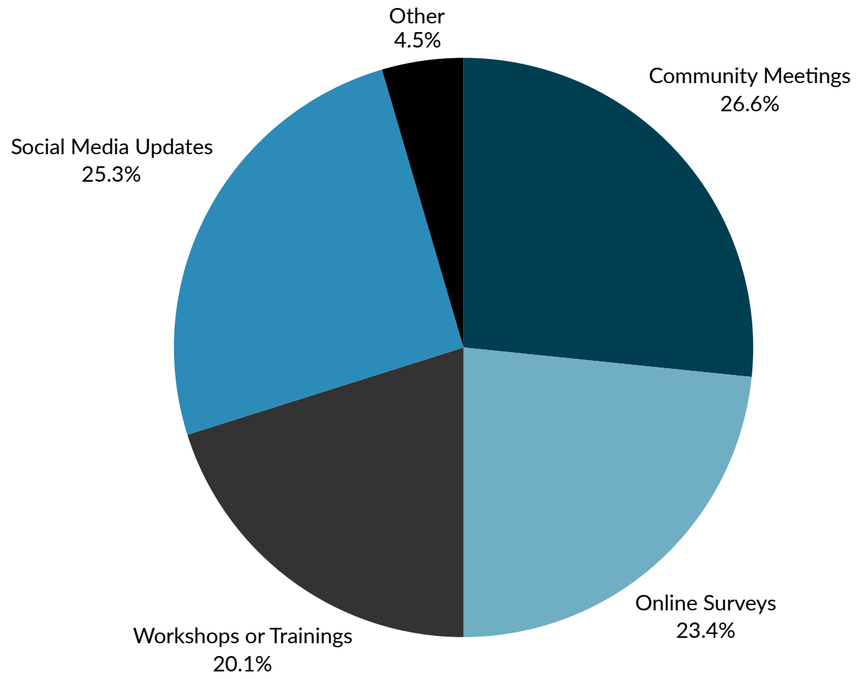
2. How can we ensure that community voices are genuinely represented and valued in the decision-making process?



Other:

- Door to door
- need all because the easiest participation is to say "NO" which comes from unexpected groups
- regular meetings, info sessions for micro learning/education exchange, feedback survey on the exchange
- Get REAL community members on the advisory boards
- Neighborhood outreach
- online information with ability to provide feedback, ask questions and receive answers
- Tabling at as many commity events/festivals to reach folks where they are at

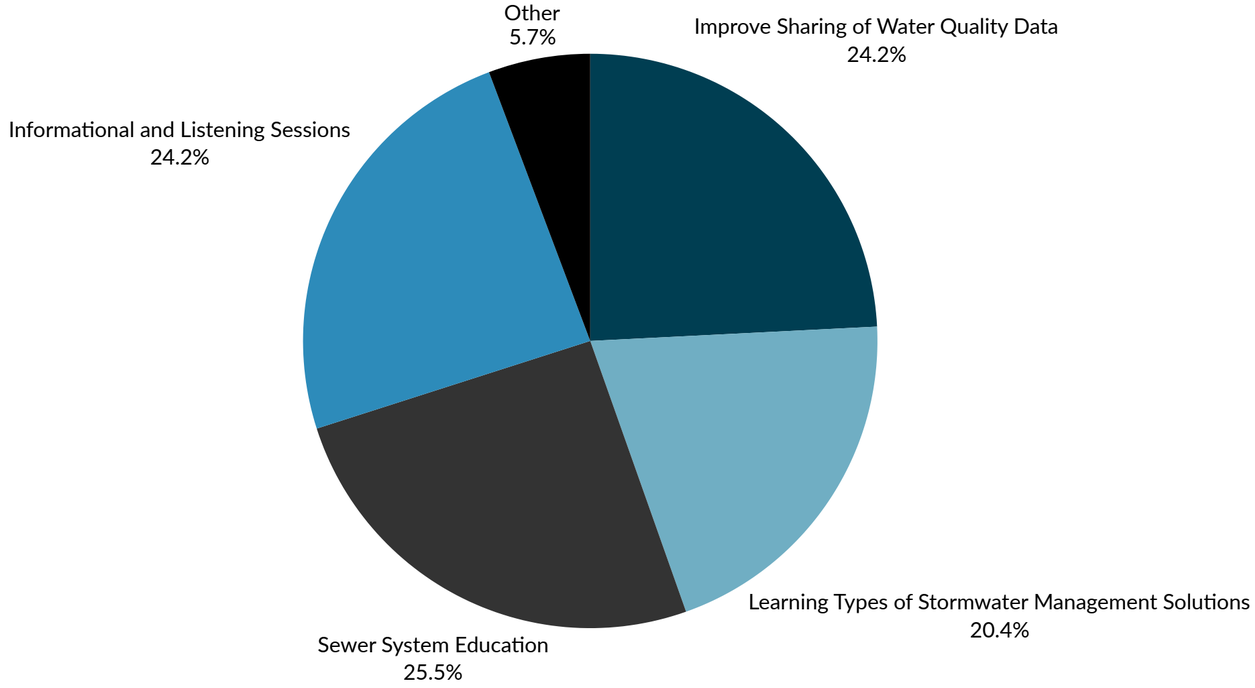
3. How would you prefer to be engaged in future discussions or decision making about sewer infrastructure improvements?



Other:

- Direct mail, with the option to follow-up.
- Direct mailings with survey or voting opportunities
- Email or Text
- The Buffalo News - print edition
- Challenger and Criterion local Newspapers
- direct email
- meet at the worship centers neighbor that site and environmental groups to leverage their contact to community counterparts

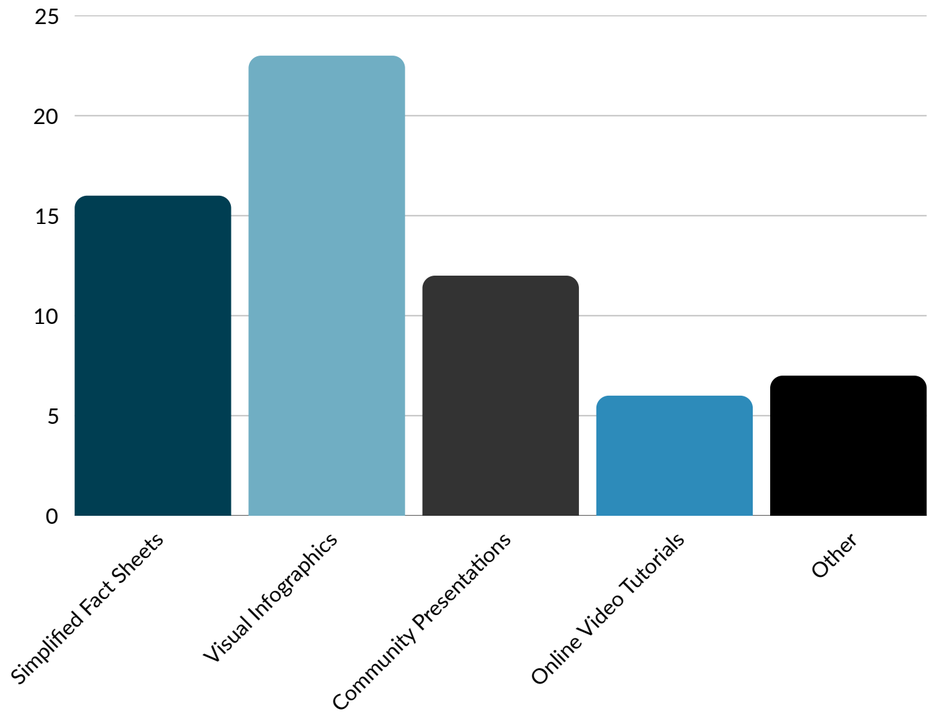
4. What additional resources or support would be most helpful to improve sewer infrastructure and waterways testing/improvements in your community (such as Niagara River and Scajaquada Creek)?



Other:

- Focus all funding on infrastructure improvements. The problems are well known. It's time to talk less and do more.
- Publish testing results data, possibly using this website
- The Buffalo News - print edition
- Videos, social media
- Cartoon Like Videos get the information out in a visual easy to understand what
- Independent Studies
- Teaming up with schools to teach kids about this. Host lunch and learns throughout the city with interactive learning opportunities.
- Civic education in all schools (public and private).
- town hall set up in summer, monthly on progress and distribute FAQs

5. How can we make technical information about the Queen City Clean Waters Initiative accessible and easy to understand for everyone?



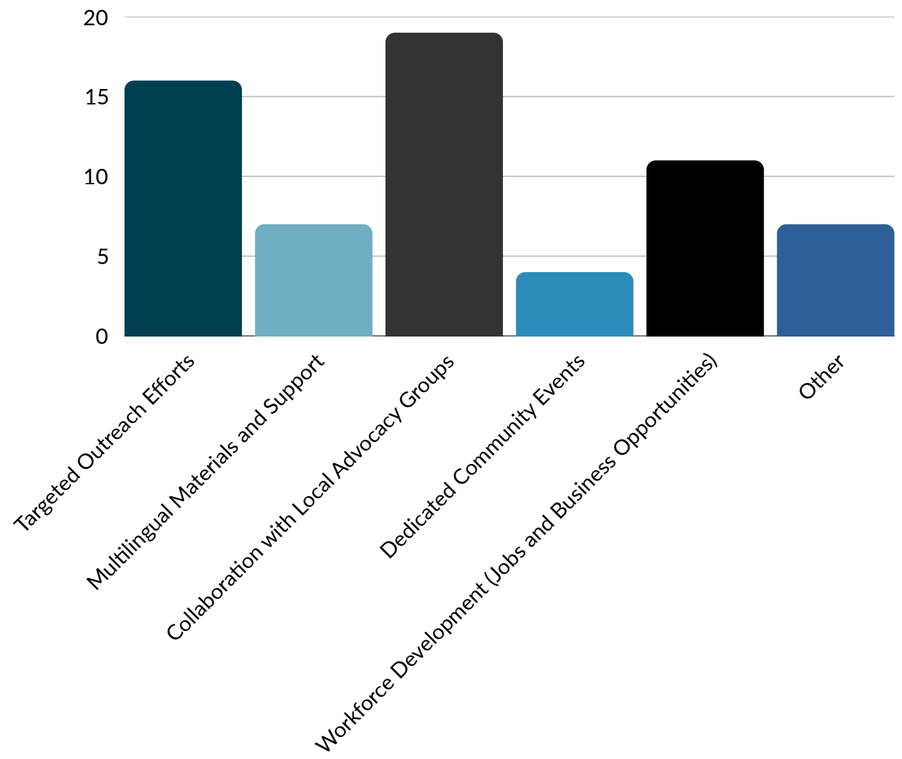
Other:

- accuracy and clarity of information, unbiased, science-based.
- all of the above and use community bulletin boards, FB
- All of the above!
- Cartoon like tutorials as mentioned in the previous answer.
- youtube

6. What partnerships could help us better connect with the community? (Rank in Order 1 = Least, 5 = Best)

1. Buffalo Public Schools
2. Local Businesses
3. Community Leaders
4. Nonprofit Organizations
5. Workforce Development

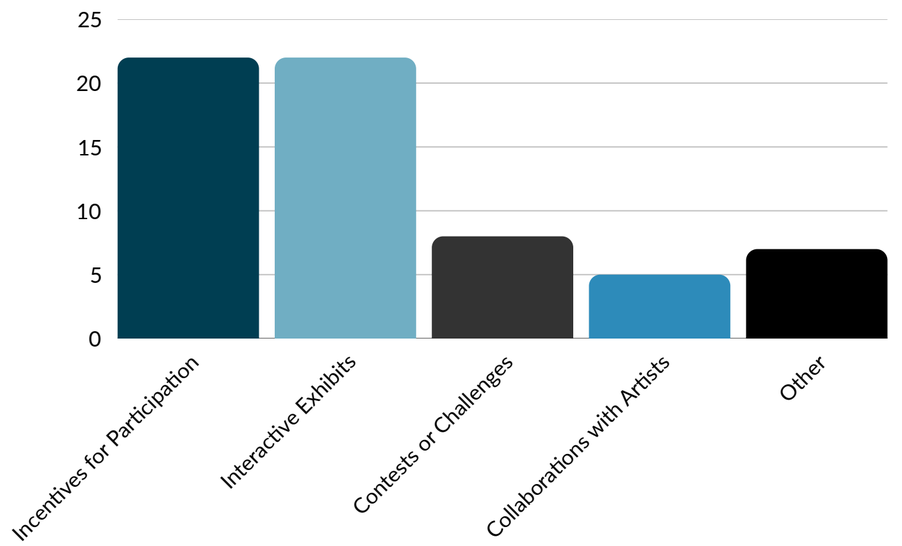
7. How can we engage underrepresented or historically marginalized communities in this process?



Other:

- All of the above ❗
- Churches and pastors
- Door to door
- Forums for residents' input and these suggestive opportunity kept in records
- multilingual and targeted outreach, collab at cultural specific events

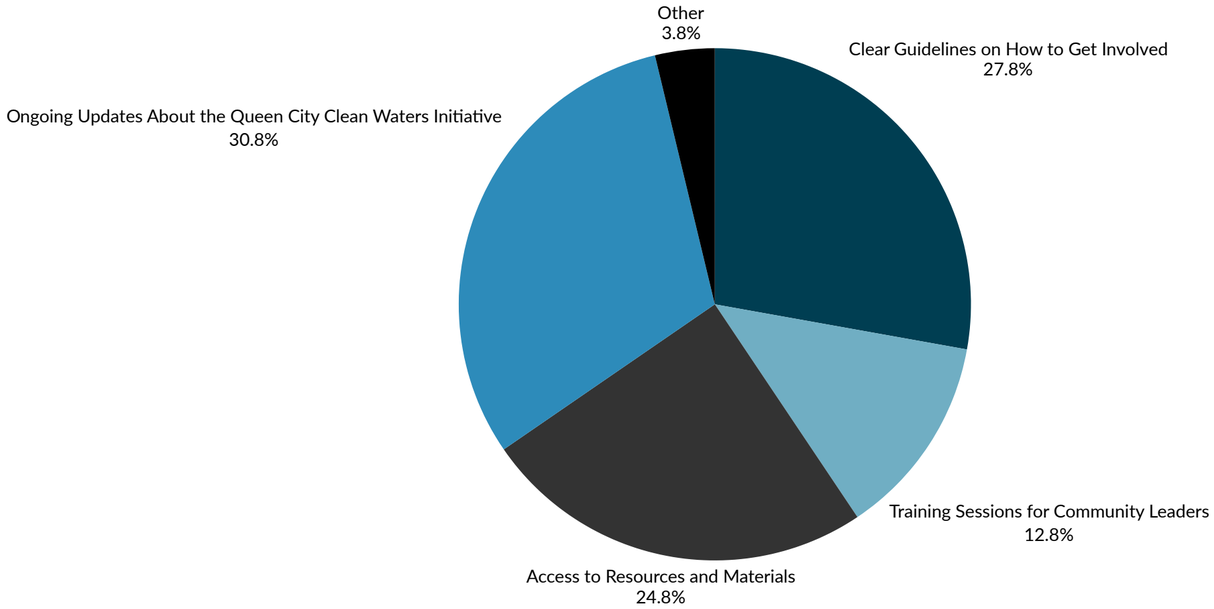
8. What is a creative idea for building public interest and participation in this Queen City Clean Waters Initiative?



Other:

- why is 'public interest' important? Participation important? All public needs is confidence that work is being done to make things better.
- People need to see that their time and energy isn't bein wasted - this means that results need to be both meaningful and communicated. These items may generate interest in the contest, but not the project.
- Be open and transparent with current CSO discharge practices. We have old infrastructure, the sewer water needs to be treated and not directly discharged. Tie the investment $$ to providing clean water.
- Artist collab and contests with kids BPS
- Anything that gives people the opportunity to explain how they would handle sewage and stormwater if left to their own devices.
- All of the above ❗

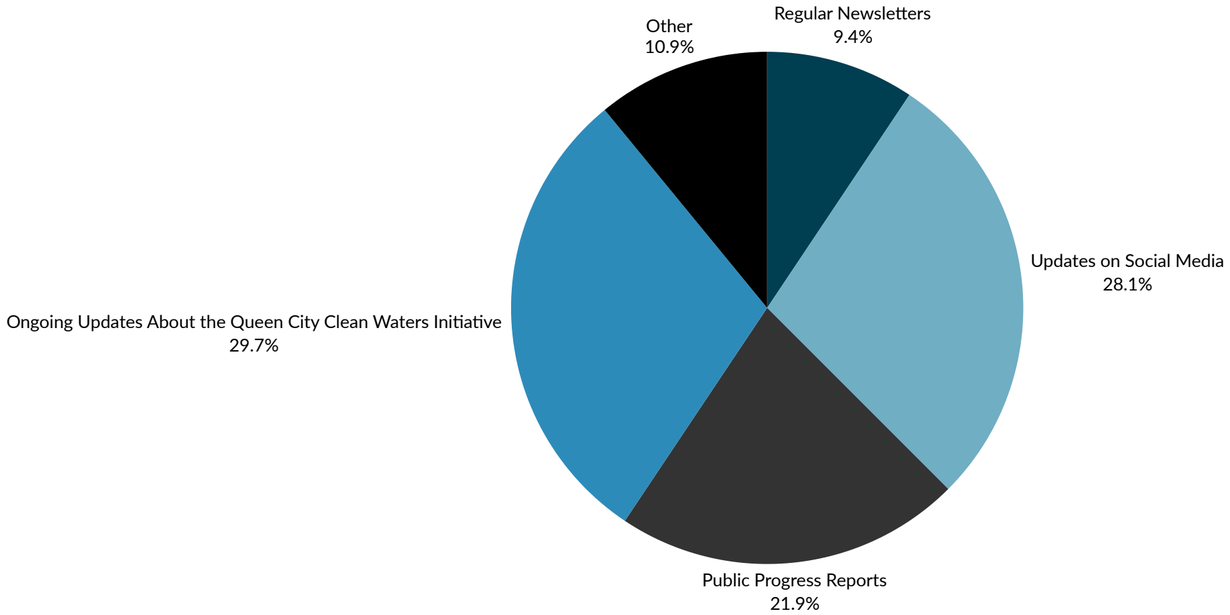
9. What information or support would you need to feel empowered to participate in or promote the Queen City Clean Waters initiative?



Other:

- Add a 'Project Type' overview maybe to the interactive map page?, shows what an RTC is, an SPP, InLine Storage etc
- Schools and public libraries are critical locations for whatever is done
- Detailed project proposals. For example, I found nothing on this website.
- Clear plan with high confidence of having meaningful positive impact and clear communication about progress - ability to see progress occurring
- Access to advisory committee by at least 1 residentially affected person willing to take part regardless of technical experience

10. How can we ensure ongoing communication and transparency with the community as the Queen City Clean Waters Initiative progresses?



Other:

- All of above and alternative outlets
- All of the above ❗
- Both ongoing updates in local media as well as social media
- Contact city council off
- published newsletter on social media, progress report in local media, mailer to direct neighbors at site

11. Is there anything else you would like us to know about water quality, health concerns, or community benefits that should be included in the Queen City Clean Waters initiative?

- What is the meaning of "green infrastructure". How would the public schools be involved. Teachers are already swamped with pressures to do things outside of the regular curriculum. I realize clean water is a science issue; topic is not in all grade level.
- Community Benefit commitment/Ensure local business employment inclusion.
- What can be done about the Scajaquada Creek? Can it be unburied?
- An interactive map that allows city residents to identify things like a smelly manhole and then get a response that's also on the map. The map could include the entire system with the ability to zoom in on a project and get an animation short.
- Educate the public so we all can take responsibility
- How does the QCCWI differ from the BSA? One and the same
- You need to be language inclusive. Many non-English speakers in the city.
- Stay ahead of federal chaos and non-fluoridation
- Curious about waterway access along the Niagara River
- Fluoride
- Swim in Lake Erie
- Figure out an incentive program similar to .5 for cans or the biannual Stars check.
- Even though there are concerns, the water is delicious in Buffalo/Erie Co. compared to many other places in the country. We need to encourage people to choose to drink this delicious water rather than waste money on single serve plastic water bottles.
- I appreciate the community outreach and public notification, but please don't go overkill. Ultimately, we want clean water with good, sustainable, resilient infrastructure. Paying a consultant to manage a social media account doesn't help the design.

BUFFALO
SEWER AUTHORITY

Queen City Clean Waters Fair Recap

QCCW Fair Recap

- **132** Registered Attendees; **50+** Volunteers; About **100** Bookbags Given Away

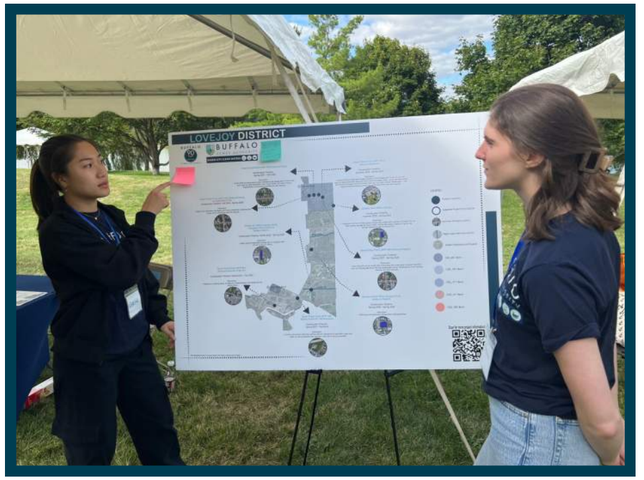












BUFFALO
SEWER AUTHORITY

QCCW Fair Recap

- Strengths
- Weaknesses
- Opportunities for next year







BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Community Engagement

Upcoming & Current Engagement Strategies

- Masten District Breakfast
- Ellicott District Breakfast
- Meetings in Lovejoy Council District





BUFFALO
SEWER AUTHORITY

BUFFALO
SEWER AUTHORITY

Updates from SAC

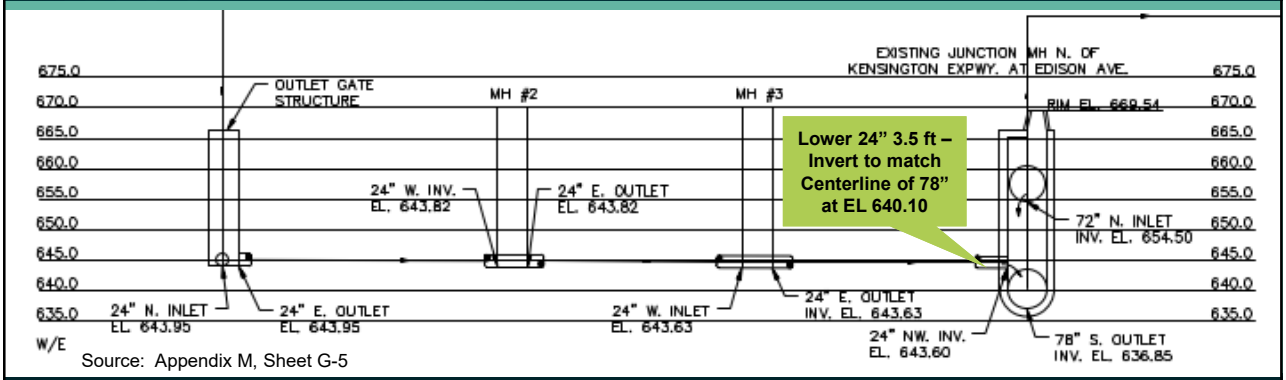

BUFFALO
SEWER AUTHORITY
QUEEN CITY CLEAN WATERS
HALLMARK
PLANNING & DEVELOPMENT
Questions?

Technical Concepts for Roosevelt Park OLS Tank

OPTION	DESCRIPTION	BENEFITS TO THE AUTHORITY
Tank Configuration	Reduce footprint by increasing side water depth Reduce number of tipping buckets Decrease flush-way slope and increase cross-channel slope	Reduced impact on stakeholders Increased footprint for Park features Less installed equipment Better handling of solids-laden flush water
Tank Partitioning	Add full-height wall(s) to partially fill tank during small storms	Reduced O&M costs
Alternative Tank Location to Improve Impact Mitigation	Locate tank away from Millicent Avenue Potentially locate tank near Kensington Expressway	Increased distance between tank and sensitive receptors Improved stakeholder relations
Odor Control	Consider designing for addition of odor control in future if required	Capital and O&M cost savings; simplified facility operation
Freeboard	Consider reducing freeboard	Increased soil cover over tank top slab, reduced buoyancy forces, potential reduced number of rock anchors, and reducing cost
Tank Influent and Effluent Piping	Consider: Alternatives to micro-tunneling Consider pumped dewatering	Potential cost savings by avoiding micro-tunnel machine use for short conduit drives Potential cost savings related to avoiding deep effluent conduit
Dynamic Weir	Consider use of inlet gate to minimize OLS tank activations	Reduction in small storm activations without additional equipment, saving capital and O&M cost and reducing operational complexity
Roosevelt Park Coordination	Waterline Design coordination; keeping OLS tank access points out of green space	Cooperation among stakeholders resulting in improved design efficiency
Support Building	Explore locating support building adjacent to Kensington Expressway near OLS tank in wooded area	Capital cost savings with shorter conduit and wire runs, smaller wire sizes, and shorter odor control duct O&M cost savings due to shorter odor control duct and wire runs and ease of long-term facility operation

1

AECOM Concept to Increase Side Water Depth



Source: Appendix M, Sheet G-5

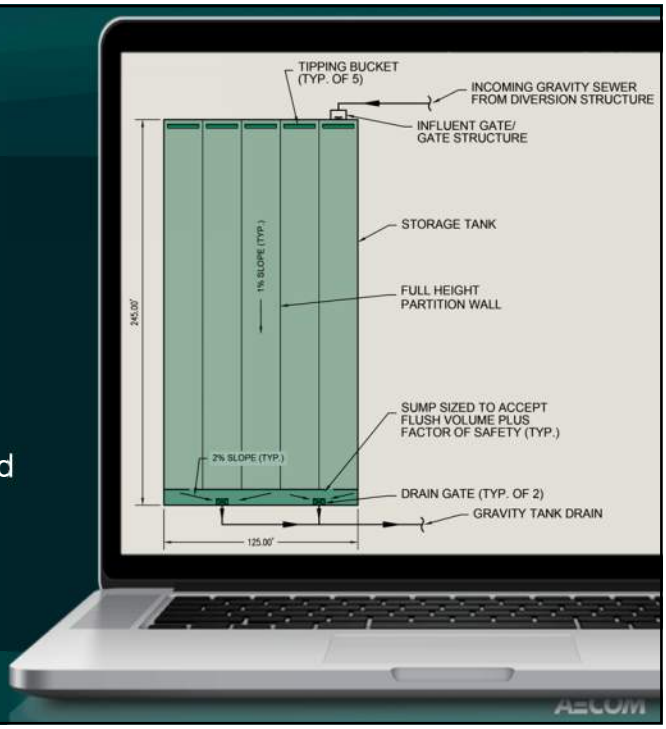
- Lowering downstream end of 24" outlet pipe 3.5 ft enables OLS tank bottom to be lowered 3.5 ft
- Collection system modeling warranted

BENEFITS *Reduced tank footprint, Reduced number of tipping buckets, Reduced sensitive receptor impacts, Increased area for park use*

2

Benefits of Increased Side Water Depth

- Less bottom area requiring post-event cleaning
- Ability to locate tank further from sensitive receptors
- Influent conduit enters below tipping buckets
- Reduction in tipping buckets & actuated valves (15 to 5)
- Reduced footprint subject to uplift
- Potential construction cost savings



3

Smaller Tank Footprint & Influent / Effluent Piping

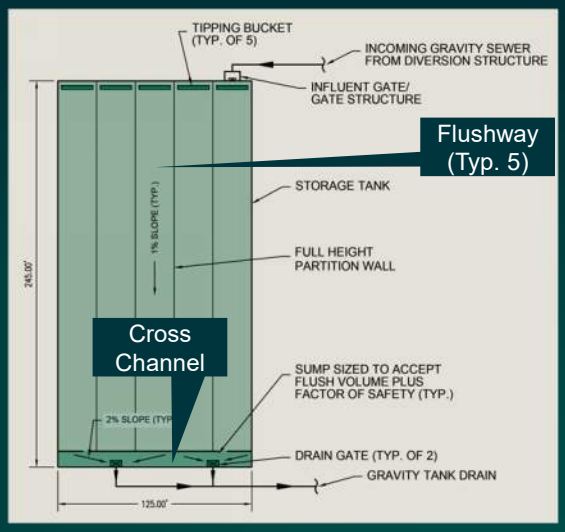
- Influent piping:
  - Micro-tunnel or open cut per Appendix K
- Effluent piping
  - Micro-tunnel per Appendix K
  - Reflects partitioning to reduce post-event clean-up
  - Consider pumped dewatering



4

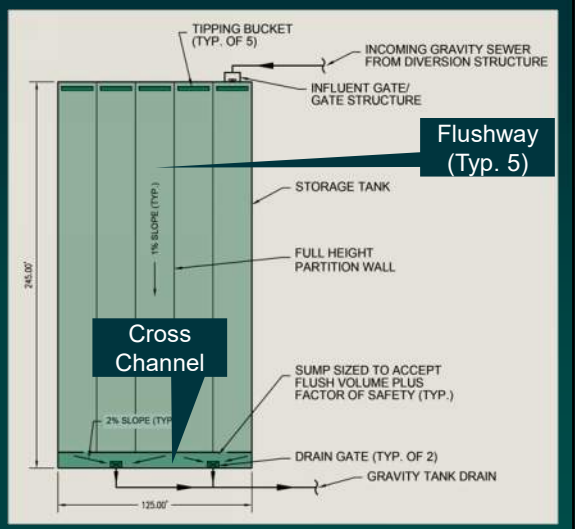
Flushway and Cross Channel Slopes

- Flushway (longitudinal) slope
  - Current design: 2%
  - AECOM recommendation: 1%
- Cross channel slope
  - Current design: 1%
  - AECOM recommendation: 2%



Cross Channel Sizing and Sump

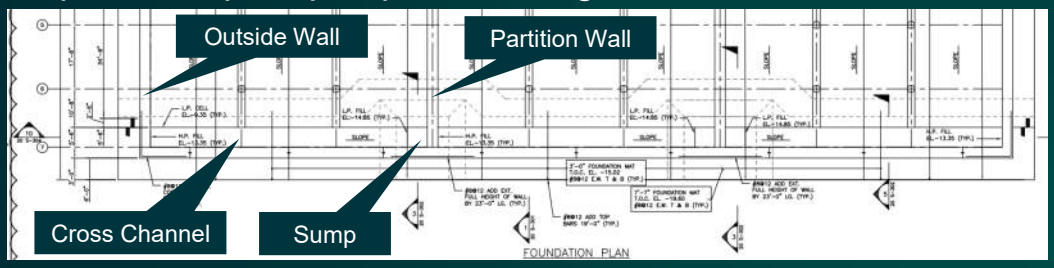
- Size cross channel to accept tipping bucket volume with factor of safety
- Slope to low point(s) for gravity discharge
- Slope to sump for pumped discharge



Sloped to low points for gravity drain

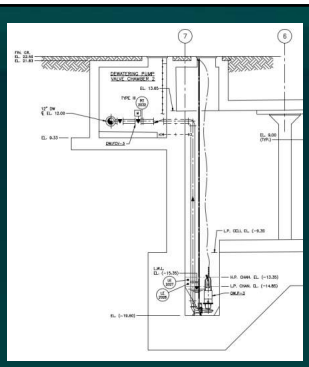
Cross Channel Sizing and Sump

- Size cross channel to accept tipping bucket volume with factor of safety
- Slope to low point(s) for gravity discharge
- Slope to sump for pumped discharge

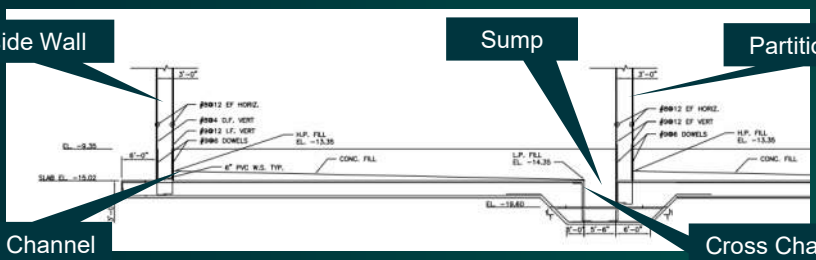


Sloped to sump for pumped discharge

Cross Channel Sizing and Sump



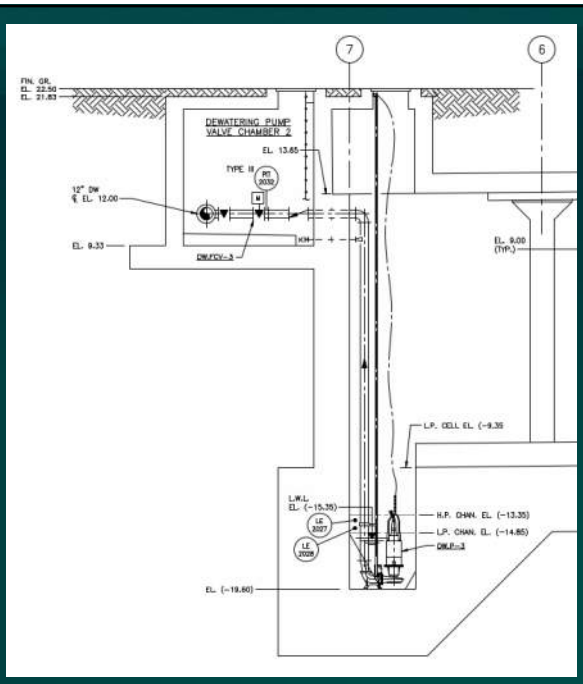
- Size cross channel to accept tipping bucket volume with factor of safety
- Slope to low point(s) for gravity discharge
- Slope to sump for pumped discharge



Sloped to sump for pumped discharge

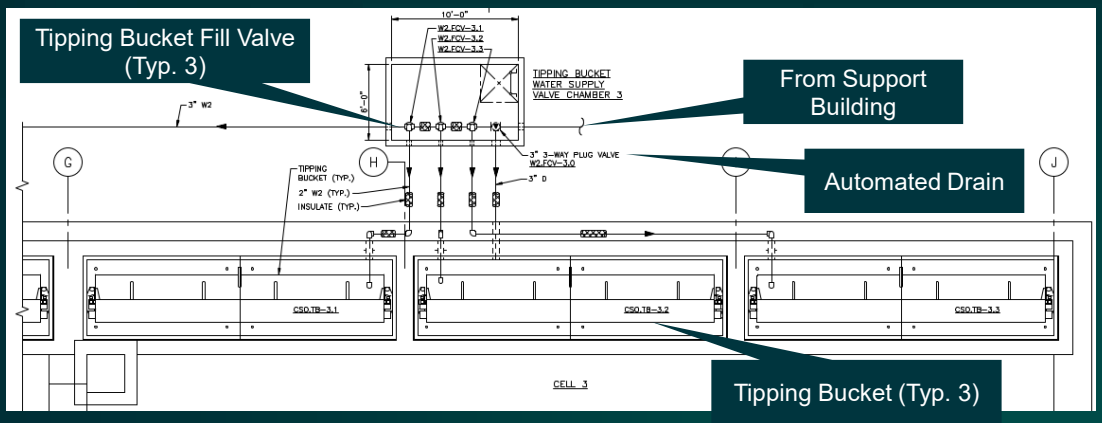
Pumped Dewatering

- Cross channel sloped to sump for pumped discharge
- Pump sized to dewater tank within 24 hours
- Potential for significant construction cost savings
- Proven experience & reliability



Tipping Bucket Fill Valves

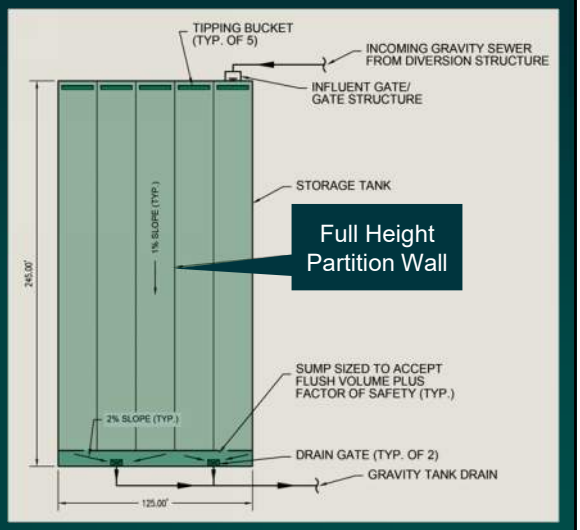
- Locate in proximity of tipping buckets



- If located in control room would require separate water lines

Tank Partitioning

- Approach:
  - Request collection system model results showing activation volume for each storm event in typical year
- Typical result:
  - 50% or more storms would fill 25-50% of tank volume
- Potential benefit:
  - Less post-event cleanup
- Offsetting factors:
  - Cost for full-height partition wall
    - Partition wall could reduce roof support columns and increase tank dead weight
  - Added equipment



11

Tank Freeboard

- Current design calls for 2 ft freeboard
- Consider reducing to 1.5 ft
- Benefits:
  - Increased soil cover to reduce uplift
  - Potential reduction in number of rock anchors
  - Potential cost savings

12

Odor Control

- Often not required from technical perspective
- May be required for stakeholder acceptance
- Activated carbon most common for wet weather facilities
  - Requires mechanical (exhaust fan) ventilation
  - Based on 29.3 MGD peak flow to tank would require 2,720 cfm odor control system
  - Consider designing for future odor control



MWRA Union Park Odor Control – Exhaust Fan (foreground) and Carbon Adsorber

Support Building – Field House





Figure 4: First Floor Architectural Plan, courtesy of Trautman Associates

May 21, 2025 Edison-Martha OLS Waterline Design – Alternatives Analysis

Water Supply & Electric Power Connections



Figure 5: Potential Location for Waterlines and Conduits

May 21, 2025 Edison-Martha OLS Waterline Design – Alternatives Analysis

15

Water Supply & Electric Power Connections

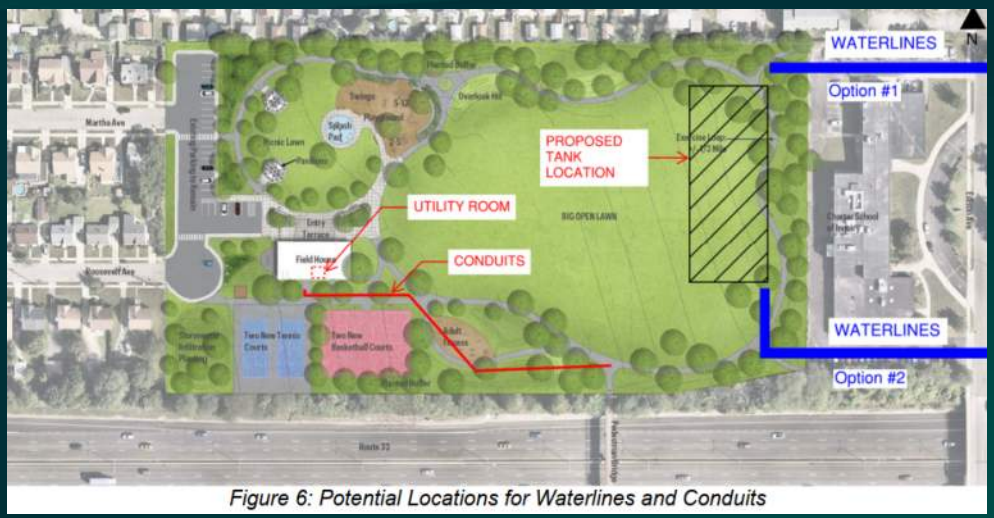


Figure 6: Potential Locations for Waterlines and Conduits

May 21, 2025 Edison-Martha OLS Waterline Design – Alternatives Analysis

16

Water Supply and Electric Power Connections

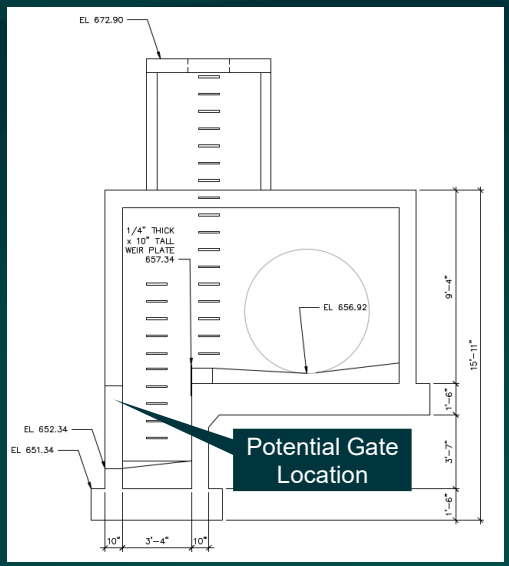


Figure 7: Potential Locations for the Vault, Waterlines, and Conduits

May 21, 2025 Edison-Martha OLS Waterline Design – Alternatives Analysis

Diversion Structure

- Dynamic weir
  - Called for on Sheet G-11, Appendix M
  - With weir crest 5 inches above sewer invent limited potential for dynamic weir control
- Inlet gate
  - Could be relocated to diversion structure and automated
    - Normally closed
    - Modulates open based on level in sewer
    - Closes when tank approaches full
    - Opens at end of event to drain overflow
  - Could provide same function if located at tank
  - Collection system modeling warranted



Appendix M, Sheet G-11

Edison Avenue Sewer

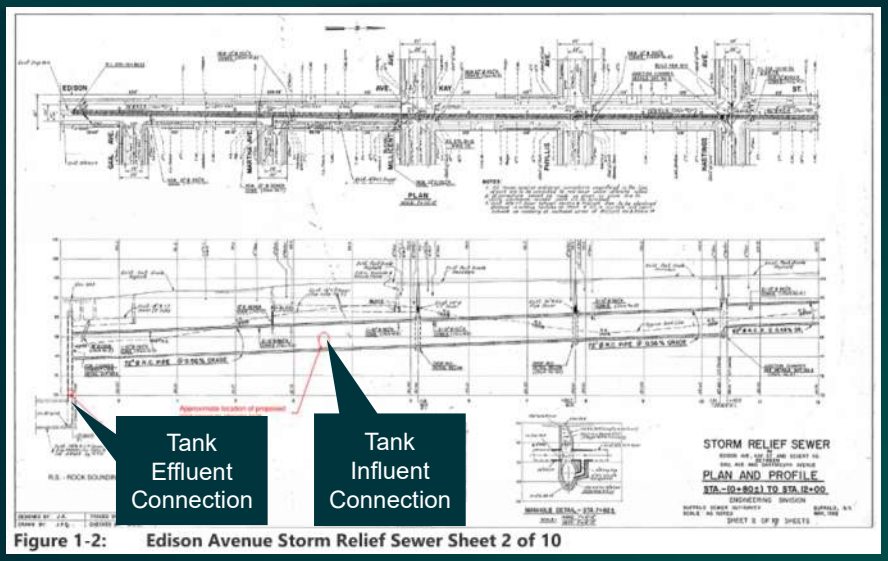
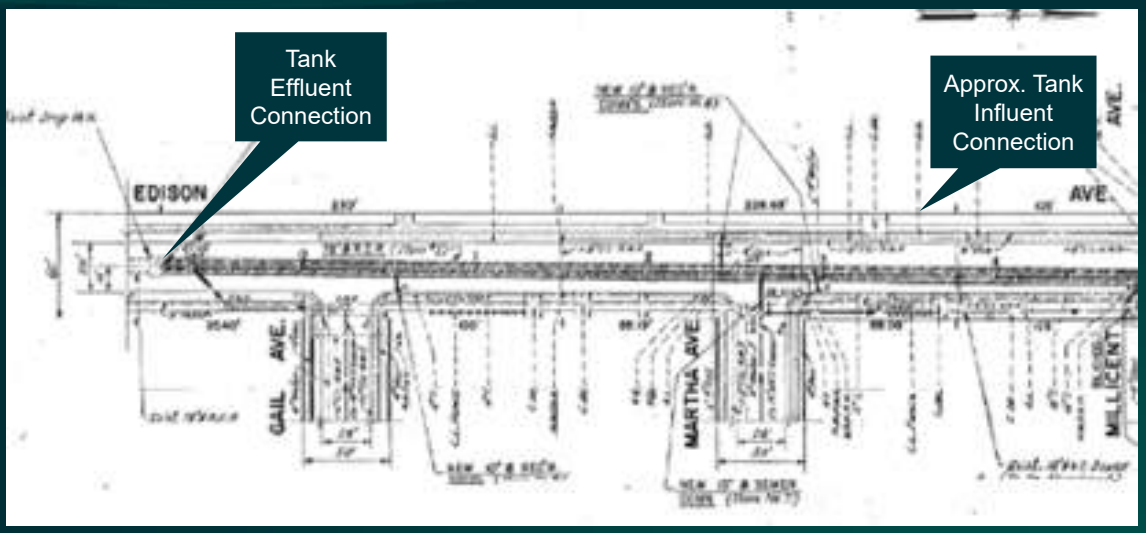


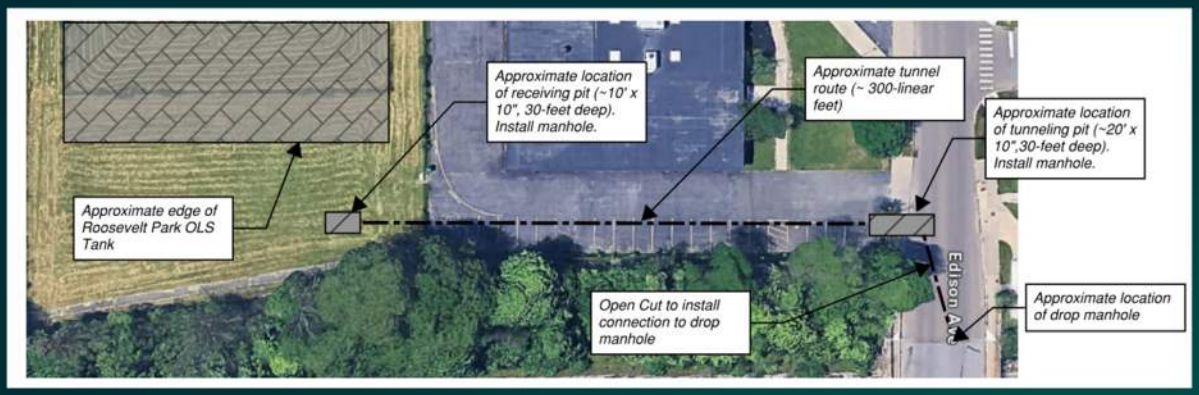
Figure 1-2: Edison Avenue Storm Relief Sewer Sheet 2 of 10

Appendix I, Figure 1-2

Edison Avenue Sewer - Plan



Outlet Pipe Construction Considerations



BUFFALO
SEWER AUTHORITY



Queen City Clean Waters

Roosevelt Park OLS

September 3, 2025 – Charter School of Inquiry

BSA Capital Projects Program Management Team:

TYLin | Greeley and Hansen Water Solutions

Arcadis | JM Davidson Engineering | Hallmark Planning & Development | e3 Communications | Watts Architecture & Engineering | CORE Environmental | Atlantic Testing Laboratories | Frandina Engineering and Land Surveying | KHEOPS Architecture, Engineering and Survey | International Institute of Buffalo | Jade Stone Engineering | NASCO Construction Services | JKMuir | People Inc. | CWD Consulting

Agenda

1. Introductions & Roles
2. Purpose & Meeting Objectives
3. QCCW Overview by BSA
4. Project Overview
5. Community Engagement (Hallmark)
6. Next Steps & Open Discussion

Introductions & Roles

Purpose & Meeting Objectives



Queen City Clean Waters Overview

Queen City Clean Waters (QCCW) – Mission and Vision

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

VISION

Clean waters and a resilient Buffalo.

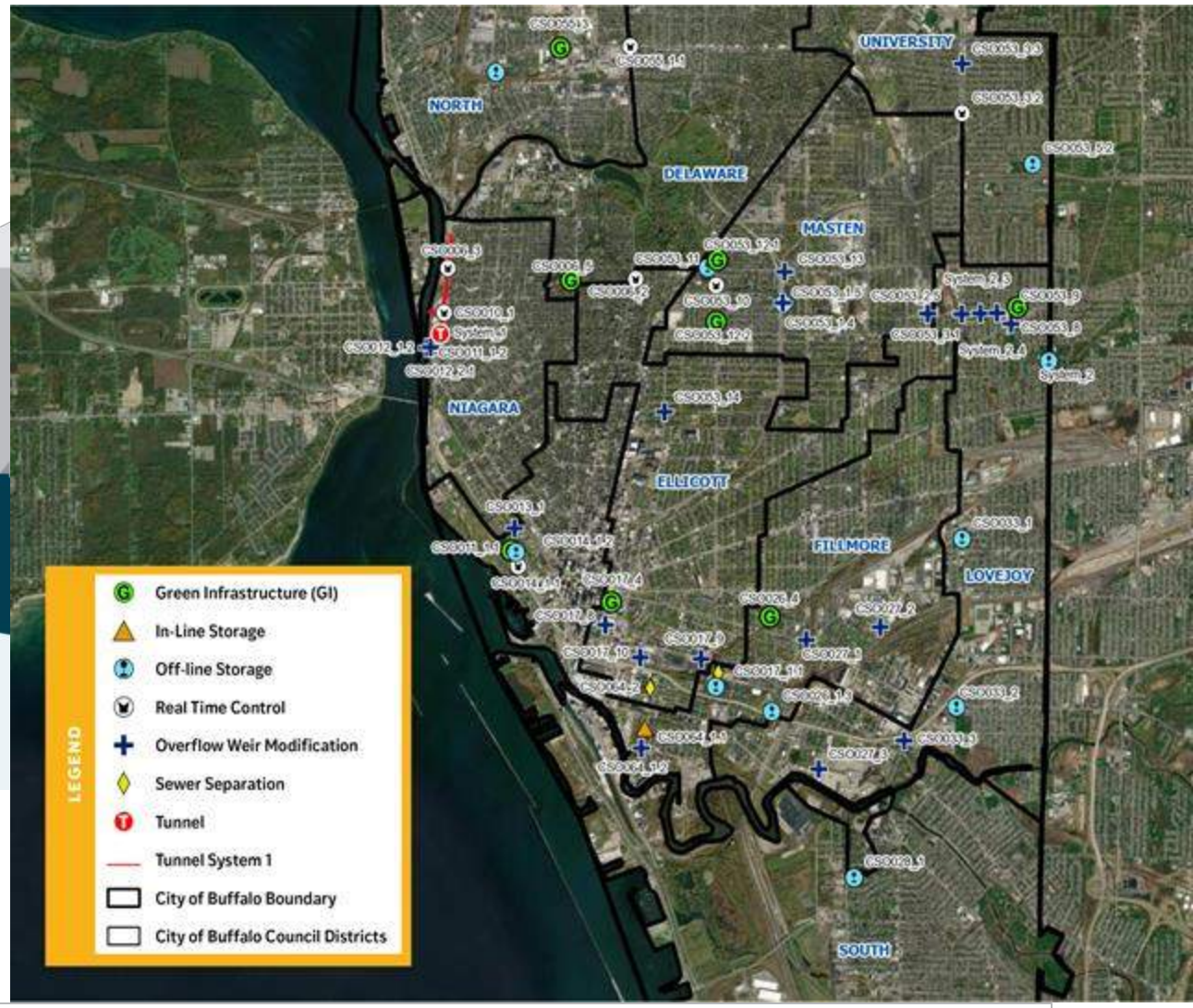
MISSION

To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

Queen City Clean Waters

PROGRAM OVERVIEW







Construction Impacts and Mitigation Measures

- During construction, residents can expect to see equipment and traffic cones off to one side of the road.
- Temporary disruptions, such as noise and dust, will be minimized as much as possible.
- Sewage odors will NOT be present in homes but may be present outside.



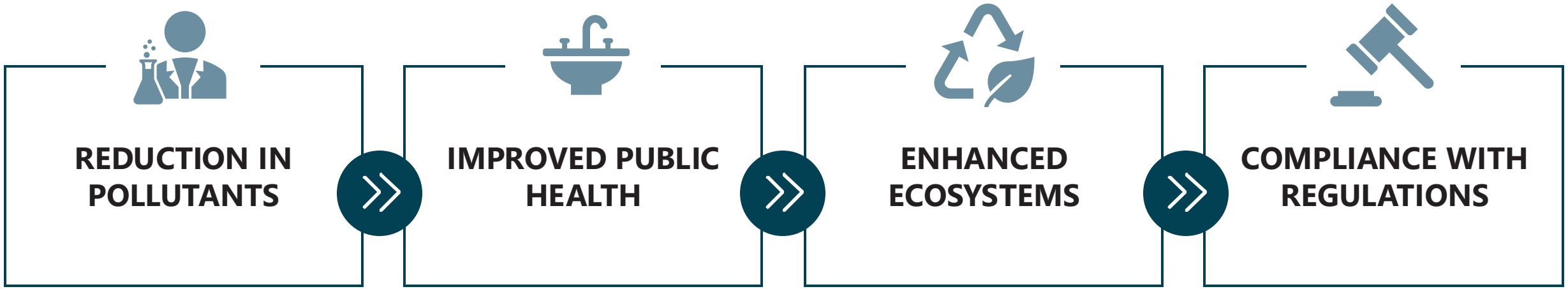




Construction Impacts and Mitigation Measures

- New traffic patterns will be in place during construction, including:
  - Partial or full road closures
  - Sidewalk closures
  - Limited street parking
  - Possible detours (for vehicles, cyclists and pedestrians)/ relocated bus stop
  - Rodent control plans
  - Fencing and site visibility

Water Quality Benefits



Roosevelt Park Offline Storage Tank

Charter School of Inquiry

Roosevelt Park

OFFLINE STORAGE (OLS)

Project Description:

- 2.61 MG buried concrete offline storage tank
- Diversion structure
- Includes inlet and outlet gravity sewers
- Survey start date: April 17th, 2024

Estimated Cost: $84,500,000

Waterbody Impacted: Scajaquada Creek



TIMELINE ▼

Design Start Date
March 2024

December 2026
Design Completion Date

Required Construction Start Date
June 2027

June 2033
Required Construction End Date

Roosevelt Park (OLS)

Anticipated Construction Duration:
Goal: 3 Years

Year 1

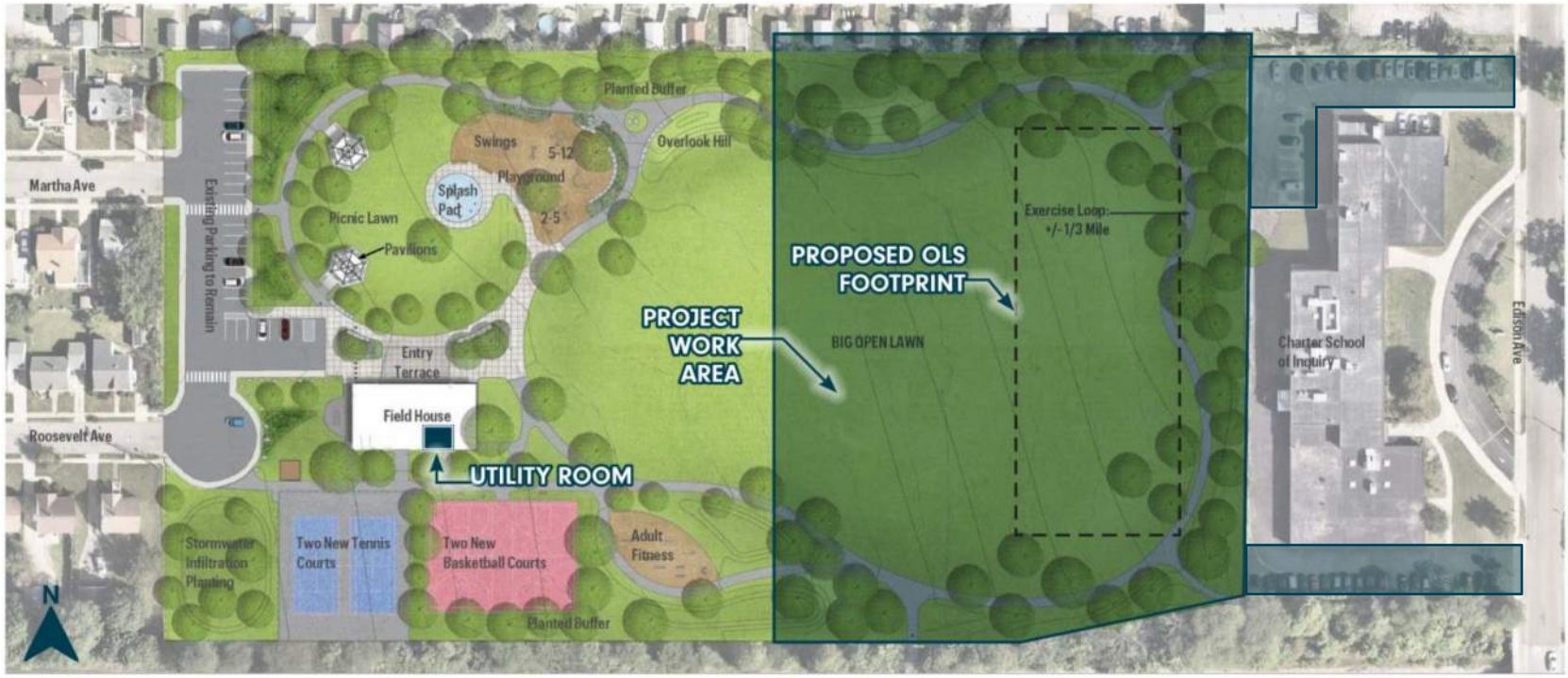
- Protective fencing and construction trailer
- Begin excavation for buried tank
- Start tank construction

Years 2

- Continued tank with concrete and steel

Years 3

- Finish tank construction
- Site restoration and park beautification



Project Area ▲

TIMELINE ▼

Design Start Date
March 2024

December 2026
Design Completion Date

Required Construction Start Date
June 2027

Required Construction End Date
June 2033

Example Project

Davis Brook CSO Storage Tank – Bangor, ME

During Construction





Example Project

Davis Brook CSO Storage Tank – Bangor, ME

Post Construction



Bangor, ME Davis Brook CSO Storage Tank site at completion. Paved passive walking path in foreground, Electrical / Support Building and vent stack in background.

Opportunities to Stay Engaged

Engagement Opportunities

– Implement Community STEM Programming & Activities (Ages 5-12)

BSA Little Gardeners Club

- *Focus:* Water, Agriculture & Nutrition
- *Goals:* To create community gardens, while educating the young people on rainwater and water conservation.

Be a "Junior Water Explorer" Activity Kits:

- *Focus:* Environmental Education through Engaging Activities
- *Goals:* Creating activities for school-age children and their families.

– Facilitate Bi-Annual "Day with an Engineer"

- Learning opportunity for students to shadow an engineer

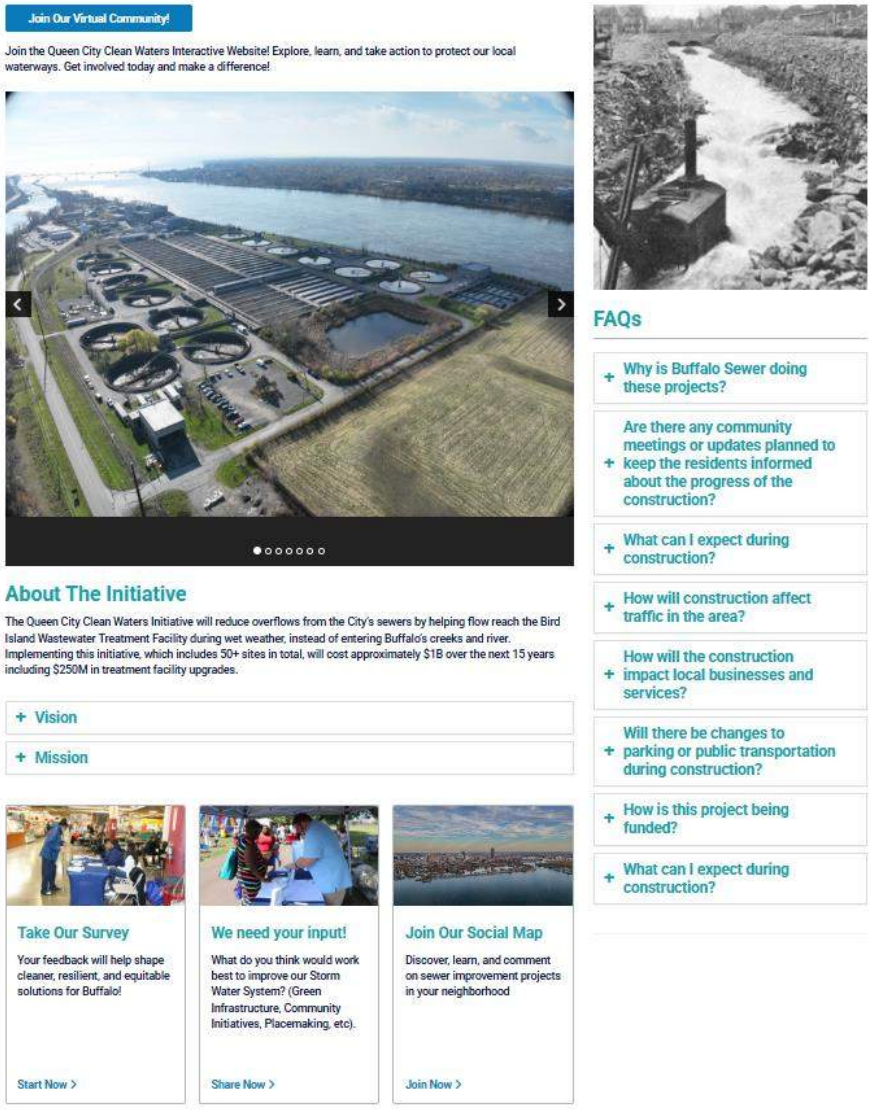
Community Partnership Plan

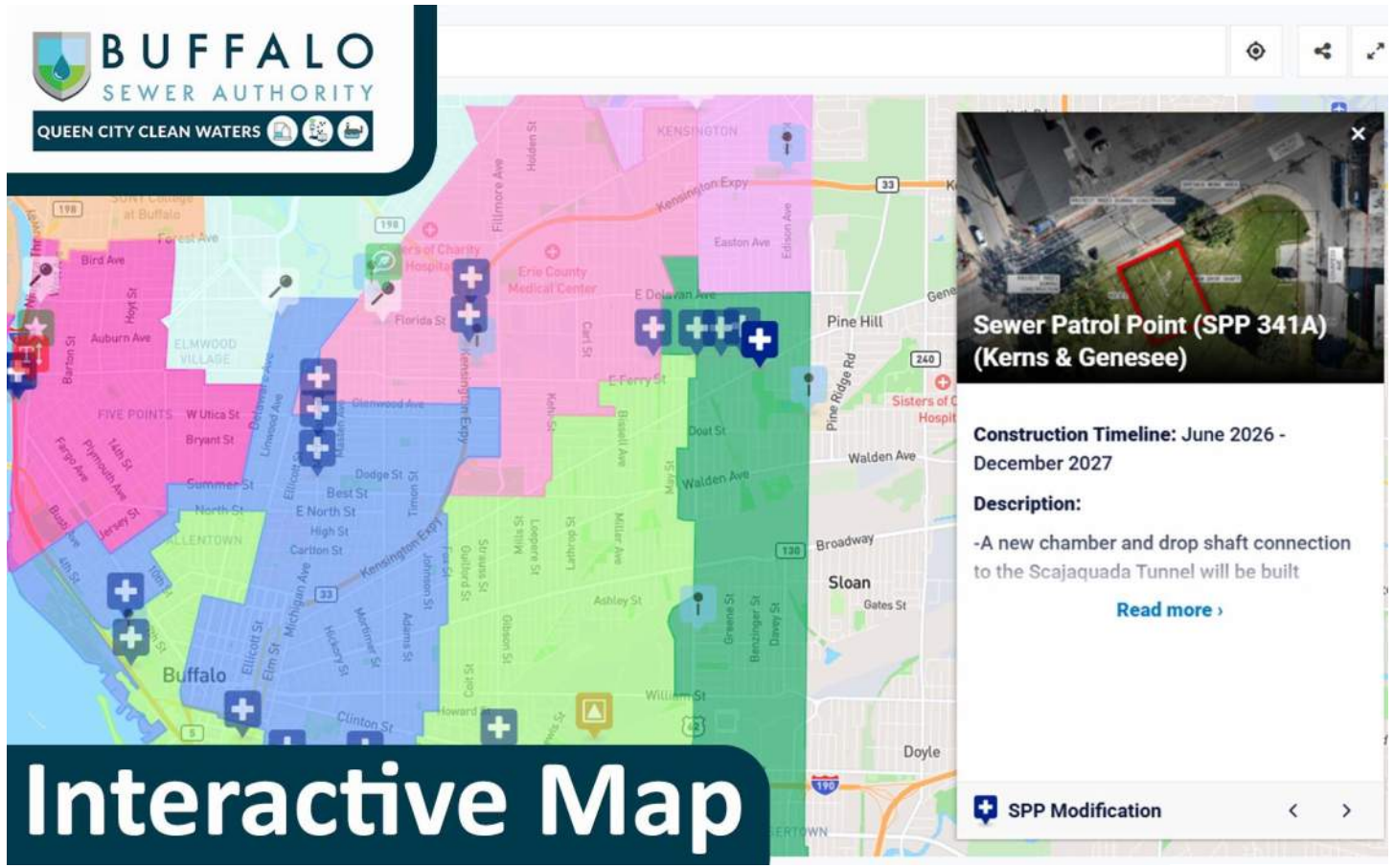
– Potential Program Partners include:

- Buffalo Sewer Authority
- Buffalo Niagara Waterkeeper
- Buffalo Public Schools
- WNY Environmental Alliance
- Buffalo Museum of Science/Tifft Nature Preserve
- Youth and Community Centers
  - Boys & Girls Clubs of Buffalo, SAY Yes Buffalo, YMCA Buffalo Niagara

New! Queen City Clean Waters Interactive Website

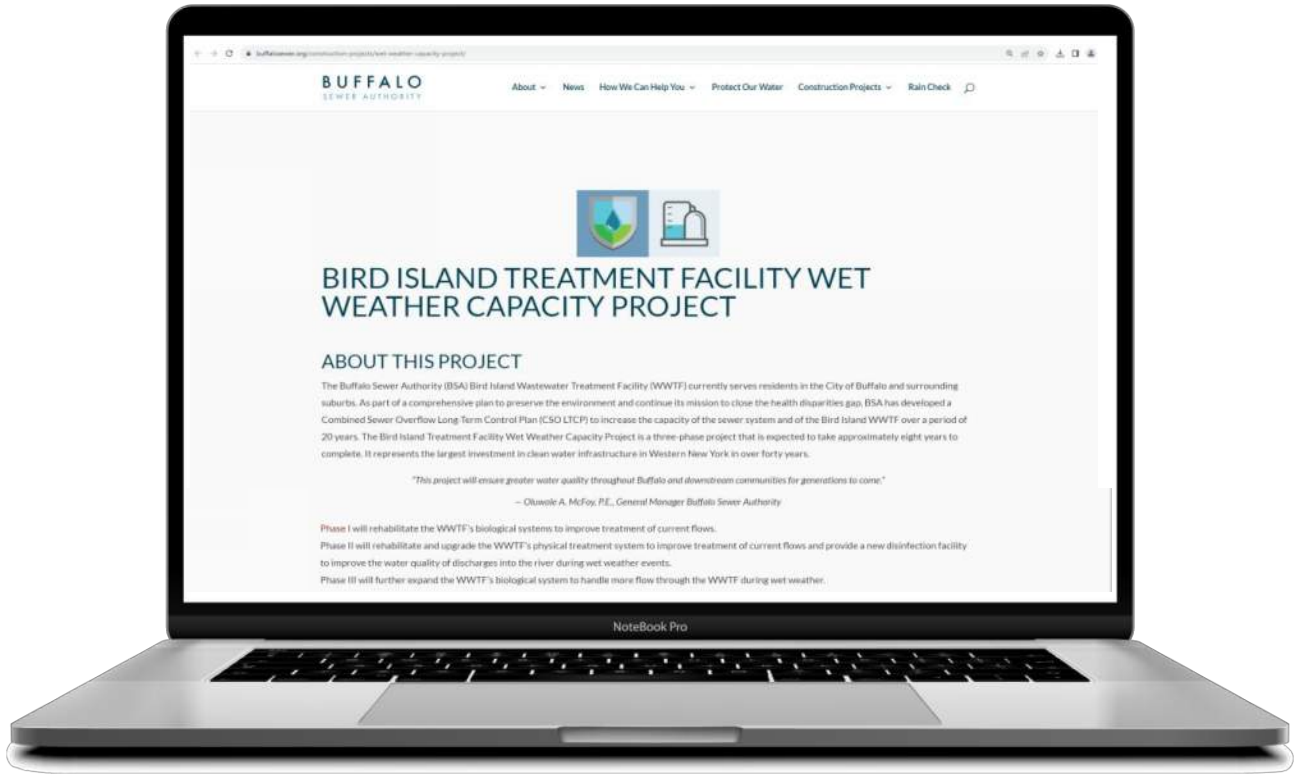
BUFFALOQCCW.ORG





ι Development | e3 Communications | Watts Architecture & Engineering | CORE Environmental | Atlantic Testing Laboratories | ıitecture, Engineering and Survey | International Institute of Buffalo | Jade Stone Engineering | NASCO Construction Services | JKMu

Buffalo Sewer Authority Website



buffalosewer.org

Your BEST source of information!

Consultant, Contractor, and Supplier Opportunities

Construction Updates

FAQs

Board Meeting Minutes

Public Participation Plans

Next Steps & Open Discussion

Next Steps


TRAFFIC CONTROL & SAFETY
SITE ACCESS COORDINATION
FOLLOW-UP MEETINGS & ENGAGEMENT

Thank you!

GET IN TOUCH:

@BuffaloSewer

BuffaloSewer.org

@BuffaloSewer

BuffaloSewerAuthority

Disclaimer

- This Presentation is provided as of September 3, 2025.
- If you are viewing this Presentation after that date, subsequent events could have a material effect on this information.
- By presenting this information, Buffalo Sewer has not undertaken any obligation to update the information beyond the date of the Presentation.
- Data and other information provided are not warranted as to completeness or accuracy and are subject to change without notice.
- The views, policies, programs, and practices reflected herein also are subject to change without notice.
- This Presentation is provided for your information and convenience only.



University at Buffalo Hydrologic Engineering

9/16/2025

BUFFALO
SEWER AUTHORITY

From Brick Tunnels to Smart Sewers: The Evolution of Buffalo Sewer Authority

Rosaleen B. Nogle, PE

Principal Sanitary Engineer

Early Days

1825-1850

- Erie Canal Opened 1825
- Residents dug drains to dry out swampy land near downtown
- Cholera epidemics
- City officially installed sewer mains in 1840s
- Untreated water flowed directly into waterways



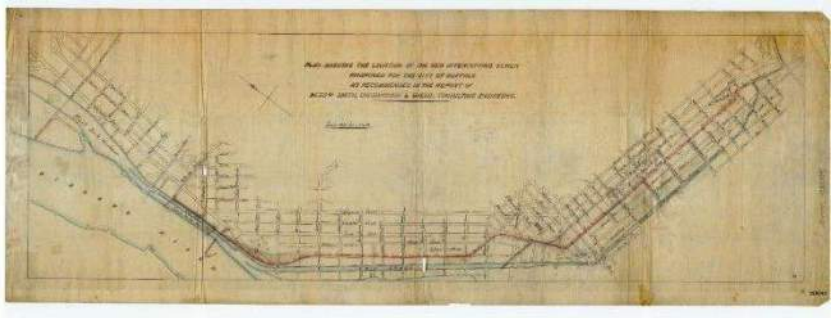


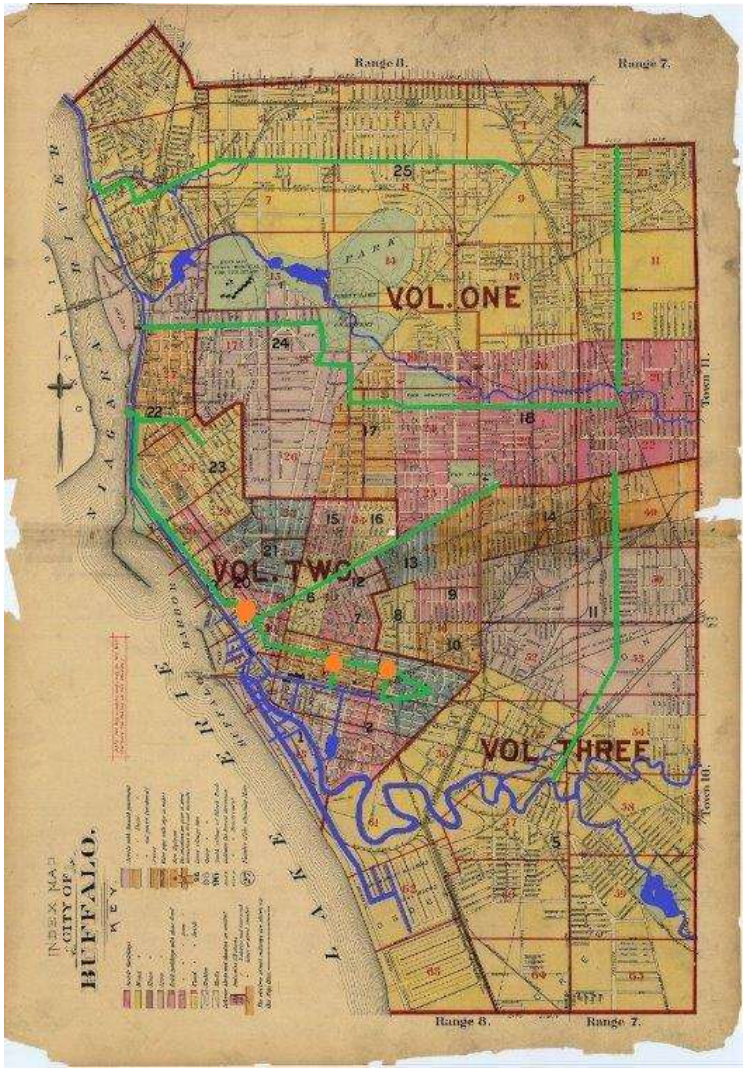
BUFFALO
SEWER AUTHORITY

Growing Pains

1870 - 1900

- Buffalo's population boomed
- Sewers expanded, but pollution worsened
- Sewer separation and treatment facility considered, but rejected
- Trunks installed



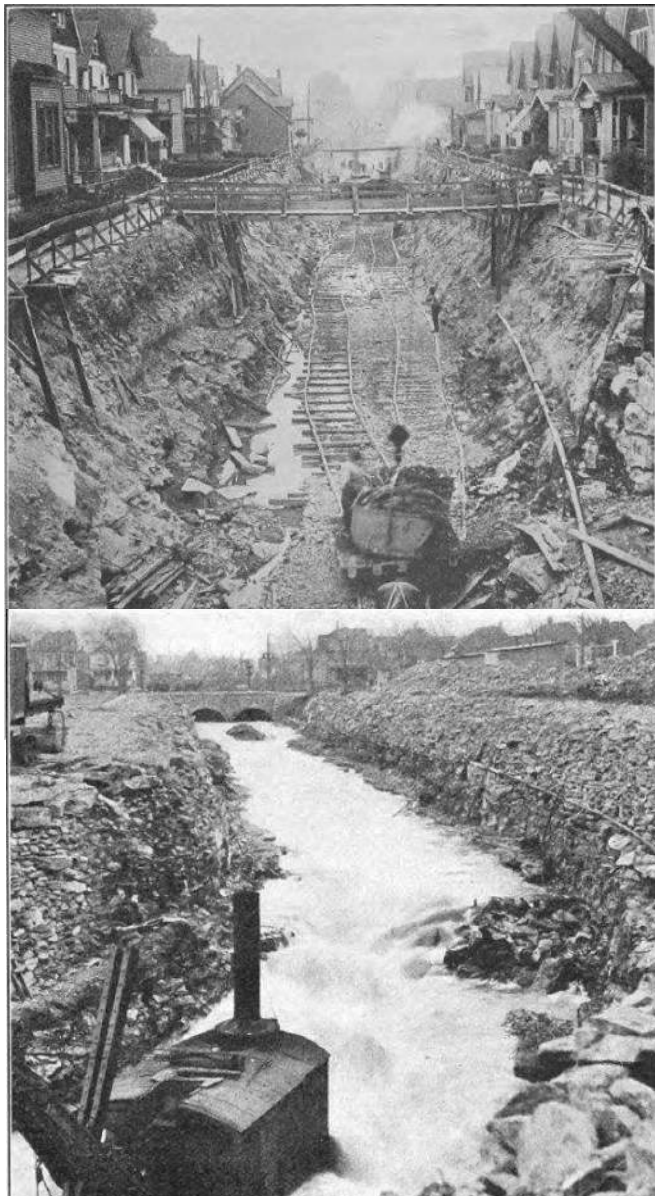


BUFFALO
SEWER AUTHORITY

Burying of Waters

1900 - 1929

- Waterways to Sewers transformation
- Main Hamburg Canal to Hamburg Drain
- Ohio Basin to Ohio Drain
- Cornelius Creek to Hertel Ave Overflow Drain
- Scajaquada Creek to Scajaquada Drain

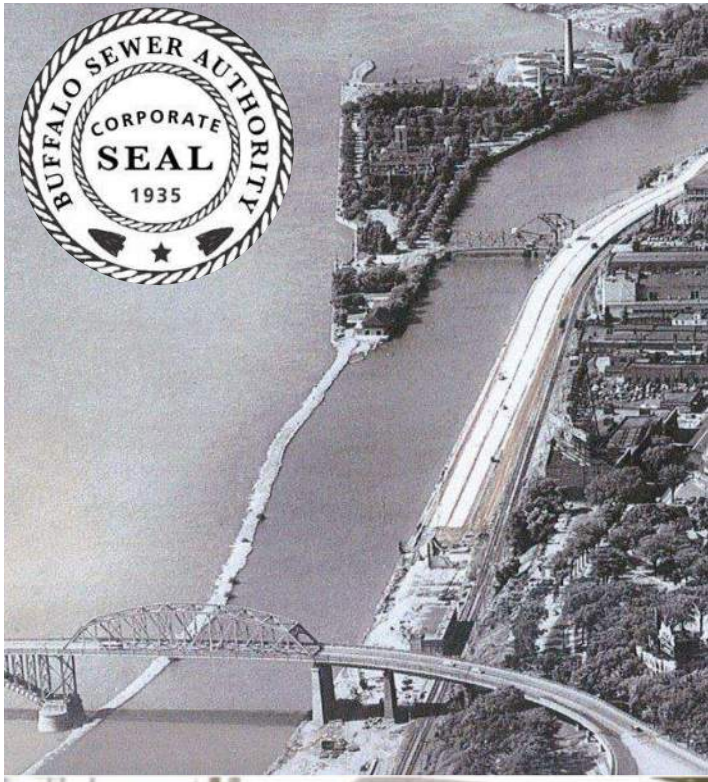


BUFFALO
SEWER AUTHORITY

Turning Point

1935 - 1939

- BSA was created in April 1935
- Direct discharges intercepted
- Bird Island Wastewater Treatment Facility constructed
- Typhoid nearly eliminated





BUFFALO
SEWER AUTHORITY





Storm Relief and Sprawl

1941 - 1970

NYS Route 33

- Severed Bird-Ferry Trunk
- Stormwater added to system
- New pump station for stormwater and groundwater
- New trunk sewers constructed

I-198

- New storm sewers
- Direct discharge to Scajaquada Creek

I-190

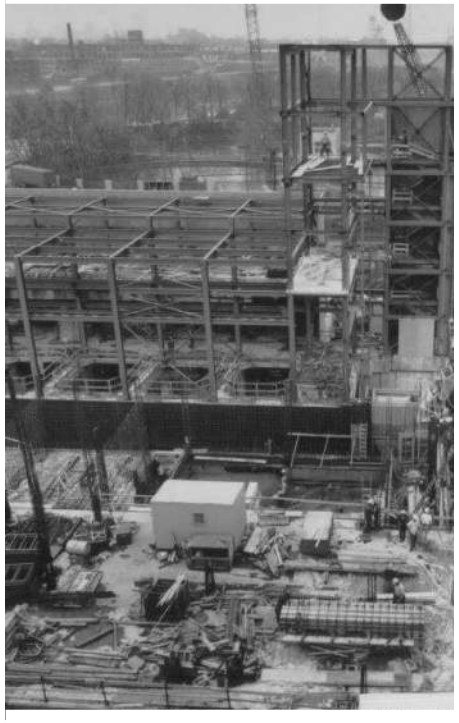
- Old Erie Canal bed
- On top of:
  - Swan Trunk
  - Interceptors
  - Hamburg Drain

BUFFALO
SEWER AUTHORITY

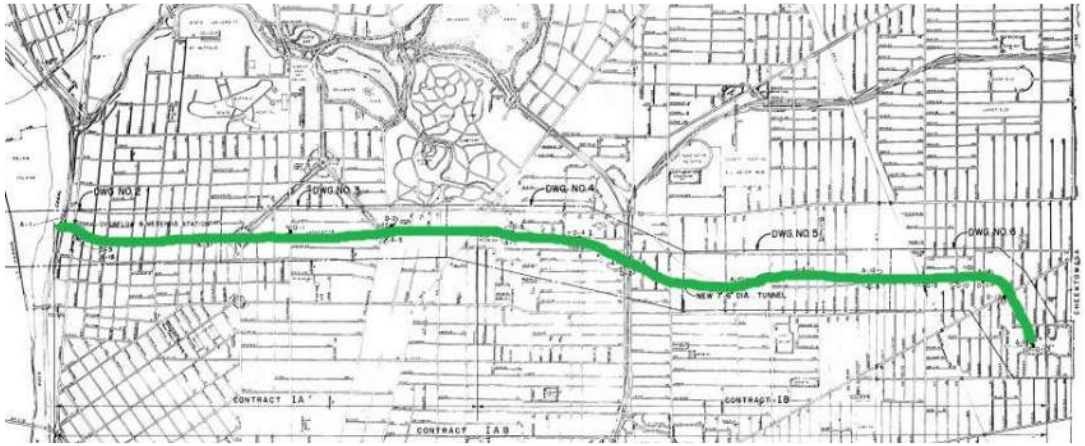
Clean Water Act

1972

- Scajaquada Tunnel
- Weir Modifications
  - Diversion from Scajaquada Drain to Tunnel
  - Raising of Weirs
- Kelly Island Connection
- Backwater Gates
- Secondary Treatment Process







BUFFALO
SEWER AUTHORITY

Long Term Control Plan (LTCP)

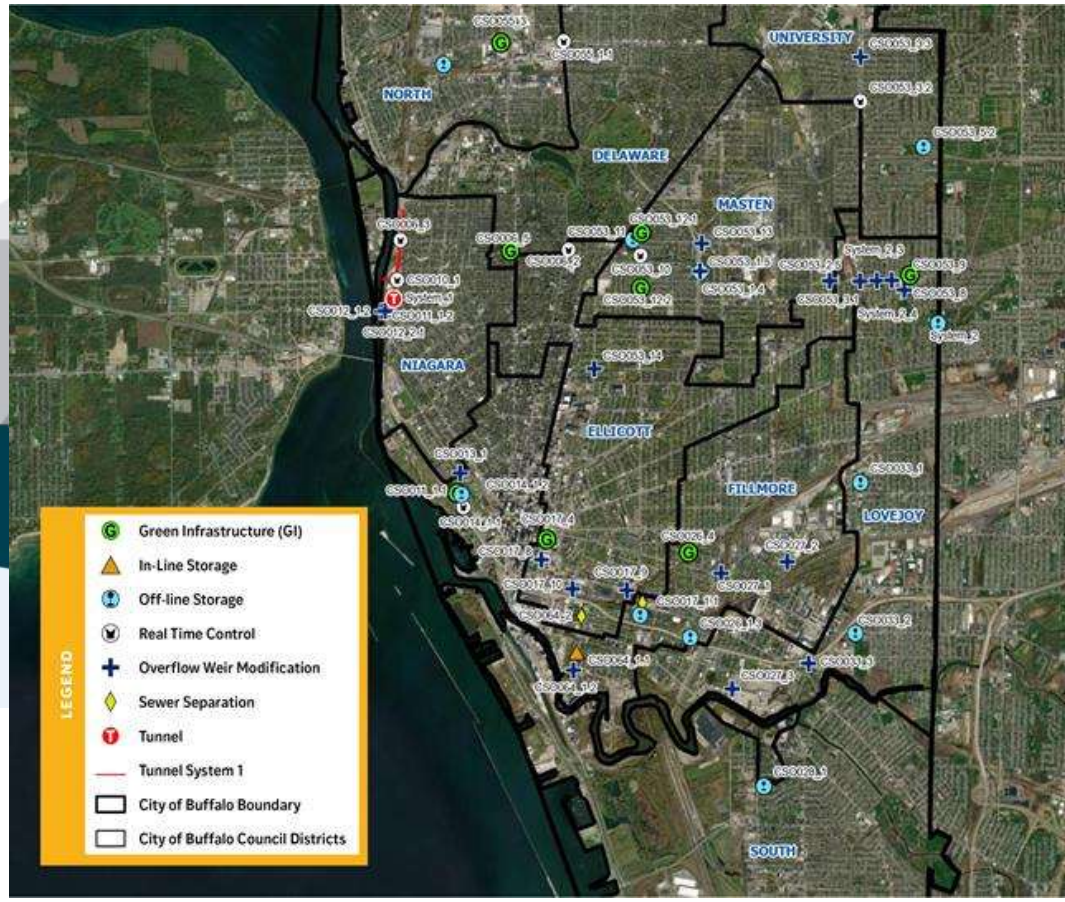


1994	2004	2007	2009	2012	2014	2022	2023
USEPA CSO Control Policy Issued (Required Development of LTCP)	Submitted Initial LTCP to New York State Department of Environmental Conservation (NYSDEC)	NYSDEC/USEPA Request Additional Evaluations	Negotiation of Consent Decree Begins	Submitted LTCP Update to USEPA/ NYSDEC (as directed by regulatory agency	Final LTCP Report Submitted to USEPA/NYSDEC	Revised collection system model is approved	**Queen City Clean Waters** (51 proposed projects) submitted to NYSDEC

Queen City Clean Waters

PRESENT DAY



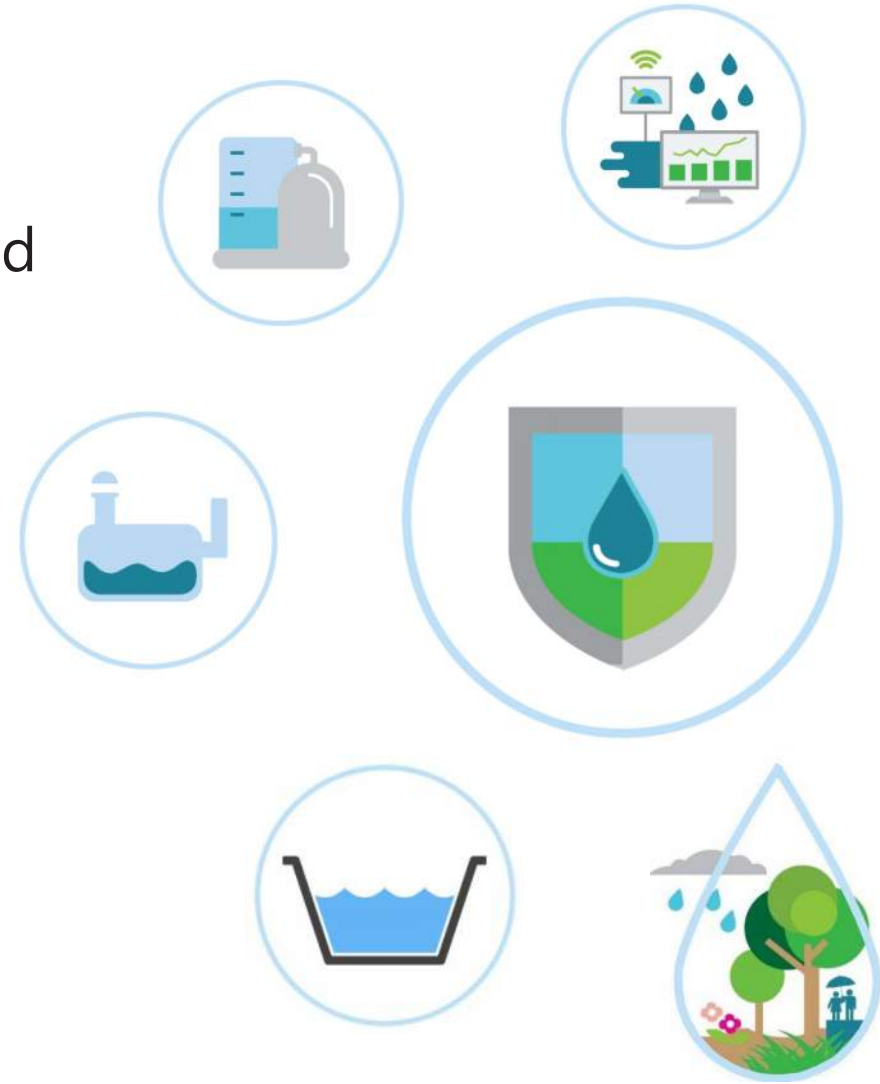


BUFFALO
SEWER AUTHORITY

A Balanced Plan

QUEEN CITY CLEAN WATERS

- $1B infrastructure investment launched
- In-line and offline storage
- Real-time controls
- WWTF capacity increase to 560 MGD
- Green Infrastructure



BUFFALO
SEWER AUTHORITY

Key Terminology

- **Combined Sewer:** A sewer that collects both wastewater and stormwater in the same system
- **Combined Sewer Overflow (CSO):** CSOs occur when heavy rainfall or snowmelt overwhelms a combined sewer system. When this happens, untreated wastewater is discharged directly into nearby rivers, lakes, or coastal waters.
- **Green Infrastructure (GI):** involves planting vegetation and other natural elements in urban environments to absorb and treat stormwater where it lands. Through this process, plants and soils help slow down or prevent runoff from entering the sewer system.
- **In-Line Storage (ILS):** the storage of wastewater temporarily within the existing sewer pipes
- **Off-Line Storage (OLS):** A tank that holds extra wastewater when the sewer is full, then drains it to be treated when space becomes available
- **Real Time Control (RTC):** Sewer chambers with automatic gates that open and close to store and release water in order prevent overflows
- **Sewer Patrol Point (SPP):** A chamber that directs water to the treatment plant in dry weather, or to a storage area during heavy rainfall or snowmelt



CSO: Combined Sewer Overflow



GI: Green Infrastructure



ILS: In-line Storage



OLS: Off-line Storage Tank



RTC: Real Time Control



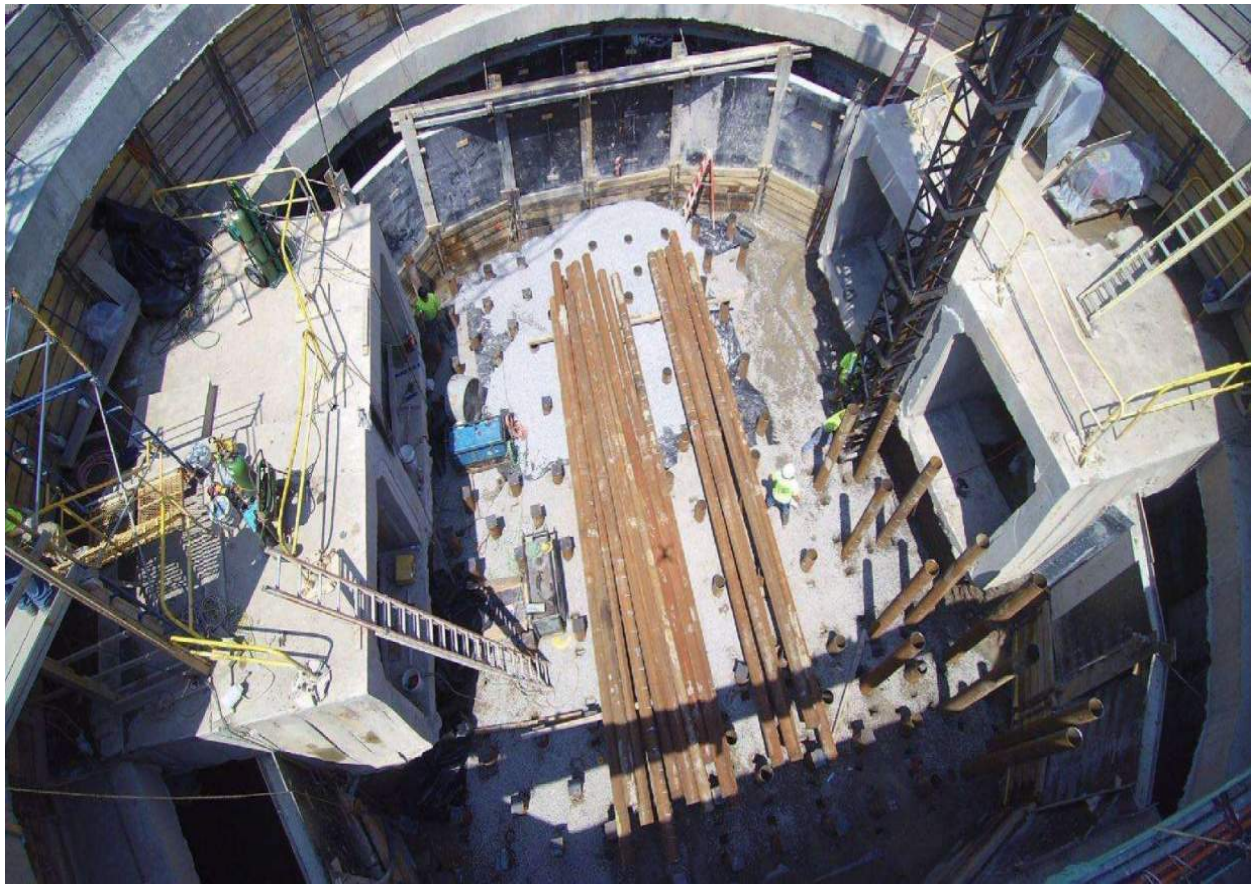
SPP: Sewer Patrol Point

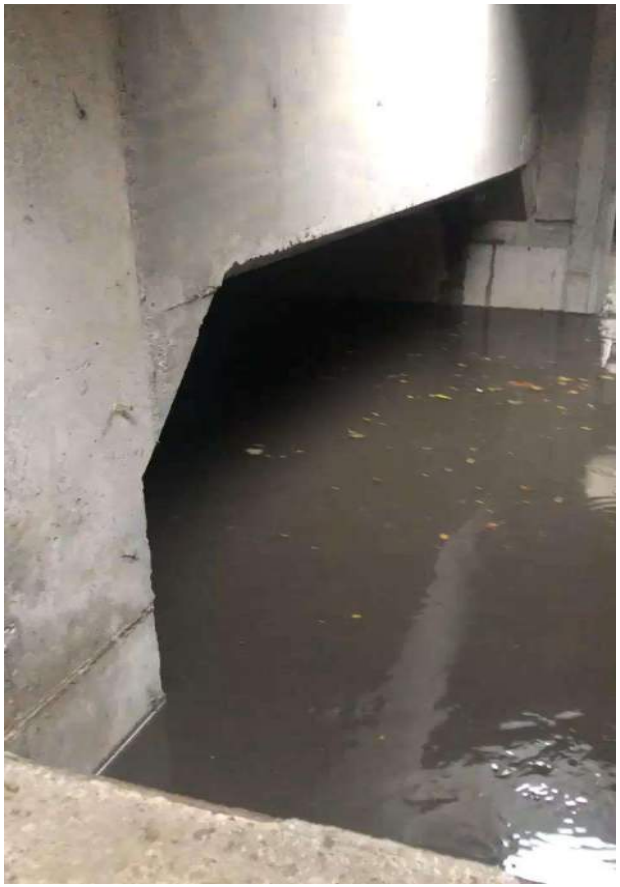
Green Infrastructure



BUFFALO
SEWER AUTHORITY

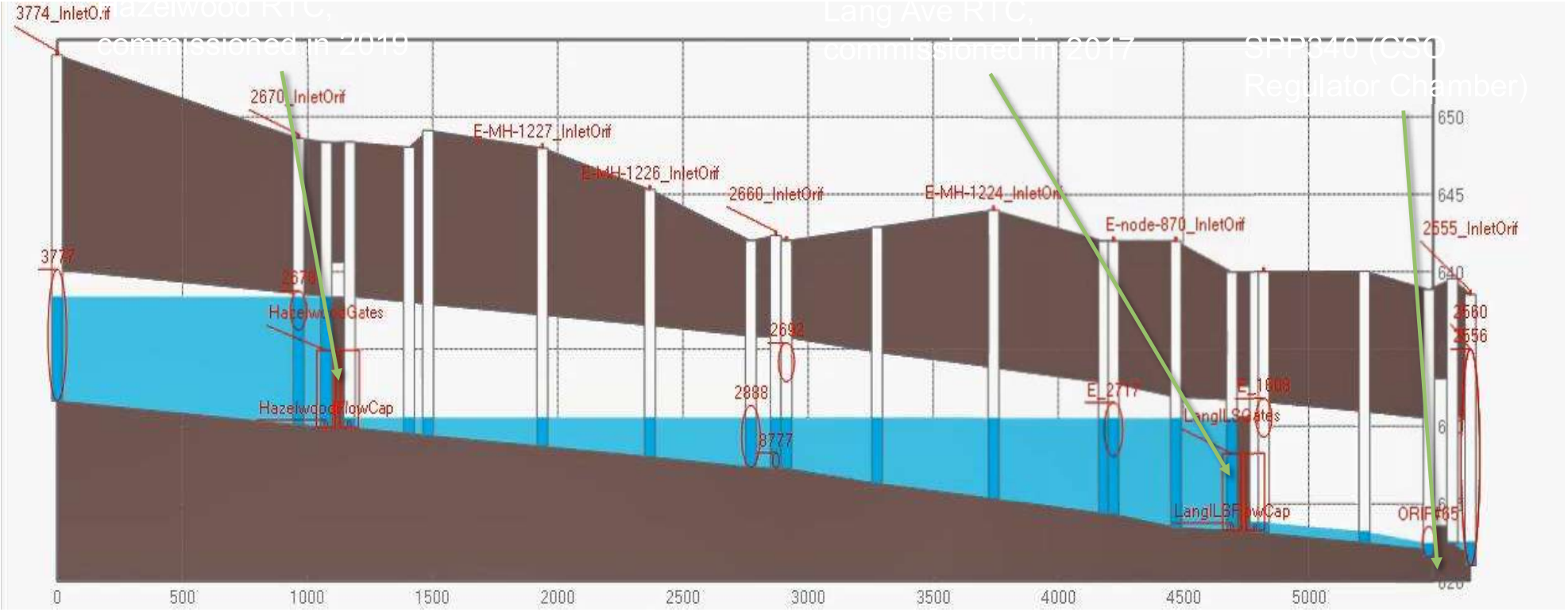
In-Line Storage (ILS)





BUFFALO
SEWER AUTHORITY

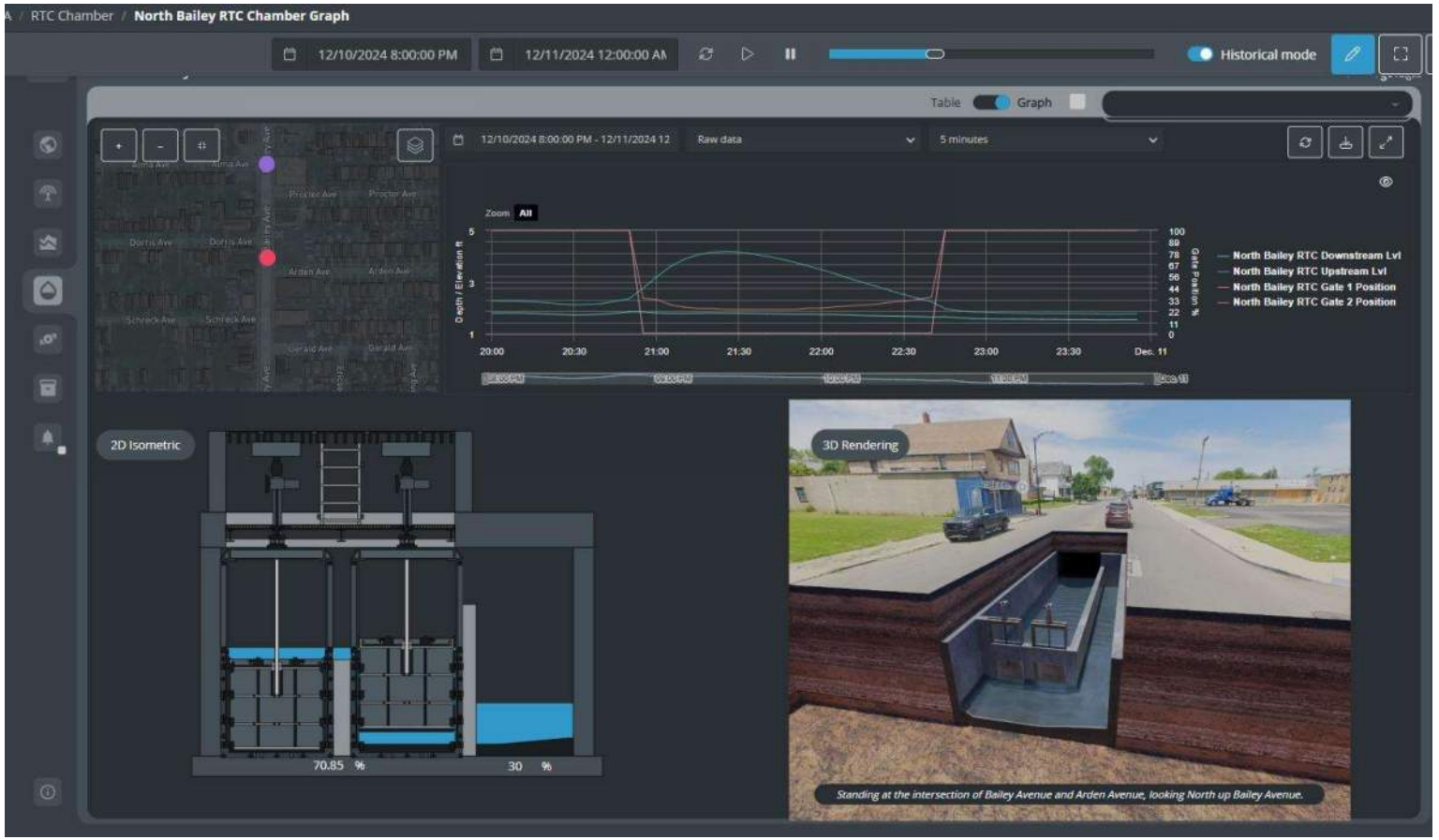
Coordinated Remote Control for In-Line Storage



BUFFALO SEWER AUTHORITY

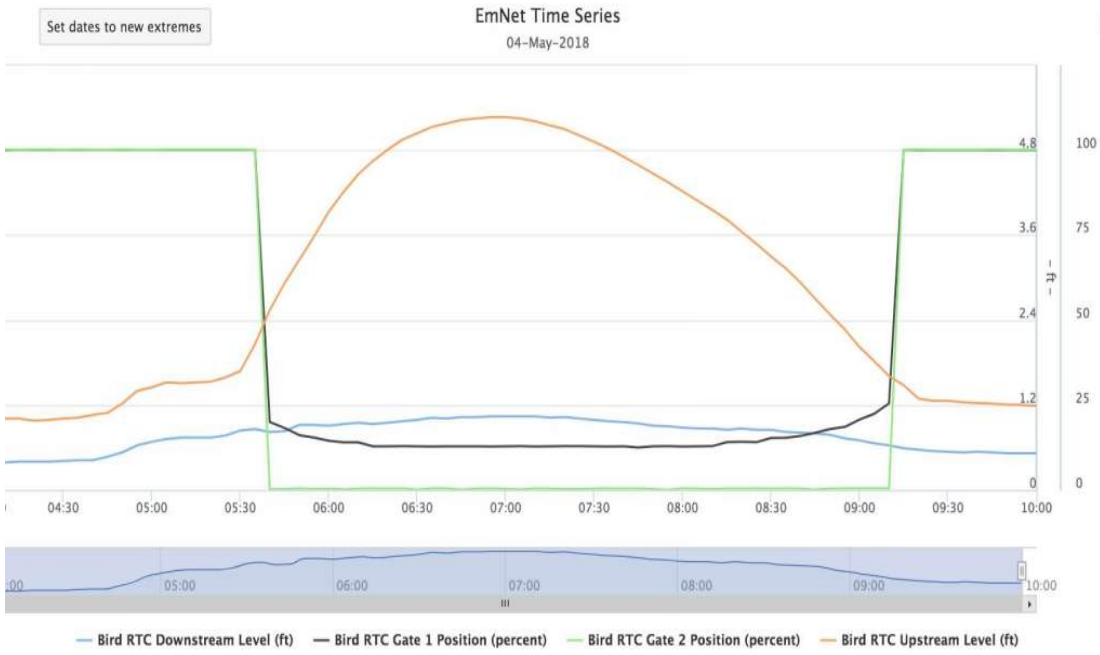
15

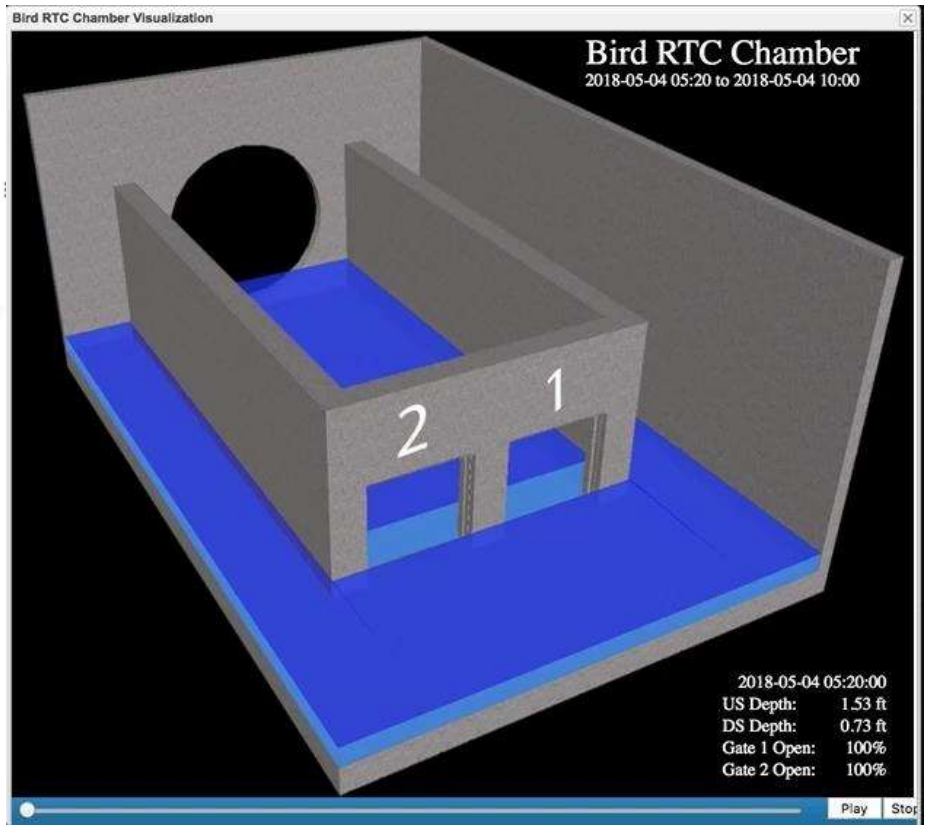
Local Control for ILS (North Bailey RTC)



BUFFALO
SEWER AUTHORITY

Bird Avenue RTC





BUFFALO
SEWER AUTHORITY

Bird Island Wastewater Treatment Facility (WWTF)



BUFFALO
SEWER AUTHORITY

WWTF Facility Repairs and Upgrades

- Phase I: Biological System Rehabilitation
  - Rehabilitate biological treatment system
  - Replace piping and gates
  - Upgrade aeration tanks
- Phase II: Physical System & Disinfection Upgrades
  - Rehabilitate physical treatment systems
  - Construct a new disinfection facility
- Phase III: Wet Weather Capacity Expansion
  - Add capacity to manage storm and combined sewer flows

BUFFALO
SEWER AUTHORITY



WWTF Pump Stations

RAW WASTEWATER PUMP STATION (RWWPS)



SETTLED WASTEWATER PUMP STATION (SWWPS)



April 2024
Condition Assessment start

Design Completion
May 2025

June 2025
Advertisement for Bids

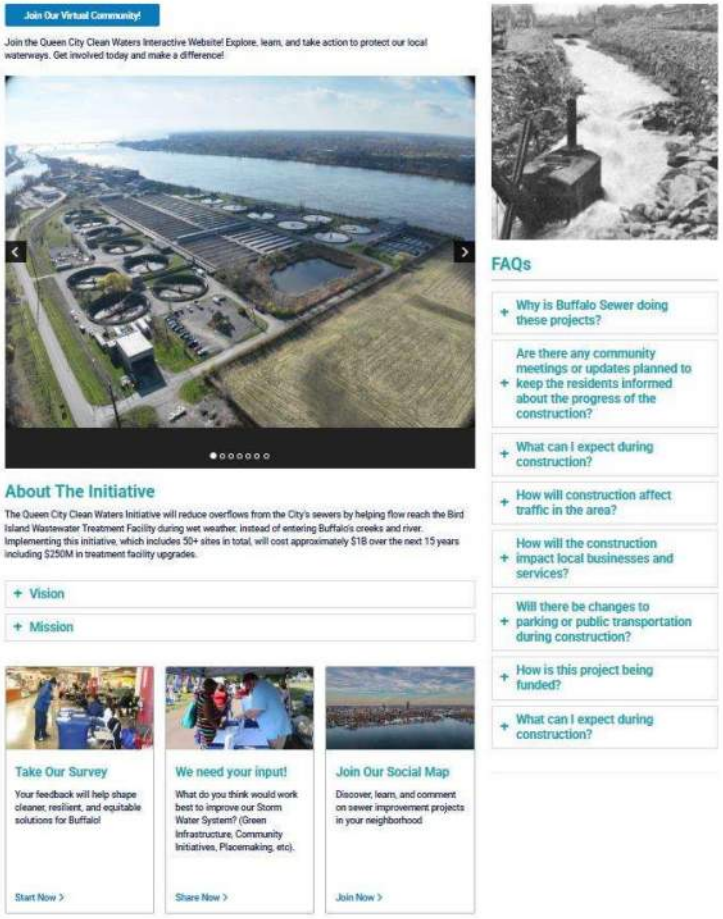
Construction NTP
October 2025

April 2027
Construction Completion

BUFFALO SEWER AUTHORITY

Learn More About Our Projects

BUFFALOQCCW.ORG





Questions?

THANK YOU

Rosaleen B. Nogle, PE

Principal Sanitary Engineer

Beyond the classroom

WHAT'S NEXT FOR YOU?

Kathryn Rozwod, PMP
Capital Projects Program Manager

What could a career look like?

- Regulatory and Compliance
- Remediation
- Environment, Health & Safety
- Air/Water Permitting
- Utility Industry (Energy/W/WW Resources and Design)
- Renewable Energy
- Project and Program Management

Regulatory and Remediation

REMEDIATION ENGINEER INTERN, NYSDEC



Spill prevention and remediation

SPDES permitting



Shoreline rehabilitation and habitat restoration (Buffalo River, Riverbend)

BUFFALO
SEWER AUTHORITY

Environment, Health & Safety

NIAGARA FRONTIER TRANSPORTATION AUTHORITY



Permits & Inspections

CBS/PBS

MOSF

SWPPP

SPCC



BNIA Engineered Wetland

SPDES Compliance

Seasonal Wetland O&M



Sustainability Auditing

BUFFALO
SEWER AUTHORITY

Career Pathways



Air Permitting Engineer

Barrick Gold Elko, NV



Junior Sanitary Engineer

Buffalo Sewer Authority



Corrosion Engineer

National Grid

Utility Industry

Corrosion Engineering

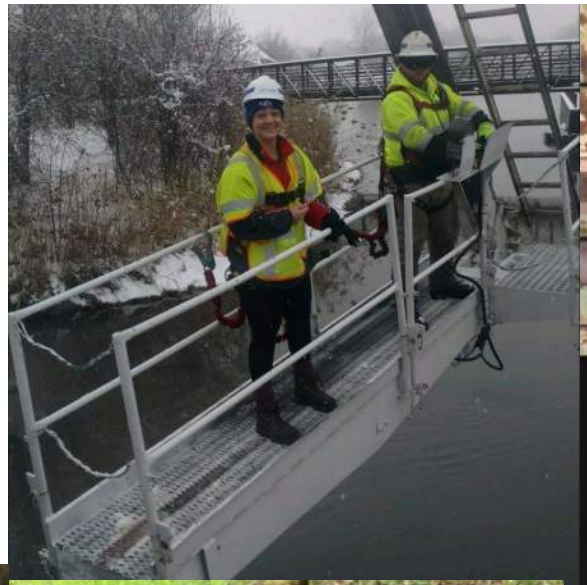
Atmospheric Corrosion Inspections

Traffic Management Plans

Contractor Management

Gas Compliance

Gas Planning and Design









Utility Engineering

COLORADO SPRINGS UTILITIES



Gas Planning and Design

Integrity Management



Propane Air Plant

Peak Shaving

BUFFALO
SEWER AUTHORITY

Water Resources Engineering

COLORADO SPRINGS UTILITIES





Watershed protection

Water supply watch

Reservoirs and Dams

Water conservation and demonstration

Agricultural water shares

Water wise rules

BUFFALO
SEWER AUTHORITY

Regulatory and Compliance

COLORADO SPRINGS UTILITIES



Integrity Management Program

Anomaly Remediation



Compliance Program Plan

Regulatory Audits and Reporting

BUFFALO
SEWER AUTHORITY

Resource Planning

COLORADO SPRINGS UTILITIES



Air Quality Mandates

Clean Energy Goals



Energy Transition

Rate Management

BUFFALO
SEWER AUTHORITY

Renewable Energy and Power Markets

COLORADO SPRINGS UTILITIES



Capacity Expansion Planning

Energy Storage



Electric Transmission

Southwest Power Pool

FERC, NERC

BUFFALO
SEWER AUTHORITY

Capital Improvement Program Management

BUFFALO SEWER AUTHORITY



CIP Budget

Staff Augmentation

Funding Mechanisms

Engineering Design

Community Partnerships

Stakeholder Engagement

Workforce Development

What I wish I knew

- Do your research
- Leverage internships
- Include your part-time job on resume
- Attend activities, conferences, student memberships
- Get certifications early
- Take chances and make mistakes
- It's never too late to try something new
- Find something you enjoy
- GO BILLS

BUFFALO
SEWER AUTHORITY

Questions?

THANK YOU

Kathryn Rozwod, PMP
Capital Projects Program Manager

APPENDIX E: SOCIAL MEDIA POSTS



Buffalo Sewer Authority
1,389 followers
2mo •

This weekend the Buffalo Sewer Authority Outreach Team was at the Soulful Christmas Market hosted by the Michigan Street African American Heritage Corridor at Broadway and Michigan.

If you would like us to table at one of your events please contact us at 716-851-4664

Arthur Hall, M.U.P. and 20 others

Like Comment Repost Send

Add a comment...



Buffalo Sewer Authority
1,389 followers
4mo •

Today the Buffalo Sewer Authority hosted the Queen City Clean Waters Initiative Launch Media Event. Through this initiative, Buffalo Sewer is committed to modernizing our water infrastructure, increasing climate resilience, and enhancing public health for all residents. BSA employees, elected leaders, and community stakeholders came together at Freedom Park to learn more about the initiative and its benefits. Here are some photos from the launch.

69 2 reposts

Like Comment Repost Send

Add a comment...

Buffalo Sewer Authority
1,389 followers
6mo •

As part of our Scajaquada Creek and Smart Sewer project we have dug up a pipe at East Amherst and Bailey that at first appears to be wooden.
But what we found was that the pipe is actually concrete, but the original workers tunneled through clay and used two layers of wooden shoring to keep the tunnel from collapsing and then used that to form the new pipe.



Buffalo Sewer Authority
1,389 followers
5mo •

Today we had the pleasure of tabling at the Buffalo Police Departments B District Community Days at Front Park. It was a great opportunity to share information on upcoming projects with residents that came and give candy and coloring pages to the kids.





Buffalo Sewer Authority
1,389 followers
6mo •

The NACWA Utility Conference is this week. Today, Buffalo Sewer's own Preventative Maintenance Coordinator, Perry Pope, was part of the panel discussion "How Community Engagement Drives Better Outcomes... The Buffalo Case Study" along with Franchelle Parker, Executive Director of Open Buffalo, with Porsha Ari Parson as moderator. They were introduced by NACWA President and BSA General Manager O.J. McFoy.

39 1 comment

Like Comment Repost Send

Add a comment...

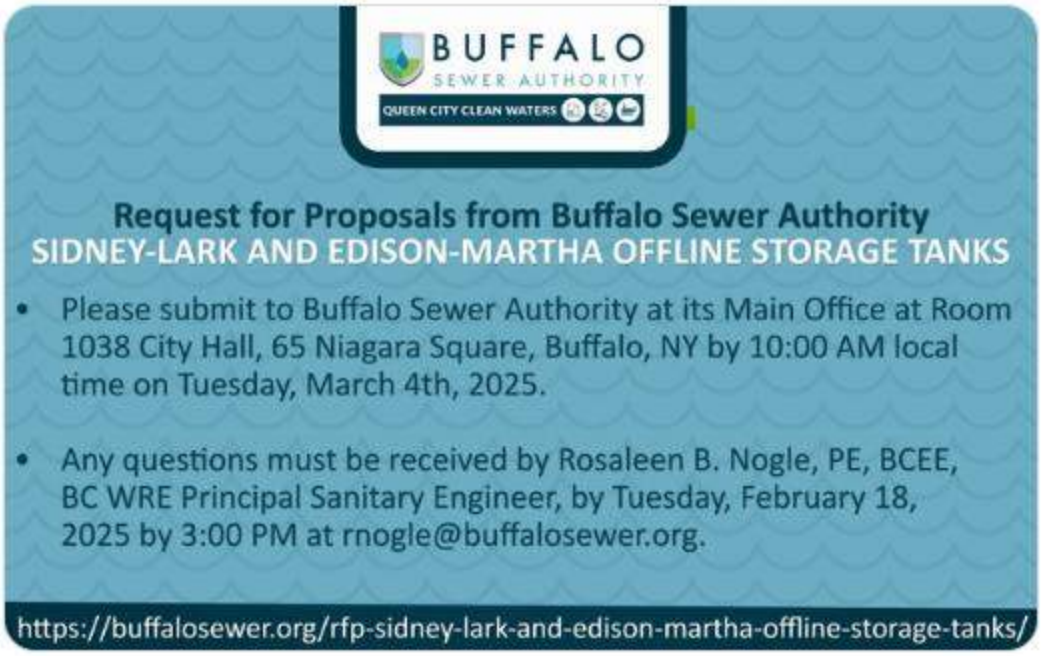
Most relevant

Sheri L. Mooney • 2nd
Leader | Coach | Founder | Attorney
6mo

Great to see more National conferences happening here in Buffalo!

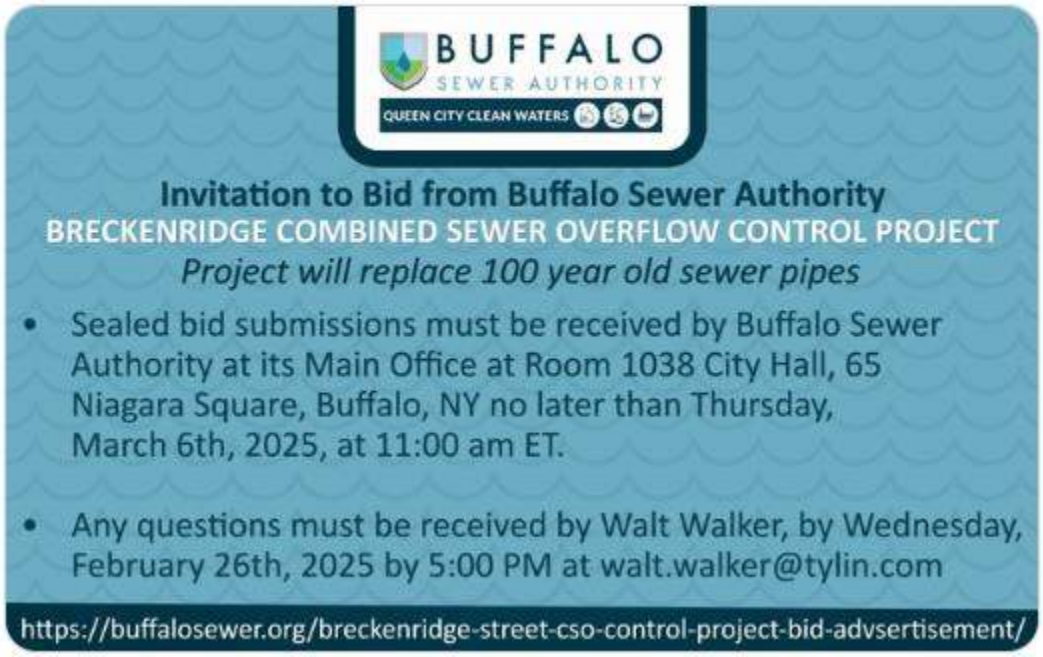
Like · 3 | Reply

Buffalo Sewer Authority @BuffaloSewer · Feb 5



50

Buffalo Sewer Authority @BuffaloSewer · Feb 10



Buffalo Sewer Authority @BuffaloSewer · Mar 11

On Saturday Kaitlin Walsh and Traserra Adams from our Outreach Team were on hand at School 80's Saturday Academy where we talked with community members about our Queen City Clean Water projects.



Buffalo Sewer Authority @BuffaloSewer · Mar 18

City of Buffalo residents and stakeholders can access the website at buffaloqccw.org.

BSA wants to hear from you! Visit the link to share your thoughts and collaborate with us throughout this initiative.



buffaloqccw.org
Queen City Clean Waters Initiative
The Queen City Clean Waters Initiative will reduce overflows from the City's sewers by helping flow ...

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Mar 18

The Buffalo Sewer Authority has launched an interactive website for the Queen City Clean Waters Initiative to engage local stakeholders and communities for project input and engagement.



Buffalo Sewer Authority @BuffaloSewer · Mar 19

On Saturday Perry Pope and Katie Walsh from our Outreach Team were back at another Saturday Academy this time at Riverside High School where they connected with community members and talked about our Queen City Clean Water projects.



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · May 2



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · May 2



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · May 5

Our Principal Sanitary Engineer, Rosaleen Nogle, joined WKBW to share how the Queen City Clean Waters Initiative will improve Buffalo's water infrastructure through 50+ projects over 15 years.

Explore more at: buffaloqccw.org



Buffalo Sewer Authority @BuffaloSewer · May 14



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · May 14

BSA recently held a Queen City Clean Waters forum in the Masten District. Missed it? Watch here: youtu.be/90axgHwIIEE

Join us tonight in the Fillmore District at 1081 Broadway. Refreshments provided!



Buffalo Sewer Authority @BuffaloSewer · May 15

This Infrastructure Week, BSA proudly highlights the critical systems that keep our city running. From treatment plants to underground networks, we're investing in a stronger, more resilient Buffalo—now and for the future. #InfrastructureWeek #BuffaloSewer



Buffalo Sewer Authority @BuffaloSewer · May 16

This Infrastructure Week, we're highlighting key upgrades at BSA.

Watch as Alex Emmerson, Tim Blake, and Paul Harris discuss bringing the "A Side" of Aeration back online—Phase 1 of a 3-phase project improving water quality.

Big steps forward. Cleaner water ahead.



Buffalo Sewer Authority @BuffaloSewer · May 20

Join us tonight from 6–8 PM at the Pratt Willert Community Center to learn about upcoming sewer projects in the Ellicott District.

Dinner, translation & ASL services provided.

Can't attend? Join our virtual session July 12 — scan the flyer QR code to register.

#BuffaloSewer



Buffalo Sewer Authority @BuffaloSewer · May 23

Join Buffalo Sewer Authority & Queen City Clean Waters at Waterkeeper Weekend!
Catch us Sat, May 31 | 12–7PM at Canalside for music, food, fun & the start of water season!
Details: bnwaterkeeper.org/waterkeeper-we...



Buffalo Sewer Authority @BuffaloSewer · May 28

📢 Join us Tuesday, June 10 from 6–8 PM at Dash's Market (1770 Hertel Ave) for a Public Participation Forum on upcoming sewer projects in the Delaware District.

Learn how Buffalo Sewer is investing in infrastructure to improve water quality in our community.



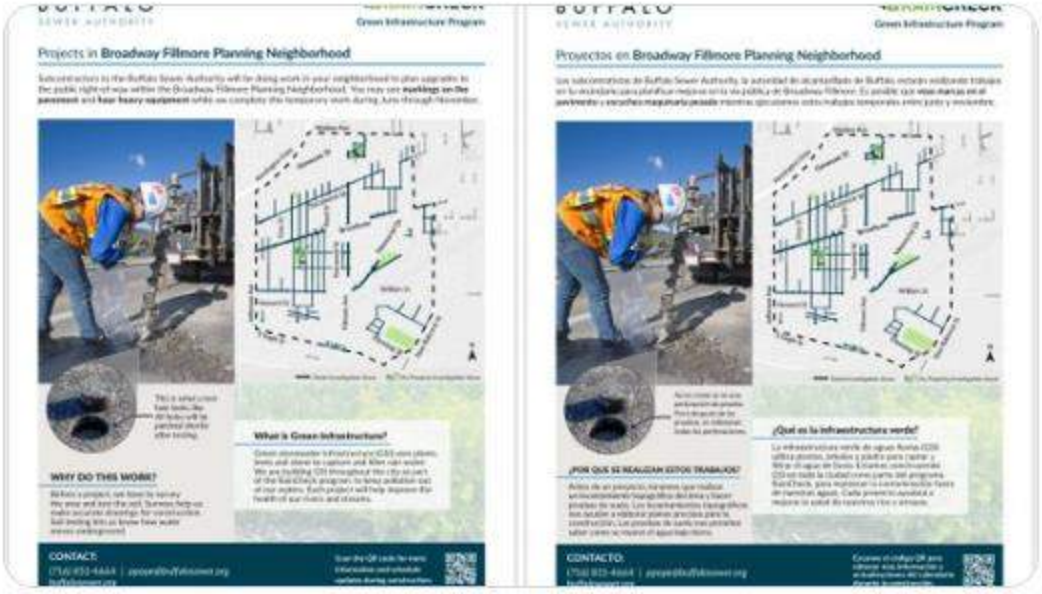
Buffalo Sewer Authority @BuffaloSewer · Jun 2

📢 North District residents — join us for a Public Participation Forum on Tuesday, June 17 from 6–8 PM at the Northwest Buffalo Community Center (155 Lawn Ave).

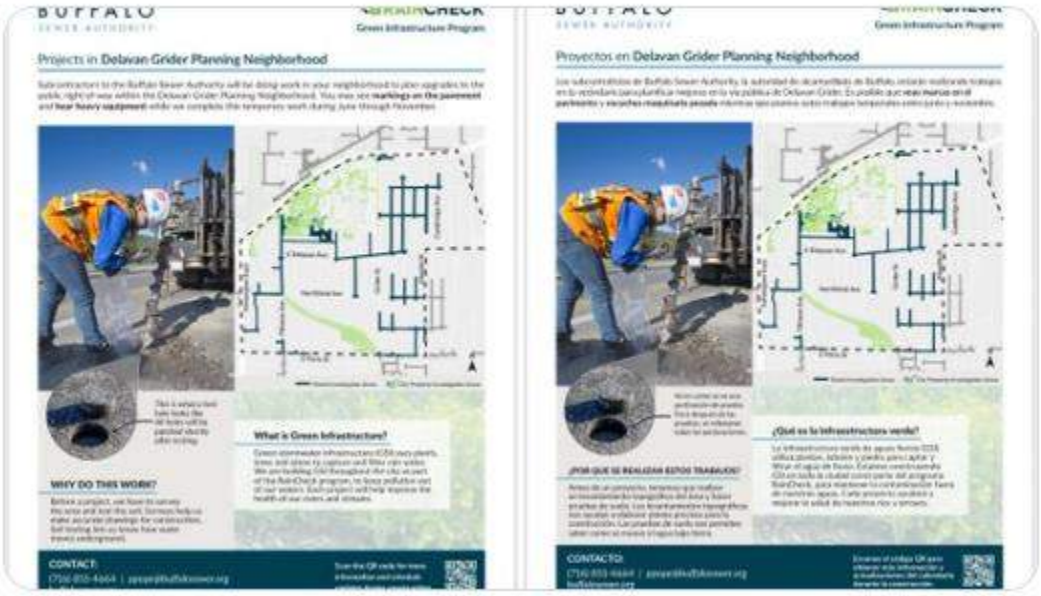
Learn about upcoming sewer projects and how we're investing to improve water quality. Dinner provided!



Buffalo Sewer Authority @BuffaloSewer · Jun 5

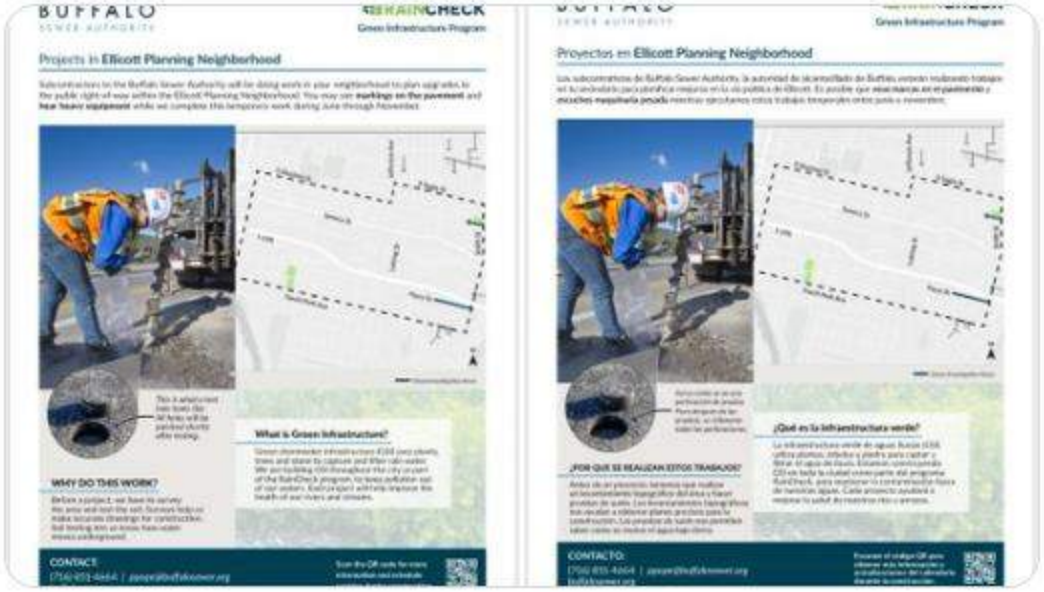


Buffalo Sewer Authority @BuffaloSewer · Jun 5

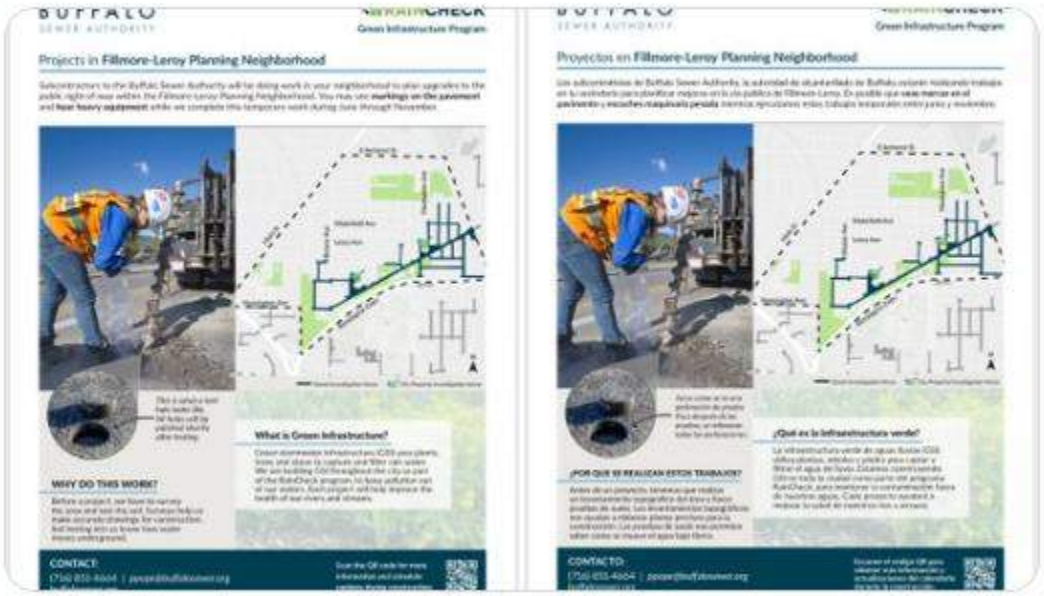


Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 5

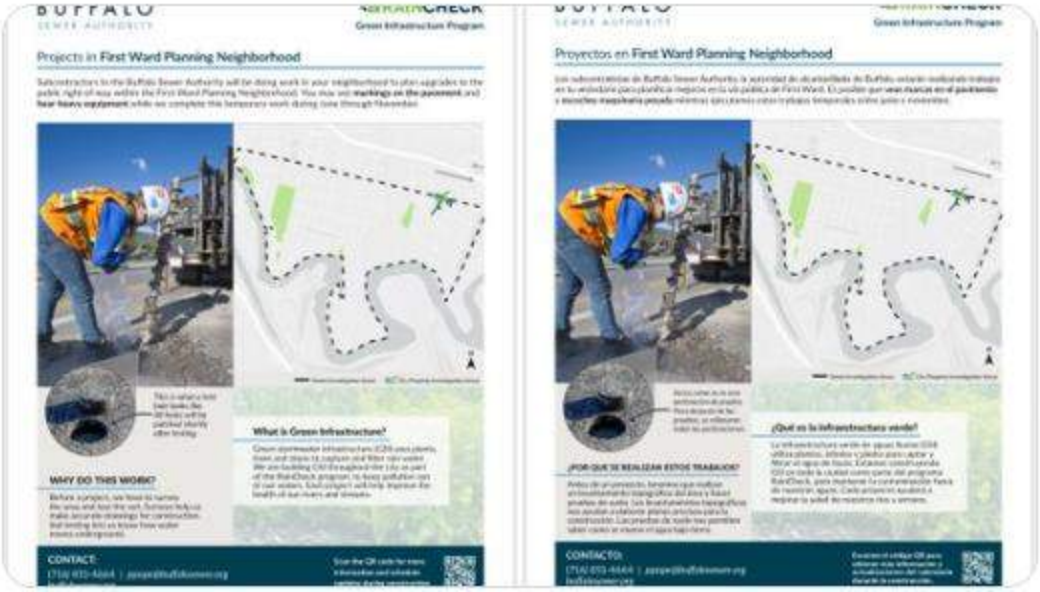


Buffalo Sewer Authority @BuffaloSewer · Jun 5

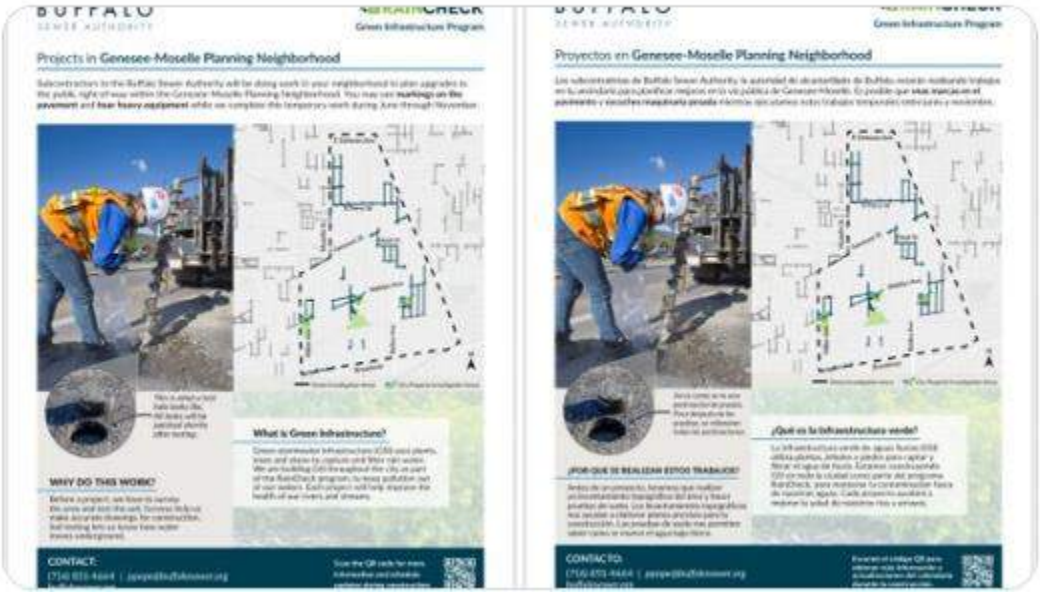


Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 5

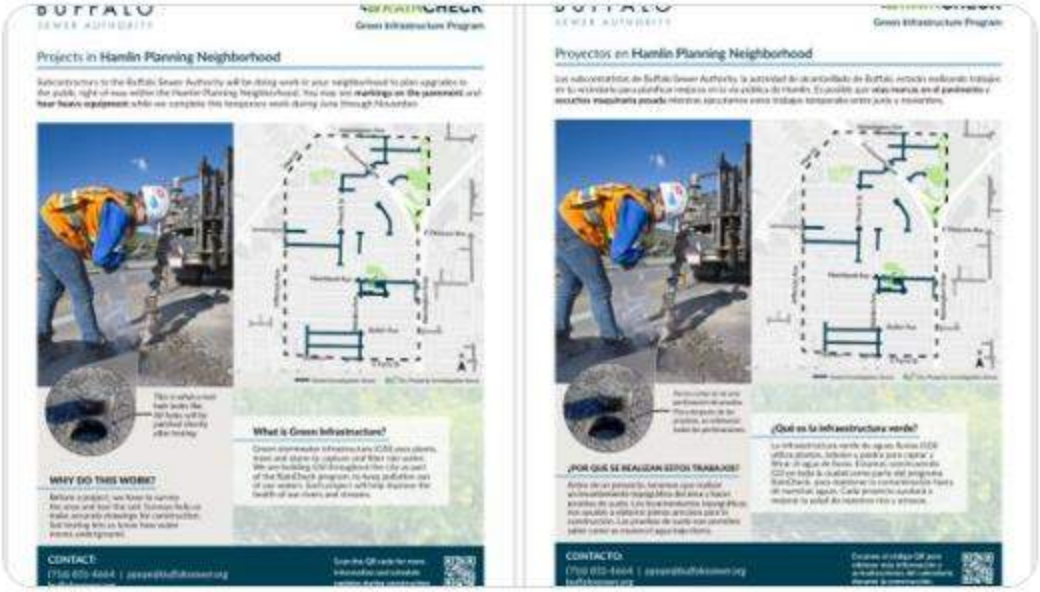


Buffalo Sewer Authority @BuffaloSewer · Jun 5

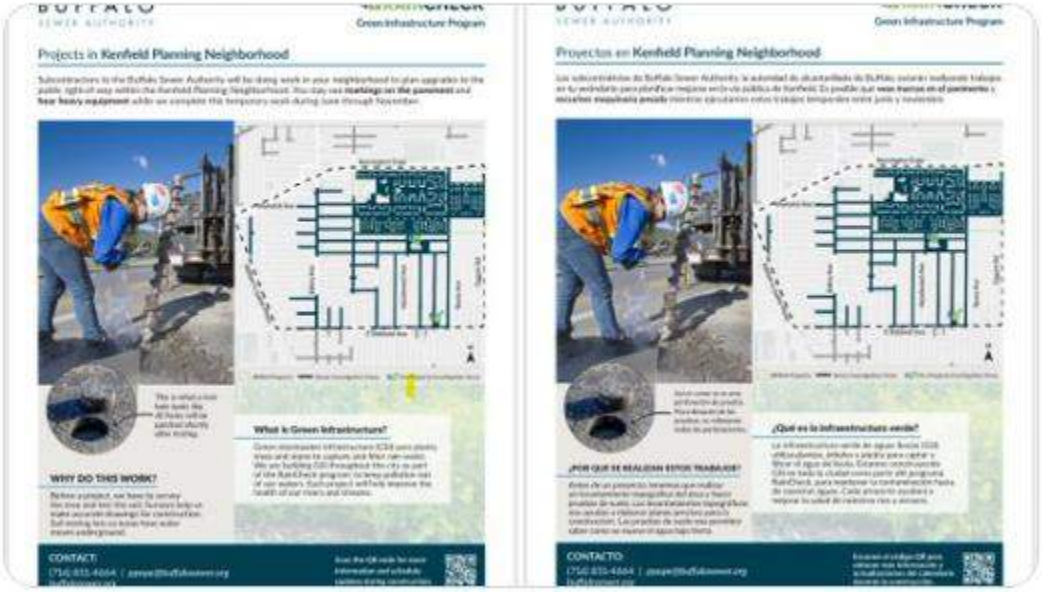


Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 5

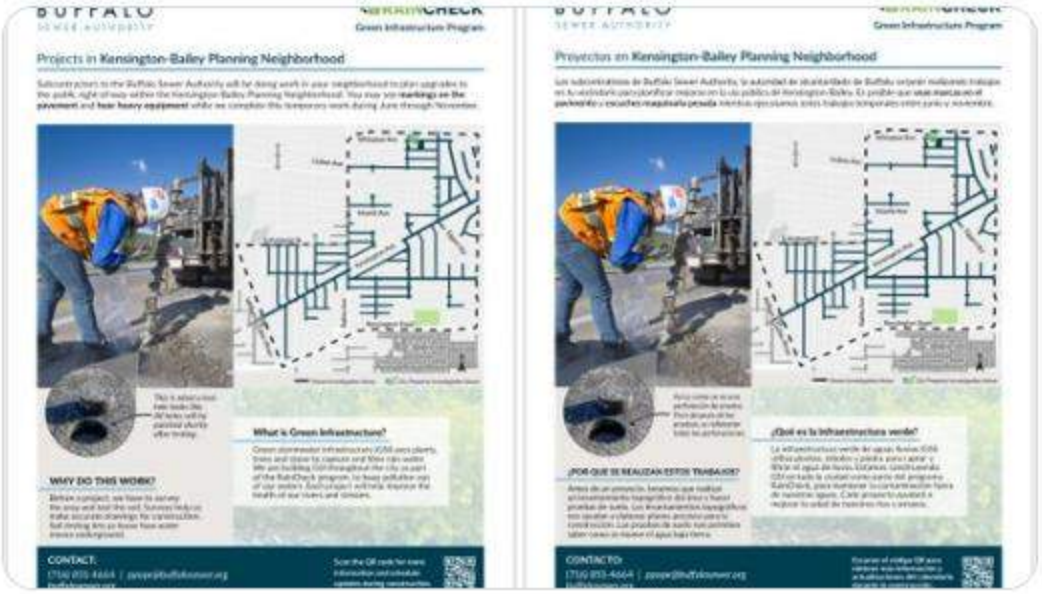


Buffalo Sewer Authority @BuffaloSewer · Jun 5

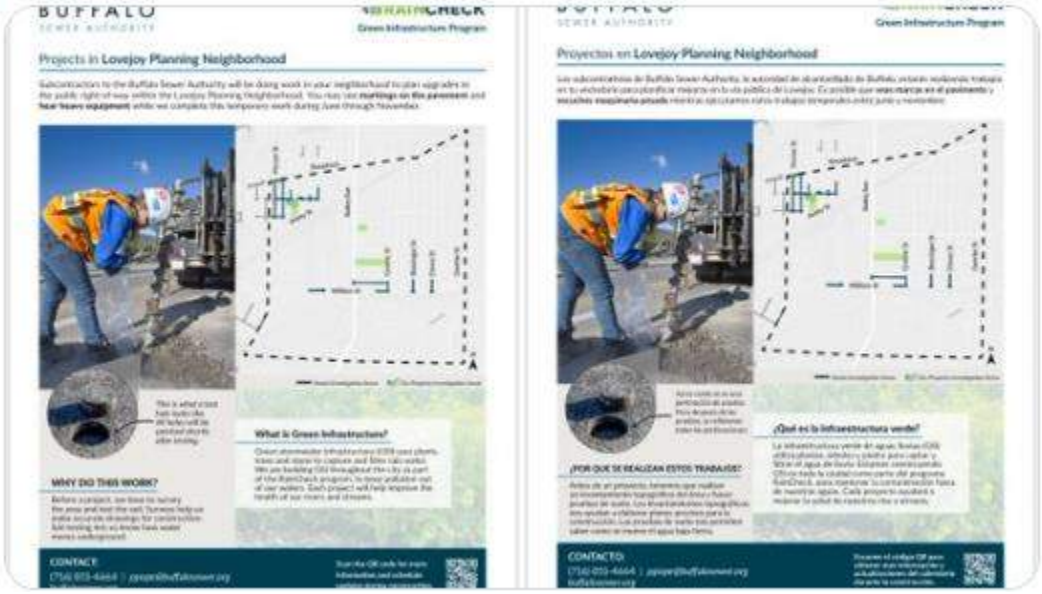


Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 5



Buffalo Sewer Authority @BuffaloSewer · Jun 5

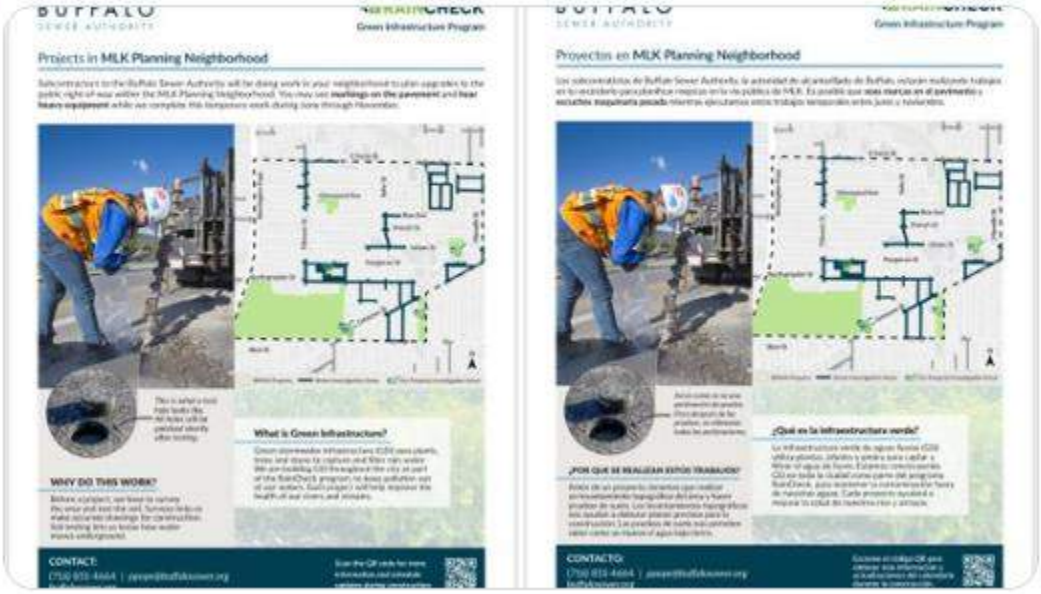


Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 5

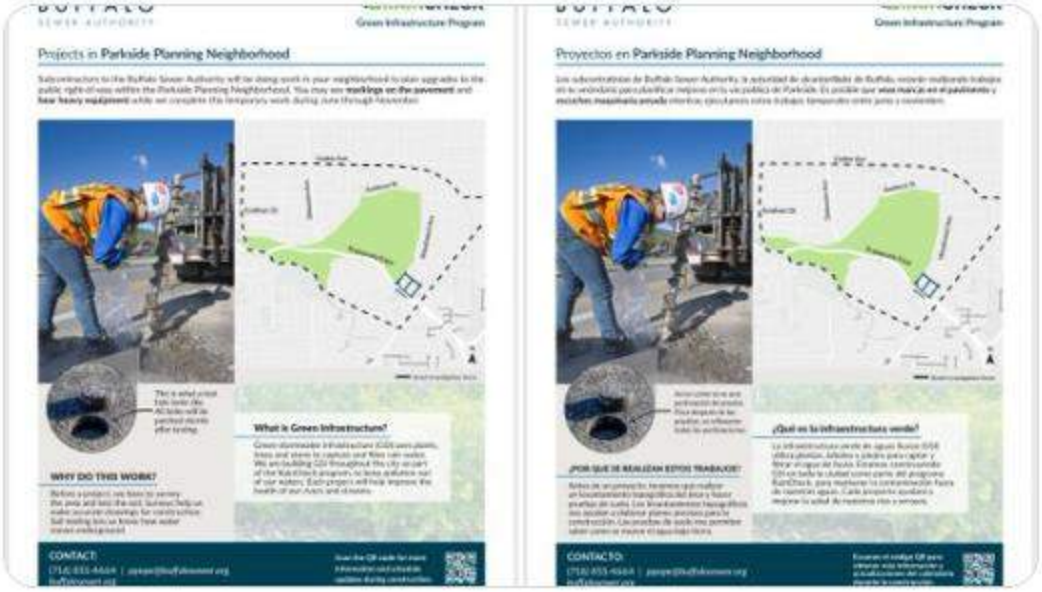


Buffalo Sewer Authority @BuffaloSewer · Jun 5



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 5

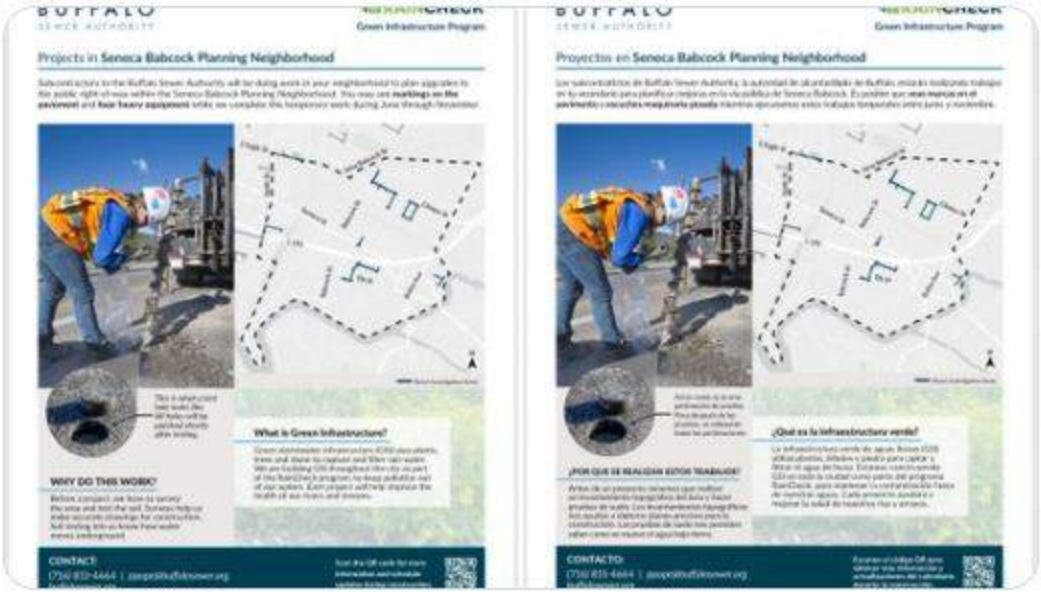


Buffalo Sewer Authority @BuffaloSewer · Jun 5

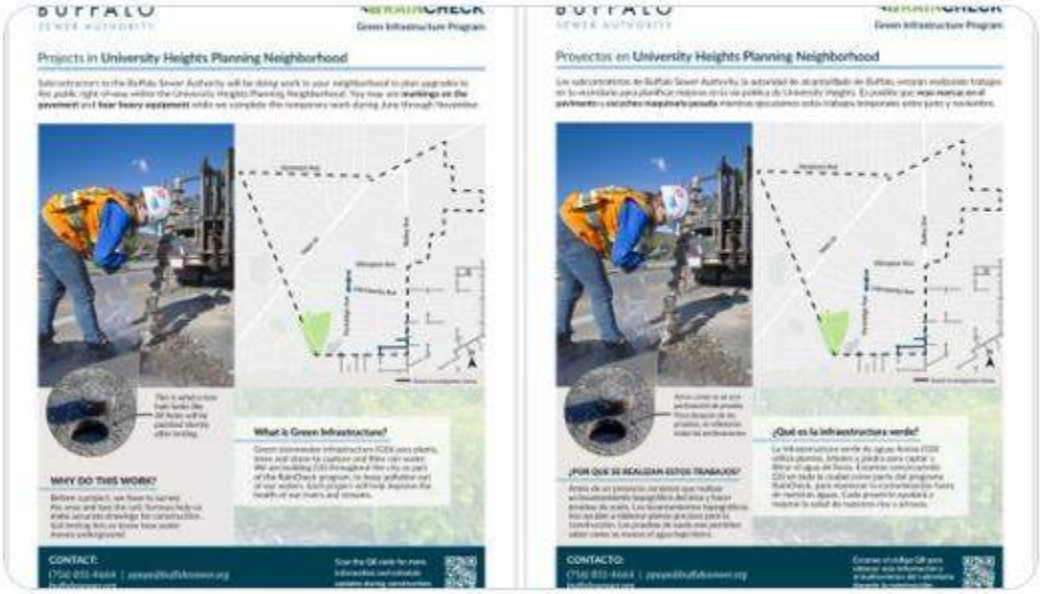


Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 5



Buffalo Sewer Authority @BuffaloSewer · Jun 5



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 6

Join us Thursday, June 12 from 6–8 PM at The Belle Center to learn about major sewer projects coming to the Niagara District. Dinner will be provided, along with translation and ASL services.



Buffalo Sewer Authority @BuffaloSewer · Jun 10

Happening tonight!
Join us at the Buffalo Museum of Science from 6–7:30PM for the Lovejoy District Public Participation Forum. Learn about upcoming sewer projects and share your input!



Buffalo Sewer Authority @BuffaloSewer · Jun 12

Join us tonight at The Belle Center (6–8 PM) for a Public Participation Forum on upcoming Niagara District sewer projects. Dinner & translation services provided.



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority X Posts

Buffalo Sewer Authority @BuffaloSewer · Jun 12

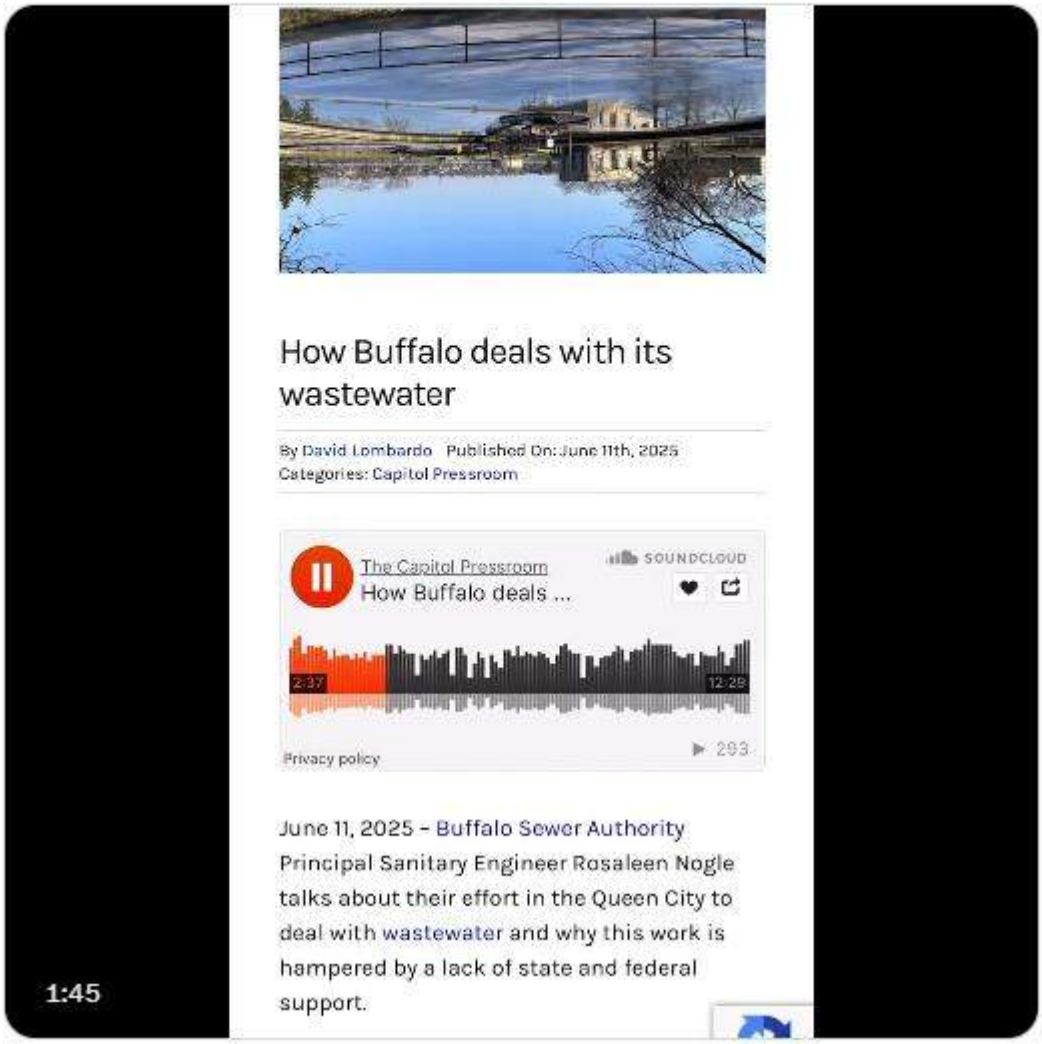
News 4 covered Tuesday's QCCW Forum at Dash's, highlighting BSA's $1B clean water initiative, work on Scajaquada Creek, and upgrades at Bird Island. Don't miss tonight's forum in the Niagara District at The Belle Center (104 Maryland St.)!



Buffalo Sewer Authority @BuffaloSewer · Jun 13

🎙️ BSA's Rosaleen Nogle joined The Capitol Pressroom to talk stormwater, sewer overflows, upgrades at Bird Island, and our $1B Queen City Clean Waters plan.

🎧 Full interview: capitolpressroom.org/2025/06/11/how...



Buffalo Sewer Authority @BuffaloSewer · Jun 16

The Buffalo Sewer Authority has launched an interactive site for the Queen City Clean Waters Initiative! Visit buffaloqccw.org to learn more and share your input. We want to hear from you!



Buffalo Sewer Authority @BuffaloSewer · Jun 24

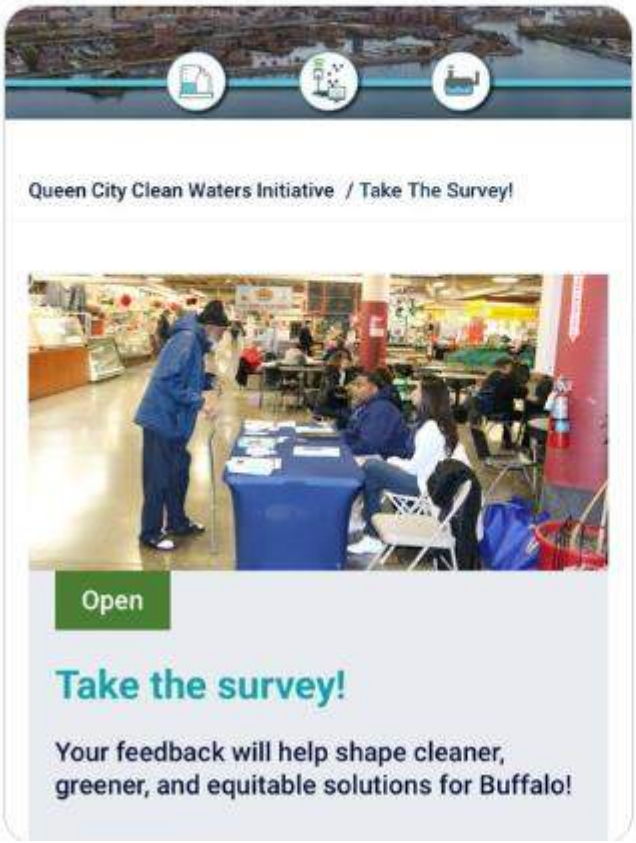
Combined sewer overflows have negatively affected our communities and waterways for decades. The historic investment in our wastewater and stormwater infrastructure will reduce the overflows of combined stormwater and wastewater.



Buffalo Sewer Authority @BuffaloSewer · Jun 27

Your feedback is crucial for the success of the Queen City Clean Waters Initiative, visit the survey below to shape a brighter future across the city of Buffalo!

buffaloqccw.org/take-survey



Buffalo Sewer Authority @BuffaloSewer · Jun 27

BSA's Rosaleen Nogle sat down with Joe Chille from Townsquare Media to discuss clean water and infrastructure. Catch the full interview Sunday:

6AM on 96.1

6:30AM on WYRK, WBUF & WBLK



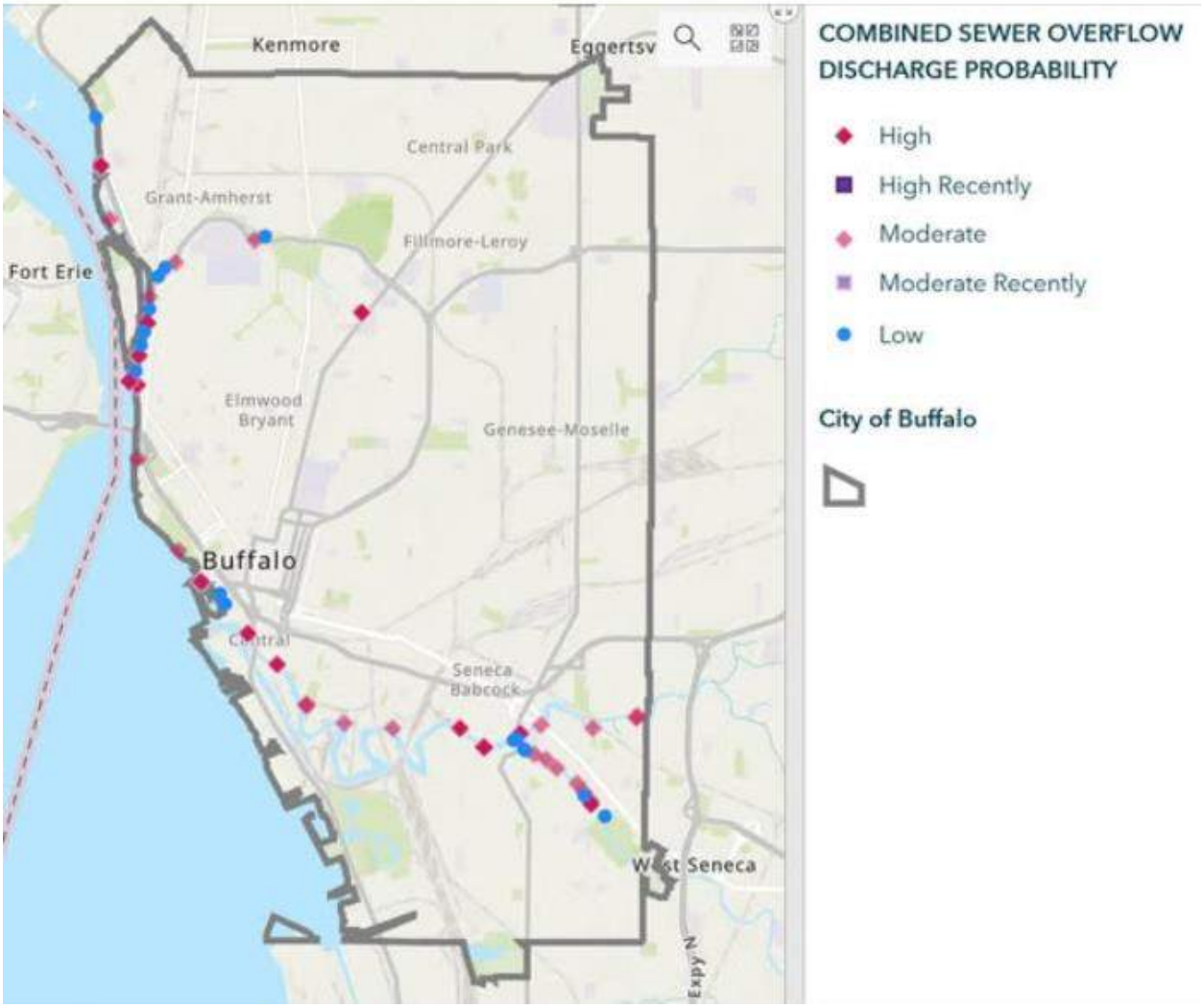
Buffalo Sewer Authority @BuffaloSewer · Jun 30

Edwin Jeter and Perry Pope from our Outreach Team stopped by the South Buffalo Farmers Market to share info on our Queen City Clean Waters projects and connect with the community.



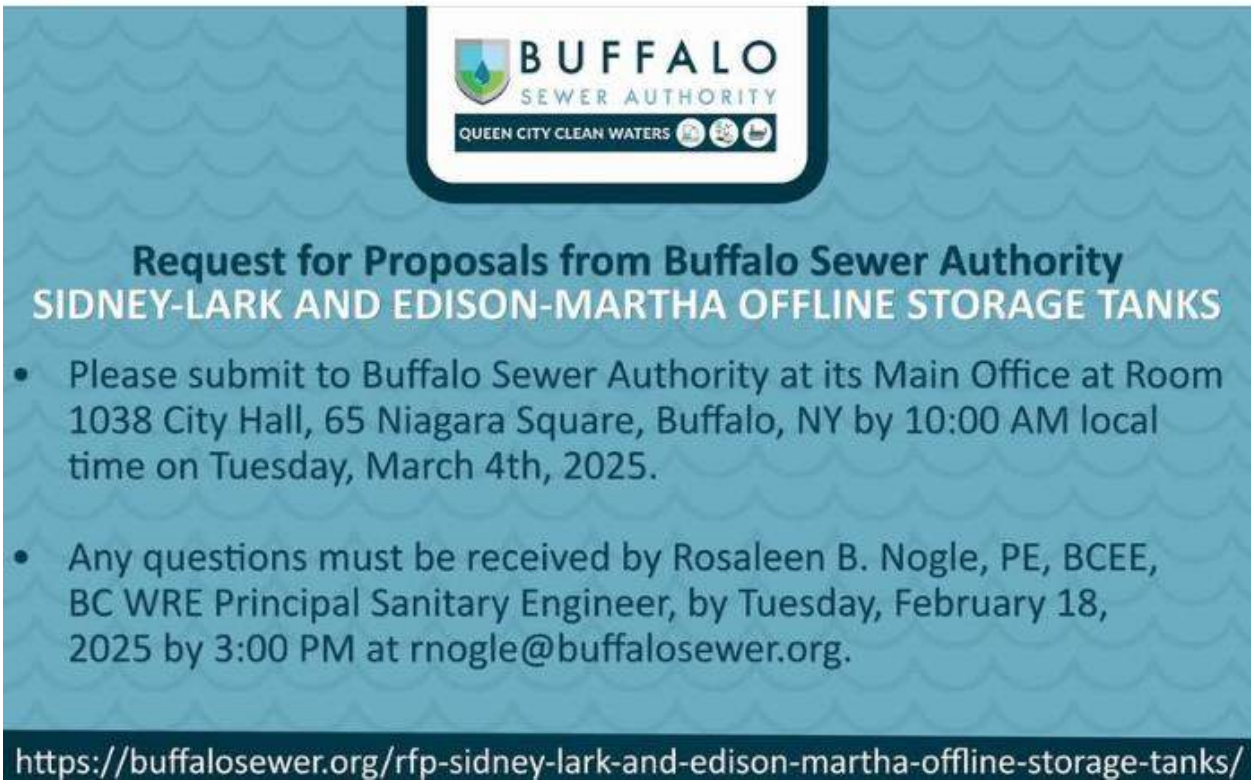
Buffalo Sewer Authority
January 31 ·

Buffalo Sewer is proud to present the Combined Sewer Overflow Probability Status Map. Click the link in our Bio and select 'Combined Sewer Overflow Probability Map' to learn more!



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
February 5 ·



Buffalo Sewer Authority
February 8 ·

On Thursday Kristen Suto and Darell Johnson from our Outreach Team were on hand at the NFTA's Bailey Rapid Transit open house at Gerard Place where we talked with community members about our Queen City Clean Water projects. We will be at the same event this morning at the Boys and Girls Club at 2061 Bailey Avenue. Please stop by and say hello!!





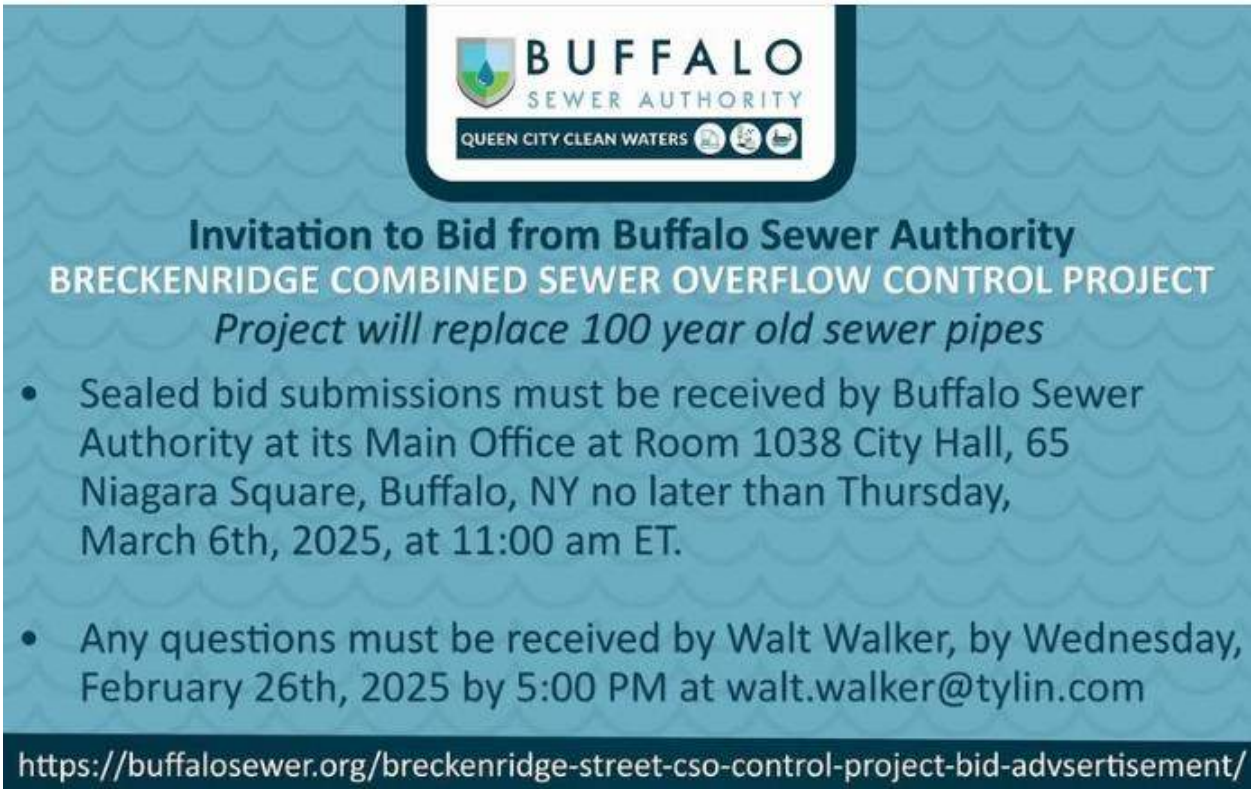
Buffalo Sewer Authority
February 9 ·

Yesterday Chuck Riley, Perry Pope and Edwin Geter from our Outreach Team tabled at the University Stakeholders Breakfast at the Martha Mitchell Community Center where we spoke about discounts on sewer rent, water bill's and Homeserve coverage and talked with community members about our Queen City Clean Water projects.



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
February 10 ·



Buffalo Sewer Authority
February 11 ·

This weekend Jaleel Harris and Justin Black from our Outreach Team were on hand at the NFTA Bailey Rapid Transit (BRT) public meeting where Justin and Jaleel educated attendees with regards to our Queen City Clean Water program, and the importance of Fats Oils and Grease (FOG) management in the home.

If you are interested in the BRT project, there is a virtual open house this Thursday. For more information, please see the attached flyer.



Buffalo Sewer Authority
March 7 ·

As part of our ongoing water quality efforts through our Queen City Clean Water Initiatives we will begin some survey work and soil testing in the near future. Please see the attached flyers for details:



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
March 11 ·

On Saturday Kaitlin Walsh and Traserra Adams from our Outreach Team were on hand at School 80's Saturday Academy where we talked with community members about our Queen City Clean Water projects.



Buffalo Sewer Authority
March 12 ·

On Saturday Justin Black and Darrell Johnson from our Outreach Team were tabling at School 93's Saturday Academy where we talked with community members about our Queen City Clean Water projects.



Buffalo Sewer Authority
March 19 ·

On Saturday Perry Pope and Katie Walsh from our Outreach Team were back at another Saturday Academy this time at Riverside High School where they connected with community members and talked about our Queen City Clean Water projects.



Buffalo Sewer Authority
April 1 ·

Tifft Street between South Park and Hopkins will be temporarily closed to facilitate important sewer repairs. We appreciate your patience as we work to improve essential infrastructure and keep our systems running smoothly for everyone.



Buffalo Sewer Authority
April 1 ·

We understand road closures are frustrating — but they pave the way (literally!) for better infrastructure. Thank you for your patience as we make necessary improvements to our sewer and water systems to better serve our community.



Buffalo Sewer Authority
April 2 ·

Please be advised that Barnard Street from Clinton Street to Griswold Street will be closed today and tomorrow from 8am to 3pm each day for sewer work.
The street will not be passable during this time.
Please use caution in the area and reroute as needed.



Buffalo Sewer Authority
April 7 ·

This past Saturday, our Outreach Team's Edwin Jeter and Jaleel Harris visited School 99 – Makowski for another great Saturday Academy. They had the opportunity to connect with community members and share updates about our Queen City Clean Water projects.



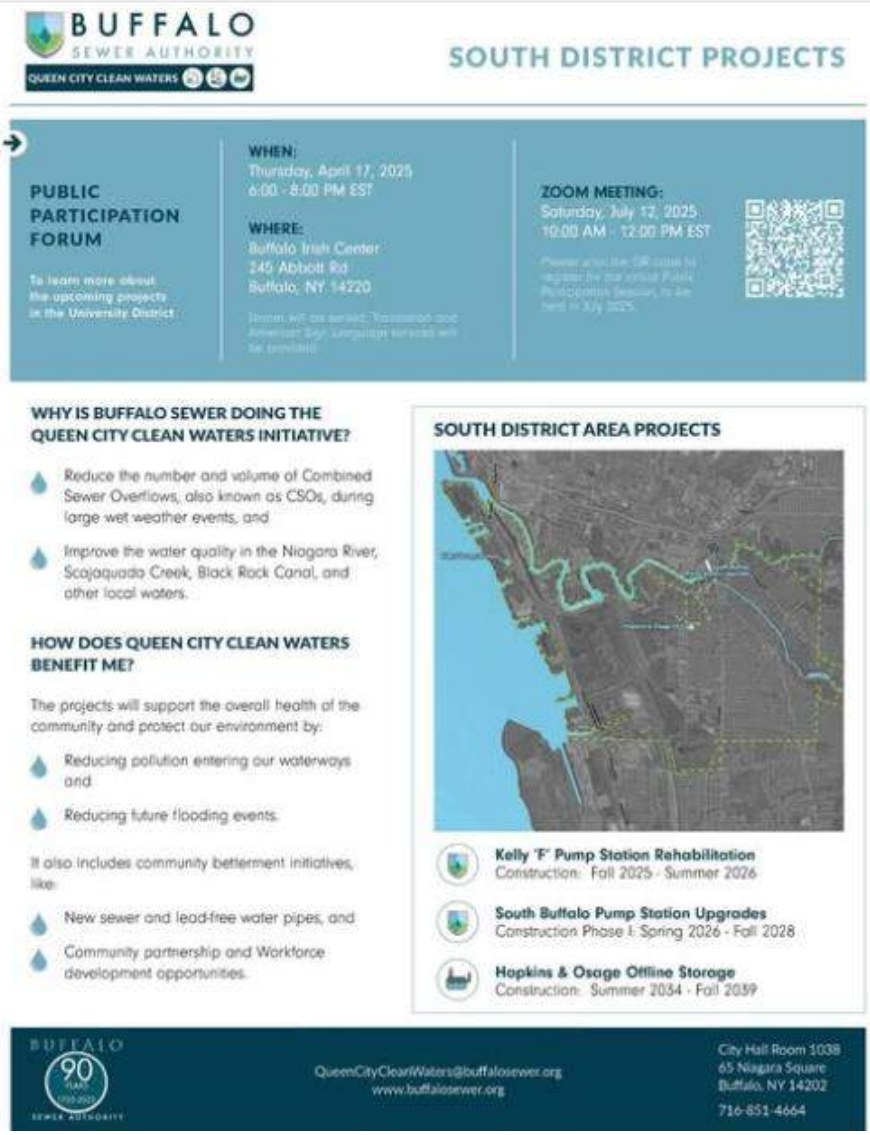
Buffalo Sewer Authority
April 8 ·

🎉 Today marks 90 years of the Buffalo Sewer Authority proudly serving our community! Since 1935, BSA has been dedicated to protecting the waterways of Buffalo and the surrounding region—keeping our Great Lakes clean, our infrastructure strong, and our city safe. 💧⚙️
From its beginnings as a response to public health and environmental needs, to today's cutting-edge wastewater treatment and green infrastructure, BSA continues to evolve while staying true to its mission.
Here's to 90 years of service, stewardship, and sustainability—and to the future we're building together! 🌊💙
#BuffaloSewerAuthority #BuffaloSewer90



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
April 9 ·



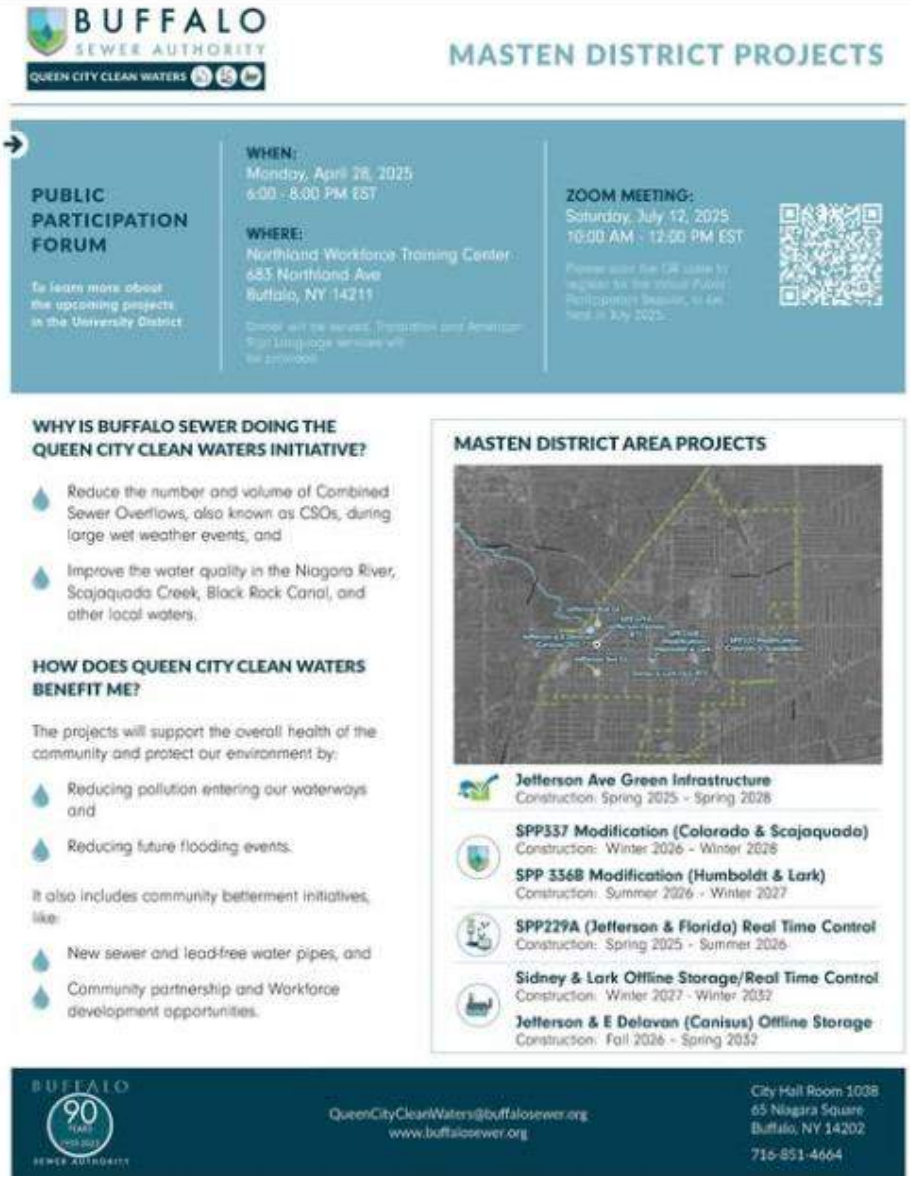
Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
April 9 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
April 9 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
April 11 ·

West Tupper Street from Elmwood to Delaware will be closed for the day today, 4-11-25, until 4pm for Sewer work



Buffalo Sewer Authority
April 16 ·

Buffalo Sewer Authority today celebrated the 90th Anniversary of our founding with Mayor Scanlon (@mayorchrisscanlon), Councilmember Everhart (@councilwomaneverhart)and members of our stakeholder advisory committees, Board Chairman, and staff as we broke ground on the first phase of a $100 million investment in the Jefferson-Delavan neighborhood



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority's post

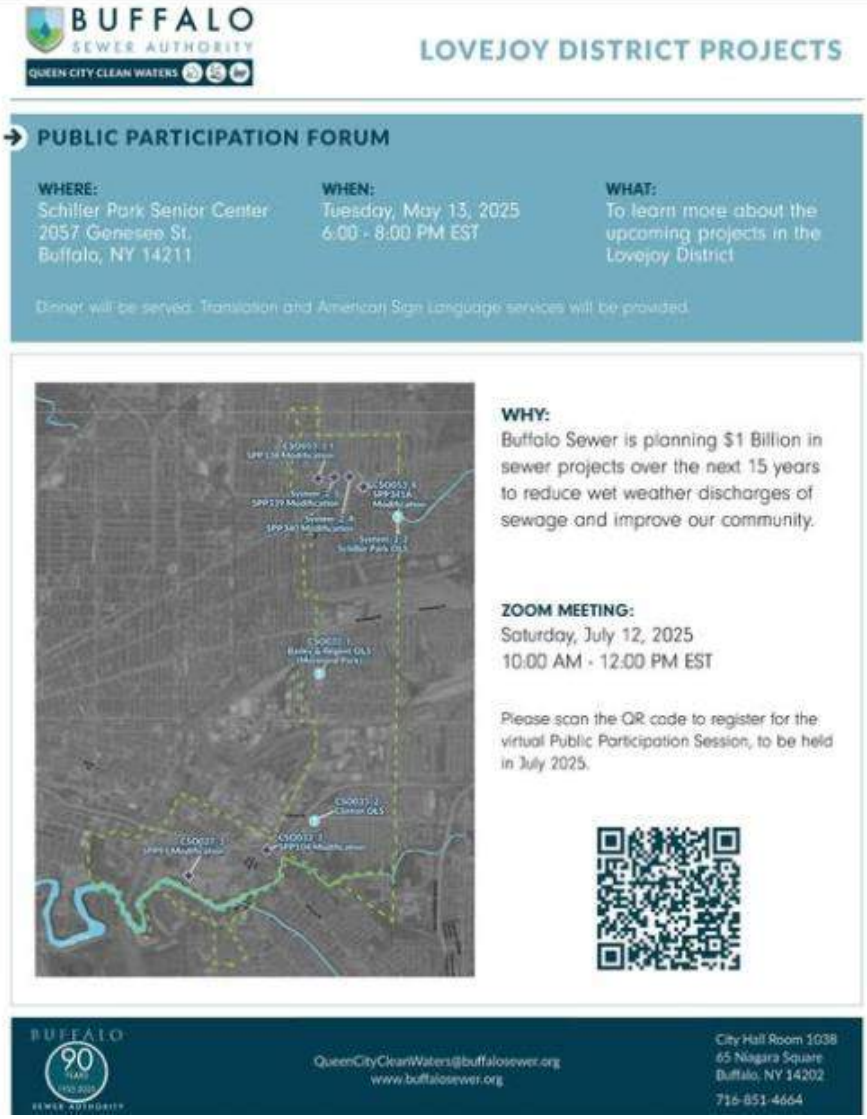
Buffalo Sewer Authority
April 22 ·

🌎 Happy Earth Day from Buffalo Sewer Authority!
We're celebrating by giving back to our community and protecting the environment we all share. Join us this Saturday, April 26th, as BSA participates in two neighborhood cleanup events:
Masten District Cleanup 📍 Canisius University Student Center, 81 Hughes Ave 🕙 10:00 AM – 2:00 PM 🍽️ Panel Luncheon to follow from 2:00 – 4:00 PM
International Schools Block Club Cleanup 📍 Meet at the corner of Baynes & Auburn 🕑 2:00 – 4:00 PM
Cleaning up debris before it can enter our system and helping to keep our waterways clean (like we do everyday). All are welcome—let's work together to keep Buffalo beautiful! 💧🌳 #EarthDay





Buffalo Sewer Authority
May 2 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 2 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 9 ·



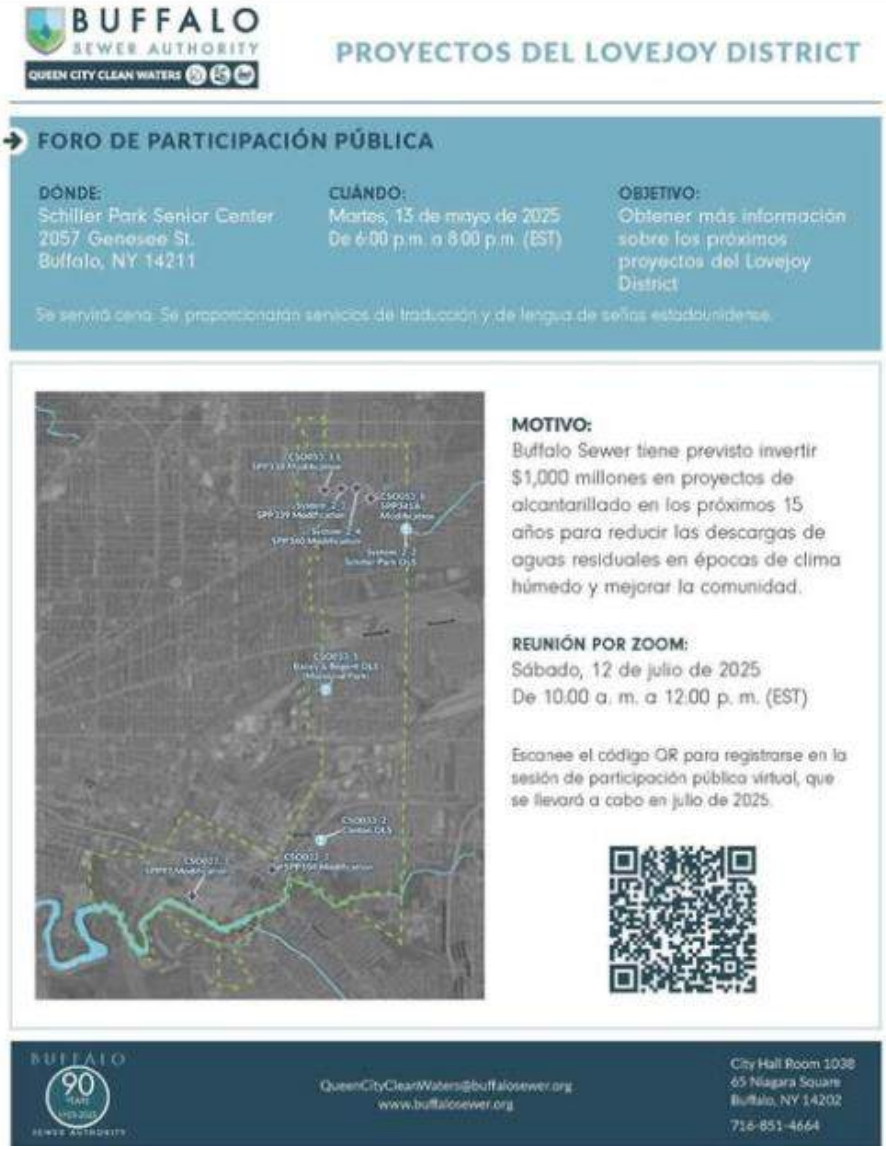
Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 9 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 9 ·



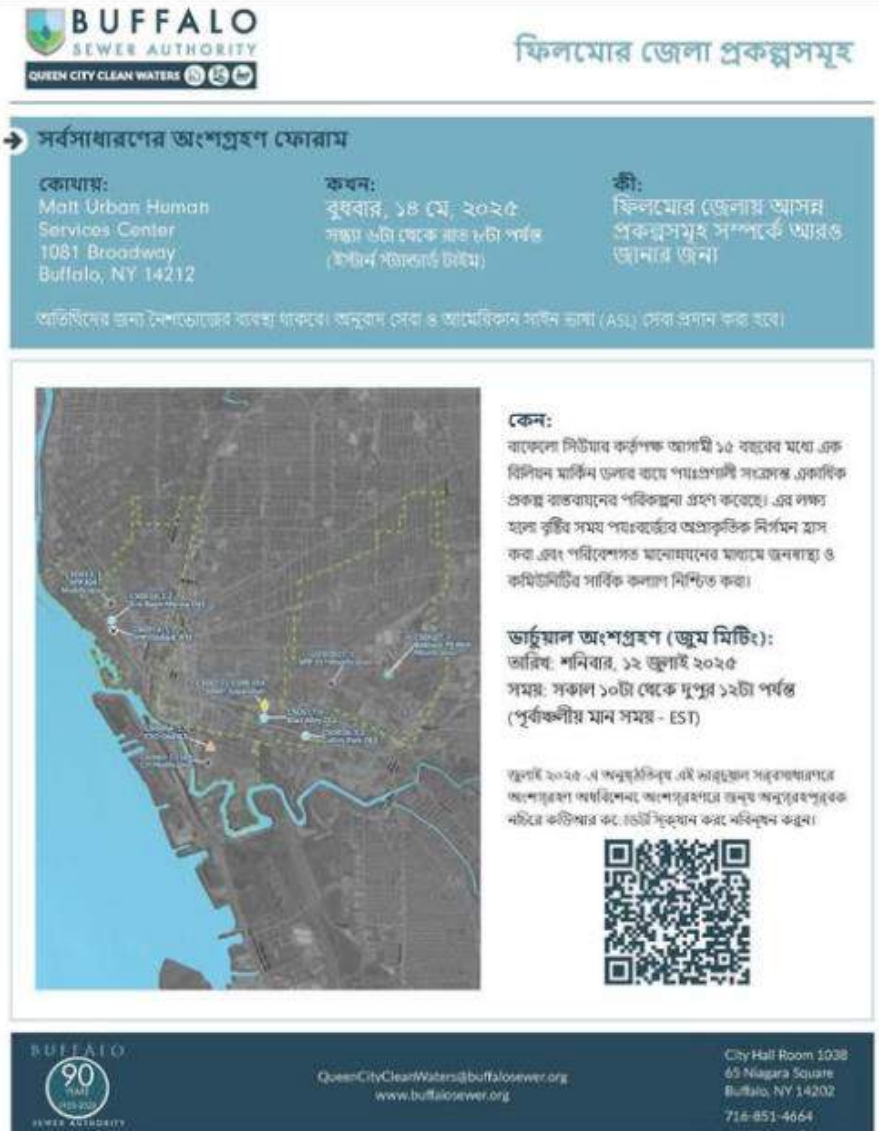
Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 9 ·



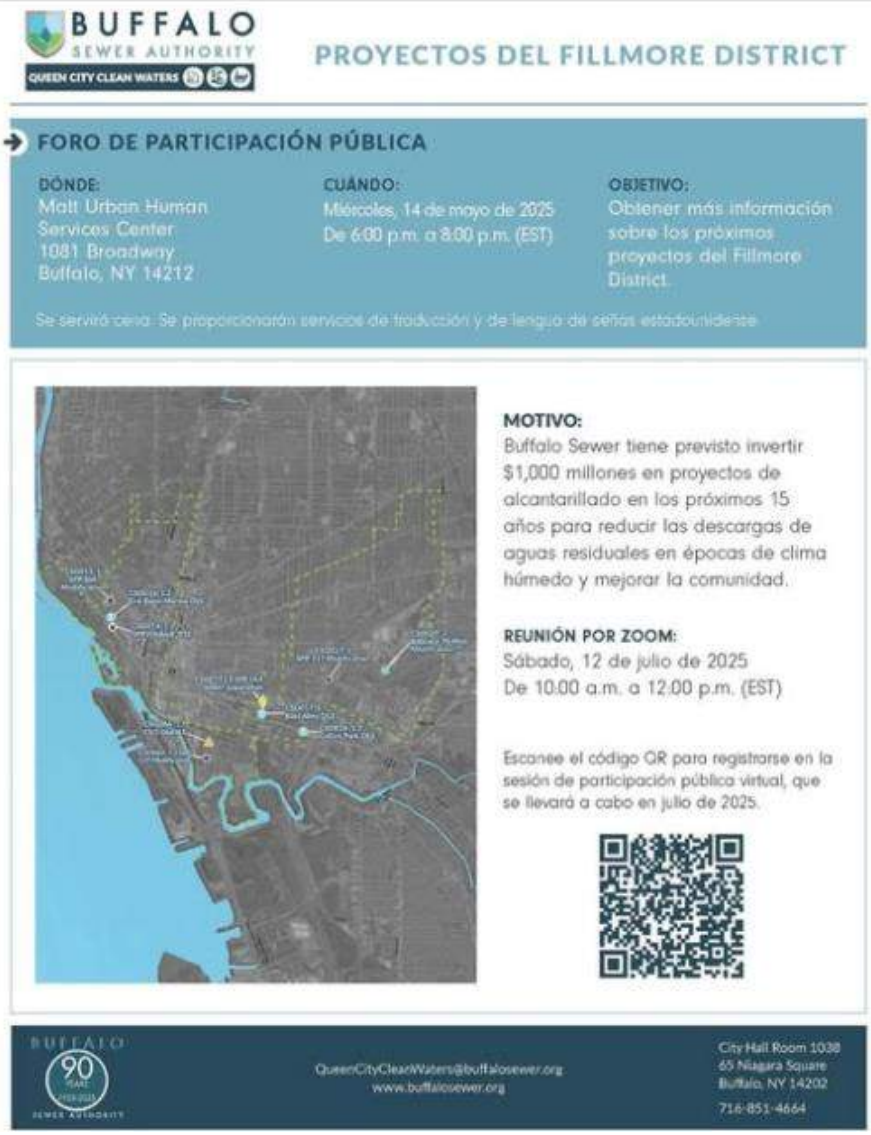
Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 9 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 9 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 9 ·



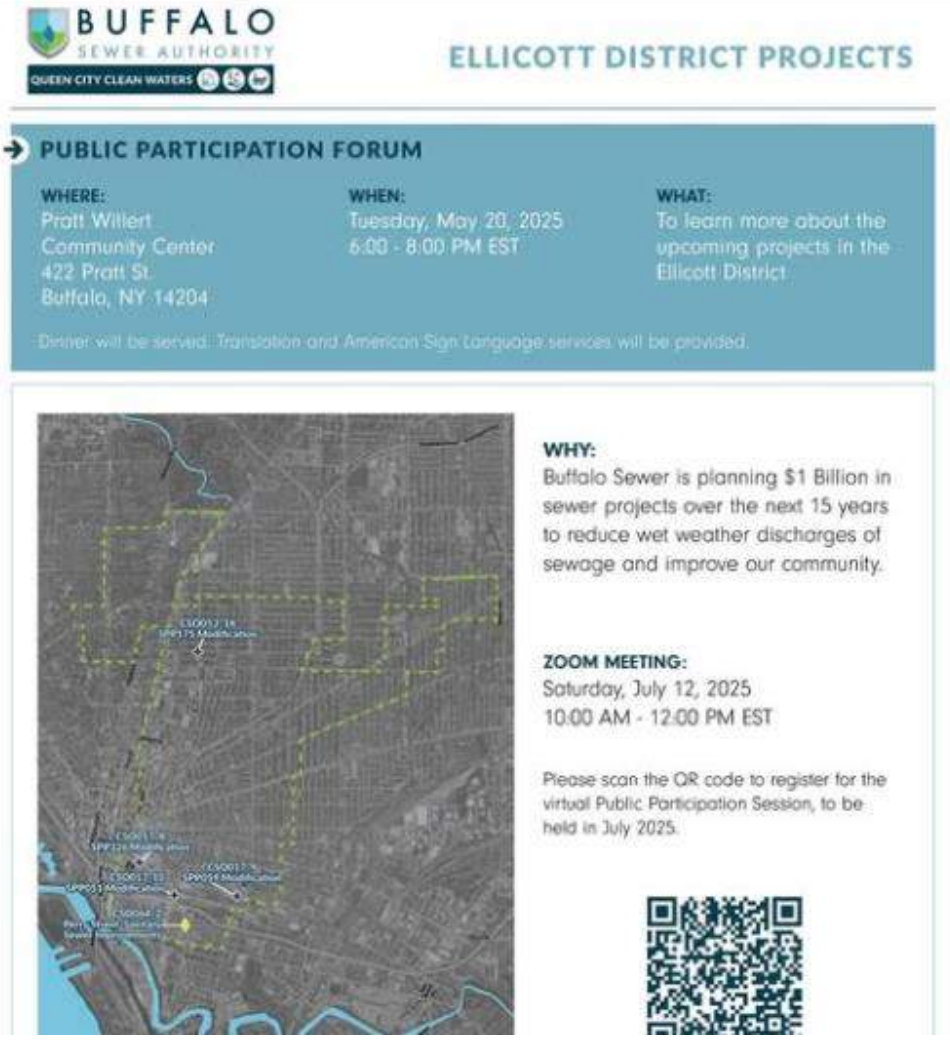
Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
May 20 ·

Join us for our Ellicott District Public Participation Forum tonight from 6–8 PM at the Pratt Willer Community Center (422 Pratt St.).
Learn about upcoming sewer projects aimed at improving water quality in your neighborhood. I translation, and ASL services will be provided.

Can't make it in person? Register for our virtual session on Saturday, July 12 from 10 AM–12 PM scanning the QR code on the flyer.

#BuffaloSewer #ellicottdistrict



Buffalo Sewer Authority
May 28 ·

🦫 Join us for a Public Participation Forum on upcoming sewer improvement projects in the Delaware District!

📍 Dash's Market, 1770 Hertel Ave
📅 Tuesday, June 10 | ⓘ 6–8 PM

Learn how Buffalo Sewer is investing $1 Billion over 15 years to reduce sewage overflows and improve water quality. Dinner, translation, and ASL services provided.



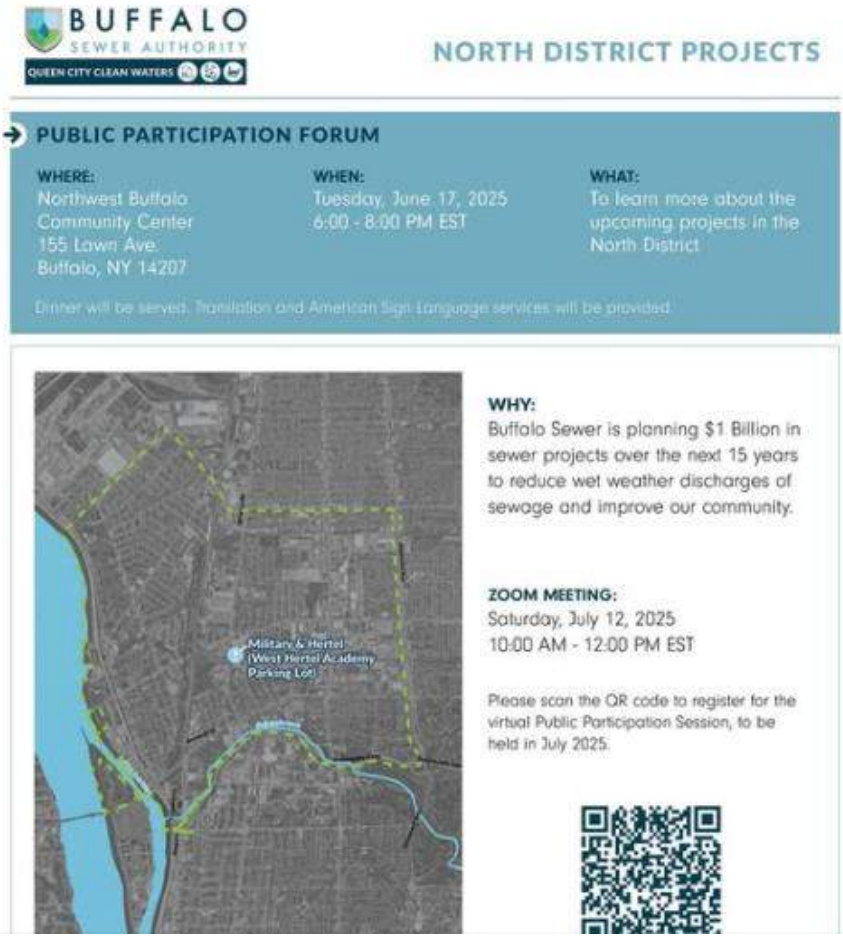
Buffalo Sewer Authority
June 2 ·

Join us for the North District Public Participation Forum!

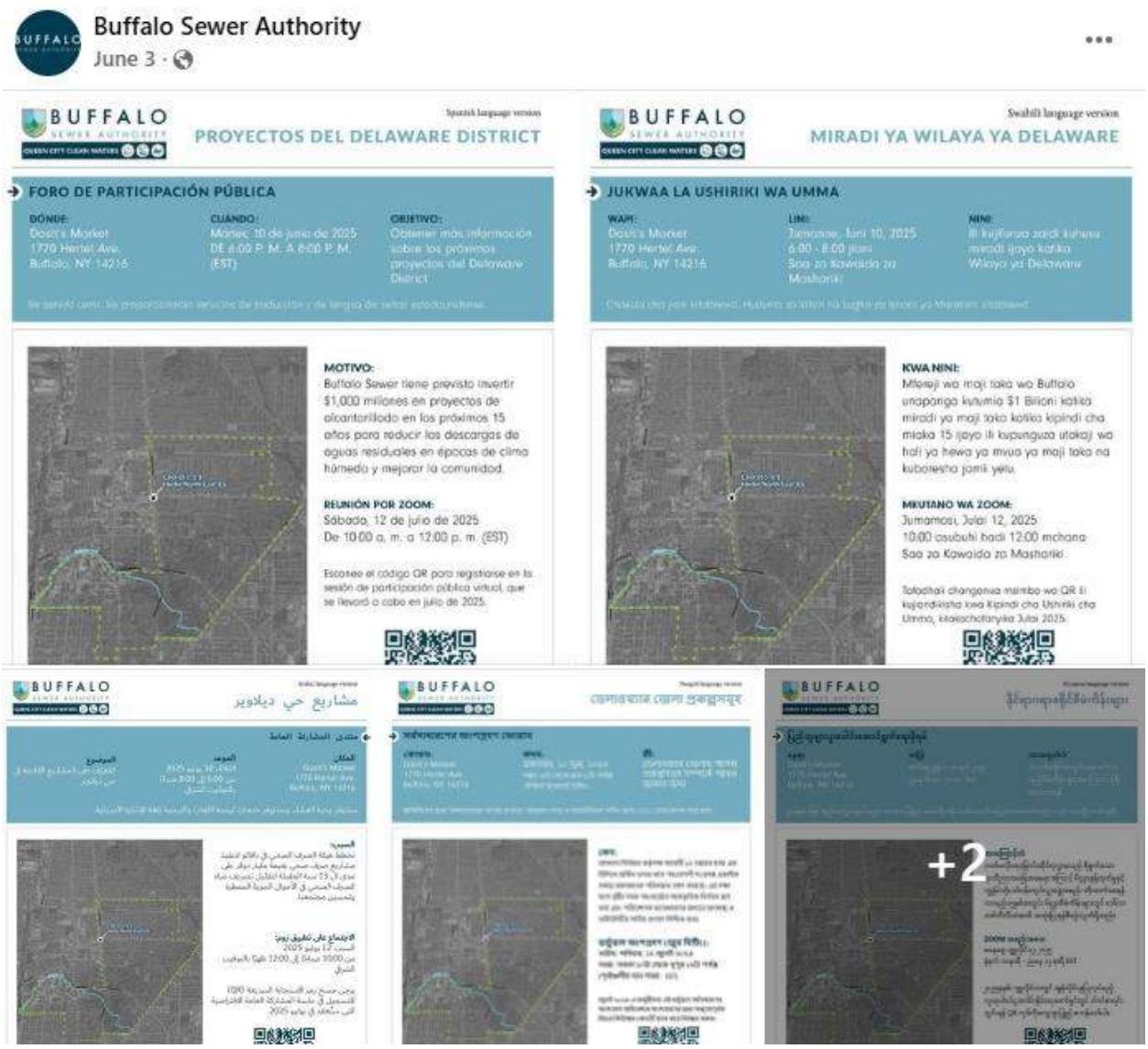
Buffalo Sewer will be hosting an in-person forum on Tuesday, June 17 from 6–8 PM at the Northwest Buffalo Community Center (155 Lawn Ave) to share details on upcoming sewer projects in the North District.

Learn how we're investing $1 billion over the next 15 years to improve water quality and reduce sewage overflows.

Dinner will be served. ASL and translation services provided.



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·





Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Projects in **First Ward Planning Neighborhood**

Subcontractors to the Buffalo Sewer Authority will be doing work in your neighborhood to plan upgrades to the public right-of-way within the First Ward Planning Neighborhood. You may see **markings on the pavement** and **hear heavy equipment** while we complete this temporary work during June through November.

This is what a test hole looks like. All holes will be patched shortly after testing.

What is Green Infrastructure?

Green stormwater infrastructure (GSI) uses plants, trees and stone to capture and filter rain water. We are building GSI throughout the city as part

BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Proyectos en **First Ward Planning Neighborhood**

Los subcontratistas de Buffalo Sewer Authority, la autoridad de alcantarillado de Buffalo, estarán realizando trabajos en tu vecindario para planificar mejoras en la vía pública de First Ward. Es posible que **veas marcas en el pavimento** y **escuches maquinaria pesada** mientras ejecutamos estos trabajos temporales entre junio y noviembre.

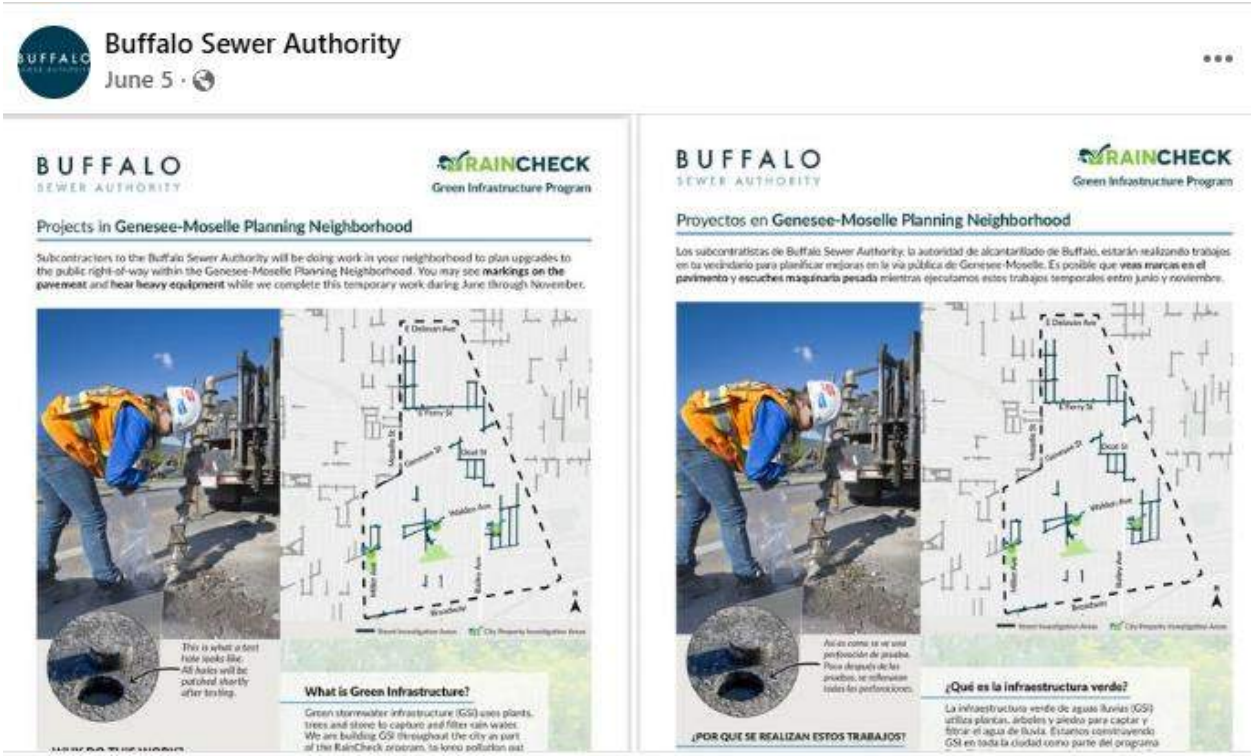
Así es como se ve una perforación de prueba. Poco después de las pruebas, se rellenarán todas las perforaciones.

¿Qué es la infraestructura verde?

La infraestructura verde de aguas lluvias (GSI) utiliza plantas, árboles y piedra para captar y filtrar el agua de lluvia. Estamos construyendo GSI en toda la ciudad como parte del programa

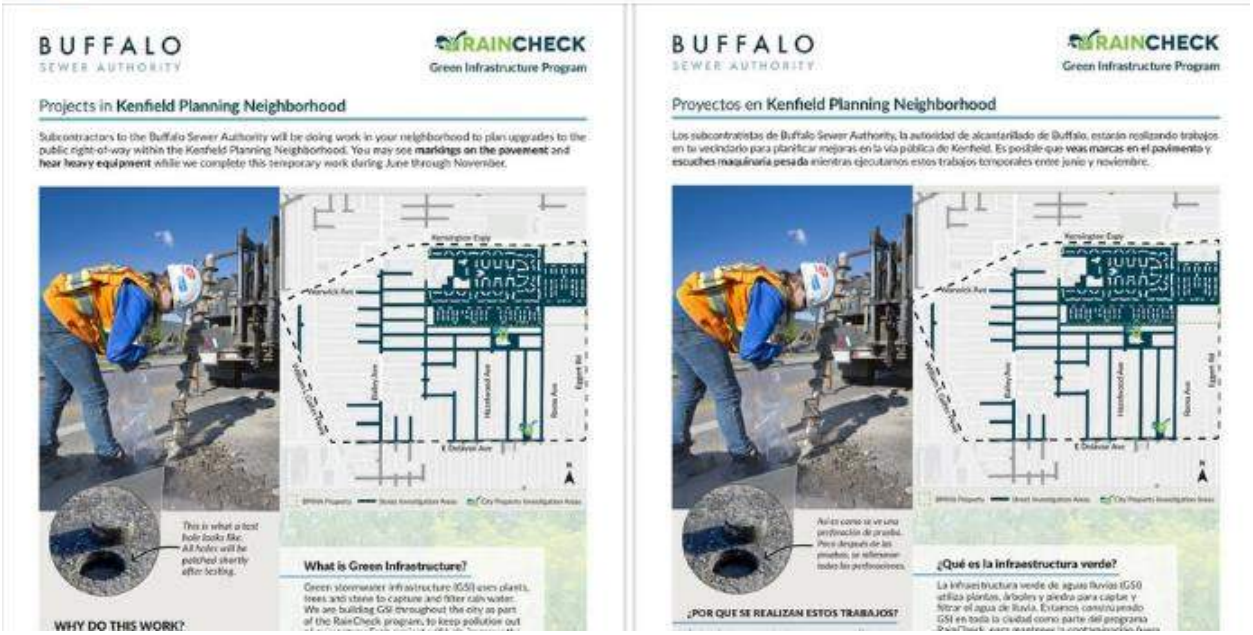
¿POR QUE SE REALIZAN ESTOS TRABAJOS?

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Projects in **Kenfield Planning Neighborhood**

Subcontractors to the Buffalo Sewer Authority will be doing work in your neighborhood to plan upgrades to the public right-of-way within the Kenfield Planning Neighborhood. You may see **markings on the pavement** and **hear heavy equipment** while we complete this temporary work during June through November.

What is Green Infrastructure?

Green stormwater infrastructure (GSI) uses plants, trees and shrubs to capture and filter rain water. We are building GSI throughout the city as part of the RainCheck program, to keep pollution out

WHY DO THIS WORK?

BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Proyectos en **Kenfield Planning Neighborhood**

Los subcontratistas de Buffalo Sewer Authority, la autoridad de alcantarillado de Búfalo, estarán realizando trabajos en tu vecindario para planificar mejoras en la vía pública de Kenfield. Es posible que **veas marcas en el pavimento** y **escuches maquinaria pesada** mientras ejecutamos estos trabajos temporales entre junio y noviembre.

¿Qué es la infraestructura verde?

¿POR QUÉ SE REALIZAN ESTOS TRABAJOS?

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Projects in **Kensington-Bailey Planning Neighborhood**

Subcontractors to the Buffalo Sewer Authority will be doing work in your neighborhood to plan upgrades to the public right-of-way within the Kensington-Bailey Planning Neighborhood. You may see **markings on the pavement** and **hear heavy equipment** while we complete this temporary work during June through November.

This is what a test hole looks like. All holes will be patched shortly after testing.

What is Green Infrastructure?

Green stormwater infrastructure (GSI) uses plants, trees and stone to capture and filter rain water. We are building GSI throughout the city as part of the RainCheck program, to keep pollution out

BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Proyectos en **Kensington-Bailey Planning Neighborhood**

Los subcontratistas de Buffalo Sewer Authority, la autoridad de alcantarillado de Buffalo, estarán realizando trabajos en tu vecindario para planificar mejoras en la vía pública de Kensington-Bailey. Es posible que **veas marcas en el pavimento** y **escuches maquinaria pesada** mientras ejecutamos estos trabajos temporales entre junio y noviembre.

Así es como se ve una perforación de prueba. Poco después de las pruebas, se rellenarán todos los perforaciones.

¿Qué es la infraestructura verde?

La infraestructura verde de aguas lluvias (GSI) utiliza plantas, árboles y piedra para captar y filtrar el agua de lluvia. Estamos construyendo GSI en toda la ciudad como parte del programa

¿POR QUE SE REALIZAN ESTOS TRABAJOS?

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Projects in Kensington-Bailey Planning Neighborhood

Subcontractors to the Buffalo Sewer Authority will be doing work in your neighborhood to plan upgrades to the public right-of-way within the Kensington-Bailey Planning Neighborhood. You may see **markings on the pavement** and **hear heavy equipment** while we complete this temporary work during June through November.

This is what a test hole looks like. All holes will be patched shortly after testing.

What is Green Infrastructure?

Green stormwater infrastructure (GSI) uses plants, trees and stone to capture and filter rain water. We are building GSI throughout the city as part of the RainCheck program. To keep pollution out

BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Proyectos en Kensington-Bailey Planning Neighborhood

Los subcontratistas de Buffalo Sewer Authority, la autoridad de alcantarillado de Buffalo, estarán realizando trabajos en tu vecindario para planificar mejoras en la vía pública de Kensington-Bailey. Es posible que **veas marcas en el pavimento** y **escuches maquinaria pesada** mientras ejecutamos estos trabajos temporales entre junio y noviembre.

Así es como se ve una perforación de prueba. Poco después de las pruebas, se rellenarán todas las perforaciones.

¿POR QUÉ SE REALIZAN ESTOS TRABAJOS?

¿Qué es la infraestructura verde?

La infraestructura verde de aguas lluvias (GSI) utiliza plantas, árboles y piedra para capturar y filtrar el agua de lluvia. Estamos construyendo GSI en toda la ciudad como parte del programa

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·





Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·





Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Projects in Schiller Park Planning Neighborhood

Subcontractors to the Buffalo Sewer Authority will be doing work in your neighborhood to plan upgrades to the public right-of-way within the Schiller Park Planning Neighborhood. You may see **markings on the pavement** and **hear heavy equipment** while we complete this temporary work during June through November.

This is what a test hole looks like. All holes will be patched shortly after testing.

What is Green Infrastructure?

Green stormwater infrastructure (GSI) uses plants, trees and stone to capture and filter rain water. We are building GSI throughout the city as part

BUFFALO
SEWER AUTHORITY

RAINCHECK
Green Infrastructure Program

Proyectos en Schiller Park Planning Neighborhood

Los subcontratistas de Buffalo Sewer Authority, la autoridad de alcantarillado de Buffalo, estarán realizando trabajos en tu vecindario para planificar mejoras en la vía pública de Schiller Park. Es posible que **veas marcas en el pavimento** y **escuches maquinaria pesada** mientras ejecutamos estos trabajos temporales entre junio y noviembre.

Así es como se ve una perforación de prueba. Poco después de las pruebas, se rellenarán todas las perforaciones.

¿POR QUÉ SE REALIZAN ESTOS TRABAJOS?

¿Qué es la infraestructura verde?

La infraestructura verde de aguas lluvias (GSI) utiliza plantas, árboles y piedra para captar y filtrar el agua de lluvia. Estamos construyendo

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·



BUFFALO SEWER AUTHORITY

RAINCHECK Green Infrastructure Program

Projects in Seneca Babcock Planning Neighborhood

Subcontractors to the Buffalo Sewer Authority will be doing work in your neighborhood to plan upgrades to the public right-of-way within the Seneca Babcock Planning Neighborhood. You may see **markings on the pavement** and **hear heavy equipment** while we complete this temporary work during June through November.

What is Green Infrastructure?

Green stormwater infrastructure (GSI) uses plants, trees and stone to capture and filter rain water. We are building GSI throughout the city as part of the RainCheck program, to keep pollution out

BUFFALO SEWER AUTHORITY

RAINCHECK Green Infrastructure Program

Proyectos en Seneca Babcock Planning Neighborhood

Los subcontratistas de Buffalo Sewer Authority, la autoridad de alcantarillado de Buffalo, estarán realizando trabajos en tu vecindario para planificar mejoras en la vía pública de Seneca Babcock. Es posible que **veas marcas en el pavimento** y **escuches maquinaria pesada** mientras ejecutamos estos trabajos temporales entre junio y noviembre.

¿Qué es la infraestructura verde?

La infraestructura verde de aguas lluvias (GSI) utiliza plantas, árboles y piedra para captar y filtrar el agua de lluvia. Estamos construyendo GSI en toda la ciudad como parte del programa

¿POR QUE SE REALIZAN ESTOS TRABAJOS?

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 5 ·





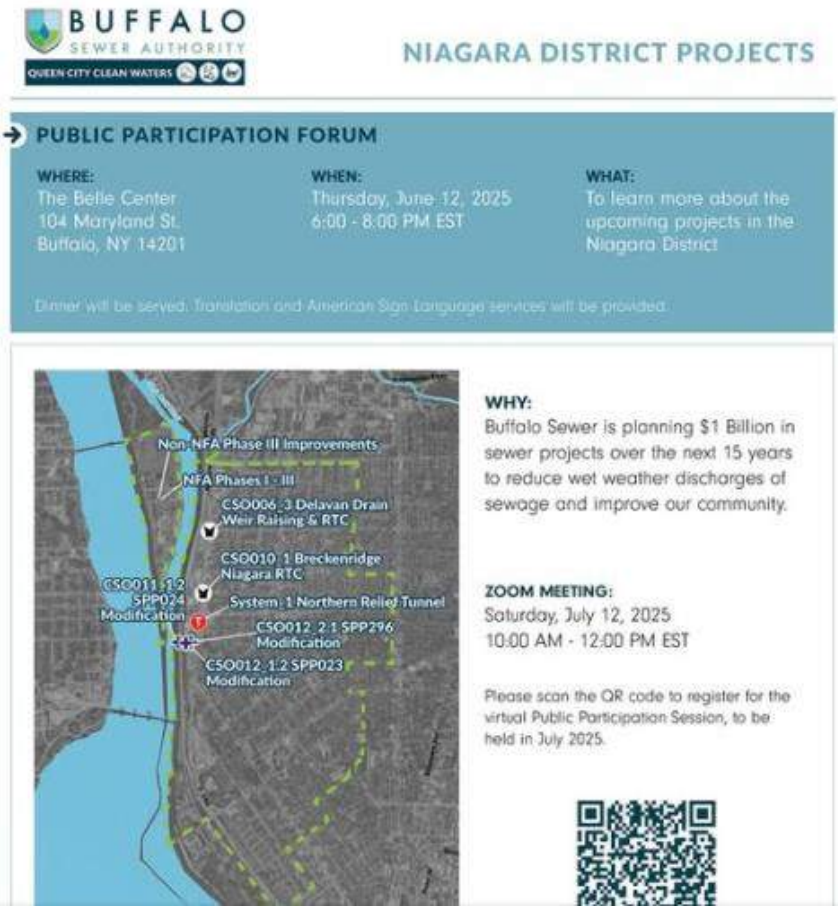
Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 6 ·

Join us for the Niagara District Public Participation Forum!
Buffalo Sewer is investing $1 Billion in sewer upgrades to protect our waterways and improve our community.

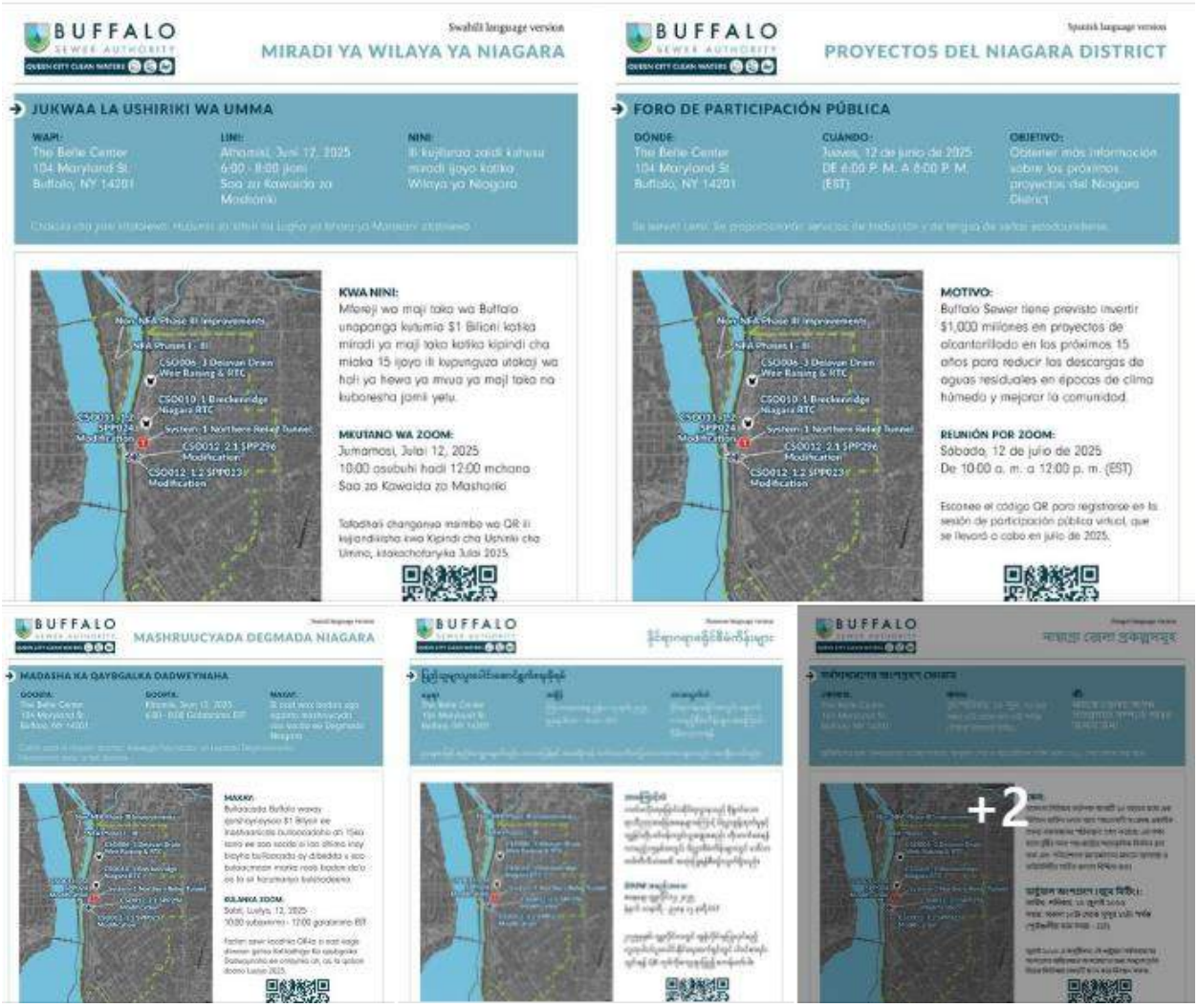
📍 The Belle Center, 104 Maryland St.
🗓️ Thursday, June 12, 2025
🕕 6:00–8:00 PM
🍽️ Dinner provided | 🌐 ASL & translation services available

Learn more about projects planned in your neighborhood.



Buffalo Sewer Authority
June 9 ·

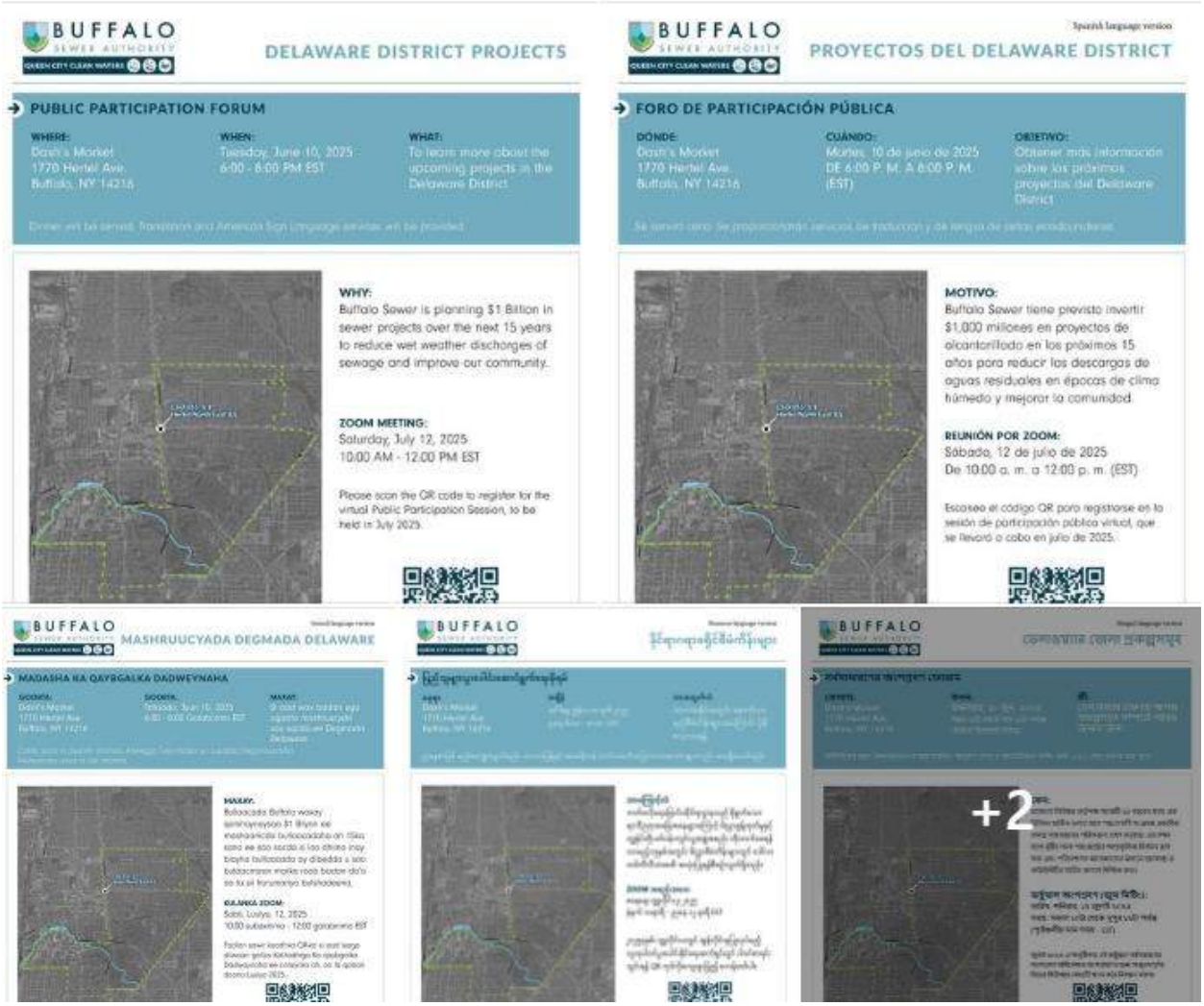
Translated flyers for Thursday's event.



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 10 ·

Join us tonight for the Queen City Clean Waters Public Participation Forum in the Lovejoy District! We'll be at the Buffalo Museum of Science (1020 Humboldt Parkway) from 6–7:30PM to discuss upcoming sewer infrastructure projects and hear from the community. Stop by, get informed, and have your voice heard! Dinner will be served!



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority Facebook Posts

Buffalo Sewer Authority
June 12 ·

📍 Join Us Tonight!
Buffalo Sewer Authority is hosting a Public Participation Forum for Niagara District residents! Come learn about the upcoming projects planned to improve our sewer infrastructure and protect our waterways.

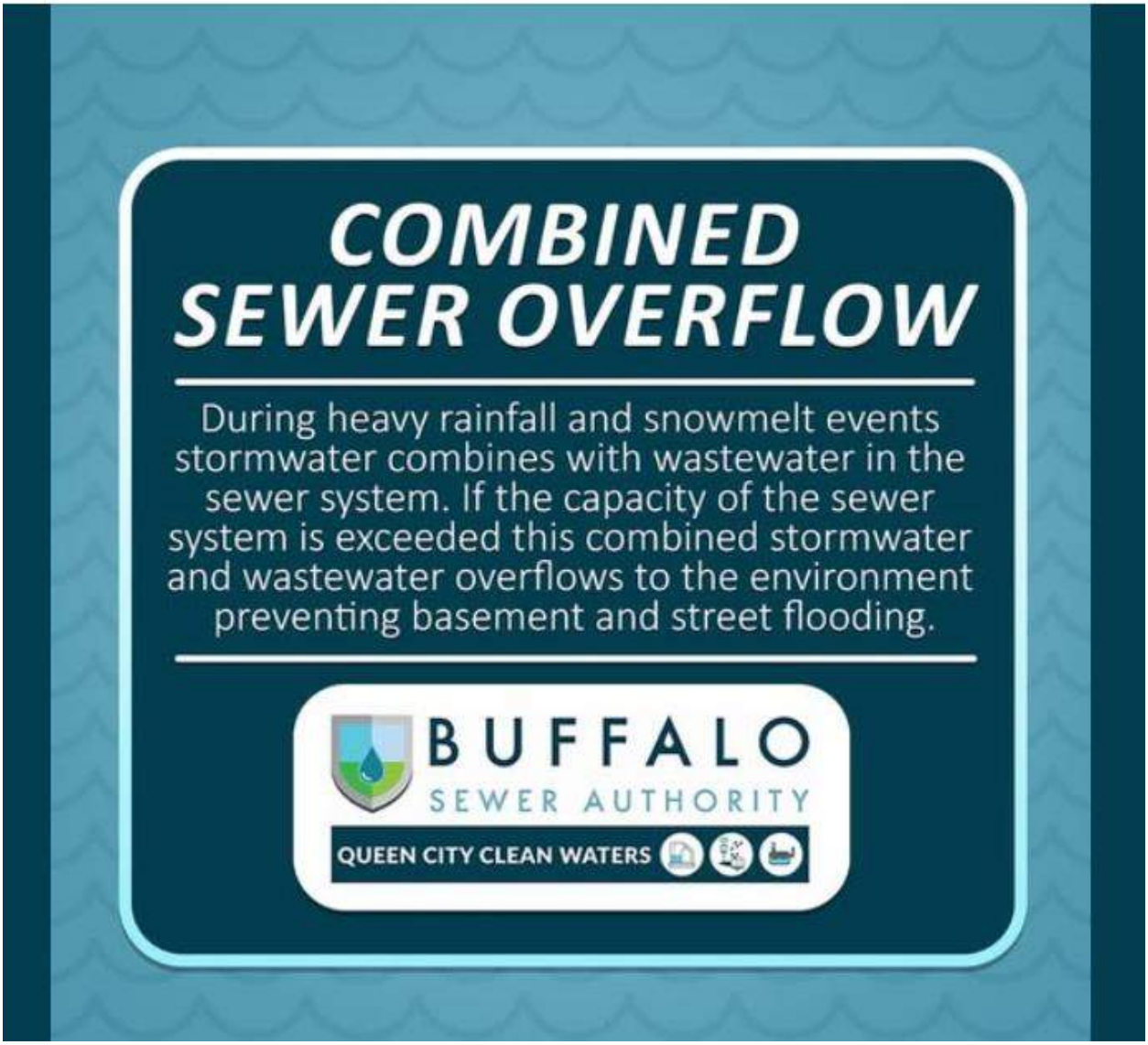
📅 Thursday, June 12
🕕 6:00–8:00 PM
📍 The Belle Center, 104 Maryland St.

Dinner, translation, and ASL services will be provided. Let's build a cleaner, greener Buffalo together!
💧



Buffalo Sewer Authority
June 24 ·

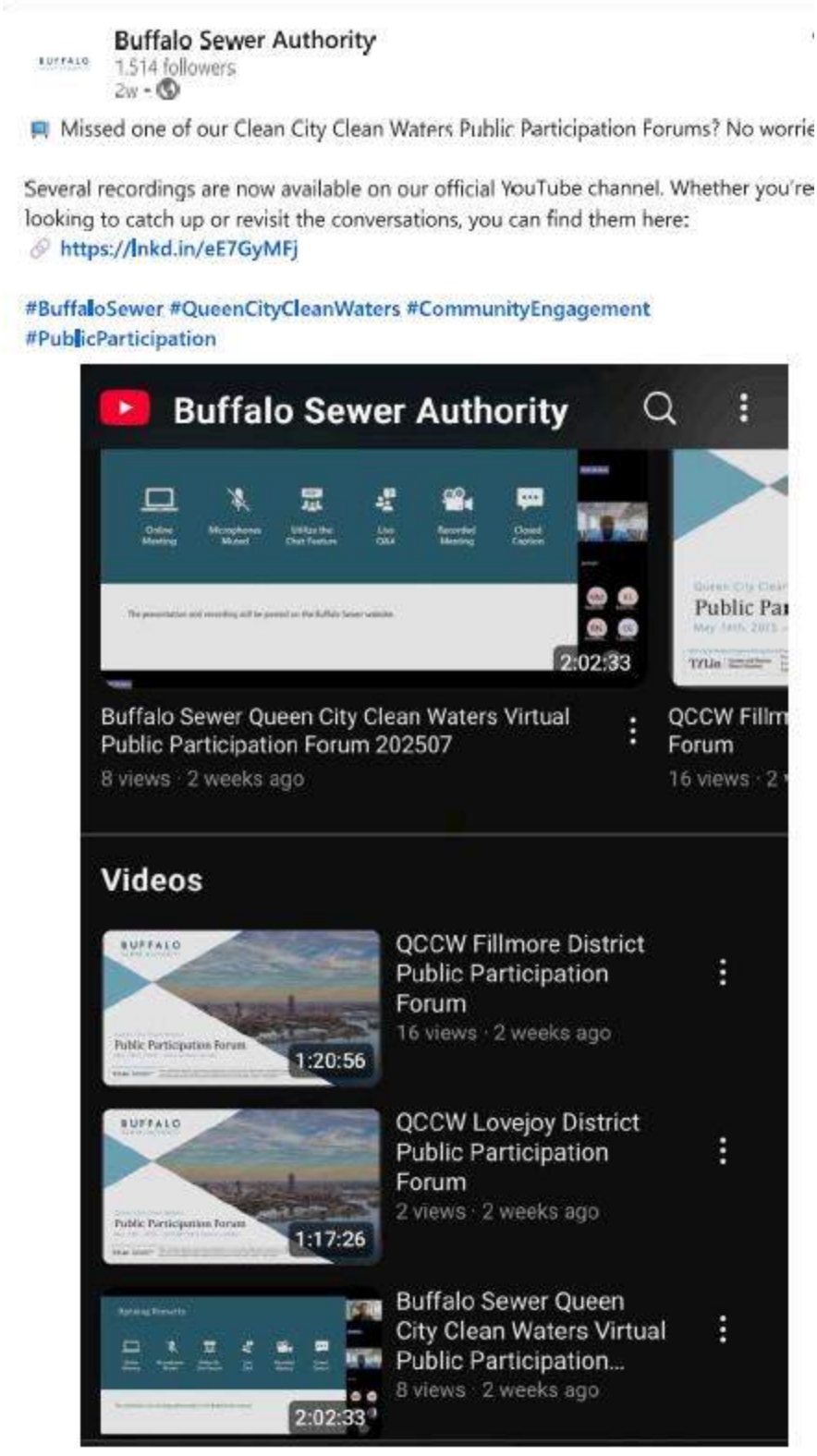
Combined sewer overflows have negatively affected our communities and waterways for decades. The historic investment in our wastewater and stormwater infrastructure will reduce the overflows of combined stormwater and wastewater.



Buffalo Sewer Authority
June 30 ·

Yesterday, Edwin Geter and Perry Pope from our Community Outreach Team were at the South Buffalo Farmers Market in Cazenovia Park engaging with residents, sharing information, and handing out materials about our Queen City Clean Waters projects. We're always proud to connect with the community and spread the word about protecting Buffalo's waterways.





Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority LinkedIn Posts

Buffalo Sewer Authority
1,515 followers
2mo -

Our Principal Sanitary Engineer, Rosaleen Nogle, joined The Capitol Pressroom to discuss how Buffalo is tackling stormwater challenges, overflows, and major upgrades at our Bird Island Treatment Facility. She also spoke about our $1B Queen City Clean Waters initiative and the importance of funding these efforts.

Listen to the full interview here: https://lnkd.in/e_2JaCT4



How Buffalo deals with its wastewater

By David Lombardo Published On: June 11th, 2025
Categories: Capitol Pressroom



June 11, 2025 - Buffalo Sewer Authority Principal Sanitary Engineer Rosaleen Nogle talks about their effort in the Queen City to deal with wastewater and why this work is hampered by a lack of state and federal support.

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority LinkedIn Posts

Buffalo Sewer Authority
1,514 followers
4mo •

Happy Earth Day from Buffalo Sewer Authority!
We're celebrating by giving back to our community and protecting the environment we all share. Join us this Saturday, April 26th, as BSA participates in two neighborhood cleanup events:
Masten District Cleanup 📍 Canisius University Student Center, 81 Hughes Ave 🕙 10:00 AM – 2:00 PM 🍽 Panel luncheon to follow from 2:00 – 4:00 PM
International Schools Block Club Cleanup 📍 Meet at the corner of Baynes & Auburn 🕙 2:00 – 4:00 PM
Cleaning up debris before it can enter our system and helping to keep our waterways clean (like we do everyday). All are welcome—let's work together to keep Buffalo beautiful! 💧🌳 #EarthDay





Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority LinkedIn Posts

Buffalo Sewer Authority
1,515 followers
1mo

This weekend, Katie Walsh and Traserra Adams from our Community Outreach Team attended the Ellicott District Stakeholders Breakfast to connect with residents and share information about our upcoming Queen City Clean Waters projects. We're committed to engaging with the community as we work to improve Buffalo's waterways and environment.



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority LinkedIn Posts

Buffalo Sewer Authority
1,514 followers
4mo •

Buffalo Sewer Authority today celebrated the 90th Anniversary of our founding with Mayor Scanlon, Councilmember Everhart and members of our stakeholder advisory committees, Board Chairman, and staff as we broke ground on the first phase of a $100 million investment in the Jefferson-Delavan neighborhood.







+7

Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority LinkedIn Posts

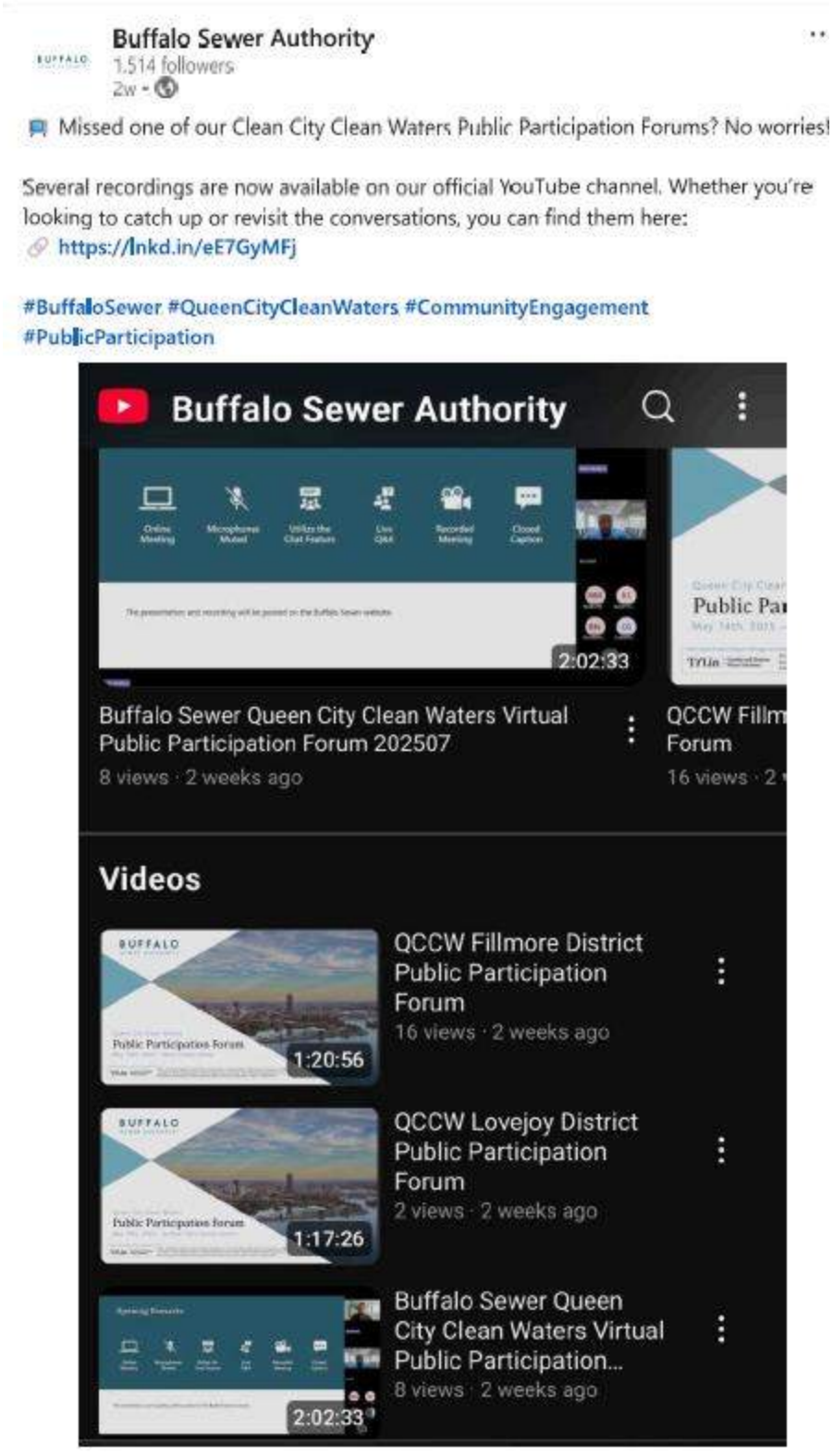
Buffalo Sewer Authority
1,514 followers
2mo

BSA was proud to march in this year's Juneteenth Festival Parade! 🎉💚❤️🧡
Our team showed up strong with an energetic float celebrating diversity and unity, while honoring the legacy of freedom, resilience, and progress. With the support of our unions CSEA 815 and CWA 1186, we joined the community in commemorating this important holiday and had a great time engaging with residents along the parade route.

Thank you to everyone who came out and celebrated with us — we're honored to be part of such a vibrant and historic tradition!



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority LinkedIn Posts



Attachment C to the Semi-Annual Status Report: September 2025
Public Outreach Materials: Buffalo Sewer Authority LinkedIn Posts


Buffalo Sewer Authority
Posts
About
Photos
More
Buffalo Sewer Authority is with bnwaterkeeper.
Aug 27 ·
We're proud to support our partners at @bnwaterkeeper as they host their Solo Sweep on Sept. 18!
Join the effort to keep Buffalo's streets and sidewalks clean before Explore Buffalo's Doors Open event.
Plus, the first 50 people to register and participate will earn a free drink ticket @ 42 North Brewery
721 Main St. | 5–7 PM
Register here www.bnwaterkeeper.org/cleanups
#cleanwaters #buffalostrong #communitycleanup
BUFFALO NIAGARA WATERKEEPER
EXPLORE BUFFALO DOORS OPEN BUFFALO
SOLO SWEEP
SEPT. 18 | 5-7P.M.
721 MAIN ST.
CLEAN UP TRASH, EARN A FREE DRINK
@ 42 NORTH BREWERY IN BUFFALO!

Buffalo Sewer Authority

Posts About Photos More

Buffalo Sewer Authority — with **hallmarkfirm** and **tylininternational** at **Hoyt Lake in Delaware Park.**

Aug 28 ·

We are one day away from the Clean Wat... See more



255 views

Like Comment Share

Buffalo Sewer Authority is with **eriecountydep** and **16 others** at **Hoyt Lake in Delaware Park.**

Aug 27 ·

Community Partners Spotlight
Queen City Clean Waters Fair... See more



Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025

Buffalo Sewer Authority

Posts About Photos More

Buffalo Sewer Authority is with **twistedicee** and **2 others** at **Hoyt Lake in Delaware Park**.

Aug 29 ·

Vendor Spotlight: @twistedicee
Queen City Clean Waters Fair
Today, August 29
Hoyt Lake, Delaware Park
4 PM – 7 PM

Cool off lakeside with the refreshing flavors of Twisted Icee! They're bringing the chill to this year's Clean Waters Fair—perfect for a summer evening by the water.

#QCCWFair #cleanwaters #twistedicee #supportlocal



Buffalo Sewer Authority

Posts About Photos More

The Clean Waters Fair wouldn't be possible without our amazing community partners! These organizations are working side by side with BSA to support healthier communities, a cleaner environment, and a stronger Buffalo. 🌍💙

Come meet them at the Fair and learn how together we're shaping a brighter future for our city!

#qccwfair #cleanwaters #buffalostrong #communitypartners



Buffalo Sewer Authority

Posts About Photos More

Buffalo Sewer Authority is at **Hoyt Lake in Delaware Park.**

Aug 29 ·

The Clean Waters Fair is finally here!
Join us tonight from 4 PM – 7 PM at Hoyt Lake for a fun, free family event.

We're providing Buffalo residents with an evening of food + music, giveaways, environmental educational activities, and interactive displays to learn more about the Queen City Clean Waters Initiative.

Don't miss the extra fun for all ages:
🎈 Games & Prizes
📚 Bookbag & Book Giveaways
🍿 Food
🎶 Music

📌 For the bookbag giveaway: child must be present and only one bookbag per child.




Buffalo Sewer Authority
Posts
About
Photos
More
Buffalo Sewer Authority is at Hoyt Lake in Delaware Park.
Sep 2 ·
Thank you, Buffalo!
Our Queen City Clean Waters Fair was a success thanks to all of YOU who joined us at Hoyt Lake on Friday. From the food and music to the activities and community partners, it was a true celebration of clean water and community.
BUFFALO
SEWER AUTHORITY
+15



Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025

Buffalo Sewer Authority

Posts About Photos More

Buffalo Sewer Authority
Sep 8 ·

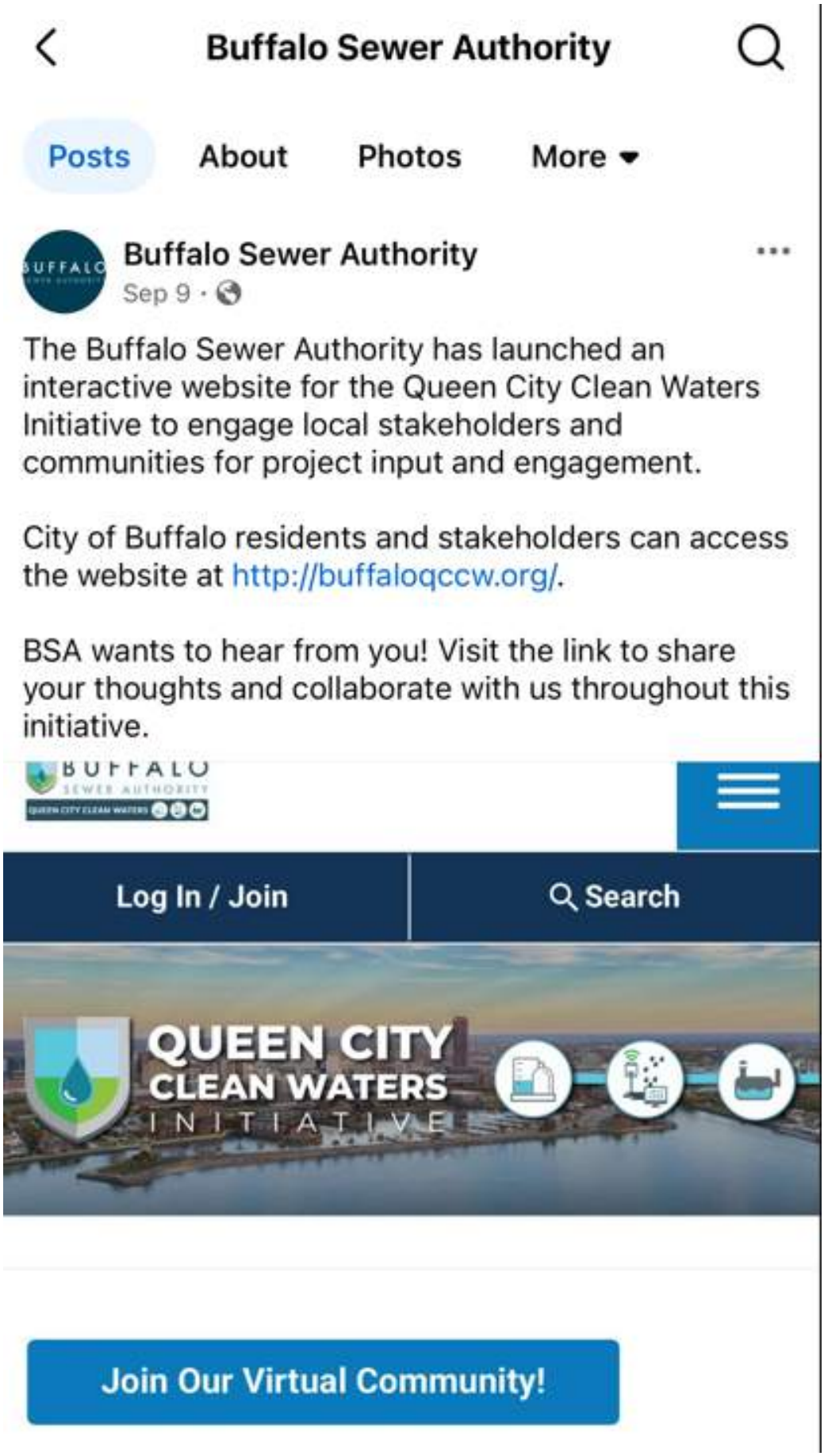
💧 On Saturday, our Outreach Team was out at the Boys & Girls Club for the 3rd Annual Party in the Park! 🎉

Edwin Geter & Kaitlin Walsh connected with residents about keeping Buffalo's water clean 🚰💙 — from "No Wipes Down the Pipes" 🚫 to "Fat-Free Sewers" 🍳 and water bill assistance 💡.

Together, we can protect our sewers & waterways!

#buffalosewer #queencitycleanwaters #communityoutreach





Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025


Buffalo Sewer Authority
Posts
About
Photos
More
Buffalo Sewer Authority updated their cover photo.
Sep 12 ·
BUFFALO
90
YEARS
1935-2025
SEWER AUTHORITY
3
Like
Comment
Share



Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025

Buffalo Sewer Authority

Posts About Photos More

Buffalo Sewer Authority
Sep 17 ·

Community collaboration is a key driver in the success of the Queen City Clean Waters Initiative.

We want to hear from you!

Please visit the link below to let us know your thoughts on how we can improve our infrastructure to create a cleaner and resilient community!

https://buffaloqccw.org/share-your-insight



Queen City Clean Waters Initiative / Share Your Insight

News

Share Your Insight

10 December 2024

Share Your Insights

What do you think would work best to improve our Storm Water System? (Green Infrastructure,

Buffalo Sewer Authority

Posts About Photos More

Buffalo Sewer Authority
Sep 18 ·

🚧💧 One of our Sewer Cleaning Crews and Sewer Televising Crews were out in the field performing routine maintenance on a section of the sewer system.

Before our high-tech camera is sent underground to televise the sewer line, the cleaning crew uses powerful hoses and vac equipment to clear debris and sediment. This step ensures the camera has a clear path to capture detailed footage of the pipe's condition. 🛠️📹

Televising sewers allows us to spot cracks, blockages, or structural issues early allowing us to keep our system reliable

#buffalosewer #cleanwaters #infrastructure #communityfirst





Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025

Buffalo Sewer Authority

Posts About Photos More

Buffalo Sewer Authority
Sep 20 ·

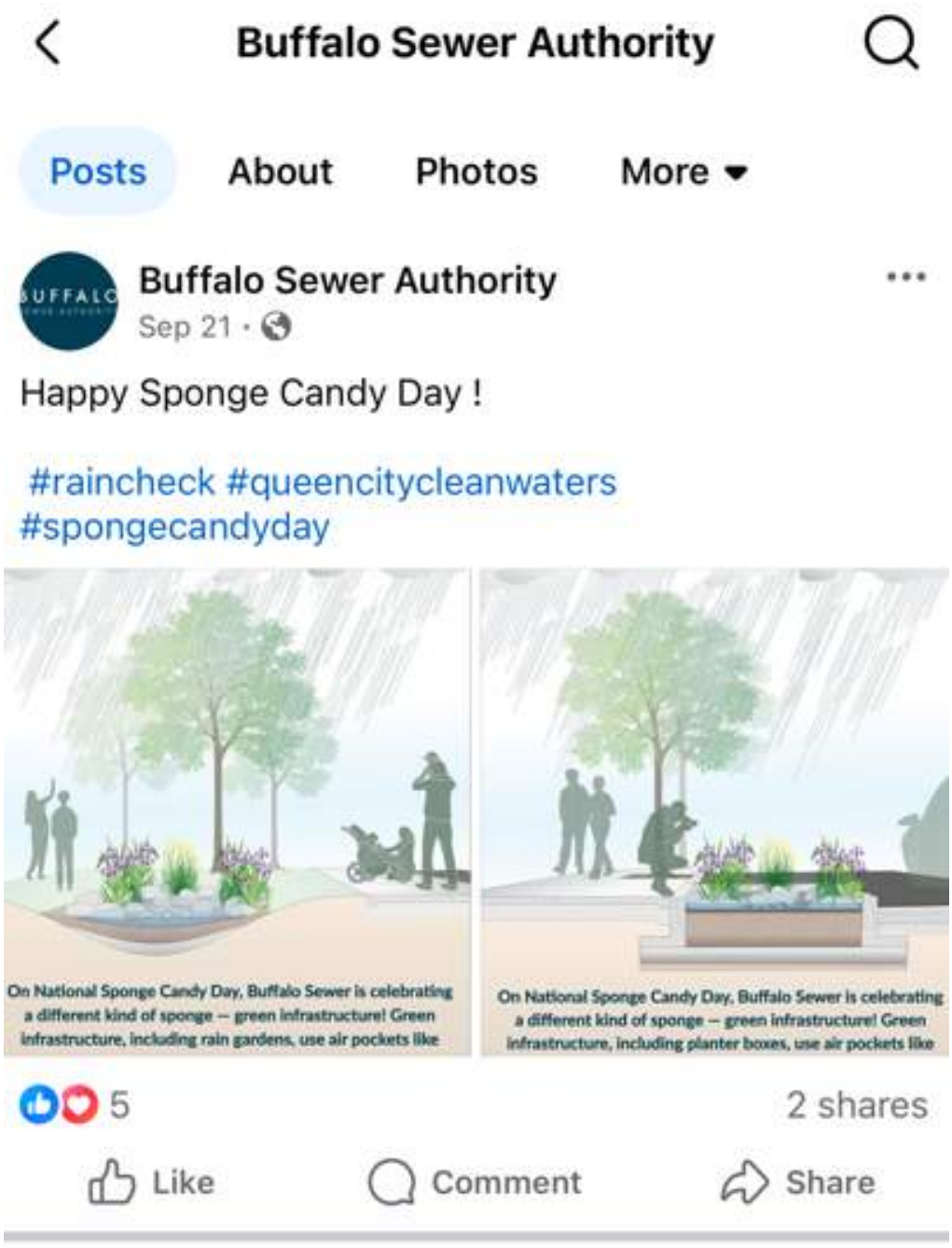
💬🌇 Community Work in the Masten District 🌇💬

At today's Masten District Stakeholders Brunch, our Community Outreach Team shared updates on upcoming projects in the district, discussed their potential impacts, and provided residents with helpful informational literature.

We appreciate the opportunity to connect directly with the community, thank you for having us, @councilwomaneverhart ! 💙

#buffalosewerauthority #queencitycleanwaters #CommunityOutreach #mastendistrict

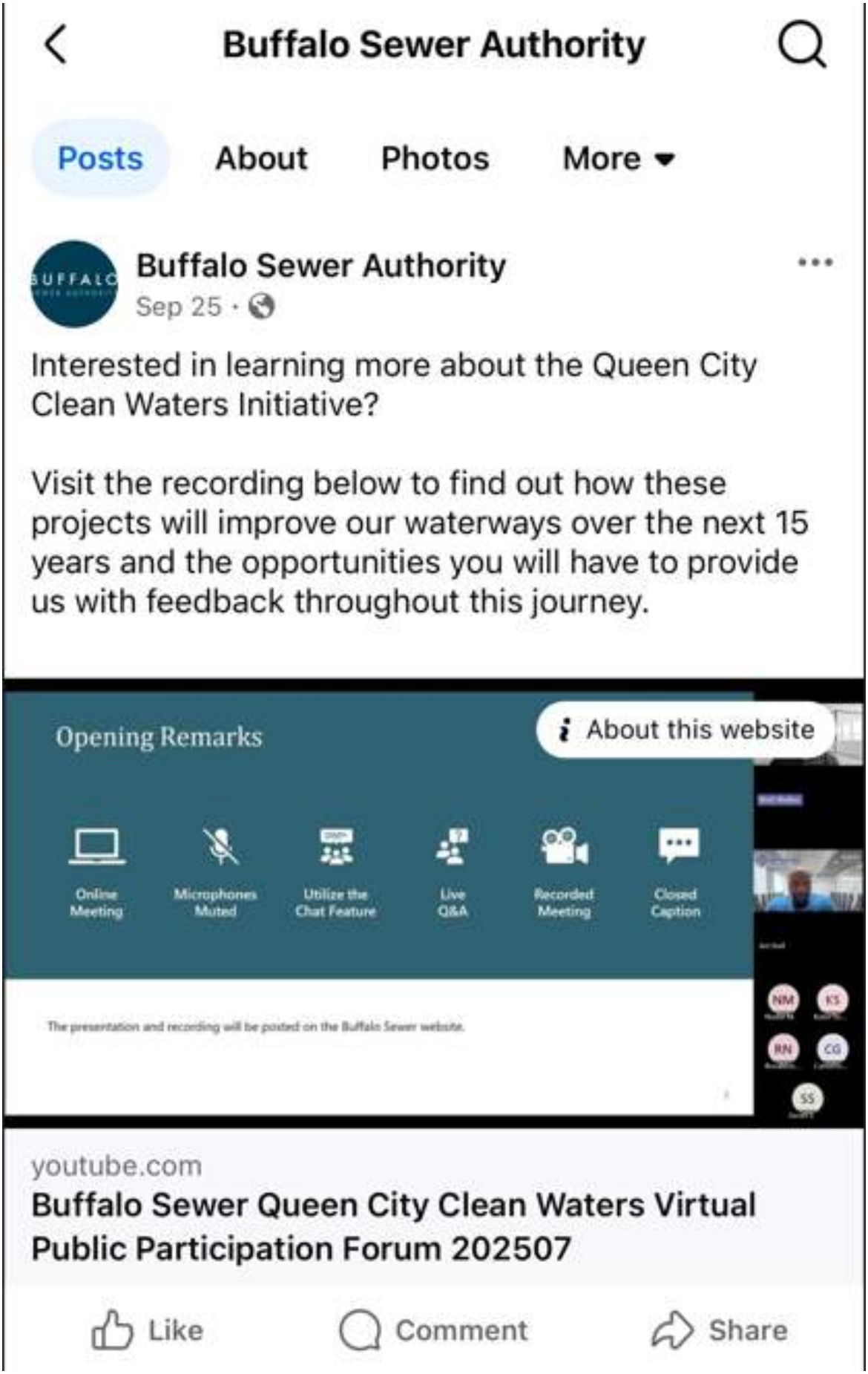




Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025



Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025


Buffalo Sewer Authority
Posts
About
Photos
More
Buffalo Sewer Authority
Sep 25 ·
Interested in learning more about the Queen City Clean Waters Initiative?
Visit the recording below to find out how these projects will improve our waterways over the next 15 years and the opportunities you will have to provide us with feedback throughout this journey.
Opening Remarks
About this website
Online Meeting
Microphones Muted
Utilize the Chat Feature
Live Q&A
Recorded Meeting
Closed Caption
The presentation and recording will be posted on the Buffalo Sewer website.
youtube.com
Buffalo Sewer Queen City Clean Waters Virtual Public Participation Forum 202507
Like
Comment
Share



Buffalo Sewer Authority
Facebook Posts
August 2025 - September 2025

Buffalo Sewer Authority

Home About Posts Jobs People

🚧 26th Clean Sweep of the Season – Ellicott District 🚧

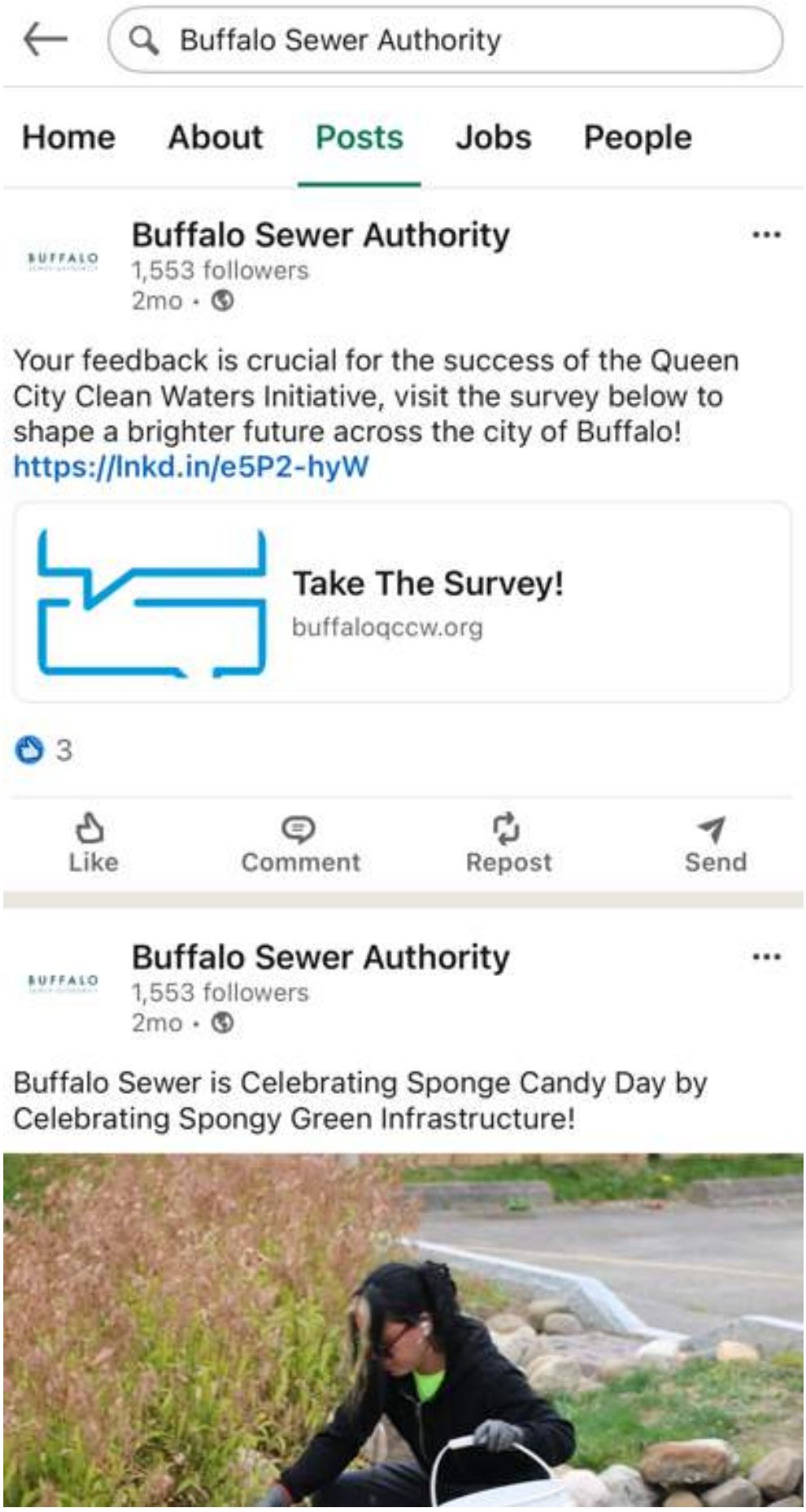
As part of the City of Buffalo's Clean Sweep initiative, Buffalo Sewer crews were in the Ellicott District performing receiver maintenance—clearing out leaves, debris, and sediment to keep storm drains flowing properly.

This work helps:
✓ Prevent localized flooding
✓ Support healthier neighborhoods
✓ Ensure reliable stormwater management across our city

Clean Sweeps are a great example of how city departments, community groups, and residents can work together to improve the quality of life in Buffalo.



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025

Home About Posts Jobs People

Buffalo Sewer Authority
1,553 followers
2mo ·

💬🏙️ Community Work in the Masten District 🏙️💬

At today's Masten District Stakeholders Brunch, our Community Outreach Team shared updates on upcoming projects in the district, discussed their potential impacts, and provided residents with helpful informational literature.

We appreciate the opportunity to connect directly with the community—thank you for having us, Councilwoman Everhart!💙









Buffalo Sewer Authority
Linkedin
August 2025 - September 2025



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025

Buffalo Sewer Authority

Home About Posts Jobs People

Buffalo Sewer Authority
1,553 followers
2mo ·

💧 Community Outreach in Action

On Saturday, Buffalo Sewer Authority's Community Outreach Team members Edwin Geter and Kaitlin Walsh participated in the 3rd Annual Party in the Park at the Boys & Girls Club.

They engaged residents with information on our Queen City Clean Waters Initiative while also sharing resources on:

- 🚫 Preventing sewer blockages with No Wipes Down the Pipes
- 🍳 Protecting homes & the environment with Fat-Free Sewers
- 🚽 Promoting proper flushing habits with Let's Talk Toilets
- 💡 Affordability programs such as PromisePay

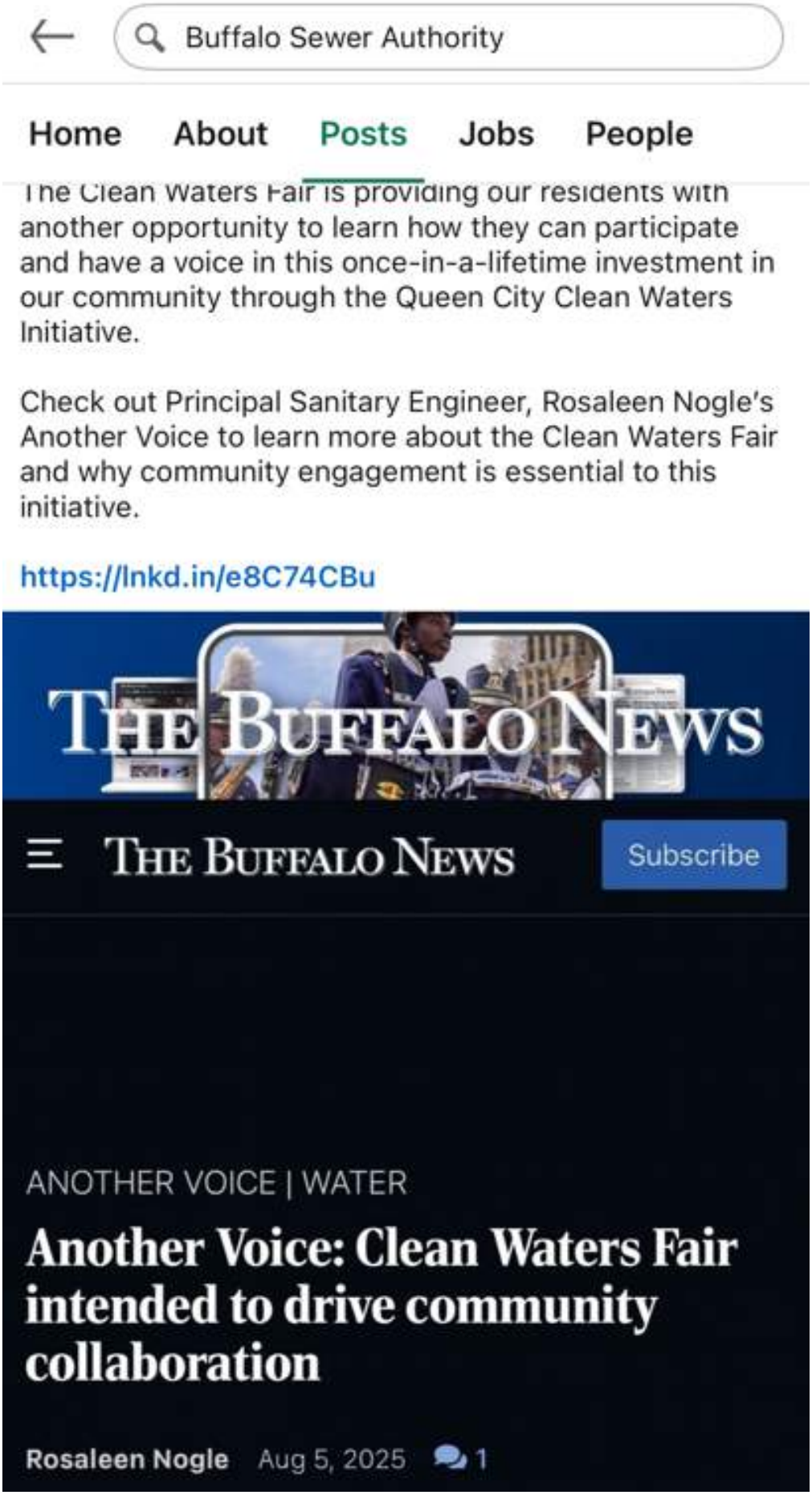
Events like this help us strengthen community connections while promoting cleaner waterways and healthier neighborhoods across Buffalo. 🚰💙



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025

Buffalo Sewer Authority
1,553 followers
2mo •

Buffalo Sewer is proud to announce that we have reached an agreement with NYS DEC to implement the Queen City Clean Waters Initiative:

https://lnkd.in/eVYYkiGJ

DEC Commissioner Lefton, Attorney General James, and Buffalo Sewer Authority Announce Historic Commitment to Significa...
buffalosewer.org

12 1 comment

Like Comment Repost Send

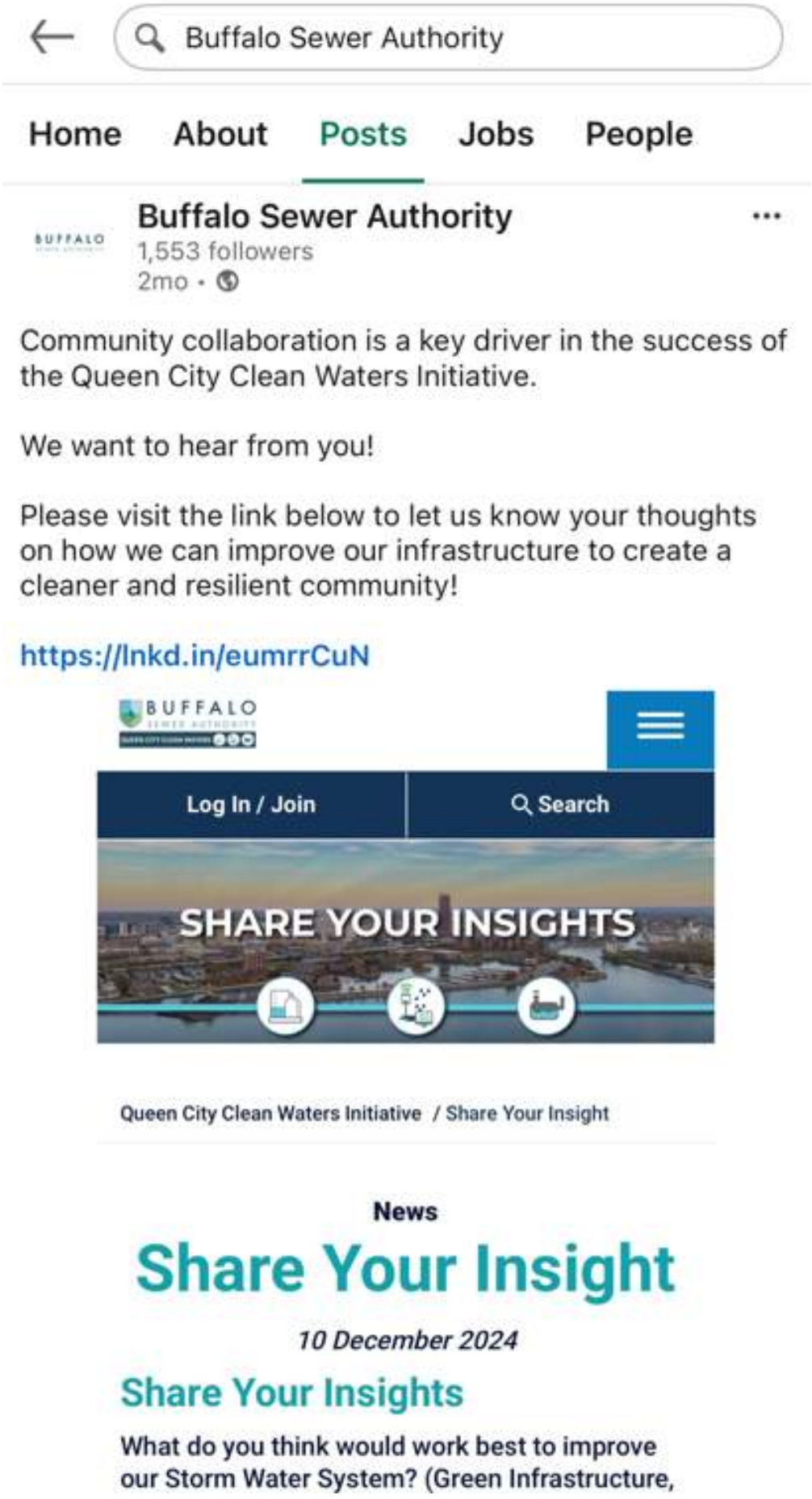
Buffalo Sewer Authority
1,553 followers
2mo •

🌱🛠️ Receiver Work 🛠️🌱

Enjoy a look at our crews performing cleansing receiver maintenance during the 22nd Clean Sweep in the Niagara District 🌍💧.




Buffalo Sewer Authority
Linkedin
August 2025 - September 2025



Buffalo Sewer Authority
Linkedin
August 2025 - September 2025

Buffalo Sewer Authority

Home About Posts Jobs People

Buffalo Sewer Authority
1,553 followers
2mo •

🚒 Buffalo Sewer Capital Project Opportunities 🚒

Design consultants, construction contractors, and vendors interested in learning more about upcoming Queen City Clean Waters Initiative capital project opportunities are encouraged to attend the upcoming Informational "Open House" Session (virtual) scheduled for Tuesday, September 16th at 10:00 am EST.

In particular, BSA aims to create space for Disadvantaged, Women, and Minority Business Enterprise (D/W/MBE) firms to connect with Primes and other partners, advancing our mission of community impact and local job creation.

Register at: https://lnkd.in/eeGr4f-b

Consultant, Contractor & Supplier Opportunities
buffalosewer.org

Aria Harris and 5 others 1 repost

Like Comment Repost Send

Buffalo Sewer Authority

Home About Posts Jobs People

Buffalo Sewer Authority
1,553 followers
2mo •

Upcoming Work in the Lovejoy District

Buffalo Sewer Authority

Home About Posts Jobs People

Buffalo Sewer Authority
1,553 followers
2mo •

Upcoming Work in the Lovejoy District

BUFFALO SEWER AUTHORITY

UPCOMING WORK IN THE LOVEJOY COMMON COUNCIL DISTRICT

Buffalo Sewer through its Queen City Clean Waters program **is tackling stormwater challenges in Buffalo.**

In **September 2025**, our team will be digging a test pit in the Lovejoy District to gather important information for these projects.

Here's what you need to know:

- **Location:** Our crews will wear yellow vests and hardhats as they dig **in the westbound travel lane of Genesee Street near the intersection with Kerns Avenue.**
- **Purpose:** We need to confirm where buried utilities are located.
- **Process:** We will dig a small hole to expose the underground utilities. The area will be restored once the work is completed.
- **Impact:** You will see traffic cones, and traffic lanes will remain open, but may be shifted on Genesee for up to 8 hours while work is being completed. We will take precautions to minimize any inconvenience.

For more information please contact:
Rosaleen Nogle, Principal Sanitary Engineer
Buffalo Sewer Authority
mogle@buffalosewer.org
(716) 851-4664 Ext. 4203



4

Buffalo Sewer Authority
Linkedin
August 2025 - September 2025

APPENDIX F: PRINT ADS AND PRESS RELEASES

BUFFALO
SEWER AUTHORITY

Media Coverage
June 2024 – December 2024

Buffalo Sewer Authority adopts budget, rates set to increase

WKBW

June 3, 2024

BUFFALO, N.Y. (WKBW) — The Buffalo Sewer Authority has approved its Fiscal Year 2025 budget which will lead to a rate increase.

According to the sewer authority, customers will see an increase of $5 per month based on homes with an assessed value of $100,000.

The new rate increase will fund required improvements to comply with regulatory mandates from the U.S. Environmental Protection Agency (EPA) to further reduce pollution in the Niagara and Buffalo Rivers, Cazenovia and Scajaquada Creeks, and Black Rock Canal." a release says.

For help paying your sewer bill, you can visit getwaterwisebuffalo.org or call 716-847-1065 and eligible customers can enroll in Residential Affordable Water Programs.

"We recognize that an increase of any kind may pose challenges for financially vulnerable families. That's why we established programs that help support families in need. Buffalo Sewer's success securing Federal and State funds, and focus on affordability have allowed us to keep rates as low as possible for our customers. Buffalo Sewer's five-year, $770 million capital program will continue to improve water quality, treatment facilities, and reduce combined sewer overflows into our local waterways."

- Buffalo Sewer General Manager Oluwole "OJ" McFoy

Town hit with higher sewer bill

West Seneca Bee

June 20, 2024

When the Town of West Seneca received its 2023 bill for water treatment services from the Buffalo Sewer Authority (BSA), Supervisor Gary Dickson thought there must have been some kind of mistake.

Since the bill was about $1 million higher than expected, his double-take was understandable.

“We thought maybe they read a meter wrong, or something like that,” Dickson said. “Nope. It’s not wrong.”

Dickson called the increase – which represents about a 20% hike – “the new normal” because the BSA is taking on a five-year capital improvement project with an estimated cost of $770 million, and it will be passing along the costs to all of the municipalities it serves.

In addition, the BSA is in the midst of some sewer repair work that has been mandated by the Department of Environmental

Conservation through the year 2034, sending the costs even higher.

The town pays a percentage of the overall flow through the treatment facility; historically, that percentage is between 5 and 6.5% and currently sits at 6.3%.

Dickson said the town can handle the increase – for now.

“This is not a problem this year – we have enough resiliency in sewer fund balance to cover this year – but it will have to be budgeted for in 2025 and going forward,” he said. “BSA expects even higher charges in the next few years as they do their large capital project. So it’s not a big deal right now, but it is going to be in future budgets.”

Dickson said the BSA is hoping to offset the capital costs with grants, so the financed amount is expected to come in somewhat less than anticipated, but it means there will still be substantial costs passed on to the municipalities.

The BSA is projecting another $10 million increase for 2023-24 – so if the projected flow stays around 6%, West Seneca is looking at another extra $1 million in sewer treatment costs again next year.

That would raise the total payable to BSA for 2023-24 to $4.78 million. The total paid to BSA in 2021-22 was $2.68 million and $3.749 million in 2022-23.

In comparison, Cheektowaga is about 10% of the treatment plant’s flow, Dickson said, and the Lancaster/Depew area is also looking at a hefty hike.

But the BSA will be working with New York state for any avenue possible in terms of grant funding to try to alleviate the costs.

“There are a number of grants available, so that should reduce the total,” Dickson said. “This is something that will be concerning in future years – we’ll certainly do our best to mitigate it and to join with Buffalo and surrounding towns to get as many grants as possible.”

Buffalo’s water board chair spent nearly 300 days traveling while city delayed fluoride

WGRZ

September 10, 2024

BUFFALO, N.Y. — For nearly nine years, since Buffalo city officials quietly stopped adding fluoride to the drinking water, parents and dentists say they’ve seen a spike in tooth decay and dental surgeries for the city’s kids.

During that same time frame – as the city repeatedly missed its own deadlines for re-fluoridating the water – the chairman of Buffalo’s water board spent nearly 300 weekdays away from the office on work trips paid for by taxpayers, an investigation by 2 On Your Side has found.

Oluwole A. “O.J.” McFoy, 49, who has served as Buffalo Water Board chairman since 2007, spent 297 weekdays traveling to various water conferences across the U.S., according to public records analyzed by 2 On Your Side Investigates.

McFoy has traveled to 23 states at an estimated cost of $161,900 to taxpayers since 2016, according to Buffalo Sewer Authority meeting minutes. McFoy disputed that figure but when pressed, could not provide an estimate he thought was more accurate.

McFoy, who in addition to his water board duties – he is not paid a salary for that role – also serves as CEO and general manager of the Sewer Authority, where he makes $130,000 per year, according to SeeThroughNY.

McFoy, an appointee of Mayor Byron W. Brown, took 55 work trips – an average of nearly seven per year – to conferences in Colorado, Arizona, Florida, the California wine country, and 41 other destinations across the nation.

He took eight trips to the nation's capital, seven to New York City, six to Chicago, and four to New Orleans.

He got his passport stamped not only for trips to Toronto and Montreal but also for an excursion to Germany to attend a conference hosted by the United Nations.

McFoy declined multiple interview requests for this story but defended his travel in a series of email exchanges with 2 On Your Side Investigative Reporter Charlie Specht.

"My position as an executive requires me to travel to continue building and improving our local infrastructure, advocating for grants and ensuring Buffalo residents receive affordable service," McFoy wrote. "This necessary travel has given Buffalo greater visibility and resulted in innovative projects, partnerships, energy-saving capital programs, and over $250 million in grants in the past five years."

Brown, through spokesperson Michael DeGeorge, declined an interview request but defended McFoy's travel as necessary to securing grants.

McFoy said he could not comment about whether his travel habits were in part responsible for the city's failure to fluoridate the water for nearly nine years. He cited a class-action lawsuit in federal court filed by parents who accuse the city of not adequately telling the public about the decision to stop adding fluoride to the water in 2015.

But McFoy said his travel expenses cost taxpayers less than $160,000 because the sewer board approved the trips as "not to exceed" the listed amount. However, McFoy could not provide 2 On Your Side with a figure he thought was more accurate or the documentation to back up such an estimate.

Additionally, the database 2 On Your Side Investigates built to track McFoy's travel using public records was compiled using conservative estimates. For

example, each time sewer board members approved a trip for multiple city officials, 2 On Your Side divided the total amount approved by the number of people taking the trip and only counted McFoy's share in his total trip costs.

Sewer Authority board members approved 376 travel days for McFoy since 2016. Counting only weekdays, that figure is 297 days. McFoy said he does not take off during the week when he travels on weekends.

Travel increased in last few years

Robert Corp, an attorney representing those parents in court, says he's not sure whether there is a correlation between McFoy's travel schedule and the city's inability to fluoridate its water. But 2 On Your Side's findings make him wonder.

"Whether that whole delay has been a result of various members of the local water administration taking extravagant travel, I guess that's part of what will come to light in the discovery," Corp said, referring to the lawsuit.

He added, "If that's a factor in the delay, then that would be really unfortunate, right? The fact that there's dozens of trips going on and not a lot of communication and certainly not a lot of development of answers for this public health crisis is a problem."

The first indication that city water was no longer being fluoridated was buried in the fine print of the 2015 Water Quality Report, a document that governments are required to file online yearly. "Since June 22, 2015 fluoride has not been added to your drinking water, and we do not expect fluoride addition to be restored before March 1, 2016," the report stated. The lawsuit states that in other parts of the annual water reports, the city appears to contradict itself by stating that fluoride was found in the city's water.

The city missed its first deadline and in its 2016 Water Quality Report said December 2017 was the new deadline for restoring fluoride.

McFoy in 2017 took five trips, including a week-long stay in Essen and Bonn, two cities in Germany, for the United Nations Climate Change Conference. Sewer Authority meeting minutes said flights and hotels were provided by the

International Council for Local Environmental Initiatives. The board approved $900 for “expected ancillary costs.”

The expected fluoride deadline was once again pushed back – to December 2018 – in that year’s Water Quality Report. McFoy’s travel began to increase that year. He took 13 trips to cities including New York, San Antonio, Texas; Boston, Mass.; New Orleans, La.; Chicago, Ill., and Atlanta, Ga.; at a total expense of $21,350 to taxpayers.

In the 2018 Water Quality Report, the deadline for fluoride restoration was pushed back to December 2019. The city in its 2019 Water Quality Report stopped giving a tentative date for the restoration of fluoride.

The global COVID-19 pandemic stifled McFoy’s traveling in 2020 and 2021 when the sewer board approved six trips for $10,000.

In 2022, though, McFoy traveled to 15 conferences – 64 total weekdays for travel – at an expense of $36,250.

The Aspen-Nicholas Water Affordability Roundtable was billed as an “invitation-only roundtable” for “executives, policy makers and thought leaders” who were “focused on transformative changes needed in water resources management.”

McFoy in his email wrote that “anywhere between 1 and 10 individuals” regularly travel using public funds to conferences, “not just myself.”

Sewer Authority minutes show that while McFoy appears to travel more than other employees, the sewer board in 2019 approved a trip to New York City for McFoy and nine others to attend –at a cost not to exceed $25,000.

In 2021, McFoy and eight others attended the Water Environment Federation's Annual Technical Exhibition and Conference in Chicago. Later this year, McFoy and 10 others are scheduled to attend the same yearly conference in New Orleans. That’s expected to cost taxpayers $27,000.

McFoy in his email said his roles at the Buffalo Water Board and the Buffalo Sewer Authority "have nothing to do with each other" even though most of the conferences he attended contained the word "water" in the title.

"My business travel for Buffalo Sewer is in service to Buffalo Sewer and my job as General Manager," he wrote in an email. "My role as Board Chair is voluntary and Buffalo Sewer does not pay for Buffalo Water business. This is not an intricate concept, it's very simple."

Fluoride controversy had no effect

Public disclosure of the fluoride issue last year – and outrage from members of the Buffalo Common Council and local dentists – also did not slow down McFoy's traveling habits. Four days after Investigative Reporter Charlie Specht broke the news in January 2023 that the city had not been fluoridating its water for eight years, McFoy traveled to Washington, D.C., for a White House event on water infrastructure.

It was one of four trips McFoy took to the nation's capital in 2023, including the Water and Wastewater Forum, an "invite-only gathering of high-caliber CEOs in the water and wastewater industry."

McFoy was invited to participate with other "industry leaders" to "further enhance their leadership journey," according to meeting minutes.

Last year, Mayor Brown said fluoride would be restored by the end of 2023 – a deadline that the city once again missed.

McFoy in 2023 took 17 trips – he was gone from City Hall for a total of 69 weekdays – that cost taxpayers more than $40,000, according to public records.

McFoy and the sewer board chairman took three separate trips to California, including to San Diego, Sacramento, and Sonoma, a city in "the heart of the renowned Sonoma Valley winemaking region."

This year, McFoy has traveled to New Orleans, La.; Miami, Fla., Austin, Texas; Washington, D.C.; Chapel Hill, N.C.; Pittsburgh, Pa.; Virginia Beach, Va.; Anaheim and Los Angeles, Calif.

Earlier this year, the city said it planned to resume water fluoridation by the end of August.

McFoy did not indicate why that deadline – like the others before it – was missed. But he hinted Friday that fluoride could soon be in the water after a nine-year absence.

“Buffalo Water will be corresponding with the media in the coming days regarding the re-fluoridation capital project,” McFoy said.

If McFoy is to attend such an announcement, he would have to wait until later this week.

From Saturday to Thursday, McFoy will be attending a water forum in Aspen, Colorado.

'Why are we traveling so much?' Buffalo Water Board Chair facing criticism for traveling nearly 300 days to conferences

WGRZ

September 18. 2024

BUFFALO, N.Y. — Anger on behalf of her young son is what caused Rahwa Ghirmatzion to file a lawsuit against Buffalo officials for failing to fluoridate in its water supply since 2015.

“I just assumed that he was getting enough fluoride, that his teeth were protected,” Ghirmatzion said.

Ghirmatzion was angered again last week when she viewed the results of a 2 On Your Side investigation into Buffalo Water Board Chair and Buffalo Sewer Authority CEO Oluwole “O.J.” McFoy.

Using public records, 2 On Your Side Investigates found that since 2015, McFoy spent 297 weekdays traveling to water conferences in 23 states. He took a total of 55 work trips at an estimated cost of $161,000, according to sewer authority meeting minutes.

The travel occurred during a period of nearly nine years in which the city repeatedly missed its own deadlines to re-fluoridate its water for dental health.

“I am now a little more angry, if I’m being honest with you, that that was taxpayer dollars going to the Buffalo Sewer Authority that is paying for these trips,” Ghirmatzion said.

McFoy declined an interview request for this story but noted in an email that he has attended every Buffalo Water Board meeting during the last nine years.

2 On Your Side also tried to speak with McFoy at a monthly Buffalo Water Board meeting on Wednesday at the Col. Francis G. Ward Pumping Station. The water board’s website said the meeting was scheduled for Sept. 18, but 2 On Your Side was denied entry by a security guard.

Mayoral spokesman Michael DeGeorge said the meeting was rescheduled to Sept. 26. The date on the water board website was changed after 2 On Your Side inquired about the meeting.

Buffalo Common Council Finance Chair Mitch Nowakowski also questioned the amount of McFoy’s travel.

“When you’re traveling that much, what are you learning that you’re bringing back to actually implement in real-time and real-life for our water and our sewers?” Nowakowski said.

McFoy said last week that the trips – which spanned from across the U.S. to places as far as Germany – have helped secure $250 million in grant money for the city.

Asked whether McFoy should cut back on travel until Buffalo restores fluoride to its water – the city just missed another deadline to do so – Nowakowski said, “Yes, and ultimately, just cut back on travel. Travel at a normal pace. Why are we traveling so much? If you’re traveling, what are you doing in your real job every single day? And I think that’s oftentimes what people are outraged with.”

McFoy was appointed to the water board post by Mayor Byron W. Brown in 2007.

Ghirmatzion previously was the executive director of People United for Sustainable Housing, or PUSH Buffalo, where she said she worked on a sewer project with McFoy.

“I think that what we see with O.J. is that he’s a very nice man. He’s a very smart man. He’s incredibly charismatic. He’s also incredibly arrogant,” she said.

Public records show McFoy’s travel actually increased after the fluoride controversy became public. Last year, he was gone from City Hall on trips for 69 weekdays. So far in 2024, McFoy has traveled for 41 weekdays.

The city missed its most recent deadline, which was the end of August, for re-fluoridating its drinking water.

Ghirmatzion said McFoy is avoiding an issue that is paramount to the dental health of Buffalo’s kids.

“Maybe he’s looking to get another job like the mayor,” Ghirmatzion said, referring to Brown, who plans to resign soon and take a job with a gambling agency. “I don’t know. But I do know that I think he’s just avoiding the issue.”

Sewer Authority board defends McFoy’s travel, approves more trips

WGRZ

September 25, 2024

BUFFALO, N.Y. — In his post at the Buffalo Sewer Authority, where he makes $130,000 per year, CEO and general manager Oluwole “O.J.” McFoy has spent 297 weekdays since 2016 traveling to 23 states and two foreign countries.

Next week, he and 10 other Sewer Authority employees will leave for a conference in New Orleans that is expected to cost taxpayers more than $27,000.

And without any discussion Wednesday, Sewer Authority board members who were appointed by Mayor Byron W. Brown not only defended McFoy’s travel schedule — they approved seven more out-of-town trips costing an additional $33,000 for McFoy and other employees of the sewer system.

Asked how he could justify such travel despite the city facing a $40 million budget deficit, McFoy said, “As you know — because I'm sure you've investigated this — the Buffalo Sewer Authority is a separate entity from the

City of Buffalo. And what we've shown here is that the investment in making sure that we're visible really brings back all of the dollars into the authority."

McFoy previously said the trips have helped the city pull in more than $250 million in grant funds in recent years and have earned awards from trade groups.

Board members Herbert Bellamy Jr., Christopher Roosevelt and Eleanor Petrucci unanimously approved trips for McFoy and other sewer employees to travel later this year to Philadelphia; Albany; Greenville, S.C.; Aurora, Colo.; Chattanooga, Tenn., Tucson, Ariz.; and Dallas, at a cost not to exceed $33,600, according to the Sewer Authority meeting agenda.

Brown spokesman Mike DeGeorge said, "The mayor has no say over this travel."

2 On Your Side Investigative Reporter Charlie Specht asked Bellamy, the board chairman, "How can you justify spending all this money, taxpayer money, on travel, when the city is in dire financial straits?"

Bellamy responded, "Well, the city has one budget. The Buffalo Sewer Authority has another budget. So it's an entirely different budget."

When 2 On Your Side pointed out that both budgets derive their funds from taxpayers, Bellamy said, "We look at it as an investment. We invest in those conferences and we have a great return. They saved us a whole lot of money."

Sewer Authority meeting documents show that McFoy and Bellamy last year traveled to five conferences together, flying on taxpayer dime on separate trips to Sonoma, Sacramento, and San Diego, as well as Washington, D.C., and Louisville, Ky.

This year, taxpayers funded a trip for McFoy and Bellamy to Anaheim, Calif., for a conference of the American Water Works Association. The estimated cost for that round of trips was $38,900, public records show.

"If you want to look at the conferences you'll see that I've been to all of the conferences inside and gain the relationships and learning to ask the questions when I come back to the board, and how we can improve on technology and how we can improve with employees," Bellamy said.

'Makes your stomach turn': What's behind the sewage smell on Buffalo's West Side?

WKBW

October 11, 2024

BUFFALO, NY (WKBW) — A strong sewage smell disrupts life on Buffalo's West Side, residents report a pervasive odor of rotten eggs and human waste affecting daily life.

- *Residents on the West Side of Buffalo are experiencing a strong sewage smell.*
- *The odor is described as a mix of rotten eggs and human waste.*
- *The smell is impacting daily activities and quality of life in neighborhoods like the Elmwood Village and along Niagara Street.*
- *Residents have taken to social media to express their frustration and seek help.*

"Whenever we open the door in the morning it just kind of hits us, it's felt pretty inescapable which is not fun," said Kaleb Colosimo, a resident of the Elmwood Village.
Colosimo and his wife have even changed walking routes to avoid the smell.

"Even if we have a candle going you can smell sewage it's horrible," said Colleen Denny.

But the wafting stench does not stop along Elmwood, it continues to Niagara Street.

"It's like the entire west side of Buffalo is cooking eggs at the exact same time," said Nikki Ronan, who has lived on the West Side for a decade and has even contemplated moving to avoid the smell.

According to the Buffalo Sewer Authority, there has been a mechanical and technical failure in the primary system of the sewage tanks.

Due to the sewage tanks being from the 1930s, the sewer authority has a $80 million plan to replace the tanks, which will be completed in 18 months.

For now, the BSA is doing what it can to get rid of the odor.

"We're doing a number of things including dosing, bringing the tanks all the way down to deal with the solids in there that are giving off the odors," said Oluwole A. McFoy, General Manager of the BSA.

Residents are encouraged to call 311 if they experience more problems.

Acting Mayor Scanlon to meet with Sewer Authority GM McFoy about travel costs

WGRZ

October 16, 2024

BUFFALO, N.Y. — Acting Buffalo Mayor Christopher P. Scanlon on Wednesday — in his first full day as the city's chief executive — addressed the controversy surrounding Sewer Authority general manager O.J. McFoy, whose extensive travel schedule was revealed in a 2 On Your Side investigation last month.

"We'll sit down and talk," Scanlon said. "Obviously, we're in a transition period here. I've had meetings with all the departments, many of the agencies. But we'll continue to have those meetings and we'll talk about it."

As mayor, Scanlon now controls appointments to the Buffalo Water Board and the Buffalo Sewer Authority. McFoy, an appointee of former mayor Byron W. Brown, served as Water Board chairman while the city failed to fluoridate its water for nine years.

During that time, McFoy spent 297 weekdays traveling to 23 states and two foreign countries for various water conferences, according to public records analyzed by 2 On Your Side Investigates. That has outraged some city residents and some of Scanlon's former colleagues on the Common Council.

Last week, McFoy and 10 other sewer employees traveled to a water environment conference in New Orleans at an estimated cost of $27,000 to taxpayers and ratepayers.

During the last two years, the Sewer Authority board has approved more than $200,000 in travel expenses, according to a database built by 2 On Your Side Investigates using board meeting minutes.

Asked whether that kind of travel concerns him in the midst of a $40 city million budget deficit, Scanlon said, “Yeah, I saw the report on it. You know, obviously, their finances are separate from the city’s. It’s a different agency, but I’ll continue to look into it. I’ll talk to the general manager about it and we’ll see what’s going on.”

McFoy and Sewer Authority Chairman Herbert Bellamy Jr. have been unapologetic about the travel. They say the conferences have helped secure more than $250 million in grants for the agency.

'He was my soul': One year after triple shooting on I-190, a mother mourns the loss of her son

WKBW

October 24, 2024

BUFFALO, N.Y. (WKBW) — It was one year ago on October 26 that gunfire rang out on I-190 in the middle of the day.

Three men were shot, among them was 22-year-old Keyshawn Gault, a Buffalo Sewer Authority worker.

His killing remains unsolved. His mother is still seeking justice.

"He was the path maker, the game changer...He was my soul," his mother, Angel DuBose, told me.

At about 11:20 a.m. Oct. 26, 2023, Gault was riding in a sewer authority pickup truck with two co-workers. They were headed to lunch as they traveled south on I-190.

Just a little south of the Peace Bridge, someone from a black Jeep Grand Cherokee opened fire on them. Gault was the only one killed.

DuBose said she often drives up and down I-190.

"I felt my son's spirit there because it's where he made his transition," DuBose said. "But I'm not understanding why or how there's no justice."

She's hoping that a $7,500 reward from Crime Stoppers might convince someone out there who knows something to come forward.

Me: "What is your message to the person who knows?"

Dubose: "Say something. You will be rewarded…You will be gratefully and heavily rewarded because this was a pure soul."

Authorities are asking anyone with information about the shooting to reach out to Crime Stoppers WNY.

Confidential tips can be made by calling 716-867-6161 or by downloading the Crime Stoppers mobile app by searching for "Buffalo Tips" for both iPhone and Android phones.

One year later, family still searches for answers into murder of Buffalo sewer worker

WGRZ

October 27, 2024

BUFFALO, N.Y. — Sunshine, views of Lake Erie, and a fall landscape... It's enough to make anyone want to come to Broderick Park.

However, for Angel DuBose, it's much more than a park. It now serves as a spot to remember her late son Keyshawn Gault on the one year anniversary of his death.

"He was very helpful, he was very attentive, he'll give you the shirt off his back," said DuBose.

Gault was shot and killed while driving along the 190 in October 2023 while on the clock, working for the Buffalo Sewer Authority. His two co-workers were also wounded, but survived.

Now a year later, the person responsible is still at large, while DuBose continues to search for answers.

"I talk to investigators every so often. They say they have leads and things but I just want justice," said DuBose.

Crimestoppers is offering up to $7,500 to anyone who may have information about what happened on that highway.

"Please come forward, you can come forward anonymously. Just think about if that was your family member. Wouldn't you want the same type of help?" asked Apree Banks, Gault's aunt.

State awards Buffalo Sewer Authority $8.75 million to improve stormwater retention at 4 parks

Buffalo News

November 1, 2024

In a small step forward on its $1 billion plan to fix sewer overflows, the Buffalo Sewer Authority received a state grant to slow down and filter stormwater at four parks in the city.

The $8.75 million was awarded to the Buffalo Sewer Authority on Oct. 16 by Gov. Kathy Hochul and the New York State Environmental Facilities Corp.

The City of North Tonawanda also received $1.5 million as part of the grant. In total, 13 counties, cities, towns, villages and agencies received funding from the $60 million grant.

The Buffalo Sewer Authority aims to use the money to capture or slow stormwater before it reaches the sewer system.

The authority's antiquated system, which covers 110 square miles and serves over 550,000 people, often gets overwhelmed during heavy rain storms or snowmelt events. This causes untreated sewage to spill through outfall pipes in rivers and streams – polluting waterways with harmful bacteria and making it unsafe to swim.

Oluwole "OJ" McFoy, Buffalo Sewer Authority's CEO and general manager, said the projects funded by the $8.75 million grant should help reduce the risk of the combined sewer overflows.

At Martin Luther King Jr., Eddie Dawson, Hennepin and Lincoln parks, the Buffalo Sewer Authority will install rain gardens, stormwater tree trenches, underground stormwater storage systems and porous pavement, according to a news release Thursday.

“High performance green infrastructure landscapes benefit water quality, and also bring a wide range of co-benefits that include reducing air pollution, improving property values, and increasing the walkability of the built-in environment,” McFoy said in a prepared statement.

Rain gardens are sunken areas in the ground with plants that will hold and filter water from a storm, according to the Buffalo Sewer Authority’s 2019 Rain Check 2.0 Opportunity Report.

The tree trenches are a similar concept to the rain gardens but with trees housed in structured pits that may have extra infrastructure to allow a large amount of water to flow in and filter down into the soil.

Adding the underground storage systems and porous pavement ensures that more stormwater is going into the soil before flowing into the sewer system, according to the Rain Check 2.0 Opportunity Report.

The $8.75 million awarded to the Buffalo Sewer Authority represents less than 1% of the funding the agency said it needs to fix the issue of combined sewage overflows.

McFoy has said it will take 15 years – and a lot more funding – to complete more than 50 construction projects aimed at addressing the overflows.

“We continue to aggressively pursue additional funding from our state and federal partners and other sources to support the Queen City Clean Waters initiative,” McFoy said in the Thursday news release.

The $1 billion estimated to be needed to address the issue includes planned upgrades at the Bird Island Wastewater Treatment Facility expected to cost $250 million. Those upgrades began in 2023.

The Buffalo Sewer Authority is also expected to begin rebuilding and replacing the sewer system along East Delavan Avenue and Spillman Place this fall. That project, which could take up to five years, should reduce combined sewer overflows into Scajaquada Creek.

In 2012, the Buffalo Sewer Authority was ordered by the U.S. Environmental Protection Agency to comply with federal Clean Water Act requirements by

reducing the combined sewer overflows to protect people's health and water quality.

At the time, Judith A. Enck, the regional administrator for the EPA said "local fish are inedible and people can't enjoy recreational water sports or local parks because of sewage odors."

Two years later, the EPA approved a plan by the Buffalo Sewer Authority to reduce the amount of sewage and stormwater runoff that flowed into the system. According to the EPA, the Buffalo Sewer Authority had, through the 2014 plan, committed to investing $380 million on stormwater infrastructure and greenspace projects over 20 years.

Buffalo Water Board thanks customers for 'their important role in holding us accountable'

WGRZ

November 15, 2024

BUFFALO, N.Y. — The scandal-plagued head of the Buffalo Water Board is in the spotlight again, this time about a lack of transparency in how it holds its meetings.

The Water Board through a hired publicist released a statement Friday that apparently was in response to a 2 On Your Side story that was published on Tuesday.

That story, about the New York State Committee on Open Government's determination that the board violated the Open Meetings Law when it limited access to a public meeting in September, included an emailed response from Water Board Chair and Sewer Authority GM Oluwole "O.J." McFoy.

Porsha Ari Parson, who is described in the statement on Buffalo Water letterhead as a publicist, released the following statement Friday: "Buffalo Water is committed to transparency and community partnership, which is why we've always welcomed customers to attend our public water board meetings. We appreciate our customers' interest in our work and their important role in holding us accountable."

Parson's statement went on to defend the practice of holding Water Board meetings not at City Hall — as multiple members of the Common Council have suggested — but in a conference room within a pumping station on Porter Avenue, behind a gate and security guard.

"Buffalo Water Board public meetings are held at the Colonel Ward Pumping Station conference room in LaSalle Park (Centennial), conveniently located just minutes from Downtown Buffalo. The space has free parking and is also equipped with large monitors and streaming technology for those who wish to attend virtually. Rescheduled meeting dates are announced at least 72 hours in advance. We have enhanced our website and procedures to ensure meeting minutes and recordings are available timely. Buffalo — Thank you for your trust and engagement in helping us serve you better!"

The NY State Committee on Open Government in Albany in a letter to 2 On Your Side says the board violated the Open Meetings Law when it limited access to a public meeting in September.

The committee also said the agency appears to have violated the law by not posting the minutes of its meetings online. Governments are required to post meeting minutes within two weeks but the water board had not done so since June. The board on Wednesday posted the minutes of its previous three meetings online.

The Committee also said two other potential violations of the Open Meetings Law that 2 On Your Side outlined in a letter last week did not violate the law, including the practice of holding meetings at the pumping station.

But some are hoping Acting Mayor Christopher P. Scanlon will push the board to do better or even to fire McFoy, who was appointed to the post 17 years ago by former Mayor Byron Brown and who also serves as general manager of the Buffalo Sewer Authority. McFoy, who is paid $120,000 per year, has also been criticized for failing to fluoridate Buffalo's water and for traveling extensively to conferences in different states and countries.

McFoy and Parson's statement to 2 On Your Side was not sent in consultation with the Scanlon administration. Scanlon's aides have said he plans to make

new transparency recommendations to the sewer and water authorities next week.

Sewer Authority board materials show that McFoy was scheduled to spend the week in Tucson, Ariz., from Nov. 10 to Nov. 15 for the National Association of Clean Water Agencies conference.

A 2 On Your Side Investigation in September found that since 2015, McFoy spent 297 weekdays traveling to water conferences in 23 states. He took a total of 55 work trips at an estimated cost of $161,000, according to sewer authority meeting minutes.

"Meetings should be held in City Hall in accessible places," said Paul Wolf, president of the New York Coalition for Open Government. "So my hope is Mayor Scanlon will make this a priority. We've seen time and time again where plenty of politicians have said that but the follow through has been lacking. Hopefully he'll be different. He can show us how committed he is to open government."

Buffalo's controversial sewer and water czar will step down

WGRZ

November 20, 2024

BUFFALO, N.Y. — The controversial head of Buffalo's water and sewer systems is leaving to take a job as city engineer in Houston, Texas.

Oluwole "O.J." McFoy, who held dual roles as Buffalo Water Board chair and Buffalo Sewer Authority general manager, was praised Wednesday for his "transformative impact" in a news release announcing his departure.

But McFoy's 19-year tenure — he was appointed by former Mayor Byron W. Brown — had become increasingly controversial in recent months as 2 On Your Side reported on scandals involving McFoy's leadership.

Those included a lack of fluoride in the city's water supply for a nine-year period, which prompted emergency dental surgeries for young kids and a class-action lawsuit filed by parents against the city.

In September, a 2 On Your Side investigation revealed that McFoy during that time period also kept an extensive taxpayer-funded travel schedule. Since 2015, McFoy spent 297 weekdays traveling to water conferences in 23 states. He took a total of 55 work trips at an estimated cost of $161,000, according to sewer authority meeting minutes.

The travel expenses outraged some residents and members of Buffalo's Common Council. McFoy said the trips were necessary to secure grant funding for the sewer authority.

Government transparency under McFoy was also an issue in recent months.

The State Committee on Open Government in Albany in a letter to 2 On Your Side last week said the Water Board violated the Open Meetings Law when it limited access to a public meeting in September.

The committee also said the agency appears to have violated the law by not posting the minutes of its meetings online. Governments are required to post meeting minutes within two weeks but the water board had not done so since June.

Sewer Authority Board Chair Herbert Bellamy Jr. said he was "incredibly grateful for OJ's dedicated service and the transformative impact he has had in the City of Buffalo."

Acting Mayor Christopher P. Scanlon was expected later this week to "strongly encourage" the water and sewer agencies to comply with transparency laws. Wednesday evening, Scanlon released a written statement that said, "In the coming weeks, I plan to meet with my administration to discuss the future of both the Buffalo Sewer Authority and Buffalo Water Authority. I am committed to ensuring that individuals are selected who are ready to take on these critical roles with a head-on approach, demonstrating open, honest, and transparent leadership to facilitate a seamless transition into a new era of service excellence to our ratepayers."

McFoy's statement said he would remain with Buffalo Sewer until January "to ensure a smooth transition." He made $120,000 per year in Buffalo. His statement noted that he will be paid an annual salary of $280,000 in Houston.

Buffalo Sewer Authority general manager leaving Buffalo for a position in Houston, Texas

WKBW

November 21, 2024

BUFFALO, N.Y. (WKBW) — The Buffalo Sewer Authority announced that general manager Oluwole "OJ" McFoy is leaving Buffalo for a job as a city engineer in Houston, Texas.

McFoy has been with the Sewer Authority for 19 years and served in various roles before being named general manager in 2015. In a news release announcing his departure he was described as a "transformative leader."

"We are incredibly grateful for OJ's dedicated service and the transformative impact he has had in the City of Buffalo. His leadership, vision, and commitment to excellence have positioned Buffalo Sewer as a leader in the industry, creating 3,000 jobs and $205 million in economic impact while investing nearly $32 million in minority and women business enterprises. Although we will miss his expertise and character, we are excited for him as he embarks on this new chapter in his career."

- Herbert L. Bellamy, Buffalo Sewer Board Chair

McFoy also served as chairperson of the Buffalo Water Board.

"It has been a privilege to serve the Buffalo community and lead the dedicated team at Buffalo Sewer. I am immensely proud of the progress we have achieved together and confident that Buffalo Sewer will continue to excel in delivering exceptional service to its customers."

- OJ McFoy

He will remain in his position until January 2025 to "ensure a smooth transition."

"Early this evening, I was informed of Oluwole A. 'O.J.' McFoy's decision to step down from his roles as General Manager of the Buffalo Sewer Authority & Chairman of the Buffalo Water Board. As Mayor of the City of Buffalo, I want to thank O.J. for his years of dedicated service to our city and on behalf of

ratepayers.

O.J. has accepted a position as a city engineer in Houston, Texas, and we wish him continued success in this endeavor.

In the coming weeks, I plan to meet with my administration to discuss the future of both the Buffalo Sewer Authority and Buffalo Water Authority. I am committed to ensuring that individuals are selected who are ready to take on these critical roles with a head-on approach, demonstrating open, honest, and transparent leadership to facilitate a seamless transition into a new era of service excellence to our ratepayers."

- Acting Mayor of Buffalo, Chris Scanlon

---

2 Investigates: The travels and troubles of O.J. McFoy

WGRZ

November 21, 2024

BUFFALO, N.Y. — Buffalo Water Board Chair and Sewer Authority GM O.J. McFoy liked to leave the Buffalo area often when he was in charge of those agencies.

Now McFoy is leaving Buffalo for good.

McFoy announced Wednesday that he is taking a job with the city government in Houston, Texas. McFoy will become the city engineer and — as his news release noted — will be paid $280,000 per year.

The Sewer Authority's news release called McFoy "a transformative leader" who made a series of "key achievements" in clean water and public health.

But McFoy came under criticism for a failure to fluoridate Buffalo's water for a nine-year period.

Fluoride has now been restored to the water supply to prevent pediatric tooth decay but not before the city missed multiple deadlines to restore it.

In April, McFoy had this exchange with 2 On Your Side Investigative Reporter Charlie Specht:

SPECHT: “Do you feel as the water board chair that this whole thing, that you bear some responsibility for dropping the ball on this?”

MCFOY: “I appreciate that question, but no. We actually as a team make sure that we are doing our due diligence whenever we're doing changes.”

But he came under intense pressure after a 2 On Your Side investigation revealed that McFoy kept an extensive travel schedule using public money.

Since 2016, McFoy traveled to 23 states — a total of 55 work trips, or an average of nearly seven per year — to conferences in Colorado, Arizona, Florida, Sonoma, Calif., and more than 40 other destinations across the nation.

In September, Specht asked him, “The city is facing a $40 million budget deficit. How do you justify that expense at a time like this?”

McFoy replied, “As you know, because I'm sure you've investigated this ... the Buffalo Sewer Authority is a separate entity from the City of Buffalo. And what we've shown here is that the investment in showing that we're visible really brings back all of the dollars into the authority."

City Hall sources say the administration of Acting Buffalo Mayor Christopher Scanlon is planning to make some recommendations to the water and sewer boards on the issue of transparency.

That’s after 2 On Your Side uncovered multiple violations of the state’s Open Meetings Law by the Water Board. Two of those violations were confirmed by the State Committee on Open Government.

Scanlon declined to comment on Wednesday.

According to the Harris County government website, Houston is one of the few cities in the United States that does not add fluoride to its water for dental health.

20 Buffalo Schools properties to receive green upgrades through Sewer Authority partnership

Buffalo News

November 21, 2024

Given the age of most of Buffalo Schools' properties, only one has been subject to city's Green Code, which was signed into law in 2017. As rich as many of these lots are with history, they're not conducive to environmental efforts.

But thanks to a partnership between the Buffalo Sewer Authority and Buffalo Public Schools, 20 district properties in the coming years will benefit from features such as tree trenches, underground water storage and porous asphalt to mitigate problems with water runoff and sewer overflow.

"It's an ambitious effort on their part," Buffalo Schools Chief Operating Officer David Hills said about the Sewer Authority. "They were able to get the funding, and they've been great to work with."

The projects are funded by the Sewer Authority's $54 million environmental impact bond, fall under its Rain Check 2.0 Green Infrastructure Program and come at no cost to the school district.

The Buffalo School Board on Wednesday night approved a Superintendent's Resolution for the district to enter into a memorandum of understanding with the Sewer Authority, a relationship that previously happened only during crises, Hills said.

"Buffalo Public Schools does want to be a good partner with the City of Buffalo and make sure that our shared resources are preserved and used wisely," he said. It's an encouraging development after the City of Buffalo last winter did not join the district's in-progress effort toward building a new commissary kitchen.

The project will go forward even with news Wednesday night that Oluwole A. "OJ" McFoy would step down in January as Sewer Authority general manager. He accepted a position in Houston. The Sewer Authority did not reply to a message seeking comment about its partnership with Buffalo Schools.

Of the 20 properties, 13 are elementary schools and five are high schools. Among them are East Community High School, Harriet Ross Tubman School, Dr. Lydia T. Wright School of Excellence, BUILD Academy and Burgard High School. The remaining two parcels are at School 171, an unused district building on East Delavan Avenue in Lovejoy.

Parking lots will be a primary focus, and Hills said the district will ensure the infrastructure work will not interfere with school programming – a concern of School Board member Terri Schuta at Wednesday's meeting.

Buffalo Schools will reap benefits – aesthetically and practically – even though water runoff and sewer overflow have not directly caused the district significant problems. They're a concern of the city, however; the sewer system, which dates back to the 1800s, gets overwhelmed by heavy rain or when rapid warming occurs following large snowstorms. The Sewer Authority targeted some school sites that, thanks to their large parking lots, contributed to the buildup.

"We don't see it impact our sites, but we know it goes to the sewer and contributes to those problems we have when sewers back up, sewers are overloaded or they overflow at the processing center," Hills said. "It's more of a communitywide impact than us having a problem with our lots."

Tree trenches were implemented in the recent street redesigns of Niagara Street. They're essentially basins with water-absorbent floors; these "rain gardens" may have plants or trees. Their purpose is to soak up rainwater and funnel it to plant growth rather than burdening the sewer system. Underground water storage tanks can also provide some relief to the sewer system.

Porous asphalt, Hills said, is a little more unfamiliar to Buffalo. The chief operating officer said he's intrigued by its potential.

"I will be interested in how that plays out," he said, "because it could help when we have flash-freezing."

Acting Mayor Scanlon rebukes Buffalo Sewer Authority for $30,000 trip

WGRZ

December 4, 2024

BUFFALO, N.Y. — The Buffalo Sewer Authority on Wednesday – after being "strongly" advised by Acting Mayor Christopher P. Scanlon to do so – rescinded its request for approval of a trip to New York City in February that would have cost nearly $30,000 in public money.

The move came after 2 On Your Side Investigates notified the Scanlon administration of the agency's plans to send nine staff members to the New York Water Environment Association conference in February.

A 2 On Your Side investigation in September revealed that Sewer Authority General Manager O.J. McFoy – who last month said he would resign to take a job in Texas – kept an extensive travel schedule using public money. The Sewer Authority has spent more than $200,000 on travel in the last two years, according to public records analyzed by 2 On Your Side.

"In light of recent findings relating to the administrative policies and expenditures of the Buffalo Sewer Authority (BSA), including travel for senior executives and the recent resignation of General Manager Oluwole "O.J." McFoy, I am strongly advising you to retract the travel authorization item listed on the agenda for the BSA meeting on Wednesday, December 4, 2024," Scanlon wrote in a letter sent Tuesday to Sewer Authority Chairman Herbert Bellamy Jr.

Since becoming acting mayor in October after the resignation of Mayor Byron W. Brown, Scanlon wrote that he has "repeatedly emphasized the need for accountability and transparency within city government. This commitment extends to all city agencies and public authorities that operate on behalf of the City of Buffalo and to which the mayor has board member appointment authority. As Chairman of BSA, it is imperative to ensure that ratepayer and public funds are utilized judiciously and responsibly."

Bellamy, after rescinding the agenda item for the New York City trip, repeatedly declined to comment further after the meeting. He referred a

reporter to a news release that said the Sewer Authority was launching a “nationwide search” for McFoy’s replacement.

McFoy and Bellamy, who were both appointed to various posts by Brown, praised each other during the meeting.

“We’re certainly going to miss you,” Bellamy said to McFoy. “You’ve given us a bigger task to replace you.”

McFoy said, “And you have been a great board. You have been a wonderful chair to work with, to work for. And I’m blessed.”

Later in the day -- in an interview in his second-floor office in City Hall -- Scanlon said he spoke with Bellamy and delivered the following message: "Moving forward, we should be a little more careful about this. We shouldn’t be spending excessively when it comes to travel. We need to be taking the ratepayers into consideration. I don’t think we should be going on these trips for conferences or anything. And again, I’m not familiar with all the conferences [but] maybe it’s something you can attend remotely."

Scanlon hinted in his letter that he may be planning a shake-up of the agency’s leadership, including the board, whose members are appointed by the Buffalo mayor.

“I would like to meet with you in the near future to discuss various issues concerning the BSA,” Scanlon wrote. “This includes appointments I intend to make to the Board of Directors and considerations regarding the future leadership of the organization.”

Bellamy declined to comment on whether he thought he would lose his position on the board.

State Sen. Sean Ryan, D-Buffalo, who is running for Buffalo mayor, took to social media to criticize the travel request.

"Taking this position now, after so many years of waste, is too little too late," Ryan wrote on X.

Scanlon: City authorities will meet at Buffalo City Hall

WGRZ

December 6, 2024

BUFFALO, N.Y. — Holding public meetings in locations that are miles from downtown Buffalo.

Suggesting that only certain members of the public are allowed to attend.

Violating the Open Meetings Law by failing to post meeting minutes on the city's website for months.

Those practices — which in addition to excessive travel costs, were revealed by a months-long investigation of the Buffalo Water Board and Buffalo Sewer Authority by 2 On Your Side — are now coming to an end, according to the city's new chief executive.

Acting Mayor Christopher P. Scanlon said his move Wednesday to nix the Sewer Authority's planned $30,000 trip to New York City is only the first step in his plans to reform city agencies and authorities in the wake of former Mayor Byron W. Brown's departure.

Scanlon said beginning immediately, the water and sewer boards will hold their meetings not at a water pump station or the sewage treatment plant — which are both more than 2 miles from Niagara Square and situated behind locked gates — but at the more centrally located Buffalo City Hall.

"And that's not just for the Buffalo Sewer Authority," Scanlon said. "That's for all the agencies associated with the City of Buffalo, any of the committees or boards that exist in our charter."

Scanlon said it was "disappointing" to learn about the Sewer Authority and Water Board's practices that were revealed in multiple 2 On Your Side investigative reports. The State Committee on Open Government said the Water Board violated the Open Meetings Law on two occasions.

Scanlon said even though the water and sewer agencies are separate legal entities from the city, "they should be doing the same, operating with full transparency and full accountability. So whether it was the meetings that

maybe people weren't able to access very easily, or the expenses associated with the travel, it was concerning to me. Obviously you always want to take into consideration the ratepayers and how these things impact them."

Scanlon said he will make appointments to fill positions on the boards that have gone unfilled. Meeting minutes will be posted more regularly. He also plans to establish a portal on the city's website where residents can access meeting agendas, minutes and other information more easily.

Scanlon said before outgoing Sewer Authority GM O.J. McFoy announced his plans to resign last month, he was planning to deliver McFoy a blunt message about the more than $200,000 in travel costs his agency racked up in the last two years.

"I was planning on having conversations with the general manager to say, this type of behavior with the agency has to stop," Scanlon said. "Whether it's the meetings that people can't regularly attend or easily attend or the travel, the expenses related to the travel, this can't continue at this rate."

Buffalo Sewer Authority and Water Board to move meetings to City Hall

Buffalo News

December 13, 2024

Beginning in January meetings of the Buffalo Sewer Authority and Buffalo Water Board will be held in City Hall to make it easier for residents to attend the public sessions and to provide more transparency, according to Mayor Christopher P. Scanlon's administration.

According to Scanlon, the sewer authority's monthly meetings – which had been held in the conference room at the Bird Island Treatment Facility on West Ferry Street – have been moved to the authority boardroom in Room 1038 on the 10th floor of City Hall beginning Jan. 8.

The Buffalo Water Board had been meeting at the Col. Ward Pumping Station on Porter Avenue. It will also hold its meetings in the boardroom in Room 1038 on the 10th floor of City Hall.

Following the resignation last month of Oluwole A. “OJ” McFoy as the sewer authority general manager and chairman of the water board, Scanlon said in a written statement he planned to meet with his administration to discuss the future of both public authorities and find open, honest and transparent leadership that will deliver a “seamless transition into a new era of service excellence to our ratepayers.”

“After conversations with board members and management at the BSA and BWB, both have agreed to hold their future meetings at Buffalo City Hall to allow for much easier accessibility for the public,” Scanlon said Friday. “This underscores my administration’s commitment to accountability and transparency in city government, as well as at city agencies and public authorities, which will help ensure that ratepayers and city residents can be more informed about decisions that impact their daily lives."

Both the West Ferry Street and Porter Avenue locations were hard to reach for constituents, said Council members who questioned whether the sewer authority and water board have been transparent enough. Earlier this month they asked both of the public authorities to hold their meetings in City Hall.

“There are some questions as to whether the meetings that the water and the sewer authority have been holding have been transparent,” said North Council Member Joseph Golombek Jr. “I think that in the sake of and in the name of transparency, and I think for the appearance of transparency, that holding these meetings in Buffalo City Hall would be much wiser in the future.”

It would mean easier access for constituents to get to the public sessions, they said.

“If you told people in my district, ‘Oh, the meeting is at Buffalo City Hall,’ the majority of people know where Buffalo City Hall is. Even the people that are the most active probably would not know how to get to the Col. Ward Pumping Station,” Golombek said.

Following the Council’s request, McFoy, outgoing chairman of the Buffalo Water Board, said the board would “definitely” take the Council’s resolution under advice.

“I will encourage the next board leadership to consider the Common Council’s recommendation to hold meetings at a suitable location within City Hall,” he said.

McFoy resigned last month from the water board and as general manager of the sewer authority to accept a job as a city engineer in Houston. His last day with both is the third week in January.

The water board had faced intense criticism over its failure to adequately inform the public in 2015 that it had stopped adding fluoride to the drinking water of more than 250,000 city residents. The cavity-fighting mineral was not returned to the drinking water until September 2024 with the addition of a new fluoride system.

Environmental Facilities Corporation (/)

Making Water Quality Projects Affordable for All Communities

Green Resiliency Grant Awards 2024

Announced by Governor Kathy Hochul on Wednesday, Oct. 16, 2024

Governor Kathy Hochul on Oct. 16, 2024 announced $60 million in Green Resiliency Grant (GRG) funding to support 13 transformative green infrastructure projects across the state. The projects will combat the effects of climate change, particularly in flood-prone and disadvantaged communities. The GRG program, supported through the Clean Water, Clean Air, and Green Jobs Environmental Bond Act, will deliver on Governor Hochul's State of the State resiliency commitment to protecting New Yorkers from extreme weather and ensuring equitable access to clean water resources.

Awarded Projects:

Broome County Industrial Development Agency: $1.475 million for the Roberson Museum Green Initiative to integrate bioretention basins, porous pavement, vegetated swales, and riparian buffer restoration to manage stormwater and improve resilience to flood events at the historic Roberson Mansion and associated facilities in Binghamton.

Buffalo Sewer Authority: $8.75 million for the Rain Check 2.0 Park Projects to implement stormwater tree trenches, rain gardens, underground stormwater storage systems, and porous pavement in five parks. The project will reduce stormwater runoff by 100,000 cubic feet annually, reduce combined sewer overflows during extreme weather events, address urban heat island effects, improve air quality, and enhance recreational opportunities.

Village of Dolgeville: $1.75 million for the North Main Street Waterfront Park Project to implement tree trenches, an infiltration basin, porous pavement, and a bioslope to reduce runoff to the storm sewer system and the East Canada Creek. The project will improve water quality and provide the first publicly accessible connection to the scenic creek, enhancing recreational activities. Plans include a playground, swing garden, pavilion, and porous pavement walking paths.

Town of Geddes: $1.025 million for the Dwight Business Park Green Infrastructure Retrofit Project to install bio-retention, vegetative swales, and porous pavement in strategic locations within the business park. The project will reduce non-point source contaminants from entering Onondaga Lake while restoring approximately one acre of wetland and reducing urban heat effects.

Village of Hastings-On-Hudson: $2.5 million for the Farragut Parkway Wet Extended Detention Pond Project to store runoff, holding it in place for pollutants to settle out and for infiltration and evapotranspiration. The detention pond and drainage bypass will reduce downstream peak flows to Boutilliers Brook, a watercourse frequently overwhelmed during storm events and mitigate the persistent and destructive flooding experienced in a residential area.

City of Kingston: $4.375 million for the Safe & Accessible Flatbush & Foxhall Streetscape Project to add bioswales and stormwater tree pits to improve climate resiliency, reduce runoff, and protect natural resources. Streetscape improvements will increase pedestrian and cyclist safety in a busy urban neighborhood.

Village of Mamaroneck: $6.6 million for the Floodplain Restoration Effort to mitigate flood risks in a designated high-risk area by creating two floodplain benches. The project will increase flood storage capacity and improve water quality with natural sediment filtering.

New York City Department of Parks and Recreation: $10 million for the Harlem Meer Stormwater Resilience Project. Through smart water infrastructure and ecological restoration, the project will transform Central Park's northern waterbodies into a multiple pond system for stormwater management, reducing the risk of flooding in Central Harlem and East Harlem.

New York City Housing Authority: $6.85 million for the Jefferson Houses Cloudburst Project to manage, store, and filter stormwater runoff at a public housing development in East Harlem. The project will install a subsurface retention system, porous concrete pavers, and two synthetic turf fields. These green infrastructure practices will reduce urban heat island effect while providing residents access to outdoor recreation space.

New York City Municipal Water Finance Authority: $10 million grant for the Tibbetts Brook Daylighting Project to reduce combined sewer overflows to the Harlem River by more than 200 million gallons annually, with improved access to new open space and into Van Cortlandt Park, enhancing the quality of life for residents.

City of North Tonawanda: $1.5 million for the Oliver Street Green Infrastructure Improvement Project to convert impervious terrace back to green space, reduce pavement width, plant street trees, and install structural soils and/or bioretention areas. The project will extend an existing storm sewer and separate combined storm and sanitary sewers, reducing untreated discharges into the Niagara River.

City of Ogdensburg: $2.925 million for the Downtown Mall Beautification, Green Infrastructure and Stormwater Reduction Project to integrate porous pavement surfaces and add bioretention and rain garden techniques. The project will improve water quality in the St. Lawrence River and reduce stormwater from entering the city's combined sanitary storm sewer. A new pocket park will feature landscape design to retain and reuse rainwater. LED lighting and electric vehicle charging stations will further promote renewable energy options to reduce the overall carbon footprint of the parking area.

City of Utica: $2.25 million for the Nail Creek Floodplain Restoration to construct flood benches and incorporate riparian buffer zones or wetlands along Nail Creek at the confluence of Halleck's Ravine, addressing flooding during storm events.

Disadvantaged Communities

Disadvantaged communities are those identified by the Climate Justice Working Group, pursuant to the Climate Leadership and Community Protection Act (https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fclimate.ny.gov%2FResources%2FDisadvantaged-

Communities-Criteria&data=05%7C02%7Cheather.cameron%40efc.ny.gov%7Cea6b0319(. Disadvantaged communities are disproportionately impacted by climate change, and are prone to increased risks of pollution, flooding, and extreme heat. Disadvantaged communities shall receive no less than 35 percent, with the goal of 40 percent, of the benefits of the $4.2 billion Environmental Bond Act funds. EFC sought to surpass the 40 percent goal for the GRG program.

Environmental Facilities Corporation

INSTAGRAM

TWITTER

YOUTUBE

- AgenciesApp DirectoryCountiesEventsProgramsServices

Translate

Translation Services

This page is available in other languages

- English
- Español
- 中文
- 繁體中文
- Русский
- יידיש
- বাংলা
- 한국어
- Kreyòl Ayisyen
- Italiano
- العربية
- Polski
- Français
- اردو

THE BUFFALO NEWS

OPINION

Tom Wiley
Publisher and President

Margaret Kenny Giancola
Editor-in-Chief

PAST PUBLISHERS

EDWARD H. BUTLER, *Founder 1880-1914* • EDWARD H. BUTLER, JR., *Publisher 1912-1956*
JAMES H. RIGHTER, *Publisher 1956-1971* • MRS. EDWARD H. BUTLER, *Publisher 1971-1974*
HENRY Z. URBAN, *Publisher 1974-1983* • STANFORD LIPSEY, Publisher *1983-2012*
WARREN T. COLVILLE, *Publisher 2012-2020*

NEWS

BRUCE ANDRIATCH
Assistant Managing Editor

BUSINESS

TAMMY BARNES-TURNBULL
Vice President, Human Resources & Labor Relations

KATIE MULLIGAN
Vice President, Sales & Marketing

JENNIFER SMIGIELSKI
Director of Audience Operations

JENNIFER PAGE
Audience Relationship Manager



ADAM ZYGLIS, THE BUFFALO NEWS • **EMAIL:** AZYGLIS@BUFFNEWS.COM

EDITORIAL



ASSOCIATED PRESS

Abortion rights activists gather for a protest following the U.S. Supreme Court's decision to overturn Roe v. Wade, at Washington Square Park, New York. Proposal 1 will help protect the reproductive rights of women in New York.

Yes on Prop 1

An amendment that protects already-existing rights deserves to be passed

Ignore the fearmongering and the false claims. Proposal 1, which appears on the other side of every New Yorker's ballot this year, is an amendment to the state constitution that, if passed, would guarantee rights already written into state law.

In other words, it strengthens protections that New Yorkers currently have – some of them have been law for decades. Discrimination on the basis of age, race, creed, color, national origin, sexual orientation, military status, sex, marital status or disability is already prohibited in New York.

Proposal 1, also called the New York Equal Rights Amendment, would also protect New Yorkers who seek access to reproductive healthcare from discrimination on that basis. New York law already supports women's reproductive rights, but this amendment would add that protection to the state constitution.

Since Roe v. Wade was struck down by the Supreme Court, 21 states have either banned or restricted abortion care. That didn't happen in New York, but, under a different governor and a different legislature, it could. Easily.

To avoid any such catastrophic step backward for women and to strengthen other important rights that could be reversed by lawmakers, voters should vote "Yes" on Proposal 1. The amendment would keep reproductive rights from being subject to the political winds of government by embedding them in New York's constitution.

Opponents of Proposal 1 know that abortion rights are popular — and not just in New York. Indeed, when abortion rights have been on the ballot, people across the country have voted to support them.

That's why the amendment is being subjected instead to a barrage of false or misleading claims. One of them is that the amendment would infringe on parental rights by allowing minors to undergo operations such as gender-transition surgeries. According to the independent fact-checker organization, Politifact New York, the amendment would not undermine parental rights, as New York State does not allow minors to obtain medical care without parental consent in most cases, and this includes gender-affirming care.

Another claim, that transgender high school athletes would be allowed to play on teams that align with their chosen gender is misleading because New York State already offers protections that allow this. Proposition 1 would be strengthening protections that already exist.

The State Legislature amended New York's Human Rights Law in 2019 to include gender identity as a protected class and state education law states: "No person shall be disqualified from state public and high school athletic teams, by reason of that person's sex.

By pushing misleading claims and appealing to transphobia, opponents of Prop 1 don't have to talk about the issue of reproductive rights. But make no mistake, these efforts are as much about jeopardizing women's rights as they are anti-LGBTQ.

Both purposes endanger vulnerable segments of New York's populations. Both purposes set the stage for rolling back civil rights New York is renowned for respecting and guarding.

Proposal 1 deserves a Yes vote for what it is: a constitutional amendment that will help make sure New Yorkers keep the rights they now have.

MY VIEW

Memories of mom in floating feathers



Cheryl Apruzzese Thompson finds her way back to mom.

This time of year is filled with mom – her birthday, the holidays, yellow mums – but it also saddened her. "Everything is dying."

She reminded me of this last night while I was making the bed.

Since she passed last December, I've been waiting for the signs other people get, like pennies, numbers, or songs. A cardinal did appear in January, a brilliant red bird sitting on the snowy deck railing among a string of ordinary brown sparrows.

"Is that you, Mom?"

She had always stood out at the dances and festivals she loved to go to. Strong Ukrainian genes gifted her high cheekbones, flawless skin, beautiful green eyes, and a youthful figure. In her 90s, she could still pass for my older sister.

The cardinal looked straight in the window at me, then flew away. I've waited every morning, but it has never made itself known again. Then came the blue jays, and I convinced myself that mom was more like a jay. Excitable, curious, busy. Her first initial was J for Jeanette, and she loved the color blue. Yes, she must be a jay.

But which one? I waited for her to show herself. One, whose comb was slightly off-center, stared through the window. That must be Mom, I thought, remembering how she sat at the window first thing in the morning, looking at the birds with coffee cup in hand and morning hair.

But as time went on, I needed more. I went to the spiritual community of Lily-dale to attend a workshop on how to read signs. But try as I might to connect, my efforts failed.

I visited her favorite bookshop and café, and put yellow mums on her grave. "Mom, I'm still waiting."

Then, last night, as I was changing the sheets on the bed, I called out, "Mom, where are you? I have things I need to tell you. Your grandson is getting married, and I just saw your granddaughter in London."

Shaking the comforter, a few feathers escaped, and a strong sense of déjà vu came over me. I remembered a time decades ago, when she came to visit and helped me make the bed. Standing at opposite corners, we smoothed the sheets and shook out the blankets together.

I was in my '40s and still dragged around teenage baggage from my parents' divorce. Although I kept it hidden under the bed of adulthood, it lay quietly between us.

As we stood shaking the down comforter that would cover it all up again, I looked over at mom and found her looking back at me, her arthritic fingers clutching the comforter as the shakes grew stronger. Feathers floated memories around us. Then it struck me. I was now roughly her age when the divorce occurred. She wasn't perfect. Neither was I.

In silent synchronicity, Mom and I each dropped our ends of the comforter and stood staring at each other. I walked toward her side of the bed and put my arms around her. "Mom, I understand. I understand."

"I tried."

"I know."

No other words were ever needed. I felt my emotions lift out from under the bed and slip back onto the pages of my teenage diary, their rightful time and place.

This first year without her, I didn't see a butterfly on Mother's Day or a rainbow on my 71st birthday. But last night, there was no doubt that Mom was with me, helping me make the bed. And tucking me in.

• • •

My View *is a first-person column open to all Western New Yorkers. If your article is selected for publication, a photo of you is required. Email submissions to editpage@buffnews.com.*

ANOTHER VOICE | INFRASTRUCTURE

Sewer initiative will mitigate storm overflows

OLUWOLE MCFOY

Severe wet weather-related events are becoming the norm in our everyday lives across Western New York.

To address the challenges of these events and improve the quality of life for our residents and neighboring communities, Buffalo Sewer is committed to upgrading our treatment facilities to ensure cleaner water and a healthier environment for everyone.

In collaboration with community stakeholders, Buffalo Sewer recently unveiled the Queen City Clean Waters Initiative, a $1 billion undertaking to improve local waterways over the next 15 years.

The Queen City Clean Waters initiative is being implemented to mitigate stormwater and combined sewer overflows that discharge into our local waterways, including the Black Rock Canal, Buffalo River, Cazenovia Creek, Erie Basin, Niagara River, and Scajaquada Creek among others.

We are proud that this initiative is making it a precedent to invest in underserved communities that have been historically neglected by outdated infrastructure. We have strategically prioritized neighborhoods that have experienced, first-hand, Buffalo's ongoing stormwater challenge.

In addition, Queen City Clean Waters will allow future generations to safely enjoy the recreational use of our local waterways.

This initiative will foster strong community partnerships, create meaningful workforce opportunities, and result in long-term environmental and economic benefits.

Through our community engagement team and stakeholder advisory committee, we are ensuring that residents and community members will have a voice and seat at the table in this process. We will be visiting local block clubs, community groups, and residents.

This advisory committee will be comprised of diverse community members and will act as a bridge between the Buffalo Sewer and residents, ensuring these upgrades reflect the needs and priorities of the community.

Since 1935, Buffalo Sewer has prioritized safeguarding public health and remains committed to that mission through the implementation of our long-term control plan and now introduction of our Queen City Clean Waters initiative.

We look forward to creating opportunities for our local neighborhoods and protecting our waterways for current and future generations.

Oluwole (OJ) McFoy, P.E., serves as the general manager and chief executive officer for the Buffalo Sewer Authority.

Editorial Board

The editorials on this page represent the opinion of The Buffalo News editorial board. Members are Publisher Tom Wiley; Editor-in-Chief Margaret Kenny Giancola; and editorial writers Dawn Marie Bracely and Elizabeth Licata.

Another Voice *is an issues-oriented column that appears on the editorial page each day. Writers must have some background or expertise on the topic about which they are writing. Submissions should be about 480 words. Email submissions to editpage@buffnews.com.*

BUFFALO
SEWER AUTHORITY

BUFFALO SEWER AUTHORITY UNVEILS QUEEN CITY CLEAN WATERS INITIATIVE

BUFFALO, NY – The Buffalo Sewer Authority (BSA), elected officials, and community stakeholders gathered at Freedom Park to unveil the Queen City Clean Waters Initiative, a

$1 billion undertaking to improve local waterways over the next 15 years. The initiative will include infrastructure enhancements at 50+ sites across the city, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility.

“The Queen City Clean Waters initiative is a community collaboration between BSA, the city of Buffalo, various community stakeholders, and residents to improve our local waterways and protect public health and safety,” said Oluwole A. (OJ) McFoy, Buffalo Sewer Authority CEO and General Manager. “This historic investment in our wastewater system infrastructure will reduce sewer overflows so that future generations can safely enjoy the vast recreational uses our waterways provide to our community and region.”

During heavy rainfall and snowmelt events, stormwater enters the sewer system, combining with wastewater, often leading to permitted combined sewer overflow discharges. These discharges are the result of the historical design of the city’s wastewater system, which was originally intended to prevent basement flooding.

Work already is underway at the Bird Island Wastewater Treatment Facility at Freedom Park, which is the first phase of facility upgrades and will significantly reduce overflows into the Niagara River. The 50+ planned projects will directly benefit other Western New York waterways including the Scajaquada Creek, Erie Basin Marina, Black Rock Canal, and the Buffalo River among others, by reducing sewer overflows.

“I am pleased that the Buffalo Sewer Authority’s Queen City Clean Waters initiative is highly focused on community engagement and making an historic and needed investment in the city’s wastewater system,” said City of Buffalo Acting Mayor Christopher P. Scanlon. “The Queen City Clean Waters inclusive and equitable approach is a priority of my administration and will help improve the quality of life of our underserved populations.”

The Queen City Clean Waters initiative includes a collaborative stakeholder engagement process that will be overseen by a Citizens Advisory Committee (CAC).

The CAC will play a crucial role in providing a platform for residents to voice their concerns and provide feedback and suggestions, on proposed projects in their communities. The CAC will be comprised of diverse community members and will act as a bridge between the BSA and residents, ensuring that the infrastructure investments reflect the needs and priorities of the community.

Jill Jedlica, executive director of Buffalo Niagara Waterkeeper and a member of the CAC said, “Our organization has been advocating for years for a program to once and for all reduce the harmful bacterial pollution caused by sewage overflows into our area waterways. This initiative under the auspices of the BSA gives us hope that one of our major advocacy priorities is being addressed in such a comprehensive and thorough manner.”

In addition to the CAC, Buffalo Sewer Authority will partner with workforce development entities to engage residents in project areas and provide them with valuable career training and job opportunities.

Through our historic financial commitment to the Queen City Clean Waters initiative, the BSA Board of Directors is establishing a precedent of making investments in underserved communities that are historically neglected by infrastructure investments,” said Buffalo Sewer Authority Chairman Herbert L. Bellamy, Jr. “This initiative will foster strong community partnerships, create meaningful workforce opportunities, and result in long-term environmental and economic benefits for future generations in Buffalo.”

Throughout the project schedule, BSA will host informational workshops to inform potential design consultants, construction contractors, and vendors of initiative opportunities. Specifically, BSA aims to create space for Disadvantaged, Women, and Minority Business Enterprise (D/W/MBE) firms to connect with prime contractors and other partners.

Design consultants, construction contractors, and vendors interested in learning about upcoming capital project opportunities are encouraged to attend a virtual Informational “Open House” Session on Wednesday, October 16, 2024, at 11:00 am EST.

Search

CATEGORIES

Bid Opportunities (18)

Construction Projects (12)

Consultant, Contractor, Supplier Opportunities (18)

News & Updates (44)

Public Comment (2)

RFP & RFQ Opportunities (10)

Uncategorized (2)

Vendor Opportunities (18)

Vendor, Bid, RFP & RFQ Opportunities (13)

ARCHIVES

Select Month

RECENT POSTS

Invitation to Bid: Breckenridge Street CSO Control Project

RFP: Sidney-Lark and Edison-Martha Offline Storage Tanks

INDEPENDENT AUDIT CONCLUDES BUFFALO SEWER AUTHORITY USED CLEAR AND TRANSPARENT ACCOUNTING PRACTICES FOR ANNUAL FINANCIAL REPORT

National Day of Mourning

Cornelius Creek CSO Backwater Gate Flooding Mitigation Project

META

Log in

Entries feed

Comments feed

WordPress.org

BUFFALO
SEWER AUTHORITY

Buffalo Sewer Authority
City Hall Room 1038
Buffalo, NY 14202
716-851-4664

Report a Problem
Request a Document
Pay a Bill
News and Updates

Contact Us
Careers
Health Insurance & Benefits Registration
Employee Portal

© 2023 Buffalo Sewer Authority

PRESORTED STD U.S.
POSTAGE PAID
PERMIT #1077
Buffalo,NY

Mailing Address:
The Buffalo Criterion Inc
623-625 William St.
Buffalo, NY 14206

E 3 COMMUNICATIONS 5/14/16
551 FRANKLIN ST
BUFFALO NY 14202

"...the Black People"

THE BUFFALO
CRITERION

INCORPORATED

(In the 99th year of educating, working, building the legendary Buffalo Criterion; WNY's African American Weekly)

50¢

VOL. 100 - No. 1 criterion.info@thebuffalocriterion.com SATURDAY, JAN 04 - JAN 10, 2025

UPCOMING BUFFALO SEWER AUTHORITY DRILLING IN SCHILLER PARK NEIGHBORHOOD

The Buffalo Sewer Authority (Buffalo Sewer) will start preliminary site work in and around Schiller Park in January as part of the $1 billion Queen City Clean Waters initiative.

The 15-year initiative will improve local waterways by mitigating combined sewer overflows that occur during extreme wet weather events. Buffalo Sewer representatives will be working in Schiller Park and nearby neighborhoods during the week of January 6, 2025 to mark boring locations. Drilling is planned to begin the week of January 20, 2025.

The site work will include surveying and painting markings for the drillers. The boreholes will be restored after the drilling is completed. If monitoring wells are necessary, they will be cut down to ground level and capped. Surrounding homes and businesses may experience some noise during the drilling and there may be some traffic impacts.

"Buffalo Sewer crews will be wearing bright reflective vests and protective gear for both the site work and the drilling operations," said Rosaleen B. Nogle, PE, BCEE, BC.WRE, Principal Sanitary Engineer, Buffalo Sewer Authority. "This work is necessary and critical for planning and designing future projects to reduce the impacts of sewer overflows in waterways in and around Buffalo."

RIVERROCK TIMES

Vol. 4 No. 1 | Thursday, February 29, 2024 | Covering the Northwest Corner of Buffalo

Scanlon wants USPS to reconsider sending postal functions to Rochester



Buffalo Common Council President Christopher P. Scanlon (pictured at right) sent a letter Feb. 23 to Postmaster General Louis DeJoy expressing his profound concerns over the potential relocation of certain functions from the United States Postal Service (USPS) Processing & Distribution Center on William Street in Buffalo to a Rochester facility.

In the letter, Council President Scanlon urges Postmaster DeJoy to reconsider any proposals "that could have negative effects on the Buffalo Processing & Distribution Center, our dedicated postal and letter carrier workforce, mail services to the City of Buffalo, our residents, and our Western New York region."

Scanlon wrote that the recent release of the USPS's initial findings concerning this matter has "raised considerable apprehension within our community."

He said Buffalo and Western New York heavily depend on efficient mail processing for various essential aspects of everyday life, including the timely delivery of paychecks, prescriptions, communica-

significant disruption to the current operations, such as relocating functions to the Rochester Processing and Distribution Center, could have far-reaching consequences.

He added, "Not only would this impact hundreds of jobs, but it would also disrupt the daily lives of residents in Buffalo and the surrounding regions.

"It's imperative to emphasize that Buffalo is the second largest city in New York State outside of New York City. Additionally, recent projections from Zillow indicate that Buffalo's housing market is poised to be one of the most competitive among 50 major cities this year. Such rapid growth underscores the critical need for reliable and efficient mail services in our region."

Scanlon urged the postmaster to reconsider any proposals "that could have negative effects on the Buffalo Processing and Distribution Center, our dedicated postal and letter carrier workforce, mail services to the City of Buffalo, our residents, and our Western New

BSA set to begin four-year renovation project



Buffalo Sewer Authority rendering shows areas to be addressed. *buffalosewer.org*

by Roxie Harbison

The Buffalo Sewer Authority presented information regarding the Primary Treatment Renovation of the Bird Island Wastewater Treatment Facility at a well attended and informative Rediscover Riverside meeting at St. Mark's, 256 Riverside Ave. on Feb. 22.

The guest speakers were Walt Walker, consultant, and Rosaleen Nogle, BSA project engineer.

The renovation work will begin from Freedom Island and continue to Unity Island. The treatment facility built in 1938 needs an upgrade to improve water quality and reduce odors. Upgrading the facility will cost $70-$80 million.

The project will include the use

have more contact with the bleach.

The BSA will also be installing an odor control system from the tanks. This new technology reportedly filters out the odors. The current tanks and outflow pipes are still in pretty good condition.

The goals of the renovation, according to the speakers, are to protect public health, improve water quality, modernize the water treatment facility, and implement odor control. They will be keeping the original yellow brick on the outside of the facility while upgrading the inside.

Funding for the repairs will come from grants (both state and federal) and low interest loans. Construction will be from 2024 to 2028. Related items discussed included:

detour route is planned involving Niagara St.

• Buffalo Sewer Authority is also working to reduce flooding and back flows into households. It was recommended that if residents have a basement flood to call 311 first. Let the BSA check the problem.

• Storm water receivers are the sewer drains that seem to fill up with trash. There is a 2 foot difference between the bottom of the receiver and the water pipe. Debris collects in the bottom and it requires a 4-man crew to clean it up…twice a year.

• Right now the work at Hertel & Niagara streets is just sewer line replacement work.

• Tours are available of Bird Island.

• The BSA has two other large

RIVERROCK TIMES

Vol. 4 No. 1 | Thursday, February 29, 2024 | Covering the Northwest Corner of Buffalo

Scanlon wants USPS to reconsider sending postal functions to Rochester



Buffalo Common Council President Christopher P. Scanlon (pictured at right) sent a letter Feb. 23 to Postmaster General Louis DeJoy expressing his profound concerns over the potential relocation of certain functions from the United States Postal Service (USPS) Processing & Distribution Center on William Street in Buffalo to a Rochester facility.

In the letter, Council President Scanlon urges Postmaster DeJoy to reconsider any proposals "that could have negative effects on the Buffalo Processing & Distribution Center, our dedicated postal and letter carrier workforce, mail services to the City of Buffalo, our residents, and our Western New York region."

Scanlon wrote that the recent release of the USPS's initial findings concerning this matter has "raised considerable apprehension within our community."

He said Buffalo and Western New York heavily depend on efficient mail processing for various essential aspects of everyday life, including the timely delivery of paychecks, prescriptions, communications, and other vital services. Any significant disruption to the current operations, such as relocating functions to the Rochester Processing and Distribution Center, could have far-reaching consequences.

He added, "Not only would this impact hundreds of jobs, but it would also disrupt the daily lives of residents in Buffalo and the surrounding regions.

"It's imperative to emphasize that Buffalo is the second largest city in New York State outside of New York City. Additionally, recent projections from Zillow indicate that Buffalo's housing market is poised to be one of the most competitive among 50 major cities this year. Such rapid growth underscores the critical need for reliable and efficient mail services in our region."

Scanlon urged the postmaster to reconsider any proposals "that could have negative effects on the Buffalo Processing and Distribution Center, our dedicated postal and letter carrier workforce, mail services to the City of Buffalo, our residents, and our Western New York region."



BSA set to begin four-year renovation project



Buffalo Sewer Authority rendering shows areas to be addressed. *buffalosewer.org*

by Roxie Harbison

The Buffalo Sewer Authority presented information regarding the Primary Treatment Renovation of the Bird Island Wastewater Treatment Facility at a well attended and informative Rediscover Riverside meeting at St. Mark's, 256 Riverside Ave. on Feb. 22.

The guest speakers were Walt Walker, consultant, and Rosaleen Nogle, BSA project engineer.

The renovation work will begin from Freedom Island and continue to Unity Island. The treatment facility built in 1938 needs an upgrade to improve water quality and reduce odors. Upgrading the facility will cost $70-$80 million.

The project will include the use of settling tanks to improve the disinfectant program. They use bleach as a disinfect and the new tanks will have more contact with the bleach.

The BSA will also be installing an odor control system from the tanks. This new technology reportedly filters out the odors. The current tanks and outflow pipes are still in pretty good condition.

The goals of the renovation, according to the speakers, are to protect public health, improve water quality, modernize the water treatment facility, and implement odor control. They will be keeping the original yellow brick on the outside of the facility while upgrading the inside.

Funding for the repairs will come from grants (both state and federal) and low interest loans. Construction will be from 2024 to 2028. Related items discussed included:

• A section of the Shoreline Trail will be closed for about one year. A detour route is planned involving Niagara St.

• Buffalo Sewer Authority is also working to reduce flooding and back flows into households. It was recommended that if residents have a basement flood to call 311 first. Let the BSA check the problem.

• Storm water receivers are the sewer drains that seem to fill up with trash. There is a 2 foot difference between the bottom of the receiver and the water pipe. Debris collects in the bottom and it requires a 4-man crew to clean it up…twice a year.

• Right now the work at Hertel & Niagara streets is just sewer line replacement work.

• Tours are available of Bird Island.

• The BSA has two other large projects and a number of smaller projects in the works.

SCHEDULE A

DESCRIPTION OF PROPERTY SUBJECT TO THE BUFFALO SEWER AUTHORITY LIEN

All that tract or parcel of land situate in the City of Buffalo, County of Erie and State of New York, being part of Lot No. 49, Township 10 and Range 8 of the Buffalo Creek Reservation and more particularly described as follows: Beginning at a point in the northwesterly line of Folger Street at the distance of seven hundred thirty-two (732) feet from the point of intersection of the northwesterly line of Folger Street with the westerly line of Triangle Street running thence southwesterly along the said northwesterly line of Folger Street thirty-three (33) feet; running thence northerly and parallel with Triangle Street one hundred sixty-eight (168) feet running thence northeasterly and parallel with Folger Street thirty-three (33) feet; running thence southerly and parallel with Triangle Street one hundred sixty-eight (168) feet to the place of beginning.

FOR IMMEDIATE RELEASE
December 30, 2024

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

UPCOMING BUFFALO SEWER AUTHORITY DRILLING IN SCHILLER PARK NEIGHBORHOOD

Buffalo Sewer to collect soil and rock samples for design of future construction work to mitigate combined sewer overflows

BUFFALO, NY—The Buffalo Sewer Authority (Buffalo Sewer) will start preliminary site work in and around Schiller Park in January as part the $1 billion Queen City Clean Waters initiative. The 15-year initiative will improve local waterways by mitigating combined sewer overflows that occur during extreme wet weather events.

Buffalo Sewer representatives will be working in Schiller Park and nearby neighborhoods during the week of January 6, 2025 to mark boring locations. Drilling is planned to begin the week of January 20, 2025.

The site work will include surveying and painting markings for the drillers. The bore holes will be restored after the drilling is completed. If monitoring wells are necessary, they will be cut down to ground level and capped. Surrounding homes and businesses may experience some noise during the drilling and there may be some traffic impacts and

“Buffalo Sewer crews will be wearing bright reflective vests and protective gear for both the site work and the drilling operations,” said Rosaleen B. Nogle, PE, BCEE, BC.WRE, Principal Sanitary Engineer, Buffalo Sewer Authority. “This work is necessary and critical for planning and designing future projects to reduce the impacts of sewer overflows in waterways in and around Buffalo.”

-more-

Buffalo Sewer representatives will be going door to door to provide notifications to the residents and businesses in the Schiller Park area during the week of December 30, 2024. The affected areas include Doat Street, Zelmer Street, Genesee Street, Sprenger Avenue, Heminway Street, Pennock Place, Pine Park, Pine Ridge Road, and others near and around Schiller Park.

Residents and businesses can contact Buffalo Sewer at rnogle@buffalosewer.org.or at (716) 851-4664 Ext. 4203 if they have any questions.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof." Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
January XX, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

BUFFALO SEWER AUTHORITY ANNOUNCES QUEEN CITY CLEAN WATERS STAKEHOLDER ADVISORY COMMITTEE

Committee will collaborate with Buffalo Sewer to maximize socioeconomic benefits of $1 billion initiative to reduce combined sewer overflows

BUFFALO, NY – The Buffalo Sewer Authority (BSA) has announced the formation of a Stakeholder Advisory Committee (SAC) for the $1 billion Queen City Clean Waters initiative to improve local waterways by mitigating combined sewer overflows. The Committee will collaborate with BSA to ensure that community perspectives, concerns, and insights are aligned with the planning and implementation of over 50+ projects across the City of Buffalo over the next 15 years.

"Community engagement is a critical component of the Queen City Clean Waters initiative, and it is important that we listen to stakeholders so that these projects positively impact City residents," said Rosaleen B. Nogle, PE, BCEE, BC.WRE, Principal Sanitary Engineer, Buffalo Sewer Authority. "The Committee will help create meaningful socioeconomic opportunities that result in long-term environmental and economic benefits for future generations in Buffalo, especially in neighborhoods that have been negatively impacted by combined sewer overflows because of a lack of investment."

The Committee will play a crucial role in providing a platform for residents to voice their concerns and provide feedback and suggestions on the various projects in communities across the city. The Committee will act as a bridge between the BSA and residents, ensuring that the infrastructure investments reflect the needs and priorities of the community.

The Committee will be comprised of a diverse group of representatives from various groups and organizations who represent the neighborhoods and communities where projects are taking place. Currently, the Committee is comprised of representatives from the following organizations:

-more-

2-2-2-2

- Board of Block Clubs Buffalo & Erie County Inc.
- Buffalo Center for Health Equity
- Buffalo Niagara Waterkeeper
- City of Buffalo Office of Strategic Planning
- Buffalo Urban League
- Jericho Road
- LISC (Local Initiatives Support Corp.) WNY
- Northland Workforce Training Center
- Buffalo NAACP
- PUSH Buffalo

BSA is continuing to contact groups and organizations about joining the Committee. Those interested in serving on the Committee can contact rnogle@buffalosewer.org or call (716) 851-4664 Ext. 4203. It is anticipated that the Committee will meet on a monthly basis and members will receive a nominal per diem of $100 per meeting. Representatives from public entities such as the City of Buffalo or any ex officio members who may be appointed will not be compensated.

Meeting minutes and agendas will be made available on www.buffalosewer.org.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof." Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
January 28, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

BUFFALO SEWER ISSUES RFPS FOR ENGINEERING AND CONSTRUCTION WORK FOR QUEEN CITY CLEAN WATERS INITIATIVE PROJECTS

BUFFALO, NY— As part of the Queen City Clean Waters Initiative, a $1 billion program to improve local waterways by mitigating combined sewer overflows over the next 15 years, the Buffalo Sewer Authority (Buffalo Sewer) has issued Requests for Proposals (RFPs) for engineering and construction work on two offline storage tanks.

An offline storage (OLS) tank holds extra water when the sewer is full, then drains it to be treated when there's space. Real-time controls (RTC) contain sewer chambers with automatic gates that store and release water to prevent overflows when the treatment plant is ready. RTC technology has been used in projects across the City of Buffalo over the last decade.

“These projects are critically important in our efforts to reduce combined sewer overflows through maximizing storage within the existing collection system and strategically increasing storage where needed to regulate flows to the Bird Island wastewater plant,” said Rosaleen Nogle, PE, BCEE, BC WRE
Principal Sanitary Engineer, Buffalo Sewer.

The Edison-Martha Offline OLS tank project will be located at the intersection of Edison Avenue and Martha Avenue in proximity to Roosevelt Park and the Sidney-Lark tank project will be located near the intersection of Sidney Street and Lark Street.

The Edison-Martha OLS project will include an underground, offline concrete tank capable of storing up to 2.61 million gallons of combined sewage flow to reduce overflows to the buried section of Scajaquada Creek.

-more-

“Our community and public engagement team will work with the selected firm to make the communities where these projects are taking place aware of this work well in advance of construction and work with the neighborhood to reduce any negative impacts while also helping to build positive long-term benefits ,” Nogle continued.

Smaller businesses and those that have had less experience with similar projects are encouraged to partner with others; funding through state and/or federal grants or loans may entail specific goals and compliance requirements.

All questions, requests for clarification or additional information must be sent by email to Ms. Nogle at rnogle@buffalosewer.org and must be received no later than Tuesday, February 18, 2025 at 3:00 pm EST. Consultants shall not communicate with Buffalo Sewer designee via any other method or outside of the time period set forth herein in regard to this RFP.

Sealed proposal submissions must be received by Buffalo Sewer no later than Tuesday, March 4, 2025, at 10:00 AM ET.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to “relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof.” Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
February 18, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

BUFFALO SEWER LAUNCHES INTERACTIVE QUEEN CITY CLEAN WATERS INITIATIVE WEBSITE

Site provides local stakeholders and residents opportunity to provide comments to projects across the city; interactive map provides real time updates

BUFFALO, NY— The Buffalo Sewer Authority (Buffalo Sewer) has launched an interactive website for the Queen City Clean Waters Initiative to engage local stakeholders and communities for project input and engagement for the $1 billion initiative to improve local waterways by mitigating combined sewer overflows.

City of Buffalo residents and stakeholders can access the website at https://buffaloqccw.mysocialpinpoint.com/ . The website features information about the initiative, project details, frequently asked questions (FAQs), comment/question sections, and a program timeline.

The website features an interactive platform where users can access the Queen City Clean Waters Initiative survey, which is intended to gain feedback for initiative communication and information dissemination. Users can also communicate directly with Buffalo Sewer on the website's comment platform to ask questions or provide feedback/ideas for the initiative.

An interactive website map allows users to access project information, timeline, and location. Users can provide comments on projects affecting their neighborhood and ensure community members are discussed and prioritized in these community betterment investments.

“An integral component of this initiative is engagement and interaction with the local community; we especially need to hear most from those neighborhoods that have experienced the negative impacts of combined sewer overflows and the burying of waterways,” said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer. “Buffalo Sewer encourages residents to participate in our engagement process to enhance our role in protecting public health and the environment.”

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof." Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
April 7, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

BUFFALO SEWER AUTHORITY TO HOST PUBLIC PARTICIPATION FORUMS REGARDING $1 BILLION QUEEN CITY CLEAN WATERS INITIATIVE

First in a series of forums across the City of Buffalo to be hosted in the Masten, South and University Councilmanic Districts

BUFFALO, NY – The Buffalo Sewer Authority (BSA) will host the first of a series of public participation forums to provide information and gather community input regarding the $1 billion Queen City Clean Waters Initiative, a 15-year program designed to build infrastructure projects in neighborhoods across the City of Buffalo to mitigate combined sewer overflows (CSOs) into local waterways.

A forum will be held in each Councilmanic district with the first three scheduled to take place at the following venues.

- University District: Thursday, April 10th at Gerard Place, 2515 Bailey Avenue at 6 p.m.
- South District: Thursday, April 17th at the Buffalo Irish Center, 245 Abbott Road at 6 p.m.
- Masten District: Tuesday April 22nd @ Northland Training Center, 683 Northland Avenue at 6 p.m.

The forums will include presentations, a demonstration of the interactive QCCW website (http://buffaloqccw.org/), a question and answer session with staff members of the Buffalo Sewer Authority, design team, , Queen City Clean Waters stakeholder advisory committee members and other project stakeholders and opportunities to provide feedback. Dinner will be served each evening.

“The Public Participation Plan is an integral process that is essential to prioritizing community engagement as we seek feedback and input from community members on any adverse impacts, including environmental justice (EJ) impacts from construction of projects, and how to ensure

maximum community benefit," said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

-more-

The initiative will include infrastructure enhancements at 50+ sites across the city, including ongoing upgrades at the Bird Island Wastewater Treatment Facility which will total over $250 million. The 50+ planned projects will reduce combined sewer overflows to Western New York waterways including the Niagara River, Scajaquada Creek, Erie Basin Marina, Black Rock Canal, Cazenovia Creek, and the Buffalo River, improving water quality for the people of the City of Buffalo, our visitors, and downstream communities.

The remaining six councilmanic district and two city wide public participation forums will be scheduled throughout the spring and early summer.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof." Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
April 10, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

BUFFALO SEWER AUTHORITY TO HOST PUBLIC PARTICIPATION FORUMS REGARDING $1 BILLION QUEEN CITY CLEAN WATERS INITIATIVE

First in a series of forums across the City of Buffalo to be hosted in the Masten, South and University Councilmanic Districts

BUFFALO, NY – The Buffalo Sewer Authority (BSA) will host the first of a series of public participation forums to provide information and gather community input regarding the $1 billion Queen City Clean Waters Initiative, a 15-year program designed to build infrastructure projects in neighborhoods across the City of Buffalo to mitigate combined sewer overflows (CSOs) into local waterways.

A forum will be held in each Councilmanic district with the first three scheduled to take place at the following venues.

- South District: Thursday, April 17th at the Buffalo Irish Center, 245 Abbott Road at 6 p.m.
- University District: Thursday, April 24th at Gerard Place, 2515 Bailey Avenue at 6 p.m.
- Masten District: Monday, April 28th @ Northland Training Center, 683 Northland Avenue at 6 p.m.

The forums will include presentations, a demonstration of the interactive QCCW website (http://buffaloqccw.org/), a question and answer session with staff members of the Buffalo Sewer Authority, design team, Queen City Clean Waters stakeholder advisory committee members and other project stakeholders and opportunities to provide feedback. Dinner will be served each evening.

-more-

“The Public Participation Forums are an integral part of the process. They are essential to prioritizing community engagement as we seek feedback and input from community members on any adverse impacts, including environmental justice (EJ) impacts from construction of projects, and how to ensure maximum community benefit,” said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

The initiative will include infrastructure enhancements at 50+ sites across the city, including ongoing upgrades at the Bird Island Wastewater Treatment Facility which will total over $250 million. The 50+ planned projects will reduce combined sewer overflows to Western New York waterways including the Niagara River, Scajaquada Creek, Erie Basin Marina, Black Rock Canal, Cazenovia Creek, and the Buffalo River, improving water quality for the people of the City of Buffalo, visitors, and downstream communities.

The remaining six councilmanic districts and two city wide public participation forums will be scheduled throughout the spring and early summer.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to “relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof.” Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
May 7, 2025

Contacts:
Rosaleen Nogle, PE, BCEE, BC WRE
716- 851-4664 Ext. 4203

BUFFALO SEWER AUTHORITY ADDS THREE BOARD MEMBERS

Herbert Bellamy Jr. remains Chair; Christopher Roosevelt remains Vice Chair

BUFFALO, NY – The Buffalo Sewer Authority (BSA) today announced at the May 7th BSA board meeting the addition of three board members: Thomas Caulfield, Ph.D. – former Buffalo Sewer administrator of capital improvements, Hope Young-Watkins – Buffalo Urban Renewal Agency senior director of programs, and Patrick Sole, Jr – former City of Buffalo director of permit and inspection services.

Herbert Bellamy Jr. will remain as board chair, and Christopher Roosevelt will remain as board vice chair. The three appointments bring the total number of board members to five, filling the remaining board vacancies. Former secretary Eleanor Petrucci retired from the board after over 20 years of service at the end of April.

"Our new board members will enhance our goals of delivering tangible, public health benefits to the city of Buffalo community as these individuals have backgrounds in community outreach, extensive knowledge of Buffalo neighborhoods, and in once instance previous experience with BSA," said Buffalo Sewer Authority Board Chairman Herbert Bellamy Jr. "I also want recognize the service of Eleanor Petrucci, who as a member of the board for the last 21 years was a strong voice for transformational projects and upgrades throughout our collection system, treatment plant, and neighborhoods."

Dr. Caulfield has over 30 years of professional experience in public administration and management. His extensive experience includes roles at both the Buffalo Municipal Housing Authority and the Buffalo Sewer Authority before his current role as a municipal operations consultant.

Hope Young-Watkins currently serves as the senior director of programs with the Buffalo Urban Renewal Agency. Prior to her current role, Ms. Young-Watkins was director of real estate for the City of Buffalo for over four years and has worked in real estate and economic development for over 30 years.

-more-

2-2-2-2

Patrick Sole, Jr., spent nearly 25 years with the City of Buffalo, a significant portion of which he served within the Department of Permits and Inspection Services, including as the department's director.

BSA board meetings are open to the public in person and virtually. A schedule of meetings can be found at: https://buffalosewer.org/about/transparency/board-meetings/.

"We look forward to working with the new board members in our continued efforts to reduce combined sewer overflows to clean our waterways through the long-term control plan and Queen City Clean Waters Initiative, continuing our 90-year mission of protecting the health and safety of our 550,000 customers across Buffalo and surrounding areas," said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof." Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
May 9, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

BUFFALO SEWER ANNOUNCES MEETING DATES FOR PUBLIC PARTICIPATION FORUMS

Forums to provide residents information about various projects associated with $1 billion Queen City Clean Waters initiative

BUFFALO, NY – The Buffalo Sewer Authority (BSA) is conducting public participation forms to provide residents information regarding various projects associated with the $1 billion Queen City Clean Waters initiative.

Meetings are taking place in council districts across the city on the following dates and times and locations:

- Lovejoy District Projects – Tuesday, May 13 from 6:00 p.m. until 8 p.m.at the Schiller Park Senior Center on 2057 Genesee Street.

- Fillmore District Projects – Wednesday, May 14, 2025 from 6:00 p.m. until 8 p.m. at Matt Urban Center on 1081 Broadway Street.

- Ellicott District Projects – Tuesday, May 20th from 6 p.m. until 8 p.m. at the Pratt Willert Community Center on 422 Pratt Street.

- Delaware District Projects – Tuesday, June 10th from 6 p.m. until 8 p.m. at Dashes Market on 1770 Hertel Street.

“The Public Participation Forums are essential in seeking feedback and input from community members on any adverse impacts, including environmental justice (EJ) impacts from projects, and how to ensure maximum community benefit,” said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer. “We encourage residents to attend, have dinner on us and ask any questions or raise any concerns they may have about the projects occurring in their neighborhoods.”

-more-

2-2-2-2

The forums will include presentations, a demonstration of the interactive QCCW website (http://buffaloqccw.org/), a question and answer session with staff members of the Buffalo Sewer Authority, design team, Queen City Clean Waters stakeholder advisory committee members and other project stakeholders and opportunities to provide feedback.

The initiative will include infrastructure enhancements at 50+ sites across the city, including ongoing upgrades at the Bird Island Wastewater Treatment Facility which will total over $250 million. The 50+ planned projects will reduce combined sewer overflows to Western New York waterways including the Niagara River, Scajaquada Creek, Erie Basin Marina, Black Rock Canal, Cazenovia Creek, and the Buffalo River, improving water quality for the people of the City of Buffalo, visitors, and downstream communities.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof." Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
July xx, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

BUFFALO SEWER ANNOUNCES QUEEN CITY CLEAN WATERS FAIR

Fair is open to the public to provide more information about the $1 Billion Queen City Clean Waters Initiative

Fair to feature food and music, interactive/educational displays and giveaways

BUFFALO, NY – The Buffalo Sewer Authority (BSA) has announced the Queen City Clean Waters Fair coming on August 29th from 4 PM – 7 PM at Hoyt Lake. The Clean Waters Fair is providing the residents of Buffalo with an evening of food + music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the Queen City Clean Waters Initiative.

The Queen City Clean Waters Initiative is an approximately $1 billion effort to reduce combined sewer overflows into local waterways. Over the next 15 years various infrastructure enhancements at 50+ sites across the city will take place, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility, the second largest wastewater treatment facility in New York State serving over 550,000 customers.

“Community collaboration is a key driver in the implementation and the mission of the Queen City Clean Waters Initiative; the Clean Waters Fair gives residents another opportunity to engage with BSA officials and program representatives to learn how they can participate and have a voice in this once in a lifetime investment in our community,” said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

Clean Waters Fest will feature representatives from the nine council manic districts, BSA customer assistance and resources team members, informational tables that highlight multiple aspects about the initiative, including green infrastructure, sewer technology, BSA history, and more.

-more-

2-2-2-2

The remaining tables will be for workforce and MWBE/DBE certification opportunities, demonstrations of engineering and water/wastewater principles and tools among others.

“We have activities and stations for all ages to come enjoy the warm summer weather and join us on this journey of creating a cleaner, resilient, and equitable environment for Buffalo,” added Nogle.

Stay tuned for future announcements about partners, vendors, and other organizations who will be a part of the Clean Waters Fest.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to “relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof.” Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

FOR IMMEDIATE RELEASE
August 18, 2025

Contacts:
Earl Wells, e3comms.
716-553-5225
Philip Wells, e3comms.
716-512-3326

LOCAL ORGANIZATIONS TO PARTICIPATE IN BUFFALO SEWER QUEEN CITY CLEAN WATERS FAIR

Public invited to attend free event to learn more about $1 billion initiative to enhance and protect area waters

BUFFALO, NY – Buffalo Sewer has announced that various local organizations will be participating in the Queen City Clean Waters Fair on August 29th from 4 PM – 7 PM at Hoyt Lake.

The Clean Waters Fair is providing the residents of Buffalo with an evening of food + music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the $1 billion Queen City Clean Waters Initiative to enhance and protect area waterways by reducing combined sewer overflows and the work Buffalo Sewer does every day to protect the environment and health of the people of Western New York.

Over the next 15 years, various infrastructure enhancements at 50+ sites across the city will take place, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility, the second largest wastewater treatment facility in New York State serving over 550,000 customers.

“I can’t think of a better way to end the summer than by celebrating how we are working as a community to protect our area waterways,” said Buffalo Mayor Christopher P. Scanlon. “Our region is so fortunate and unique from most of the country in having so many natural water resources that contribute to such a great quality of life here. The Queen City Clean Waters Fair reminds us of our obligations to protect these precious resources.”

Local workforce, environmental, and sustainable organizations will be joining Buffalo Sewer staff to provide educational, hands-on activities for all ages to learn more about water quality and protecting waterways, including:

-more-

2-2-2-2

- Aquarium of Niagara
- Buffalo Niagara Waterkeeper
- Buffalo Engineering Awareness for Minorities (BEAM)
- The Foundry Buffalo
- West Side Rowing Club
- Northland Workforce Training Center
- U.S. Fish and Wildlife Services
- Erie County Department of Environment & Planning
- Erie County Low Income Program for Sustainable Energy (ECLIPSE)
- Engineers for a Sustainable World (ESW)
- Second Chapter Bookstore
- Stantec
- Yoga Me Blac

National Grid and M&T Bank will be providing free book bags to children to help them get prepared for going back to school after Labor Day. Approximately 200 bookbags will be available for attendees while supplies last.

A few of Buffalo's favorite pop-up food vendors will be providing food & beverage options for attendees, including Half Luna Empanadas, Twisted Icee Slushie, What's Poppin Popcorn, and Moneybag Dumplings. Buffalo Sewer will provide complimentary cans of water and refillable water stations at the Clean Waters Fair.

-30-

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof." Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

About the Queen City Clean Waters initiative: To safeguard public health and the environment while fostering strong community partnerships, creating meaningful workforce opportunities, and driving lasting economic impact for future generations in Buffalo.

"The Powerful Voice of the Black People"
THE BUFFALO CRITERION
INCORPORATED

BUFFALO, NY – The Buffalo Sewer Authority (BSA) has announced the Queen City Clean Waters Fair coming on August 29th from 4 PM – 7 PM at Hoyt Lake. The Clean Waters Fair is providing the residents of Buffalo with an evening of food + music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the Queen City Clean Waters Initiative.

The Queen City Clean Waters Initiative is an approximately $1 billion effort to reduce combined sewer overflows into local waterways. Over the next 15 years various infra structure enhancements at 50+ sites across the city will take place, including $250 million in upgrades at the Bird Island Waste water Treatment Facility, the second largest waste water treatment facility in New York State serving over 550,000 customers.

“Community collaboration is a key driver in the implementation and the mission of the Queen City Clean Waters Initiative; the Clean Waters Fair gives residents another opportunity to engage with BSA officials and program representatives to learn how they can participate and have a voice in this once in a lifetime investment in our community,” said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

The Clean Waters Fair will feature representatives from the nine council manic districts, BSA customer assistance and resources team members, informational tables that highlight multiple aspects about the initiative, including green infrastructure, sewer technology, BSA history, and more.

The remaining tables will be for workforce and MWBE/DBE certification opportunities, demonstrations of engineering and water/wastewater principles and tools among other.

“We have activities and stations for all ages to come enjoy the warm summer weather and join us on this journey of creating a cleaner, resilient, and equitable environment for Buffalo,” added Nogle.

Stay tuned for future announcements about partners, vendors, and other organizations who will be a part of the Clean Waters Fair.

Comments (0) Newest First

Preview Post Comment...

‹ Nami Buffalo & WNY, Veterans One-Stop Center Bring Free Nami Homefront Class To Region

BMHA Board Of Commissioners Approves Multiple Actions Moving The Transformational Marine Drive Apartments Redevelopment Closer To Construction ›

https://buffalonews.com/news/local/article_7ab5c217-0131-4b66-a00c-b1ce1109957f.html

TOP STORY EDITOR'S PICK

More time and $1 billion needed for Buffalo sewer system improvements

Mackenzie Shuman

Apr 15, 2025

The Buffalo Sewer Authority had 20 years and an estimated $380 million to reduce the amount of raw sewage overflows plaguing the city from its century-old system.

Now, officials at the Sewer Authority said they will need more time, and a lot more money – $1 billion in total – to get the job done.

“The payoff of this is cleaner waterways and the economic development that will come with the amount of investment going into our infrastructure,” said Rosaleen Nogle, principal sanitary engineer at the Buffalo Sewer Authority. “We’re still benefiting from a system built 125 years ago and now we just need to bring it into this century.”

In 2014, the Buffalo Sewer Authority entered into a 20-year plan to reduce the amount of sewage and stormwater runoff that flows from the city’s combined sewer system and into local creeks and rivers. At the time, the Sewer Authority was accused of violating the federal Clean Water Act and its state discharge permit by failing to reduce the sewage pollution overflowing into the Niagara River, Black Rock Canal, Buffalo River, Scajaquada Creek, Cazenovia Creek, Cornelius Creek and Lake Erie basin.

People are also reading...

1 **Bills' interest in Gabe Davis reflects uncertainty behind top three receivers**

2 **Driver was 'distracted' in Thruway tour bus crash that killed 5 people, state police say**

3 **Alan Pergament: 'Hard Knocks' premiere has humor, 'stolen' moments ... and some yada, yada, yada**

4 **With preseason complete, our final Bills 53-man roster projection**



A small geyser of water from a blown diffuser flies into the air in an aeration tank at the plant.

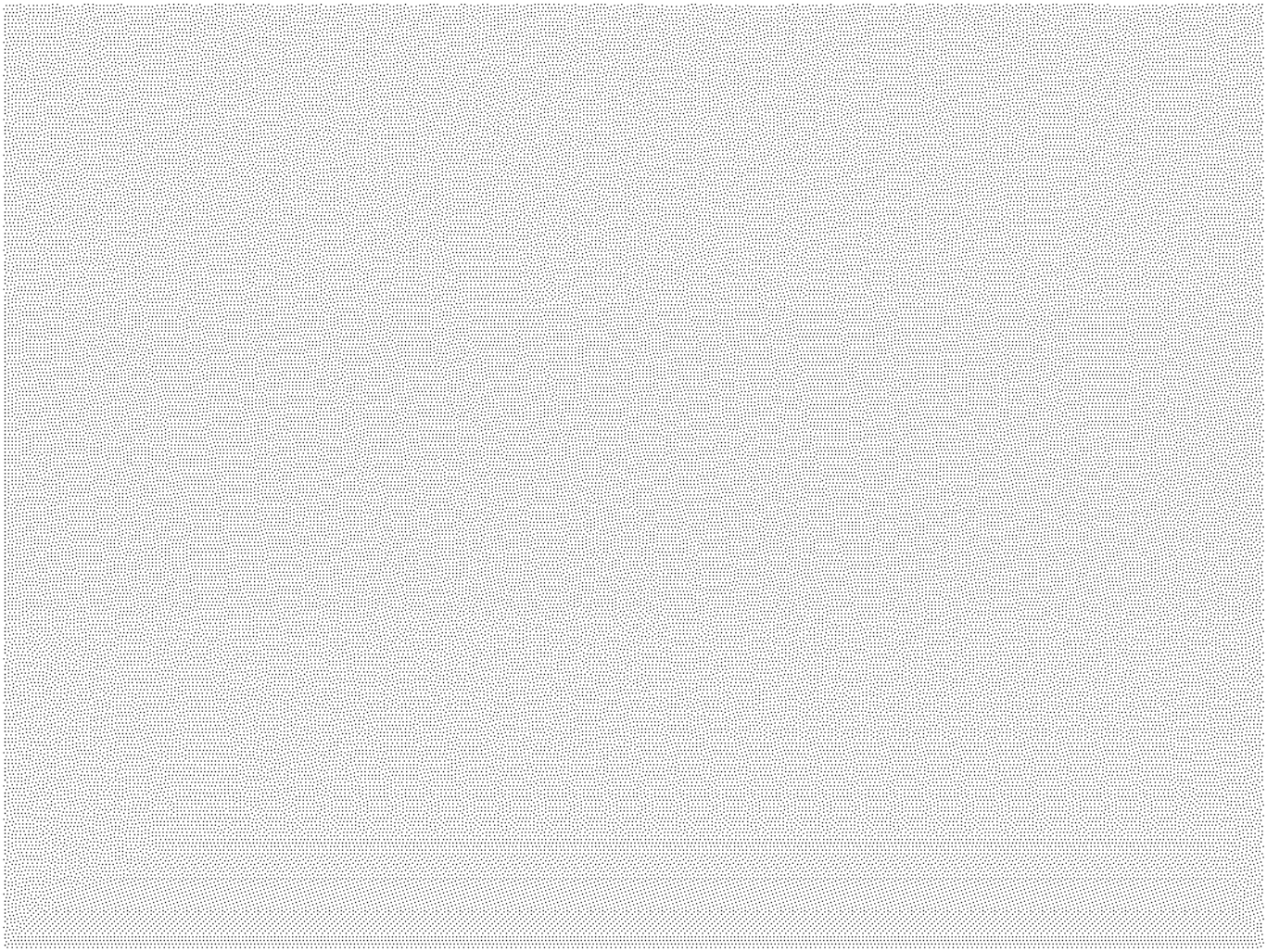
Joshua Bessex, Buffalo News

But it's been 11 years, and the Sewer Authority admits it cannot meet the 2034 deadline. Meanwhile, costs have ballooned since the original plan was set in motion.

The Sewer Authority has been negotiating with the U.S. Environmental Protection Agency, New York State Department of Environmental Conservation, state attorney general and federal Department of Justice since late 2023, hoping to buy more time to revise the 2014 Long Term Control Plan. It wants until 2040 to complete renovations to its Bird Island Wastewater Treatment Plant and related infrastructure projects throughout the city.

If approved, it will likely cost at least $1 billion to complete, Sewer Authority officials said, triple the original estimates.

A spokesperson with the EPA told The Buffalo News in an emailed statement that the agency “continues to work with the Buffalo Sewer Authority on this matter,” adding that the “EPA does not comment on active enforcement cases.”



Tim Blake, capital improvement projects manager at the Buffalo Sewer Authority, shows the new diffusers working inside an aeration tank at the Bird Island Wastewater Treatment Plant.

Joshua Bessex, Buffalo News

The Sewer Authority is relying on a combination of state and federal grants and loans to finance the bulk of the system improvements.

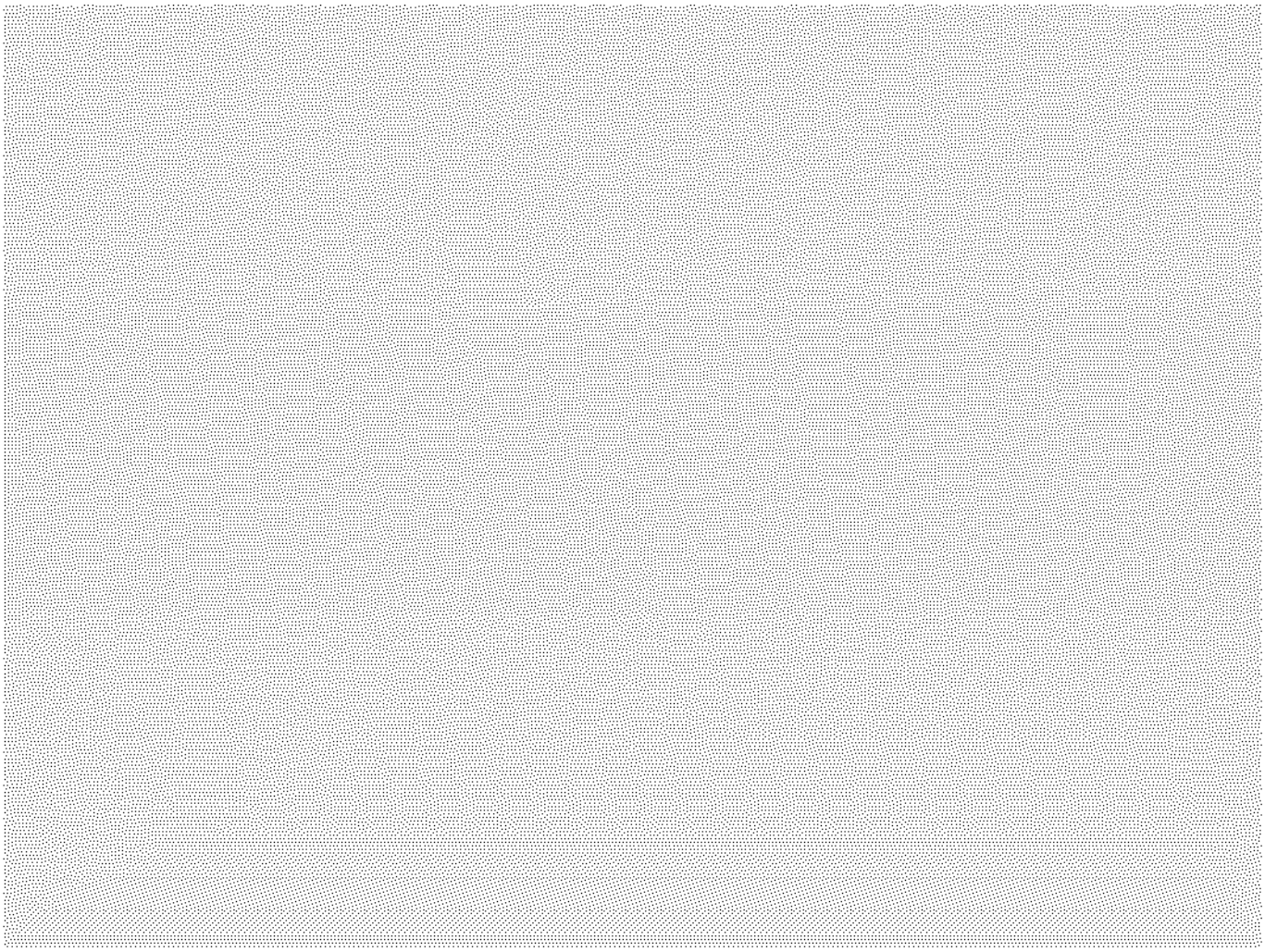
“We will continue to rely on our federal and state partners as much as we can to help defray these costs,” said Charles Riley, the Sewer Authority’s chief financial officer. “Our last step is passing costs on to our customers.”

Whether customers’ rates will increase remains to be seen while the Sewer Authority develops its latest budget, Riley said.

In the meantime, the Sewer Authority has been busy with renovations to its Bird Island Wastewater Treatment Plant.

Over the last several months, the facility has undergone long-needed renovations expected to cost a total of about $250 million.

The facility was mostly built in the 1930s and updated in the 1970s. Since then, it has worked to process the 80 million to 120 million gallons of wastewater that flow into it during a typical dry weather day, and up to 360 million gallons that flow in during wet weather days, Nogle said.



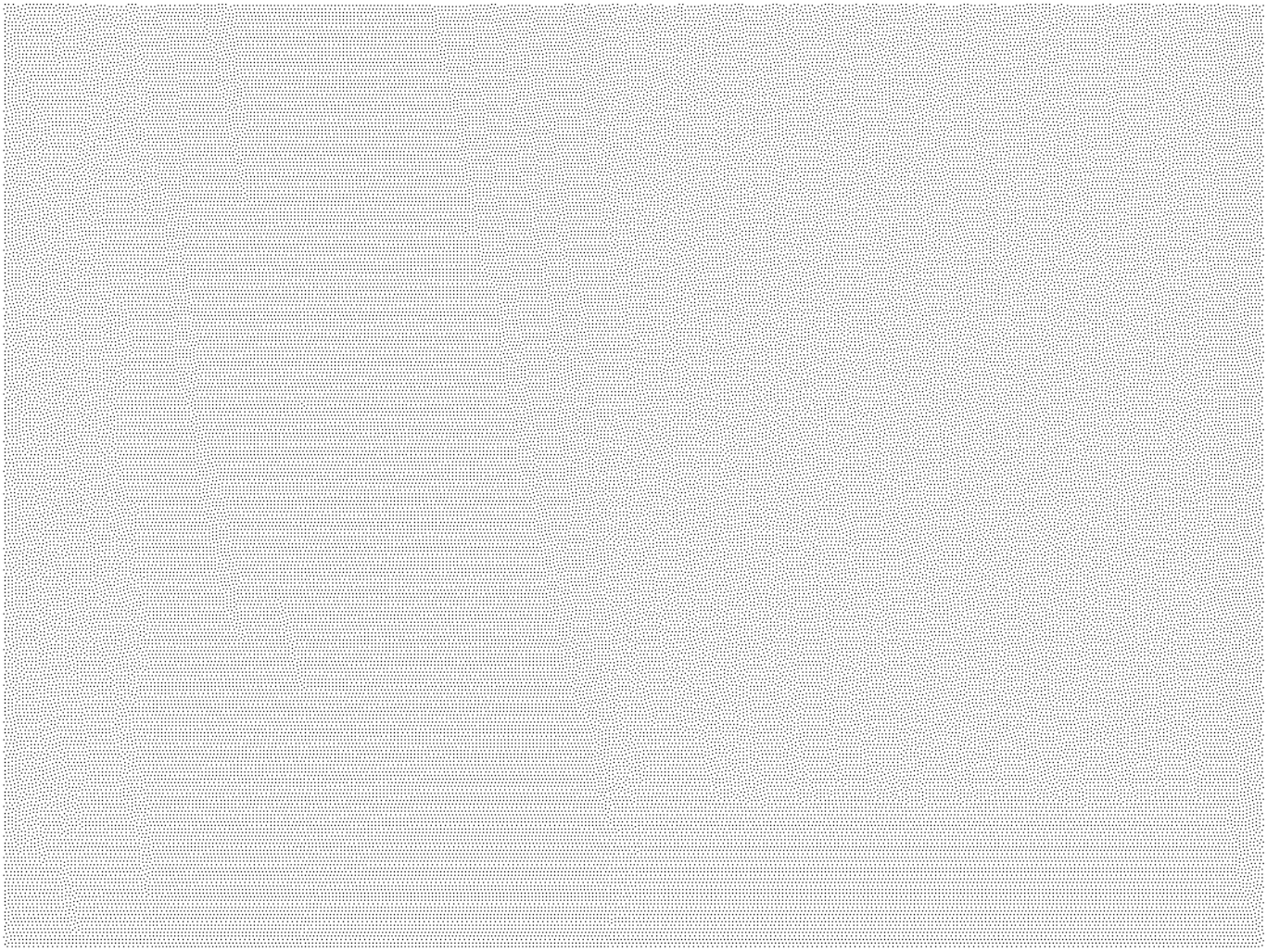
New diffusers, which pump air into the water inside an aeration tank, are visible just below the surface at the Bird Island Wastewater Treatment Plant.

Joshua Bessex, Buffalo News

Upgrades to the facility include changing the aeration tubes in the biological treatment tanks to ensure an even dispersion of air so the treatment is more efficient and effective, Nogle said. The Sewer Authority will also work to add chlorine contact tanks and upgrade system technology, she said.

The Sewer Authority also will add a deodorizing system.

“Back in the 1930s, the air in Buffalo was black and the smell of raw sewage was indistinguishable from the smell of burning coke ovens and everything else,” Nogle said. “Today, when our primary treatment system, especially in the middle of the summer, starts to get a little funky, people along Niagara Street can smell it.”



The Niagara River flows past the Bird Island Wastewater Treatment Plant.

Joshua Bessex/Buffalo News

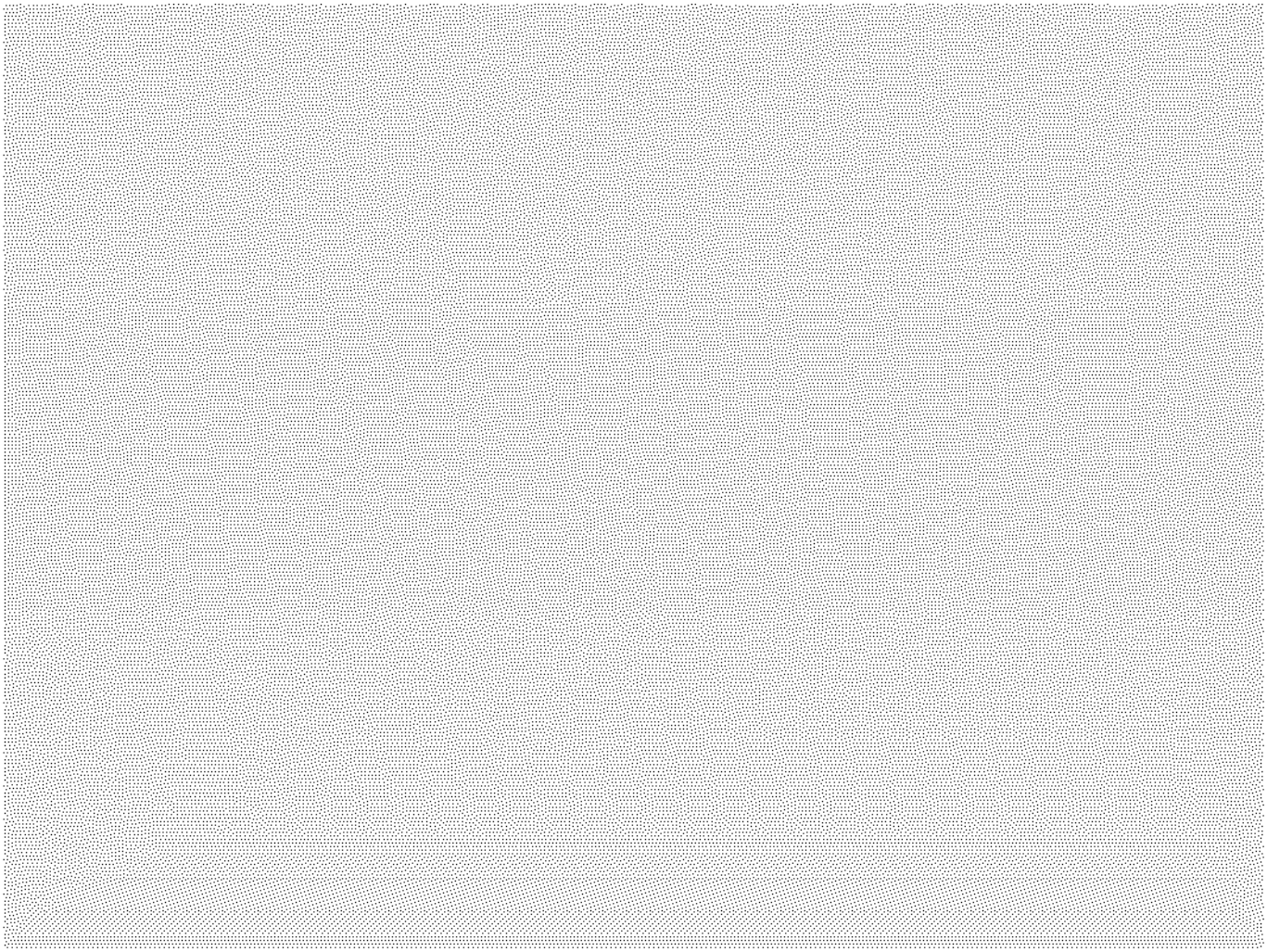
The deodorizing system should solve the issue, Nogle said, by essentially vacuuming up the odors and running the smelly air through filters.

The system should be installed by the end of 2028, Nogle said.

Outside of the Bird Island facility, the Sewer Authority plans to embark on about $750 million worth of projects in the city to improve the system as a whole.

The projects include installing green infrastructure. This could mean small projects – such as improving tree root wells, installing rain gardens and porous pavement – to large projects including underground stormwater storage systems.

“We are partnering with Buffalo Public Schools, Buffalo Municipal Housing Authority and with the City of Buffalo Department of Public Works through both their parks and their engineering departments to add more green infrastructure,” Nogle said. “We’re going to focus both in the school and low-income housing areas, but then also throughout the City of Buffalo along curb lines and then also in the parks themselves.”



The Buffalo Sewer Authority received a grant to help filter stormwater at Martin Luther King Jr. Park and three other parks in the city.

Derek Gee, Buffalo News

The Buffalo Sewer Authority **received $8.75 million** on Oct. 16 from Gov. Kathy Hochul and the New York State Environmental Facilities Corp. to help fund some of those projects.

The Sewer Authority is also embarking on dozens of other system improvement projects around the city.

These include redirecting sewer pipelines, expanding sewer pipelines, adding control mechanisms to prevent sewage overflows and building storage capacity that can be used during storm events.

Much of the work is expected to be done underground, mostly out of sight. However, traffic impacts could occur during construction of some of the projects, the Sewer Authority has warned.

To see a full list of the planned projects and their descriptions, visit the Sewer Authority's Queen City Clean Waters initiative website at **buffaloqccw.org**.

The Sewer Authority will hold three public forums to inform the public about the Queen City Clean Waters initiative. There, the public can ask questions and voice any concerns about the proposed projects.

The first meeting will be held at 6 p.m. April 17 in the Buffalo Irish Center, 245 Abbott Road.

That will be followed by another meeting at 6 p.m. on April 24 at Gerard Place, 2515 Bailey Ave., with a third held at 6 p.m. April 28 at Northland Training Center, 683 Northland Ave.

Reach climate and environment reporter Mackenzie Shuman at **mshuman@buffnews.com** or 716-715-4722.

By Mackenzie Shuman

Environment and climate reporter

Buffalo Sewer Launches Interacitve Queen City Clean Waters Intiative Website

Site provides local stakeholders and residents opportunity to provide comments on projects across the city;interactive map provides real time updates

The Buffalo Sewer Authority (Buffalo Sewer) has launched an interactive website for the Queen City Clean Waters Initiative to engage local stakeholders and communities for project input and participation in the $1 billion effort to improve local waterways by mitigating combined sewer overflows.

City of Buffalo residents and stakeholders can access the website at http://buffaloqccw.org/. The website features initiative details, project updates, frequently asked questions (FAQs), a comment/question section, and a program timeline.

The website also includes an interactive platform where users can access the Queen City Clean Waters Initiative survey, designed to gather feedback on initiative communication and information sharing. Users can also communicate directly with Buffalo Sewer through the website's comment platform to ask questions or provide input and ideas.

An interactive project map allows users to view project locations, timelines, and details. Community members can provide comments on projects impacting their neighborhoods, ensuring that their voices are heard and prioritized in these community improvement efforts.

"An integral component of this initiative is engagement and interaction with the local community; we especially need to hear from those neighborhoods most affected by combined sewer overflows and the burying of waterways," said Rosaleen Nogle, PE, BCEE, BC WRE, Principal Sanitary Engineer, Buffalo Sewer. "Buffalo Sewer encourages residents to participate in our engagement process to enhance our role in protecting public health and the environment."

BUFFALO SEWER AUTHORITY CELEBRATES 90TH ANNIVERSARY WITH EAST DELAVAN SEWER IMPROVEMENT PROJECT GROUNDBREAKING

$100 million project will build new underground facilities to store rainwater and sewage

BUFFALO, NY – The Buffalo Sewer Authority (BSA), elected officials, and community stakeholders gathered near the corner of Jefferson Avenue and Florida Street today to celebrate the Buffalo Sewer Authority's 90th anniversary and the groundbreaking for the first phase of the East Delavan Sewer Improvement Project.

The East Delavan Sewer Improvement Project is a $100 million infrastructure investment that will be constructed in three phases over the next several years. The project will upgrade the sewer collection system along East Delavan Avenue, Florida Street, and Spillman Place to control combined sewer overflow (CSO) discharges to Scajaquada Creek and other downstream water bodies such as Hoyt Lake and Black Rock Canal.

"This project and the Queen City Clean Waters Initiative align with the goals of my administration of creating equitable and inclusive processes that deliver public health and economic benefits to all city of Buffalo residents especially underserved communities that have been negatively affected by increased rainstorms and snowmelt," said City of Buffalo Mayor Chris Scanlon. "Today's event commemorates the hard work and dedication of Buffalo Sewer for the past 90 years. Their continued support and investment in our wastewater infrastructure has modernized and will continue to transform neighborhoods throughout the city of Buffalo."

Celebrating 90 years, the Buffalo Sewer Authority was created by an act of the New York State Legislature in the spring of 1935 and delegated the responsibility for providing an effectual means of relieving the Niagara River and other waterways from pollution by sewage and waste.

"Buffalo Sewer continues to fulfill our 90-year mission to protect public health, safety, and the environment. The investment we are making in the Masten District and throughout the city of Buffalo through the Queen City Clean Waters Initiative will mitigate the negative effects that combined sewer overflows have on local residents and communities," stated Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

The East Delavan Sewer Improvement Project is part of the Queen City Clean Waters Initiative, a $1 billion undertaking over the next 15 years to improve the health and safety of local waterways, including the Scajaquada Creek, Erie Basin Marina, Black Rock Canal, Cazenovia Creek, and the Buffalo River. The initiative will include infrastructure enhancements at 50+ sites across the city, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility.

Collectively, the Buffalo Sewer collection system covers 110 miles across Western New York including the city of Buffalo, and parts of the towns of Alden, Cheektowaga, Elma, Lancaster, Tonawanda, and West Seneca and the Villages of Depew, Lancaster and Sloan. Today, BSA treats the wastewater of approximately 550,000 residents in the city of Buffalo and surrounding communities.

"Operating the second largest wastewater treatment plant in New York State means we must continue to protect our waterways from pollution and mitigate the occurrence of combined sewer overflows," said Buffalo Sewer Authority Chairman Herbert L. Bellamy, Jr. "The investment being made on East Delavan and across our collection system through the Queen City Clean Waters Initiative will allow BSA to continue our mission for another 90 years."

Phase One of the East Delavan Sewer Improvement Project aims to reduce the number and volume of combined sewer overflows, preventing sewage from backing up into buildings or flooding streets during wet weather events and improve water quality in surrounding waterways. In addition to important public health benefits, BSA will be collaborating with local workforce programs to create career opportunities for local residents.

"The Queen City Clean Waters Initiative and the East Delavan Sewer Improvement Project are positive steps in the redevelopment of the Masten district, creating a better place to live, work and recreate," said City of Buffalo Masten District Council Member Zeneta Everhart. "An essential component of these projects is the participation of the public and key stakeholders of our district that will revitalize our community."

The Queen City Clean Waters Initiative includes a collaborative stakeholder engagement process that will be overseen by a Stakeholder Advisory Committee (SAC) in addition to community specific advisory groups such as the East Delavan Advisory Committee.

The East Delavan Advisory Committee will oversee and be responsible for community engagement for the three phases of the East Delavan Sewer Improvement Project. Please visit https://buffalosewer.org/east-delavan-sewer-project-community-survey/ to participate in a survey that will provide feedback and opinions on the East Delavan project to reflect the priorities of the community.

To learn more about the East Delavan Sewer Improvement Project and Queen City Clean Waters Initiative, please visit https://buffalosewer.org/construction-projects/queen-city-clean-waters/eastdelavansewer/.

RIVERROCK TIMES

Vol. 5 No. 11 | Thursday, May 15, 2025 | Covering the Northwest Corner of Buffalo

Golombek hopes for budget review to control deficit

by Amber Healy

The Buffalo Common Council must approve a new operational budget for fiscal year 2025-2026 by May 26 or the proposal brought forth by Acting Mayor Chris Scanlon will automatically take effect.

Between now and then, North District Council Member Joe Golombek hopes his colleagues will bring back a practice from years ago: Going through the budget, line by line, to look for ways to bring the city's expected deficit under control.

"I have recommended to council leadership that we sit down and go through the budget line by line like we used to do," Golombek says. He believes that would be the best way to identify possible savings.

Even if his approach is not adopted, Golombek is "more cautiously optimistic" about the city's financial future, especially now that the state has passed its budget – including two "critical measures" that will help the city deal with its deficit.

In a statement released May 9, Scanlon thanked state lawmakers for "the authorization of a 3% hotel occupancy tax and the creation of the Buffalo Parking and Mobility Authority. The hotel occupancy tax is projected to generate $3.5 million annually and the sale of four city-owned parking garages to the new BMPA will yield $40-$50 million in upfront cash that will be used as part of my administration's four-year plan, along with approximately $2.5 million in new, annual revenue," Scanlon said.

"These funds are vital to closing our $70 million budget gap, allowing us to avoid layoffs, maintain city services and prevent a substantial property tax increase for residents."

These two funding sources do not wipe away Buffalo's financial stress, "but they help a great deal," Golombek says. If the bed tax, which applies to hotel rooms and AirBNB rentals alike, had been approved by the state last year, as former mayor Byron Brown requested in last year's budget proposal, "we would have received money last year and we'd have money this year, so our deficit would be a little bit smaller."

While both the bed tax and the creation of the parking authority were proposals at the local level, Golombek says the state has to approve both before the city can move forward.

"We had to have state approval, so it is ultimately a state decision," he says. "Almost everything is a state decision for us. When we wanted school zone cameras, we had to get permission from the state."

The creation of a parking authority, which Golombek mentioned at previous meetings of both the Believe in Black Rock and Rediscover Riverside community groups, would take off the city's ledger the annual maintenance costs of four city-owned parking ramps, selling the ramps to the newly created authority for $40 million. In fiscal year 2025-2026, the city would receive the bulk of the funds – Golombek believes $30 million for this upcoming budget – with the remainder to be paid to the city over the next three budgets.

"We're not going to be responsible over the next few years to spend over $10 million for a couple of years, if not three years, on redoing those four parking ramps," he says, adding that the city will retain some of the revenue collected from parking fees. The amount to be paid to the city is still under negotiation. The city also will retain some control over the parking fee rate charged to users.

"We want to guarantee we have a say over parking rates…If you have an authority, they could just say, okay we're charging $20 an hour. Obviously that would be ridiculous and nobody would come down anymore, but they could conceivably do that," Golombek says.

This still leaves the city with a sizable deficit to deal with, but less than the $70 million gap originally stated by the acting mayor.

"As of today, I was told that the deficit is somewhere in the $40 - $50 million range," Golombek said Monday night.

Additional funds will be coming into the city's coffers, including user fees and other outstanding debts owed, but progress is being made he says.

What will not be providing significant assistance is any additional monies from the property tax assessments sent out by the city last summer to homeowners.

"If everyone paid their taxes, I believe the city would bring in approximately $170 million, roughly the same as last year because what happens is that the tax levy is approximately $170 million. No matter what, we cannot collect more than $170 million. The 8% sales tax would be added to the $170 million, so that comes out to like $18 million or so," he explains.

From now until May 26, the council will need to meet and decide whether to pass the acting mayor's proposed budget, vote on changes, or do nothing. If nothing is done, the acting mayor's proposed budget automatically will be adopted without any changes. But, if the council rejects the acting mayor's proposed budget, it also would immediately take effect on May 26.

Proposed Transportation Improvement Plan puts brakes on Scajaquada Expressway re-imagination

by Amber Healy

When the Greater Buffalo-Niagara Regional Transportation Council (GBNRTC) released its proposed Transportation Improvement Program for FY 2026-2030 earlier this month, it outlined priority projects for the next several years, including the dedication of $3.7 million for improvements to the Scajaquada Creek Bike Trail, which runs from Main Street (near Jefferson) to Fillmore Avenue, including resurfacing the existing pathway.

But what caught the attention of local activists is the zeroed-out funding for a project listed as the engineering and feasibility study for Phase 2 of the Scajaquada and Kensington expressways, an effort that would support reimagining the multi-lane roads through North Buffalo.

"It has just come to our attention today that the $100 million allocated for the reconstruction of the Scajaquada Expressway has been eliminated in the draft 2026-2030 Transportation Improvement Plan," GoBike said on May 6. "It is now listed as an 'Illustrative project' with no money allocated to it. This means that it can be, but is not required to be, included in the financial plan for the GBNRTC but only 'IF' reasonable additional resources were to become available."

The group goes on to cite the work of the Scajaquada Corridor Coalition (SCC) to come up with a vision for the 198 that would expand pedestrian and cycling opportunities, including restoration of Black Rock Harbor and the removal of the expressway. The SCC has worked with "community members, institutions and New York State to achieve a community-vetted and supported plan for the future of the 198 expressway. It is now inconceivable that the proposed 2026-2030 Transportation Improvement Plan (TIP) lists this project as 'Illustrative' and eliminates the funding to move it forward."



A Scajaquada Corridor Coalition rendering of an aerial view facing North-West from Niagara Street with the Scajaquada Expressway removed.

GoBike and the SCC call on supporters to submit public comments on the proposal through the deadline of June 2.

The New York State Department of Transportation, the agency ultimately responsible for any and all work on roadways, is asking those activists to pump the brakes.

"This was nothing more than an administrative change on the TIP for a nearly 10-year-old project," the DOT says in a statement released last week. "The State Department of Transportation will be reengaging the community in the coming weeks and months on the future of the state transportation network throughout the City of Buffalo. When a project along the Scajaquada Expressway is ready to progress, the funding will be in place to do so."

The full document can be reviewed at https://www.gbnrtc.org/announcements/public-notice-draft-ffy-26-30-transportation-improvement-program-tip; public comments can be submitted through June 2 by emailing staff@ gbnrtc.org.

TUMBLING DOWN

The sound of excavators could be heard in two locations this week in the Grant-Amherst neighborhood as demolition work was underway. At right, asbestos warning tape was visible around the former industrial site at 1 Howell Street. The project to tear down the building, cleanup the land and construct an apartment building was initiated by Savarino Companies which shut down its construction business in 2023 after problems at a project at Alfred State University. Calls by the *RiverRock Times* regarding the status of the project have not resulted in any information on the demolition work. And, below, all that remains of the Voelkers Bowling alley is rubble that was being removed from the site of another apartment project at Amherst and Elmwood.



Photos by Amber Healy







AN INSIDE LOOK: Black Rock History Society hosted an inside look at Quality Bindery on Amherst Street. From left to right are William E. Butler III, BRHS president; Kathleen Hartman, owner of Quality Bindery, and Denise Santos, head book binder. *Photos courtesy of Max Willig*

Putting it all together at Quality Bindery

by Roxie Harbison

The second presentation in the Black Rock History Society's Makers & Masters Series: The Art of Paper, Books and Wallpaper was held inside Quality Bindery, a local company on Amherst Street. The tour guide was Kathleen Hartman, owner. Their primary work is printing and mailings with clients like the State of New York, Vermont and the towns in this area.

In an era of online and digital publications, Hartman says they do have trays of old lead type for foil stamping which is done by hand. That is work for customers, for example, who want a personalized Bible.

The company handles all sizes of paper and cutters. And, while they may have some old machinery, she proudly notes it still works well and is repairable.

The company was founded in 1983 and was located on Niagara Street. Their current facility on Amherst Street was originally an ice house. Later a company called Seldrum Industries was there and it was a warehouse for office products. Quality Bindery moved there in 2002.

Hartman said they have a a great crew of longtime employees who are great workers. They also collaborate with the New York State WorkShare program. As mailings are a large portion of their business, Hartman said they have a good working relationship with the U.S. Post Office.

Denise Santos gave us a demonstration on how books are put together. Santos has been there since she was 18 and worked her way up to head book binder. She was skilled, accurate and precise.

The Black Rock History Society sells the large coffee table book about Black Rock put together by local people and it has had two separate printings. Quality Bindery did the bindery by hand, about 20 books per hour.

They have a machine named Bertha which does the lettering and stamping. The outer covers can be made of whatever the customer wants, leather, ostrich, zebra, etc. In the process, gluing is an important part of putting books together. Employees work quickly as the glue gets sticky. There are two types of glue: heat up and non heat up. They glue after every stitching. Quality also does rare book repairs.

A bit of advice to the layperson from Quality staff: Never put tape- any kind of tape-on your books, especially duct tape.



WANTED
T-Ball Coaches!

Ages 4-6

Practice begins May 19

First Game and Parade

Kick Off 9 a.m sharp

Sat., May 31.

Questions?

Register online at

https://riverrockbaseball.sportngin.com/

• NYS Inspections
• FREE Brake Check
• Competitive Pricing on Car Repairs
• Oil Change full synthetic oil $74
• Walk-in Welcome
• No Appt. Necessary

FINEST MOTORS
YOUR VEHICLE PARTNER
Dealers of Auto Sales & Services
722 Tonawanda St. | 14207
716-275-3060
Email: info@finestmotors.us | www.finestmotors.us

FREE EMAIL DELIVERY!

The RIVERROCK TIMES is now offering readers a pdf file of the newspaper emailed each Thursday.

Send your name, address and email to:
riverrock@email.com
Put "email delivery" in the subject line.

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

ELLICOTT DISTRICT PUBLIC PARTICIPATION FORUM
PRATT WILLERT COMMUNITY CENTER
(422 PRATT ST, BUFFALO, NY 14204)
Tuesday May 20th
6:00 pm- 8:00 pm

eliminating racism empowering women
ywca western new york
MOBILE FARMERS' MARKET
farm market
FeedMore WNY

The YWCA of WNY is proud to collaborate with FeedMore WNY to provide the Blackrock Community with access to affordable, local & healthy produce!

Every Thursday from 1:30 to 2:30 PM!

YWCA of WNY – 1005 GRANT ST. BUFFALO, NY 14207

- Bus #3 stops directly in front. (Grant 1014 N & Grant 1016 S)
- Bus #32 stops at the nearby corner of Grant St. @ Amherst St.

FeedMore WNY provides healthy, low-cost fresh fruits and vegetables.

FeedMore WNY works with SNAP-Ed, the Office of Temporary and Disability Assistance, the New York State Department of Health and the National Council on Aging to provide both nutrition education and SNAP Application Assistance to our neighbors. Education materials and referrals to these services will be available at each Farm Market stop. We also provide recipe ideas for currently available produce!

Accepts Credit, Debit, Cash, and SNAP!

Black Rock 436 Amherst Street • Buffalo, NY 14207
HISTORICAL SOCIETY *Chartered by the Regents of the University of the State of New York*

2025 Makers & Masters Series:
The Art of Paper, Books and Wallpaper

MAY 15



Red Disk and the Legacy of Burge & Burchfield Wallpaper Design

Gain a glimpse into the Red Disk vision and process - hand-silkscreening artisan wallpapers - while breathing new life into a Buffalo craft manufacturing tradition. **Brian Grunert and Maddie Bartley** will explore four unique wallpaper restoration projects that have taken the Red Disk team from fields of wildflowers to historic civil right sites from Buffalo to Atlanta to Stonewall, Texas - and back again.

MAY 22



Behind the Scenes: Crafting Immersive Experiences at Hadley Exhibits

Join us as **Ted Johnson**, owner and CEO of Hadley Exhibits, reveals the intricate process of designing and fabricating exhibits around the world. This exclusive tour and Q&A session offers a unique opportunity to explore the blend of traditional craftsmanship and modern technology used to create captivating displays.

Meet at Hadley Exhibits Inc., 1700 Elmwood Avenue, Buffalo, NY

Free and open to the public. ***Light refreshments will be served at our museum.***

MUSEUM ASSOCIATION OF NEW YORK · AASLH AMERICAN ASSOCIATION for STATE and LOCAL HISTORY · nycon

www.blackrockhistoricalsociety.com **email: info@blackrockhistoricalsociety.com**

ALL TALKS BEGIN AT 6 PM

NIEMIEC BUILDERS SUPPLY INC.
Delivery Available
800 Grant Street
Buffalo, NY 14213
"We Deliver"
884-6990
Fax: 884-0240
Serving The Community For Over 68 Years

Roofing Supplies	Cement	Plywood
Porch Flooring	Sand	Lumber
Bilco Doors	Gravel	Windows
Int. & Ext. Doors	Soil	Insulation

Millwork Available • General Public Welcome!

Located in Historic Black Rock

Clean Waters Fair

Media Coverage

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

35 TV and Radio Placements

Television and radio coverage of various QCQW initiative announcements - $17K of Local Publicity Value

Impressions seen by television viewers and heard by radio listeners – 455,132

Outlet	Date	Title	Local Publicity Value	Local Viewership
WIVB-BUF (CBS)	8/28/2025 15:24	Daytime Buffalo	$264.32	5823
WIVB-BUF (CBS)	8/29/2025 5:47	Wake Up 5am	$640.48	16819
CW 23	8/29/2025 5:47	Wake Up 5am	$36.03	3279
WIVB-BUF (CBS)	8/29/2025 6:52	Wake Up 6am	$908.60	25996
CW 23	8/29/2025 7:47	Wake Up-7AM	$575.85	22490
CW 23	8/29/2025 8:47	Wake Up-7AM	$757.08	21326
CW 23	8/29/2025 9:48	Wake Up 9am	$655.04	15676
CW 23	8/29/2025 10:24	Daytime Buffalo	$293.12	6896
CW 23	8/29/2025 10:27	Daytime Buffalo	$293.12	6896
WIVB-BUF (CBS)	8/29/2025 12:07	News 4 at Noon	$1,571.20	41555
WBFO-FM (Radio)	8/29/2025 16:35	N/A	N/A	41000
Spectrum News Buffalo	8/29/2025 21:00	Time Warner Cable News Buffalo	$191.88	1491
Spectrum News Buffalo	8/29/2025 22:00	Time Warner Cable News Buffalo	$191.88	1491
WIVB-BUF (CBS)	8/29/2025 23:14	News 4 at 11	$2,212.50	36137
Spectrum News Buffalo	8/30/2025 0:00	Time Warner Cable News Buffalo	$112.32	1344

Spectrum News Buffalo	8/30/2025 1:00	Time Warner Cable News Buffalo	$160.60	3493
Spectrum News Buffalo	8/30/2025 2:00	Time Warner Cable News Buffalo	$241.73	5499
Spectrum News Buffalo	8/30/2025 3:00	Time Warner Cable News Buffalo	$180.68	2479
Spectrum News Buffalo	8/30/2025 4:00	Time Warner Cable News Buffalo	$240.35	3865
Spectrum News Buffalo	8/30/2025 5:00	Time Warner Cable News Buffalo	$52.53	1099
Spectrum News Buffalo	8/30/2025 6:00	Time Warner Cable News Buffalo	$203.23	4243
Spectrum News Buffalo	8/30/2025 7:00	Time Warner Cable News Buffalo	$51.70	1079
Spectrum News Buffalo	8/30/2025 7:30	Time Warner Cable News Buffalo	$55.83	2513
Spectrum News Buffalo	8/30/2025 8:00	Time Warner Cable News Buffalo	$67.93	1445
Spectrum News Buffalo	8/30/2025 9:00	Time Warner Cable News Buffalo	$154.24	3117
Spectrum News Buffalo	8/30/2025 10:00	Time Warner Cable News Buffalo	$145.60	2824
Spectrum News Buffalo	8/30/2025 11:00	Time Warner Cable News Buffalo	$140.80	3883
WGRZ-BUF (NBC)	8/25/2025 16:10	Ch 2 News First at Four	$384.54	6773
WGRZ-BUF (NBC)	8/25/2025 16:19	Ch 2 News First at Four	$436.80	7686
WGRZ-BUF (NBC)	8/25/2025 16:22	Ch 2 News First at Four	$436.80	7686
WGRZ-BUF (NBC)	8/25/2025 17:55	Channel 2 News at 5:30	$1,072.11	35849
WGRZ-BUF (NBC)	8/25/2025 18:15	Channel 2 News	$2,191.74	52956
WGRZ-BUF (NBC)	8/25/2025 19:16	Buffalo Nightly News	$905.58	16405
WGRZ-BUF (NBC)	8/26/2025 5:42	Early Daybreak	$462.55	11079
WGRZ-BUF (NBC)	8/26/2025 6:37	Daybreak	$1,204.78	32940

Online/Print:

Here are 5 Fun Things To Do This Weekend In Western New York

WYRK

August 29, 2025

Queen City Clean Water Fair - Happening Friday night from 4 -7 pm at Hoyt Lake. You can learn about Buffalo's clean water projects. There will be family-friendly games, giveaways, and more.

Reporters' Notebook: Aug. 27, 2025 – The right stuff

Buffalo News

August 27, 2025

COMING CLEAN – Thirteen organizations will offer environmental activities and displays from 4 to 7 p.m. Friday at Hoyt Lake in Delaware Park for the Queen City Clean Waters Fair, sponsored by the Buffalo Sewer Authority. The event will highlight the $1 billion Queen City Clean Waters Initiative, which will reduce sewer overflows with improvements at more than 50 sites across the city. There also will be food, music and giveaways, including about 200 book bags for kids heading back to school.

Queen City clean waters fair this Friday

WGRZ

August 25, 2025

Queen City Clean Waters Fair

Buffalo Spree

2025 Queen City Clean Water Fair

Buffalo Rising

Anyone interested in the state of our ‘clean waters’ is invited to attend the Queen City Clean Water Fair on Friday, August 29 (4pm-7pm) at Hoyt Lake in Delaware Park. This environmental fair features games, eco activities and demonstrations, and virtual tours of the Buffalo Sewer Queen City Clean Waters projects that are underway throughout the city. There will also be food and music. This event is free to attend, and family-friendly.

Another Voice: Clean Waters Fair intended to drive community collaboration

Buffalo News

August 5, 2025

The Queen City Clean Waters Initiative is underway, investing $1 billion in our infrastructure to clean area waterways, reduce combined sewer overflows, and transform underserved communities that have been historically neglected by outdated infrastructure.

Community collaboration is a key driver in the implementation and the mission of the Initiative, which is why we hope the community will join us at the Clean Waters Fair from 4-7 p.m. on Aug. 29 at Hoyt Lake.

The fair will provide residents with the opportunity to learn more about our initiative through interactive educational activities. Together with our partners, we are empowering the people of Buffalo to ensure that their visions, concerns, feedback, and suggestions are heard and implemented.

This collaborative process will ensure that necessary sewer infrastructure improvements provide tangible benefits in city neighborhoods, especially those within the most historically underserved communities.

Residents will also be able to learn more about the anticipated construction impacts on their day-to-day lives and the planned measures to mitigate the most negative impacts of the initiative.

Perhaps most importantly, the public will also learn about how this work will create economic development opportunities for the community.

The major investment across our infrastructure will require the training and hiring of hundreds of individuals . We are collaborating with local workforce development organizations to ensure that we prepare the future workforce from day one of their employment.

Complementing workforce opportunities, the BSA team will have experts on site to discuss certification processes. Goals for disadvantaged business opportunities will be incorporated into all phases of the Queen City Clean Waters Initiative.

Finally, we will provide information about our low-income and senior discount programs and residents who bring their water account number to the event will be able to sign up on the spot if they qualify.

We welcome people of all ages to come to the fair and be a part of the process . Please visit **buffalosewer.org/construction-projects/queen-city-clean-waters** to learn how you can get involved in the Clean Waters Fair and the Queen City Clean Waters Initiative.

Buffalo Sewer Announces Queen City Clean Waters Fair

Step Out Buffalo

Buffalo Sewer Announces Queen City Clean Waters Fair

Buffalo Criterion

July 19

BUFFALO, NY – The Buffalo Sewer Authority (BSA) has announced the Queen City Clean Waters Fair coming on August 29th from 4 PM – 7 PM at Hoyt Lake. The Clean Waters Fair is providing the residents of Buffalo with an evening of food + music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the Queen City Clean Waters Initiative.

The Queen City Clean Waters Initiative is an approximately $1 billion effort to reduce combined sewer overflows into local waterways. Over the next 15 years various infra structure enhancements at 50+ sites across the city will take place, including $250 million in upgrades at the Bird Island Waste water Treatment Facility, the second largest waste water treatment facility in New York State serving over 550,000 customers.

“Community collaboration is a key driver in the implementation and the mission of the Queen City Clean Waters Initiative; the Clean Waters Fair gives residents another opportunity to engage with BSA officials and program representatives to learn how they can participate and have a voice in this once in a lifetime investment in our community,” said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

The Clean Waters Fair will feature representatives from the nine council manic districts, BSA customer assistance and resources team members, informational tables that highlight multiple aspects about the initiative, including green infrastructure, sewer technology, BSA history, and more.

The remaining tables will be for workforce and MWBE/DBE certification opportunities, demonstrations of engineering and water/wastewater principles and tools among other.

“We have activities and stations for all ages to come enjoy the warm summer weather and join us on this journey of creating a cleaner, resilient, and equitable environment for Buffalo,” added Nogle.

Stay tuned for future announcements about partners, vendors, and other organizations who will be a part of the Clean Waters Fair.

LOCAL ORGANIZATIONS TO PARTICIPATE IN BUFFALO SEWER QUEEN CITY CLEAN WATERS FAIR

Buffalo Criterion

August 20, 2025

BUFFALO, NY – Buffalo Sewer has announced that various local organizations will be participating in the Queen City Clean Waters Fair on August 29th from 4 PM – 7 PM at Hoyt Lake.

The Clean Waters Fair is providing the residents of Buffalo with an evening of food + music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the $1 billion Queen City Clean Waters Initiative to enhance and protect area waterways by reducing combined sewer overflows and the work Buffalo Sewer does every day to protect the environment and health of the people of Western New York.

Over the next 15 years, various infrastructure enhancements at 50+ sites across the city will take place, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility, the second largest wastewater treatment facility in New York State serving over 550,000 customers.

“I can’t think of a better way to end the summer than by celebrating how we are working as a community to protect our area waterways,” said Buffalo Mayor Christopher P. Scanlon. “Our region is so fortunate and unique from most of the country in having so many natural water resources that contribute to such a great quality of life here. The Queen City Clean Waters Fair reminds us of our obligations to protect these precious resources.”

Local workforce, environmental, and sustainable organizations will be joining Buffalo Sewer staff to provide educational, hands-on activities for all ages to learn more about water quality and protecting waterways, including:

- Aquarium of Niagara

- Buffalo Niagara Waterkeeper
- Buffalo Engineering Awareness for Minorities (BEAM)
- The Foundry Buffalo
- West Side Rowing Club
- Northland Workforce Training Center
- U.S. Fish and Wildlife Services
- Erie County Department of Environment & Planning
- Erie County Low Income Program for Sustainable Energy (ECLIPSE)
- Engineers for a Sustainable World (ESW)
- Second Chapter Bookstore
- Stantec
- Yoga Me Blac

National Grid and M&T Bank will be providing free book bags to children to help them get prepared for going back to school after Labor Day. Approximately 200 bookbags will be available for attendees while supplies last.

A few of Buffalo's favorite pop-up food vendors will be providing food & beverage options for attendees, including Half Luna Empanadas, Twisted Icee Slushie, What's Poppin Popcorn, and Moneybag Dumplings. Buffalo Sewer will provide complimentary cans of water and refillable water stations at the Clean Waters Fair.

https://buffalonews.com/news/local/article_72eadc72-230a-4969-bb42-13b91b566011.html

SPOTLIGHT

Hear about Buffalo Sewer Authority's $1 billion plan at public meetings

Mackenzie Shuman

May 12, 2025

The Buffalo Sewer Authority is holding four public meetings to explain more about its $1 billion Queen City Clean Waters Initiative. The first meeting is set for 6 p.m. Tuesday at the Schiller Park Community Center.

The Sewer Authority's **billion-dollar plan** is expected to help reduce combined sewage overflows that plague the city during wet weather.



Tim Blake, capital improvement projects manager at the Buffalo Sewer Authority, shows the new diffusers working inside an aeration tank at the Bird Island Wastewater Treatment Plant in March. Sewer Authority CEO Charles Riley on Tuesday cited several reasons why rates are rising for the second straight year.

Joshua Bessex, Buffalo News

The Buffalo Sewer Authority has been negotiating with the U.S. Environmental Protection Agency, New York State Department of Environmental Conservation, state attorney general and federal Department of Justice since late 2023, hoping to buy more time to revise the 2014 Long Term Control Plan. That plan gave the authority 20 years to conduct the necessary improvements and reduce the combined sewage overflows.

People are also reading...

1. **Notebook: Tre'Davious White goes down in practice as Bills' injury concerns mount**
2. **Bills Mailbag: With injuries mounting, would a pair of familiar faces provide reinforcements?**
3. **After more than 80 offers, Cheektowaga home listed for $1 sells for much more**
4. **Bills' interest in Gabe Davis reflects uncertainty behind top three receivers**

But the Sewer Authority wants until 2040 to complete renovations to its Bird Island Wastewater Treatment Plant and related infrastructure projects throughout the city.

Costs also have ballooned. If the authority receives approval for its plan, it likely will cost at least $1 billion to complete, Sewer Authority officials said, triple the original estimates.

That cost includes about $250 million in upgrades to the Bird Island facility, and at least $750 million in sewer system improvements. The authority has aimed to receive funding from state and federal grants or loans, with some costs expected to be passed down to ratepayers.

More time and $1 billion needed for Buffalo sewer system improvements

Residents can learn more about the proposed system improvement projects and voice their opinions at **the four public meetings**.

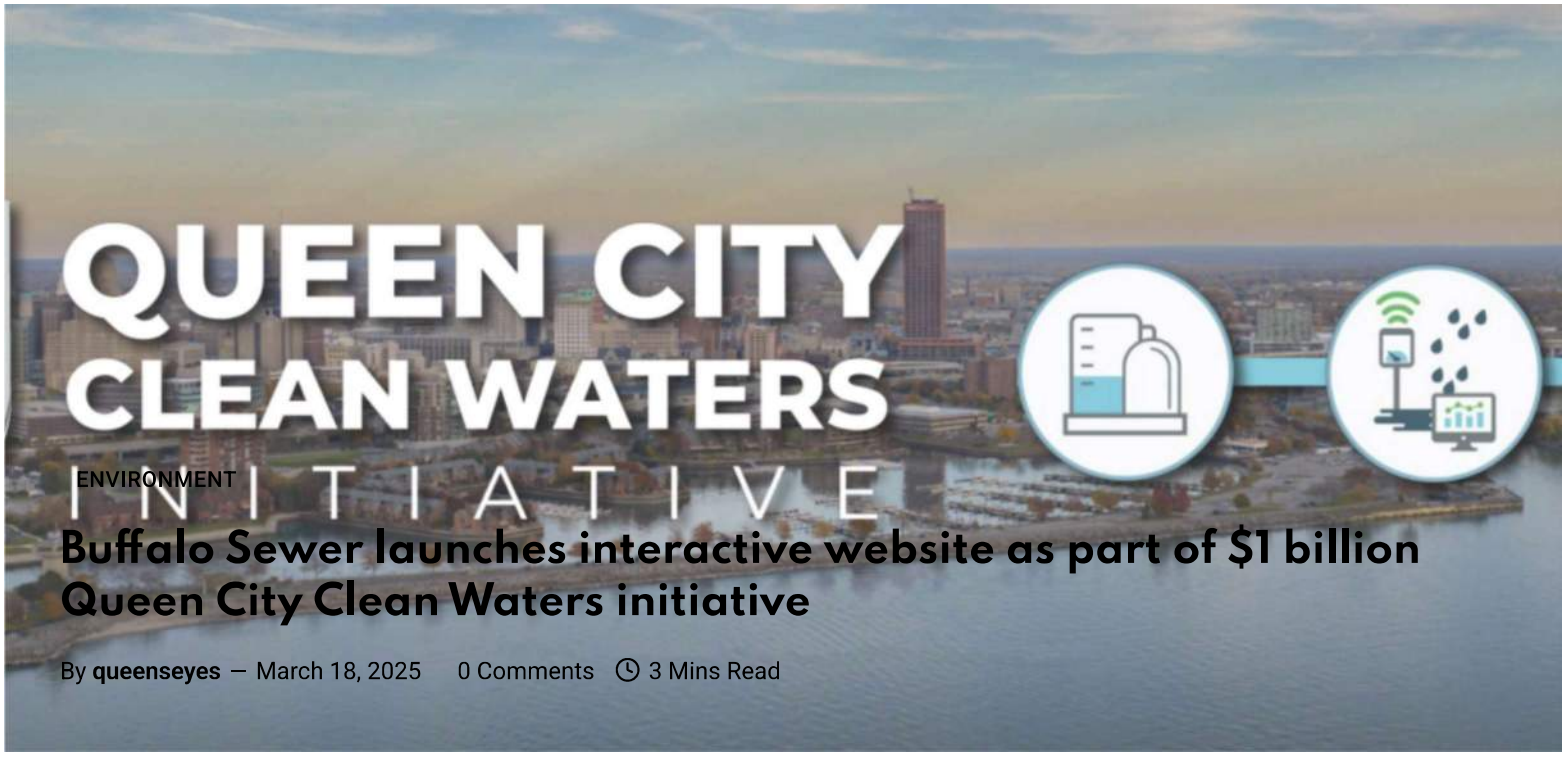
- The first meeting will be regarding projects located in the **Lovejoy District**. It will be held from 6 to 8 p.m. Tuesday at the Schiller Park Senior Center, 2057 Genesee St.
- To learn about **Fillmore District** projects, a meeting will be held from 6 to 8 p.m. Wednesday at the Matt Urban Center, 1081 Broadway.
- **Ellicott District** projects will be discussed at a meeting from 6 to 8 p.m. May 20 at the Pratt Willert Community Center, 422 Pratt St.
- **Delaware District** projects will be discussed during a meeting from 6 to 8 p.m. June 10 at Dash's Market, 1770 Hertel Ave.

“We encourage residents to attend, have dinner on us, and ask any questions or raise any concerns they may have about the projects occurring in their neighborhoods,” said Rosaleen Nogle, principal sanitary engineer at the Buffalo Sewer Authority.

Reach climate and environment reporter Mackenzie Shuman at **mshuman@buffnews.com** or 716-715-4722.

By Mackenzie Shuman

Environment and climate reporter



ENVIRONMENT

Buffalo Sewer launches interactive website as part of $1 billion Queen City Clean Waters initiative

By **queenseyes** — March 18, 2025 0 Comments 3 Mins Read

Site provides local stakeholders and residents opportunity to provide comments on projects across the city; interactive map provides real time updates

The Buffalo Sewer Authority (Buffalo Sewer) is launching a number of projects and programs to help alleviate raw sewage from entering into our waterways after major storms (due to outdated systems that can not handle combined sewer overflows). Two significant parts of the Queen City Clean Waters initiative are as follows:

- The Edison-Martha offline storage tank project where an underground concrete tank capable of storing up to 2.61 million gallons of combined sewage flow to reduce overflows to Scajaquada Creek will be installed.
- The Breckenridge Street Combined Sewer Overflow Control Project which will reduce the amount of nutrients flowing into the Black Rock Canal during storm events and improve water quality.

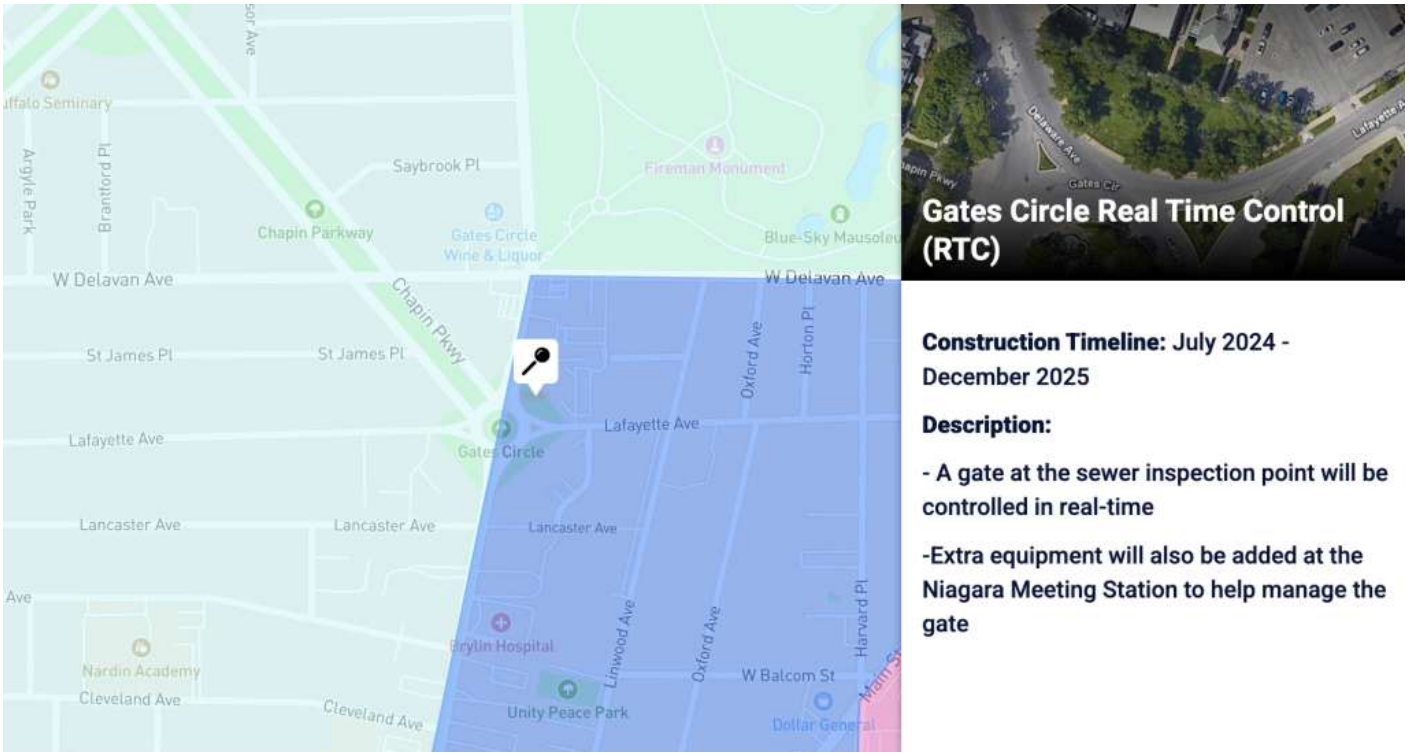
Along with these multi-million dollar projects, Buffalo Sewer has launched an interactive website for the Queen City Clean Waters Initiative.

> Implementing this initiative, which includes 50+ sites in total, will cost approximately $1B over the next 15 years including $250M in treatment facility upgrades.

This website allows stakeholders and communities to directly engage with Buffalo Sewer via a number of manners, including:

- Users can access the Queen City Clean Waters Initiative survey, which is intended to gain feedback for initiative communication and information dissemination.
- Users can communicate directly with Buffalo Sewer on the website's comment platform to ask questions or provide feedback/ideas for the $1 billion initiative.
- An interactive website map allows users to access project information, timeline, and location.
- Users can provide comments on projects affecting their neighborhood and ensure community members are discussed and prioritized in these community betterment investments.

After interacting with the map, I learned about a project that at Gates Circle that I had been wondering about. It turns out that the Buffalo Sewer project (previously hidden behind some rather large screens) is as follows:



By clicking on various pins on the map, I was able to glean a number of different project specs that will affect our city's water systems and natural resources, including project timelines, eco initiatives such as permeable pavement installations, and neighborhood sewer replacements. In order drop pins (information) on the map, residents and organizations must fill out this form to participate in the Queen City Clean Waters Virtual Community.

"An integral component of this initiative is engagement and interaction with the local community; we especially need to hear most from those neighborhoods that have experienced the negative impacts of combined sewer overflows and the burying of waterways," said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.



The website features information about the initiative, project details, frequently asked questions (FAQs), comment/question sections, and a program timeline.

“Buffalo Sewer encourages residents to participate in our engagement process to enhance our role in protecting public health and the environment.”

> The interactive website map allows users to access project information, timeline, and location. Users can provide comments on projects affecting their neighborhood and ensure community members are discussed and prioritized in these investments.

City of Buffalo residents and stakeholders can access the website at buffaloqccw.org.

Stay Informed with Buffalo Rising

Email Address

How often would you like to receive our newsletter?

- Daily
- Weekly

SUBSCRIBE

Buffalo Sewer interactive Queen City Clean Waters website

queenseyes

Newell Nussbaumer is 'queenseyes' - Eyes of the Queen City and Founder of Buffalo Rising. Co-founder Elmwood Avenue Festival of the Arts. Co-founder Powder Keg Festival that built the world's largest ice maze (Guinness Book of World Records). Instigator behind Emerald Beach at the Erie Basin Marina. Co-creator of Rusty Chain Beer. Instigator of Buffalo Porchfest, and Paint vs. Paint. Founder of The Peddler retro and vintage market on

Elmwood. Instigator behind Liberty Hound @ Canalside. Throws The Witches Ball at Statler City, the Hertel Alley Street Art Festival, and The Flutterby Festival. And his latest adventure... FigBuffalo, with the intention of creating a Buffalo United Fashion Front (BUFF). Contact Newell Nussbaumer | Newell@BuffaloRising.com

Related Posts

ENVIRONMENT

Drop-n-Chop: Squash drop-offs at Pelion Outdoor Gardens

ENVIRONMENT

Now Open: Floating Fen Preserve in Chautauqua County

ENVIRONMENT

Completion of shoreline restoration project at Ellicott Island Bark Park

Comments for this thread are now closed

0 Comments

Login

Share

Best Newest Oldest

This discussion has been closed.

Subscribe Privacy Do Not Sell My Data

Buffalo Rising Podcasts



Playwright Terry Guest on the power of new plays and the roots of OAK on stage at Alleyway Theatre



James Gardner sums up why he is the best candidate for the job of Mayor of Buffalo



Final Mayoral Candidate Podcast: James Gardner discusses his views on the City's Education Standards, and why he should be Mayor of Buffalo

All Podcasts

ABOUT US

BUFFALO RISING

As one of the region's most read publications since its launch in 2004, Buffalo Rising's diverse editorial team delivers a wide range of relevant content to our readers as it unfolds in real time. An independently owned and operated digital publication, Buffalo Rising provides editorial and critical reviews on all topics that relate to Buffalo, NY.

Do you have a story lead, press release, event notice, or article that you would like to submit for consideration?

Click Here to Share Your Story

© 2025 Local Matters Inc. All Rights Reserved.

River Rock Times

Public invited to attend free Queen City Clean Waters Fair at Hoyt Lake

Buffalo Sewer has announced that various local organizations will be participating in the Queen City Clean Waters Fair on Aug. 29 from 4 - 7 p.m. at Hoyt Lake.

The Clean Waters Fair is providing the residents of Buffalo with an evening of food plus music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the $1 billion Queen City Clean Waters Initiative to enhance and protect area waterways by reducing combined sewer overflows and the work Buffalo Sewer does every day to protect the environment and health of the people of Western New York.

Over the next 15 years, various infrastructure enhancements at more than 50 sites across the city will take place, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility, the second largest wastewater treatment facility in New York State serving over 550,000 customers.

"I can't think of a better way to end the summer than by celebrating how we are working as a community to protect our area waterways," said Buffalo Mayor Christopher P. Scanlon. "Our region is so fortunate and unique from most of the country in having so many natural water resources that contribute to such a great quality of life here. The Queen City Clean Waters Fair reminds us of our obligations to protect these precious resources."

Local workforce, environmental, and sustainable organizations will be joining Buffalo Sewer staff to provide educational, hands-on activities for all ages to learn more about water quality and protecting waterways, including:

- Aquarium of Niagara
- Buffalo Niagara Waterkeeper
- Buffalo Engineering Awareness for Minorities (BEAM)
- The Foundry Buffalo
- West Side Rowing Club
- Northland Workforce Training Center
- U.S. Fish and Wildlife Services
- Erie County Department of Environment & Planning
- Erie County Low Income Program for Sustainable Energy (ECLIPSE)
- Engineers for a Sustainable World (ESW)
- Second Chapter Bookstore
- Stantec
- Yoga Me Blac

National Grid and M&T Bank will be providing free book bags to children to help them get prepared for going back to school after Labor Day. Approximately 200 bookbags will be available for attendees while supplies last.

A few of Buffalo's favorite pop-up food vendors will be providing food & beverage options for attendees, including Half Luna Empanadas, Twisted Icee Slushie, What's Poppin Popcorn, and Moneybag Dumplings. Buffalo Sewer will provide complimentary cans of water and refillable water stations at the Clean Waters Fair.

About the Buffalo Sewer Authority: Buffalo Sewer is a New York State public benefit corporation created in 1935 to "relieve the Niagara River, Buffalo River, and Lake Erie from pollution by the sewage and waste of the city and relieving city from inadequate sanitary and stormwater drainage and for the sanitary disposal or treatment of the sewage thereof."

Buffalo Sewer may accept, treat and dispose of the sewage and waste of all municipal corporations in Erie County.

Buffalo Sewer plans Queen City Clean Waters Fair

The Buffalo Sewer Authority (BSA) has announced the Queen City Clean Waters Fair coming on Friday, Aug. 29 from 4 - 7 p.m. at Hoyt Lake. The Clean Waters Fair is providing the residents of Buffalo with an evening of food, music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the Queen City Clean Waters Initiative.

The Queen City Clean Waters Initiative is an approximately $1 billion effort to reduce combined sewer overflows into local waterways. Over the next 15 years various infrastructure enhancements at 50+ sites across the city will take place, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility, the second largest wastewater treatment facility in New York State serving over 550,000 customers.

"Community collaboration is a key driver in the implementation and the mission of the Queen City Clean Waters Initiative; the Clean Waters Fair gives residents another opportunity to engage with BSA officials and program representatives to learn how they can participate and have a voice in this once in a lifetime investment in our community," said Rosaleen Nogle, PE, BCEE, BC WRE principal sanitary engineer, Buffalo Sewer.

The Clean Waters Fair will feature representatives from the nine councilmanic districts, BSA customer assistance and resources team members, informational tables that highlight multiple aspects about the initiative, including green infrastructure, sewer technology, BSA history, and more.

7 things to do in Western New York this weekend: August 29 - August 31

WKBW

BUFFALO, N.Y. (WKBW) — If you're looking for Labor Day Weekend plans, check out these events happening throughout Western New York!

- Labor Day Weekend Street Festival
- Queen City Clean Waters Fair
- Olcott Beach Car Show
- Better Off Read Summer Book Festival
- National Buffalo Wing Festival
- Wings Over Batavia
- St. Rocco's Italian Festival

Daytime Buffalo: Queen City Clean Waters Initiative | Reduce sewer overflow into local waterways

WKBW



How Buffalo deals with its wastewater
How Buffalo deals with its wastewater

By David Lombardo Published On: June 11th, 2025 Categories: Capitol Pressroom

The Capitol Pressroom
How Buffalo deals ...
SOUNDCLOUD
Share
0:00
12:29
349
Privacy policy

June 11, 2025 – Buffalo Sewer Authority Principal Sanitary Engineer Rosaleen Nogle talks about their effort in the Queen City to deal with wastewater and why this work is hampered by a lack of state and federal support.

Listen On

Search

Search...

Categories

- Capitol Notes
- Dispatches
- Poozer Pop Culture
- Justice for All

Social Media

Get Capitol Pressroom Email Updates

Privacy - Terms

Share Episode

Share Episode

Related Posts



Lawmakers question accessibility of residential property insurance

August 25th, 2025



Looming threat of emergency room violence

August 25th, 2025



Unanswered questions after home care heari

August 25th, 2025

HOURS

The Capitol Pressroom streams weekdays at 11 a.m. The streaming player is available beginning at 10:35 a.m. For air times on your local station, please check the "Air times" page.

GET SOCIAL

MENU

- Home
- Audio Vault
- Capitol Notes
- Dispatches
- About Us

Clean Waters Fair Hosted by Buffalo Sewer Authority

August 29 @ 4:00 pm - 7:00 pm

Buffalo Sewer Authority (BSA) invites you and your family to the **Queen City Clean Waters Fair** — free entry and open to the public!

Friday, August 29, 2025
🕓 **4:00 PM – 7:00 PM**
📍 **Hoyt Lake, Delaware Park**

Join the BSA for a fun-filled evening while also learning how the **Queen City Clean Waters** program is improving Buffalo's communities, public health, and environment.

Learn More at the BSA Website

DETAILS

Date:
August 29

Time:
4:00 pm - 7:00 pm

Event Category:
Events

Website:
https://buffaloqccw.org/

VENUE

Hoyt Lake
199 Lincoln Parkway
Buffalo, 14222 United States + Google Map





30TH ANNUAL PAPPY MARTIN LEGACY

MASTEN

Jazz Festival

2025 THEME: JAZZ IS ACTIVISM

JULY 20 & 27, 2025

UNITING · UPLIFTING · TRANSFORMING

CELEBRATING 30 YEARS

PAPPY MARTIN LEGACY JAZZ COLLECTIVE

pmljazz.com

EDUCATE YOUR EAR ... LISTEN TO JAZZ

DEAR PAPPY MARTIN LEGACY JAZZ COLLECTIVE AUDIENCE OF JAZZ LOVERS,



As we celebrate the 30th year of my father, James "Pappy" Martin, embracing a charge at the Million Man March to "Go back to your community and do something to improve it", I am still inspired by the seriousness with which he accepted and fulfilled that challenge. We continue to honor his commitment by offering the community accessible experiences rooted in the historical, cultural, artistic, spiritual and mental health contributions of Jazz. He paved a well-laid path and earned the respect of those he encountered along his way.

Our 2025 theme, "Jazz Is Activism" represents our focus on celebrating 30 years of employing Jazz as an active form of protest. Activism includes acting and advocating for change, particularly with respect to social justice and political reform. From its improvisational approach to addressing the inequities of society with artistic confrontation to embracing the power of music as a healer, Jazz remains a powerful and beautiful expression of defiance. Louis Armstrong, Max Roach, Abbey Lincoln, John Coltrane, Charles Mingus, Nina Simone, Billie Holiday, Sonny Rollins, Gary Bartz, Isaiah Collier, Wynton Marsalis, Terrance Blanchard, and many more Jazz artists have offered compositions which reflect acts of rebellion to the status quo through their art. Jazz has always served as a symbol of freedom and vehicle for social change. It has been, and continues to be, an eloquent medium for voicing an allegiance to seeking equity and inclusion. The Pappy Martin Legacy Jazz Collective embraces what we have identified as a Jazz reclamation and restoration project. It reflects our dedication to using Jazz as inspiration to "keep up the fight" for freedom and justice by active engagement in programming which reflects authentic expressions of the Jazz art form with its foundation in liberation via improvisation.

2025 saw the organization expand its impact on the community. With the underpinning of many grantors, sponsors, donors and supporters, the infrastructure has been reinforced, capacity strengthened, and programming expanded. We sincerely appreciate the advocation and guidance that has been generously extended to us. It validates our dedication to create accessible opportunities for marginalized musicians and underserved communities as we use Jazz to educate, unite, uplift and transform our community. This year we continued, with great community reception, our Celestial Jazz Wellness Series funded by the NYS Office of Mental Health employing Jazz as a non-traditional approach to mental health wellness. We enhanced our programming and curriculum at the Love Supreme School of Music with major funding from an anonymous donor along with the Sportsmen's Americana Music Foundation, Children's Foundation of Erie County, Community Foundation for Greater Buffalo and John R. Oishei Foundation. We participated in April's International Jazz Day at our annual fundraiser and concert. In May, we presented the Annual Betty Carter Birthday Celebration while remembering the victims and families of the May 2022 Tops Supermarket tragedy. This year's festival showcases many world-renowned artists who will perform, honors the Dr. Kay E. Martin Scholarship awardees and recognizes our 2025 Honoree, Joe Ford. We look forward to September and our Annual John Coltrane Birthday Celebration, in collaboration with the Burchfield Penney Art Center, and December to highlight the Love Supreme School of Music students at their annual Winter Recital. These, along with a myriad of other events made possible by our appreciated sponsors, passionately reflect our mission, vision and values. It is their generous help and genuine dedication that allows our organization to execute its programming. We acknowledge our grantors, sponsors, supporters and donors in this book with heartfelt gratitude. Please consider joining them by lending your support and collaborating with us in enriching our community. Visit our website: PMLJAZZ.COM to access support opportunities.

On behalf of our funders, the Pappy Martin Legacy Jazz Collective Board of Directors and my siblings Jay, Denise and Monty along with the rest of the Martin family, I wish you a joy-filled festival experience that is full of camaraderie, good music and inspiration as we once again gather to acknowledge and celebrate the beauty, significance and power of an original American art form, Jazz.

With warmth and gratitude,

Dawn

Dawn Martin Berry-Walker
President and CEO
Pappy Martin Legacy Jazz Collective

HISTORY



PAPPY MARTIN LEGACY - MASTEN JAZZ FESTIVAL

In 1996, James "Pappy" Martin collaborated with Councilmember Byron Brown, Darryl Peebles, Council President James Pitts and Steve Porter to implement an innovative community enhancement program entitled Masten Jazz Festival, that would be free to the community. In 2015, upon the passing of Pappy Martin, who continued the festival, Masten District Councilmember Ulysees O. Wingo, Sr. agreed to change the name to the Pappy Martin Legacy – Masten Jazz Festival. It is held on the grounds of the Buffalo Museum of Science in Martin Luther King, Jr. Park, the heart and crown jewel of the Masten District. **Over the past 30 years,** there have been performances by many internationally acclaimed musicians including: Nasar Abadey, Mario Abney, JD Allen, Bootsie Barnes, Gary Bartz, Jean and Marcus Baylor, Lakecia Benjamin, Andy Bey, Junie Booth, Keith Brown, Brownman, Abraham Burton, Ron Carter, Etienne Charles, Theo Croker, George Caldwell, Steve Davis, Wayne Escoffery, Josh Evans, Joe Ford, Tia Fuller, Kenny Garrett, Giveton Gelin, Dodo Greene, Terreon Gully, Craig Handy, Phillip Harper, Winard Harper, Keyon Harrold, Donald Harrison, Louis Hayes, Eddie Henderson, Freddie Hendrix, JazzCats, Shenel Johns, Mimi Jones, Mike King, Bobby Lavell, Carmen Lundy, Curtis Lundy, Russell Malone, Spider Martin, Steve Nelson, Johnny O'Neal, Endea Owens, Jeremy Pelt, Nat Reeves, Herlin Riley, Wallace Roney Jr., Wallace Roney Sr., Shamie Royston, Vanessa Rubin, Patrice Rushen, Serious Young Musicians, Mark Shim, Barry Stephenson, Straight Ahead, Malachi Thompson, Camille Thurman, Al Tinney, Charenee Wade, Mike Wade, Donald Walden, Bobby Watson, Rodney Whitaker, Lenny White, Ben Williams, Buster Williams, Jordan Williams, Mark Whitfield Jr., Warren Wolf and Brandee Younger, among many other esteemed artists. The festival has also presented many locally-based musicians including: Bilal Abdullah, Zaid Aleem, Rodney Appleby, Rod Bronner, Sehrea Brown, Joyce Carolyn, Tim Clarke, Ben Clyburn, Drea d'Nur, Brian Freeman, Douglas Gaston, Isaiah Gethers, Jaman, Jacob Jay, Nikki Hicks, Will Holton, Danny Jelks, Marcus Lolo, Nelson "Poppa" Lucas, Quentin McCauley, Carol McLaughlin, Bobby Militello, Greg Millar, Janice Mitchell, William Murphy, Sehrea N'Dayu, Joel Nicholas, Charles Reedy, Larry Salter, Dalton Sharp, Gregory Treadwell, Darryl Washington, Joyce Wilson-Nixon, Oscar Woodrich, Armani Works and Jerry Youngman, to name a few, along with numerous students from the Love Supreme School of Music and, of course, visionary Pappy Martin.

Buffalo is a city with deep roots in the jazz tradition. It has touted numerous venues that showcased jazz performances such as the Blue Note, Bon Ton, Calumet, Colored Musicians' Club, Little Harlem, Pine Grill, Moonglow, Revilot, Royal Arms, Shalimar and many more. The city is home to several jazz giants and has provided mentors, teachers and audiences for hundreds of developing musicians. This festival is dedicated to keeping that tradition alive as it reinforces confidence, in young and old, that Western New York is a place to not only present world-renowned musicians, but also, develop and nurture future musicians. The rich legacy will continue by grooming the next generation of jazz lovers. It helps ensure that this art form will remain a part of our local cultural tapestry. We believe that through exposure, appreciation for this music is undeniable.

The Pappy Martin Legacy – Masten Jazz Festival is committed to strengthening jazz as a viable entity while offering a multi-generational, multi-ethnic festival which educates, elevates and celebrates the artistic, historic and cultural significance of jazz. The festival avails the entire community to this very deserving original American art form....jazz. It serves as an outreach to all neighborhoods, especially the underserved, in its mission to make the cultural experience of jazz accessible to everyone by keeping the festival free and open to the public and presented in the central city. It helps to ensure that jazz remains a living, breathing celebration of a cultural heritage for the descendants of its creators. The organization's dedication is boosted by the understanding that jazz has the power to cleanse your spirit and refill it with something beautiful. The festival offers a stage from which freedom of expression flows and reflects the democratic philosophy that each individual's unique contribution helps to create a whole which is enhanced by collaboration. It presents authentic artists who understand that jazz is not mere entertainment but also enriches spiritual, emotional and mental health wellness. It is an expression of activism and serves as a testament to human resilience supported by the power of improvisation which creatively expresses our spirit and uplifts our community. After 30 years, the Pappy Martin Legacy – Masten Jazz Festival continues to intentionally offer an atmosphere within which audience members have the opportunity to congregate, fellowship and unify while elevating their consciousness and love of a culture called jazz.

"EDUCATE YOUR EAR ... LISTEN TO JAZZ!"

PAPPY MARTIN LEGACY
JAZZ COLLECTIVE

BOARD OF DIRECTORS

OFFICERS: Brenda W. McDuffie, Chair
Grace Tate, Vice-Chair/Acting Secretary • Roslyn Owens, Treasurer
DIRECTORS: Deborah Cahee-Christophe • Charles Campbell
Breauna Crumple • James H. Martin, Jr. • Kenneth Martin, Jr.

President and CEO, Dawn Martin Berry-Walker **Artistic Director**, Curtis Lundy

The Pappy Martin Legacy Jazz Collective commits to keeping the tradition of jazz alive as it spearheads a multi-pronged approach to perpetuate the historical, cultural, spiritual and artistic significance of Jazz for current and future generations. We honor the continuum of healing music from the drumbeats of Africa to America's only original art form, Jazz. The Collective serves as outreach to the entire community as it creates accessible opportunities for marginalized musicians and underserved audiences by using Jazz to educate, unite, uplift and transform our community. We are dedicated to removing barriers to the experience of world class jazz that is inclusive, equitable and just.

The Collective focuses on varied initiatives to enhance audience development centered on jazz appreciation, knowledge and understanding via live performances, community forums and other related activities. It recognizes and addresses the multi-pronged aspects of continuing the legacy of James "Pappy" Martin by executing cohesive and comprehensive programming via the following entities under one umbrella organization:

Pappy Martin Legacy – Masten Jazz Festival: Started in 1996, it is a free festival that continues to grow as a highly anticipated summer mainstay attracting approximately 3000 attendees on the last two Sundays in July on the grounds of the Buffalo Museum of Science. By presenting the best of international, national and local musicians, it executes its mission to create opportunities for diverse community engagement in educating, honoring and celebrating the historical, cultural and artistic significance of jazz. By keeping this festival free and centrally located, it removes financial and physical barriers so that this cultural event is accessible to all members of the community.

Love Supreme School of Music: Beginning in 2003, it has provided instrumental and vocal music instruction as students study of the science of music with numerous opportunities for overall musical development including performance experience. It is our belief that a student does not have a complete education without the study and discipline of music study. By grooming the next generation of musicians and music appreciators, we help to ensure the longevity of this art form. The school is located at Lincoln Memorial United Methodist Church 641 Masten Avenue Buffalo, NY 14209 and offers instruction, free of charge.

Celestial Jazz Series: In 2017, this series was begun to present world-class jazz musicians in the sacred atmosphere of the church. It celebrates and exemplifies the spiritual nature of jazz while broadening its exposure and opportunity for audience development. The current focus employs Jazz as a support tool in a non-traditional approach to mental health wellness and recognizes Jazz as a form of activism.

John Coltrane Birthday Celebration: Since the 1980s, Pappy Martin honored the massive contributions and lasting impact of influential jazz saxophonist, John Coltrane, with an annual celebration on his birthday, September 23. This tradition continues and has expanded to a three day mini-festival co-sponsored by and held at the Burchfield-Penney Art Center. This event features world renowned musicians, along with the best locally-based musicians including youth performers.

Betty Carter Birthday Celebration: Started in May, 2022 to celebrate the music and life of this jazz icon who discovered, taught, groomed and launched the careers of many successful musicians. Betty Carter's contribution to the art form exemplifies women's role in the presentation of the music.

Pappy Martin Legacy Jazz Society: Founded in 2011 to support the jazz festival and its commitment to keep it free and accessible to everyone in the community, it currently supports all aspects of the Collective. Its commitment includes fundraising and activities to expand the community, knowledge and appreciation of jazz. It offers events which educate, elevate and celebrate jazz as an internationally recognized art form with a rich and unique culture, worthy of honor and preservation.

2025 LINE-UP



SUNDAY, JULY 20

HOST: SHEILA ANDERSON
ON-AIR JAZZ HOST "QUEEN OF HANG" WBGO 88.3 FM (NEWARK, NJ)

2:00PM — **A.I. THE ANOMALY**

Aitina Fareed-Cooke is a national recording artist celebrated for her poetic and jazzy hip-hop performances that address various themes and social issues to ignite thought and expand perspectives.

3:00PM — **LOVE SUPREME SCHOOL OF MUSIC STUDENT ENSEMBLE**

Created to increase support and encouragement among peers, this student ensemble from the Love Supreme School of Music continues to surprise, engage, entertain and wow audiences with their impressive performances. The technical skills, passionate interpretations and developed confidence displayed by these young people commands respect for their commitment to honing their musical gifts. The entire Pappy Martin Legacy Jazz Collective is extremely proud of the manner in which they so beautifully represent the entire organization. Ensemble members: Young Lions: Aidan Walker, Amari Funderburg, Amir Dalton, Ariyah Roberts, Audriana Pearman, London Young, Mansa Funderburg, Markis Rodgers, Nylah Bivens, Oscar Rubeck, Sage Gilliam, Xaviera Roberts ASE: Allen Smith, Gabrielle Workman, Genesis Thompson, Haadiyah Habeeb, Marika Korobin, Marko Wilondja, Samuel Parker, Zech Thompson.



4:00PM — **EKEP NKWELLE**

5:45PM — **ISAIAH COLLIER & THE CHOSEN FEW**

7:15PM — **CAROL MCLAUGHLIN**

Bandleader Carol McLaughlin is a highly accomplished woodwind master and respected bandleader who contributed to the Pappy Martin Love Supreme Band for many years. His 2025 Jazz festival ensemble presents Carol on Saxophone, Brian Freeman on trumpet, George Calwell on piano, Al Hury on drums and Mark Harris on Bass.

SUNDAY, JULY 27

HOST: JOHN DIXON
ON-AIR JAZZ HOST | WDNA 88.9 FM (MIAMI, FLORIDA)

2:00PM — **JOEY GONZALEZ COLLECTIVE**

A seasoned musician, producer, and arranger, Joey brings deep cultural and spiritual roots to every performance. The Collective features an eclectic mix of artists combining unique voices to create a powerful and cohesive sound. Together, they blend traditional influences with modern styles to craft performances that are both innovative and emotionally resonant. More than just a band, the Collective is a celebration of collaboration and community. It offers an invitation to connect through rhythm, culture, and storytelling. Featuring: Frankie Quiñones • Jessy Diaz • Luis "Chunky" Gonzalez • Tony Castillo • Hansel Herrera • Alex Aponte • Ken Whitman and special guests.

3:00PM — **LOVE SUPREME SCHOOL OF MUSIC FACULTY BAND**

Brought together through their camaraderie as instructors at the Love Supreme School of Music, these highly talented musicians formed a band which has performed to rave reviews since its inception. Their beautifully unique voices create an artistic tapestry which showcases their creativity, individuality and collaboration. This group of musicians is on a fast-track to deserved fame and explosive notoriety. The band is comprised of Marcus Lolo (piano), Joel Nicholas (piano), Armani Works (piano), Oscar Woodrich (bass), Jacob Jay (trumpet), Isaiah Gethers (drums), Quentin McCauley (saxophone) and Sehrea N'Dayu (vocals).



4:00PM — **JAMES CARTER ORGAN TRIO**

5:45PM — **CURTIS LUNDY UMOJA**

7:15PM — **TRIGGER AND THE SERMON**

Trigger and The Sermon is an organ jazz quartet led by organist Doug "Trigger" Gaston. Gaston is a pillar in the local and national jazz community as a performer, composer, and arranger. The quartet includes Greg Millar, a mainstay guitarist on the Buffalo Jazz scene for decades. Trumpeter Tim Clarke brings the brass. Holding down the drum chair is Benjamin Jason Clyburn, one of the area's most versatile and talented drummers.



EKEP NKWELLE

JULY 20 | 4:00PM

Ekep Nkwelle, age 24, is a DC-born, New York-based jazz vocalist of Cameroonian-American descent. She has trained at Duke Ellington School of the Arts, Howard University, and The Juilliard School and worked alongside jazz masters such as Russell Malone, Cyrus Chestnut, and Peter Washington.

She was also featured at Radio City Music Hall with renowned classical pianist Lang Lang in collaboration with Disney. She has performed at Lincoln Center, The Kennedy Center, and Newport and Montclair jazz festivals, but most notably, she was featured in 2022 on NPR's Tiny Desk singing her arrangement of Geri Allen's "Timeless Portraits and Dreams."

2023 marked a pinnacle in Ekep's career as she was honored with the prestigious Juilliard Career Advancement Grant, a testament to her artistry and character, nominated by jazz master trumpeter Wynton Marsalis.

Nkwelle is one of Jazz at Lincoln Center's newest rising stars, and is poised to shape the future of jazz. She strives to display her artistry and passion for music with audiences worldwide.

Ekep Nkwelle: Vocals | Luther Allison: Piano
Liany Mateo: Upright Bass | Brian Richburg: Drums

ISAIAH COLLIER & THE CHOSEN FEW

JULY 20 | 5:45PM

An explosive young saxophonist, vocalist, composer, and bandleader, Isaiah Collier performs in the Joe Henderson Lab with a night devoted to his project I AM, with drummer Timothy Regis, and one with his band The Chosen Few, playing his latest music including songs from his most recent album The World Is On Fire. A self-described "sonic scientist" at the forefront of the vibrantly creative Chicago scene, Collier has earned rapturous acclaim and a fervent following since the bow of his 2018 debut Return of the Black Emperor. He has collaborated with legends including Wadada Leo Smith and channels the churning, relentless energy of his hometown forebears the AACM and Art Ensemble of Chicago.



Isaiah Collier: Saxophone, Percussion and Vocals
Dr. Emma Dayhuff: Double Bass | Tim Regis: Drums | Victor Gould: Piano

JAMES CARTER
ORGAN TRIO JULY 27 | 4:00PM



"To hear saxophonist James Carter is to be blown away," wrote the Washington Post, hitting the nail on the head. From moonlit ballads to funky workouts to the most cerebral kind of post-bop, in an intimate club or on a sprawling festival stage, the Detroit-born saxophone master can seem to deliver all of jazz history in a single set.

"One of the most charismatic and powerful soloists in jazz," per the New York Times, Carter harbors a command of his instruments that is astonishingly complete, though he only employs that technique in the service of canny ideas

James Carter: Saxophones | Gerard Gibbs: Organ | Alex White: Drums

CURTIS LUNDY
UMOJA
JULY 27 | 5:45PM



Bassist Curtis Lundy is best-known for his work as part of jazz vocalist Betty Carter's band, which has at one point or another had several eventual renowned musicians pass through their ranks (including Jack DeJohnette, Dave Holland, and Don Braden, among others). Lundy has also played on other jazz artist's recordings (including select albums by John Hicks, Bobby Watson, Steve Nelson Quintet, Johnny Griffin, Pharaoh Sanders, Art Blakey, etc.) and in the late '80s briefly stepped out of the background and issued Just Be Yourself (1988). A decade later he united with Justin Time Records for Against All Odds (1999), followed shortly thereafter by Purpose (2002). Both albums features pianists John Hicks and Anthony Wonsey.

Curtis Lundy serves as the Artistic Director of the Pappy Martin Legacy Jazz Collective.

Curtis Lundy: Bass | Ralph Moore: Saxophone
Jordan Williams: Piano | Warren Wolf: Vibraphone | Eric Kennedy: Drums

30TH ANNUAL PAPPY MARTIN LEGACY

Jazz Festival Week

EXTENDED PROGRAMMING

THEME: JAZZ IS ACTIVISM

JULY 20 - 27, 2025

2PM - 8PM SUN JULY 20	**30TH ANNUAL PAPPY MARTIN LEGACY- MASTEN JAZZ FESTIVAL / OPENING DAY** Buffalo Museum of Science (Side Lawn) 1020 Humboldt Pkwy, Buffalo, NY 14211 **FREE**
12PM - 3PM MON JULY 21	**COMMUNITY CONVERSATION: "JAZZ IS ACTIVISM" / MUSICIANS WORKSHOP** **Hosted by Isaiah Collier/ Chicago-Based Jazz Artist and Activist** Buffalo Academy for the Visual and Performing Arts / Black Box Theater 450 Masten Avenue Buffalo, NY 14209 **FREE**
5PM - 8PM TUES JULY 22	**FOOD TRUCK TUESDAY/ LOVE SUPREME SCHOOL OF MUSIC PERFORMANCE** Larkin Square 745 Seneca Street Buffalo, NY 14210 **FREE**
6PM - 9PM WED JULY 23	**OUTDOOR JAZZ MOVIE EVENING / BRING YOUR OWN LAWN CHAIR AND SNACKS** Buffalo Academy for the Visual and Performing Arts 450 Masten Avenue Buffalo, NY 14209 (Side Parking Lot) **FREE**
5PM - 8PM THURS JULY 24	**JAZZ JAM AND POETRY SLAM HOSTED BY PAPPY MARTIN LEGACY JAZZ SOCIETY** Manna @ Main 1786 Main Street Buffalo, NY 14208 (Enter on Lafayette) **FREE**
7PM - 9PM FRI JULY 25	**JAZZ / BLUES & WINE @ NIGHT/ ARMANI WORKS TRIO** Michigan Street Corridor Event Space 136 Broadway Street Buffalo, NY 14203 (at Michigan) **$10.00 DONATION INCLUDES WINE**
ALL DAY SAT JULY 26	**JAZZ @ HOME LISTENING DAY** Check out suggested listening list on PMLJAZZ.COM **FREE**
2PM - 8PM SUN JULY 27	**30TH ANNUAL PAPPY MARTIN LEGACY- MASTEN JAZZ FESTIVAL / CLOSING DAY** Buffalo Museum of Science (Side Lawn) 1020 Humboldt Pkwy, Buffalo, NY 14211 **FREE**

THANK YOU
TO OUR GENEROUS SPONSORS

EMERALD:
John R. Oishei Foundation
DIAMOND:
NYS Office of Mental Health
TITANIUM:
NYS Assemblywoman Crystal Peoples-Strokes
NYS Senator April Baskin
PLATINUM:
Cecil and Linda Brown
Community Foundation for Greater Buffalo
Majority Leader Leah Halton-Pope / Ellicott District
Councilwoman Zeneta B. Everhart / Masten District
M.S. Hall + Associates / Syracuse NY
John V. Elmore, P.C.
GOLD:
Sportsman's Americana Music Foundation
Henry Walker and Dawn Martin Berry-Walker
Arts Services Inc.
The Fretted Buffalo World Class Acoustic Guitars
Pappy Martin Legacy Jazz Society
Erie County Legislator Taisha St. Jean Tard
Erie County Legislator Lawrence Dupre
SILVER:
Gerald and Brenda McDuffie
Five Star Bank
Yvonne I. Cummings
Scott and Danis Gehl
Stephen Rosenthal
Robert L. Thomas
US Congressman Tim Kennedy
BRONZE:
Carolyn A. Lee Clanton
Carol A. Roberts
COPPER:
Charles and Barbara Campbell
Buffalo Museum of Science
Gilbert and Yvonne Hargrave
Ed and Karen Healy
Grace D. Tate
JazzBuffalo
Thomas T. Edwards Funeral Home
Lucinda and Don Ingalls

JOHN R. OISHEI FOUNDATION

Office of Mental Health

NYS Assemblywoman Crystal D. Peoples-Stokes

NYS Senator April N.M. Baskin

Community Foundation for Greater Buffalo

Arts Services INC

Majority Leader Leah M. Halton-Pope Ellicott District

Councilmember Zeneta Everhart Masten District

JAZZ IS ACTIVISM

Jazz has been used as a powerful platform for activism and social change. During the Civil Rights Era, jazz played a significant role in advocating for freedom and social change. Contemporary jazz artists continue to address issues such as environmental concerns, gender equality, and human rights violations through their music.

"Jazz," Duke Ellington once said is a "barometer of democracy." All through the years, jazz has exemplified what the United States is supposed to represent –freedom, inclusiveness, individualism and a willingness to sacrifice one's own interests for the greater good. Throughout the years, jazz musicians have also felt the need to use their art to protest when the country fails to live up to its promises.

Jazz found ways to echo both the inspiration and the turbulence of the Civil Rights Era of the 1950's and 60's. John Coltrane's "Alabama", Billy Holiday's "Strange Fruit", Charles Mingus' "Fables of Faubus", Nina Simone's "Mississippi Goddam" and Max Roach's "We Insist! /Freedom Now Suite" are just a few examples of the protest recordings. Current artists such as Christian Scott a Tunde Adjuah, Ambrose Akinmusire, Kamasi Washington, Terence Blanchard, Isaiah Collier and others continue to contribute to the activism-inspired jazz playlist.

It is of course impossible to predict the future, either for jazz or the United States. How ever history unfolds, jazz musicians will be there, reflecting the country's best ideals and its shortcomings.

Along with the above-mentioned, here is a sample playlist of the many jazz recordings with activist themes:

YOU'VE GOT TO HAVE FREEDOM
PHAROAH SANDERS

INNER URGE
JOE HENDERSON

COME SUNDAY
DEE DEE BRIDGEWATER

JOY IS SORROW
ROY HARGROVE

THE TIME IS NOW
ISAIAH COLLIER

FREE FOR ALL
ART BLAKEY

CONGO CALL
PRINCE LASHAY

ALL AFRICA
EKEP NKWELLE

WARRIORS FOR PEACE
E.J. STRICKLAND

MUSIC IS THE MAGIC
ABBEY LINCOLN

A LONG JOURNEY
CURTIS LUNDY

"EDUCATE YOUR EAR ....LISTEN TO JAZZ!"

THE ESSAY BY MARTIN LUTHER KING, JR. THAT LIVES LARGE IN JAZZ

In 1964, Martin Luther King, Jr. penned an essay concerning the significance of jazz. The essay was written at the request of the organizers of the 1964 Berlin Jazz Festival. While one of Dr. King's lesser- known speeches, it remains as one of the most profound essays about jazz in modern times. In July 1964, Dr. King received a request from the director and organizers of the festival to write a forward to the festival's program. King had risen to prominence on many fronts of the Civil Rights movement. A year whereby he was a finalist, at the time of writing the essay, for the Nobel Peace Prize. Also, a year during which he played an essential role in the passing of the Civil Rights Act and appeared on the cover of Time Magazine as "Man of the Year."



God has wrought many things out of oppression. He has endowed his creatures with the capacity to create—and from this capacity has flowed the sweet songs of sorrow and joy that have allowed man to cope with his environment and many different situations. Jazz speaks for life. The Blues tell the story of life's difficulties, and if you think for a moment, you will realize that they take the hardest realities of life and put them into music, only to come out with some new hope or sense of triumph. This is triumphant music.

Modern jazz has continued in this tradition, singing the songs of a more complicated urban existence. When life itself offers no order and meaning, the musician creates an order and meaning from the sounds of the earth which flow through his instrument. It is no wonder that so much of the search for identity among American Negroes was championed by Jazz musicians. Long before the modern essayists and scholars wrote of racial identity as a problem for a multiracial world, musicians were returning to their roots to affirm that which was stirring within their souls.

Much of the power of our Freedom Movement in the United States has come from this music. It has strengthened us with its sweet rhythms when courage began to fail. It has calmed us with its rich harmonies when spirits were down. And now, Jazz is exported to the world. For in the particular struggle of the Negro in America there is something akin to the universal struggle of modern man. Everybody has the Blues. Everybody longs for meaning. Everybody needs to love and be loved. Everybody needs to clap hands and be happy. Everybody longs for faith.

In music, especially this broad category called Jazz, there is a steppingstone towards all of these.

2025 HONOREE OF THE YEAR JOE FORD

Award-Winning Saxophonist, Composer, Educator, and Musical Visionary

James Allen Ford, known professionally as Joe Ford, was a husband of 54 years, father, grandfather, award-winning saxophonist, composer, educator, and musical visionary. Joe departed this life leaving behind a legacy that will continue to inspire and uplift through the music and family he passionately lived for. Born in Buffalo, New York, Joe was the son of Frances Bridges and Wallace Ford. Raised in a household filled with gospel and improvisation, Joe began singing in a family choir at age five, studying piano at seven, and playing the saxophone by eleven. These early foundations led to a lifelong devotion to musical exploration and excellence.

In 1968, Joe earned his bachelor's degree in music education from Central State University in Ohio. While there, he studied saxophone under Makanda Ken McIntyre, Jackie McLean, Frank Foster, and percussion with Joe Chambers. His deep and diverse training would come to define the uniquely rich, genre-spanning voice he brought to every performance. After graduating from Central State University, Joe returned to Buffalo to teach music and direct a school band and chorus from 1968-1972. During this time, he met and married the love of his life, Cindy in Barnesville, Ohio on September 12, 1970.



In 1973, as co-leader and co-producer with tenor saxophonist Paul Gresham, and drummer Nasar Abadey, the locally popular Coltrane/ Miles-influenced jazz band, BIRTHRIGHT was formed. This alliance resulted in the release of two critically acclaimed albums for Freelance Records, "Free Spirits" and "Breath of Life". During this time Joe also played with the Buffalo Jazz Ensemble, a group featuring the future members of Spyro Gyro. After an invitation to join the McCoy Tyner Quartet, Joe established himself as one of the strongest independent voices in jazz. His robust alto and velvety soprano sound kept him in high demand.

In 1993, he stepped fully into the spotlight with his solo album "Today's Night", released on Blue Moon Records. A richly melodic and rhythmically adventurous work, the album featured longtime collaborators Charles Fambrough, Kenny Kirkland, and Jeff "Tain" Watts. Joe has appeared on more than 90 albums and television and movie soundtracks including "New York Undercover". His performances have been witnessed at over 300 jazz venues and festivals with The McCoy Tyner Big Band, Jerry Gonzalez and the Fort Apache Band, Kenny Kirkland, Jerry Eastman, Larry Willis, Abdullah Ibrahim, Jeff "Tain" Watts, Freddy Cole, Malachi Thompson, Charles Fambrough, Nova Bossa Nova, John Blake and many more. Joe Ford played on two Grammy winning albums and three Grammy nominated albums. As a member of The Fort Apache Band, and other groups, Ford proved to be a pivotal player, helping the bands become winners of the Downbeat Critic's Poll Award, World Beat Group Readers Poll Award, a New York Jazz Award, multiple Playboy Jazz Poll awards, Seagram's Jazz Talent Search and Jazz Journalist Award.

In 2004, Joe was inducted into the Buffalo Music Hall of Fame, an honor he regarded as one of his most cherished distinctions. In 2016, he received the Jazz Legacy Award, in tandem with a special commendation from the U.S. House of Representatives that was entered into the United States Congressional Record.

Despite his achievements, Joe remained humble, continually reaching new audiences in the best way possible; through heartfelt, intensely performed music that resonated with jazz aficionados, fans and critics alike. The love he had for his family was unmatched and immeasurable. Joe's surviving family includes his beloved wife of 54 years, Cindy; his children, Michael (Dixie) and Nia; his granddaughter, Madison. Joe was also a faithful friend, brother, uncle and support for those he loved. He was not merely an award-winning musician, but also, a gentle and loving man who was full of laughter, wisdom and warmth.

THANK YOU, JOE, FOR THE LOVE, BEAUTY AND LEGACY YOU LEFT FOR THE WORLD TO ENJOY!

DR. KAY E. MARTIN SCHOLARSHIP



Always Do Your Best

Be Compassionate

Take Responsibility For Your Actions

Celebrate Your Individuality

Know There Are Consequences For Your Actions

Appreciate The Arts

Speak Well…Write Well

Never Compare Yourself To The Worst; Always Compare Yourself To The Best

Keep Putting One Foot In Front Of The Other

Realize You Reap What You Sow

You Can Be Anything You Want To Be If You Are Willing To Do The Work

Often It Is Your Attitude, Not Your Aptitude, Which Determines Your Altitude

Read

2025 SCHOLARSHIP AWARDEES

MADELYN BERRY-VANCE

Academy of the Sacred Heart Graduate / Canisius University

JAZMIN CARTER

City Honors at Fosdick Masten Graduate / Rochester Institute of Technology

SAMUEL PARKER

BAVPA/Home School Graduate
(Love Supreme School of Music Student) / Berklee College of Music

GENESIS THOMPSON

Global Concepts Charter School Graduate
(Love Supreme School of Music Student) / University of Buffalo

Scholarships Funded By: Family of Dr. Kay E. Martin

PAPPY MARTIN LEGACY
JAZZ SOCIETY

PATRONS

Alan Feller
Alphonso Baldwin, Jr.
Alphonso Baldwin, Sr.
Anthony Zambito / JazzBuffalo
Barb Thomas
Bill Covington
Bradford and Wanda Watts
Bruce Cosby
Carol Roberts
Carolyn A. Lee-Clanton
Carrone Evon Crump
Cecil and Linda Brown
Charles and Barbara Campbell
Charles and Chevelle Ward
Dale Holt
Darrell and Karen Saxon
David John Lee
Denise McMicheal-Houston
Dorothy Pearman
Drea D'Nur
Ed and Karen Healy
Edward Blackwell
Ellen Lucas
Elsie Hammond
Eric Huebner
Gail Lyons-Hawkins
Gerald and Brenda McDuffie
Gilbert and Yvonne Hargrave
Glendora Cooper
Grace Tate
Henry Walker
Janet Barnes
John V. Elmore
Karen Hargrave
Karen Thomas
Karla Thomas
Kenneth Martin, Sr.
Linda Brown
Linda Gray
Lionel Lucas
Lucinda and Don Ingalls
Mark and Karla Hall
Mitchell Reed
Orin Agostini
Patricia Nelson
Richard Roberts
Robert L. Thomas
Ron Curry
Scott and Danis Gehl
Simpson and Allison Turley
Stephen Rosenthal
Vanessa Middleton
Vicki Barnes
Willie Pulliam
Yvonne I. Cummings

SUPPORTERS

Alberta Johnson
Bilala Ka Ra
Bonni Nelson
Duane T. Fleming
Randy Johnson
Sidney Douglas
Stephen and Shawn Parker
Thomas J. McClary
Vernell Douglas
Vincent Thomas

SPECIAL THANKS

Adrianne Easley-Brown, Amber Berry, Bilala Maati Ra & Amon Ra Ptah/Temple of Maati Ka Ra Ptah, Buffalo Challenger, Connie Ervin, Courtney Kincannon, Curtis Lundy/ Artistic Director of the Pappy Martin Legacy Jazz Collective, Damon Martin, Dave Perry, Deirdre Wright, Denise Martin Watson, Elliott McDougald and Daren "Doc Trini" Thomas, Family of Joe Ford, Henry Walker, Howard Vance, Jay Martin, Jocelyn Winston, Kaleb Walker, Love Supreme School of Music Faculty and Staff, Madelyn Berry-Vance, Marcus Lolo, Mark Percy, Mark Scott, Nashon Oliver, Pappy Martin Legacy Jazz Collective Board of Directors, Ras Jomo, Saibo Kebbeh, Stafford Trueheart, Wylie Horton and Yuki Namata Resnick



THE MARTIN FAMILY

(circa 1982)

On behalf of our entire beloved family, we are so very proud to still represent a commitment to community, education, arts and family through honoring and celebrating both our late parents' impactful legacies!

DR. KAY E. MARTIN

Dr. Kay E. Martin Scholarship Awards

JAMES "PAPPY" MARTIN

Pappy Martin Legacy Jazz Collective

The loving and blessed children...
Dawn, Jay, Denise, David (deceased) and Monty

Congratulations to
Pappy Martin Legacy Jazz Collective
and a warm "thank you" for all that you do!





RONALD L. WOFFORD

April 28, 1940 – June 20, 2019

In Loving Memory of your passion
for jazz and all the good times…
Forever in my heart!
Syl

Congratulations from The Buffalo Club

of the

National Association of

Business and Professional Women's Clubs, Inc.

Pappy Martin Legacy Jazz Collective



Congratulations to our Club President Janet Barnes the North East Governor-Elect

Buffalo Club Roster

2024-2025

Debbie Allen
Tereka Baltimore
Janet E. Barnes
Vicki R. Barnes
Brenda Bentil
Letia F. Byrd
Cindy Clarke
Alline W. Davis
Pamela Deans
Gladys Diji
Tashawn Folson
Valerie Dobson
Laura Harris
Sandra L. Howard
Renetta Johnson
Carol Jones
Joyce M. Jones
Jacqueline Mines
Celestine Simmons
Yolanda Smith
Diane Young

EAT OFF ART®

Studio + Place

"Thank you for supporting the arts!" EOA family

FOR EVENTS & TO LEARN MORE:
www.eatoffart.com
REGISTER FOR FREE WORKSHOPS:
www.cultruelife.org

@EATOFFART
@CULTRUELIFE

CONTACT: admin@eatoffart.com

AN OPEN INVITATION INTO THE

ARTS

"BUILDING A MORE EMPATHETIC COMMUNITY"

SALUTE

To Pappy Martin Legacy on 30 Years of Impact!

OPEN BUFFALO

RACIAL
ECONOMIC
ECOLOGICAL
JUSTICE

www.openbuffalo.org



QUEEN CITY

CLEAN WATERS FAIR

Join us for our Water and Environment Fair at Hoyt Lake for an evening of family-friendly fun, environmental activities, and watershed demonstrations. Learn more about how Buffalo Sewer Queen City Clean Waters projects are improving our neighborhoods and water quality...free entry and open to the public.

FOOD + MUSIC | GAMES + PRIZES | WATER ACTIVITIES

FRIDAY, AUG 29th | 4:00 - 7:00 PM | HOYT LAKE IN DELAWARE PARK

NO MENTHOL BUFFALO

WHEN MENTHOL STEALS THE SOUL

Menthol cigarettes aren't just addictive; they rob us of our cultural icons, silencing Black voices that shaped generations.

Nat King Cole—his velvety voice behind classics like "Unforgettabie," believed menthols give his sound signaturions.

Sammy Davis Jr.. thneat-smoker, oigentinist, biwich smoked up to three packs a day, lung cancer striking one of America's greatest voices.

Lou Rawls—with a velvet baritone heard on "You'll Never Find Another Love Like Mine"—lost his lis life to lung and brain cancer in 2006, battling ung cancer.

BUFFALO, LET'S AMPLIFY THE FUTURE

By banning menthol tobacco, we can prevent the next generation of Black talent from being silenced.

- ✓ **Support the Common Council:** Demand an immediate stop to menthol sales.
- ✓ **Honor our legends:** Reject the tobacco industry's erasure of our history.

STAND WITH US NoMenholBFLO.org

Together, we can ensure **no more voices are stolen.**

Clementine
Gold Group

The Gold Standard in Engagement is Right Here in Buffalo



Full service strategy, planning, and engagement with a focus on community-led economic development.

CLEMENTINE GOLD GROUP
The Exchange @ Beverly Gray
334 East Utica Street, Suite 3
Buffalo, New York 14208

www.ClementineGoldGroup.com
info@ClementineGoldGroup.com
(716) 222-2750



MOVING THE EAST SIDE FORWARD

CLEAN MOBILITY BUFFALO is an alliance of like-missioned organizations bringing cleaner, healthier, more equitable transportation options to Buffalo's East Side

Learn more:
www.cleanmobilitybuffalo.org

CLEAN MOBILITY BUFFALO

ALIGN CONSULTING LLC

COMMUNITY ENGAGEMENT FOR IMPACT

www.alignconsultingllc.org

Empowering Organizations to Succeed and Grow

KF

Business Solutions

Are you overwhelmed with administrative tasks? Let us handle the details while you focus on growing your business!

ABOUT US:

We specialize in helping startups, small businesses, and nonprofits streamline their operations and achieve their goals with expert support services.

WHY CHOOSE US :

- Customized Solutions Tailored to Your Needs
- Strategic Support for Sustainable Growth
- Dedicated to Excellence & Organizational Success

Let us handle the details, so you can focus on your mission!

Contact Us for a FREE Consultation!

716-908-2520

✨ Streamline Your Business with Custom Administrative Support! ✨

- Calendar & Email Management
- Document Preparation & Editing
- Office Management
- Event Consultation & Planning Support
- Customer Service Assistance
- And More-Tailored to YOUR Needs!

Courtney@thekfsolution.com

Virtual Services Available

Congratulations, Pappy Martin Legacy Jazz Collective, on celebrating the **30th Annual Pappy Martin Legacy - Masten Jazz Festival!** Bits and Bytes STEM Foundation is proud to be part of this historic celebration.

Bits & Bytes STEM Foundation

Bits and Bytes STEM Foundation Inc. is narrowing the digital and opportunity gap by promoting knowledge and exposure to Science, Technology, Engineering, Mathematics, and Computer Science through hands-on experiences, with a focus on equity, accessibility, and inclusivity.

Visions & Dreams GRAPHICS

IDEAS INTO IMAGES

We create original designs with you in mind. You'll enjoy a dependable, well managed, unique design experience that will establish brand recognition with your target audience. Let us turn your ideas into images.

- **Branding**
- **Logos**
- **Print & Digital Advertising**

VisionsDreamsGraphics.com



The Legacy Lives On.....

"My role as a musician is to elevate the consciousness and love of a culture called Jazz. Jazz is more than a music; it's a culture, it's a way of life. It is scientific, therapeutic and prophylactic"

~ James "Pappy" Martin

EDUCATE YOUR EAR .... LISTEN TO JAZZ!

PMLJAZZ.COM

DESIGNED BY: VISIONS DREAMS GRAPHICS.COM

BUFFALO
SEWER AUTHORITY

BUFFALO SEWER AUTHORITY UNVEILS QUEEN CITY CLEAN WATERS INITIATIVE

BUFFALO, NY – The Buffalo Sewer Authority (BSA), elected officials, and community stakeholders gathered at Freedom Park to unveil the Queen City Clean Waters Initiative, a

$1 billion undertaking to improve local waterways over the next 15 years. The initiative will include infrastructure enhancements at 50+ sites across the city, including $250 million in upgrades at the Bird Island Wastewater Treatment Facility.

“The Queen City Clean Waters initiative is a community collaboration between BSA, the city of Buffalo, various community stakeholders, and residents to improve our local waterways and protect public health and safety,” said Oluwole A. (OJ) McFoy, Buffalo Sewer Authority CEO and General Manager. “This historic investment in our wastewater system infrastructure will reduce sewer overflows so that future generations can safely enjoy the vast recreational uses our waterways provide to our community and region.”

During heavy rainfall and snowmelt events, stormwater enters the sewer system, combining with wastewater, often leading to permitted combined sewer overflow discharges. These discharges are the result of the historical design of the city’s wastewater system, which was originally intended to prevent basement flooding.

Work already is underway at the Bird Island Wastewater Treatment Facility at Freedom Park, which is the first phase of facility upgrades and will significantly reduce overflows into the Niagara River. The 50+ planned projects will directly benefit other Western New York waterways including the Scajaquada Creek, Erie Basin Marina, Black Rock Canal, and the Buffalo River among others, by reducing sewer overflows.

“I am pleased that the Buffalo Sewer Authority’s Queen City Clean Waters initiative is highly focused on community engagement and making an historic and needed investment in the city’s wastewater system,” said City of Buffalo Acting Mayor Christopher P. Scanlon. “The Queen City Clean Waters inclusive and equitable approach is a priority of my administration and will help improve the quality of life of our underserved populations.”

The Queen City Clean Waters initiative includes a collaborative stakeholder engagement process that will be overseen by a Citizens Advisory Committee (CAC).

The CAC will play a crucial role in providing a platform for residents to voice their concerns and provide feedback and suggestions, on proposed projects in their communities. The CAC will be comprised of diverse community members and will act as a bridge between the BSA and residents, ensuring that the infrastructure investments reflect the needs and priorities of the community.

Jill Jedlica, executive director of Buffalo Niagara Waterkeeper and a member of the CAC said, “Our organization has been advocating for years for a program to once and for all reduce the harmful bacterial pollution caused by sewage overflows into our area waterways. This initiative under the auspices of the BSA gives us hope that one of our major advocacy priorities is being addressed in such a comprehensive and thorough manner.”

In addition to the CAC, Buffalo Sewer Authority will partner with workforce development entities to engage residents in project areas and provide them with valuable career training and job opportunities.

Through our historic financial commitment to the Queen City Clean Waters initiative, the BSA Board of Directors is establishing a precedent of making investments in underserved communities that are historically neglected by infrastructure investments,” said Buffalo Sewer Authority Chairman Herbert L. Bellamy, Jr. “This initiative will foster strong community partnerships, create meaningful workforce opportunities, and result in long-term environmental and economic benefits for future generations in Buffalo.”

Throughout the project schedule, BSA will host informational workshops to inform potential design consultants, construction contractors, and vendors of initiative opportunities. Specifically, BSA aims to create space for Disadvantaged, Women, and Minority Business Enterprise (D/W/MBE) firms to connect with prime contractors and other partners.

Design consultants, construction contractors, and vendors interested in learning about upcoming capital project opportunities are encouraged to attend a virtual Informational “Open House” Session on Wednesday, October 16, 2024, at 11:00 am EST.

Search

CATEGORIES

Bid Opportunities (18)

Construction Projects (12)

Consultant, Contractor, Supplier Opportunities (18)

News & Updates (44)

Public Comment (2)

RFP & RFQ Opportunities (10)

Uncategorized (2)

Vendor Opportunities (18)

Vendor, Bid, RFP & RFQ Opportunities (13)

ARCHIVES

Select Month

RECENT POSTS

Invitation to Bid: Breckenridge Street CSO Control Project

RFP: Sidney-Lark and Edison-Martha Offline Storage Tanks

INDEPENDENT AUDIT CONCLUDES BUFFALO SEWER AUTHORITY USED CLEAR AND TRANSPARENT ACCOUNTING PRACTICES FOR ANNUAL FINANCIAL REPORT

National Day of Mourning

Cornelius Creek CSO Backwater Gate Flooding Mitigation Project

META

Log in

Entries feed

Comments feed

WordPress.org

BUFFALO
SEWER AUTHORITY

Buffalo Sewer Authority
City Hall Room 1038
Buffalo, NY 14202
716-851-4664

Report a Problem
Request a Document
Pay a Bill
News and Updates

Contact Us
Careers
Health Insurance & Benefits Registration
Employee Portal

© 2023 Buffalo Sewer Authority

"The Powerful Voice of the Black People"
THE BUFFALO CRITERION
INCORPORATED

BUFFALO, NY – The Buffalo Sewer Authority (BSA) has announced the Queen City Clean Waters Fair coming on August 29th from 4 PM – 7 PM at Hoyt Lake. The Clean Waters Fair is providing the residents of Buffalo with an evening of food + music, giveaways, environmental educational activities, and interactive displays so residents can learn more about the Queen City Clean Waters Initiative.

The Queen City Clean Waters Initiative is an approximately $1 billion effort to reduce combined sewer overflows into local waterways. Over the next 15 years various infra structure enhancements at 50+ sites across the city will take place, including $250 million in upgrades at the Bird Island Waste water Treatment Facility, the second largest waste water treatment facility in New York State serving over 550,000 customers.

“Community collaboration is a key driver in the implementation and the mission of the Queen City Clean Waters Initiative; the Clean Waters Fair gives residents another opportunity to engage with BSA officials and program representatives to learn how they can participate and have a voice in this once in a lifetime investment in our community,” said Rosaleen Nogle, PE, BCEE, BC WRE Principal Sanitary Engineer, Buffalo Sewer.

The Clean Waters Fair will feature representatives from the nine council manic districts, BSA customer assistance and resources team members, informational tables that highlight multiple aspects about the initiative, including green infrastructure, sewer technology, BSA history, and more.

The remaining tables will be for workforce and MWBE/DBE certification opportunities, demonstrations of engineering and water/wastewater principles and tools among other.

“We have activities and stations for all ages to come enjoy the warm summer weather and join us on this journey of creating a cleaner, resilient, and equitable environment for Buffalo,” added Nogle.

Stay tuned for future announcements about partners, vendors, and other organizations who will be a part of the Clean Waters Fair.

Comments (0) Newest First

Preview Post Comment...

‹ Nami Buffalo & WNY, Veterans One-Stop Center Bring Free Nami Homefront Class To Region

BMHA Board Of Commissioners Approves Multiple Actions Moving The Transformational Marine Drive Apartments Redevelopment Closer To Construction ›

APPENDIX G: QUEEN CITY CLEAN WATERS FAIR



QUEEN CITY

CLEAN WATERS FAIR

FRIDAY, AUG 29th | 4:00 - 7:00 PM | HOYT LAKE IN DELAWARE PARK

Join us on August 29, 2025 for our Water and Environment Fair at Hoyt Lake in Delaware Park...free entry and open to the public!

Enjoy a fun-filled evening featuring games, bookbag and book giveaways, environmental activities and watershed demonstrations, and virtual tours of Buffalo Sewer Queen City Clean Waters projects happening in your neighborhood.

FOOD + MUSIC

GAMES + PRIZES

WATER ACTIVITIES

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

QueenCityCleanWaters@buffalosewer.org

DATE	NAME	NOTES
7/9/2025	CM David Rivera	Rosey In-person meeting
7/21/2025	University District CM Wyatt	Rosey Email invite to QCCW Fair
7/21/2025	Masten District Councilwoman Everhart	Rosey Email invite to QCCW Fair
7/21/2025	South District CM Scanlon (Acting Mayor)	Rosey Email invite to QCCW Fair
7/21/2025	Filmore CM Nowakowski	Rosey Email invite to QCCW Fair
7/21/2025	Niagara CM Rivera	Rosey Email invite to QCCW Fair
7/21/2025	Delaware District CM Feroleto	Rosey Email invite to QCCW Fair
7/21/2025	Lovejoy District Bollman (Pro Tempore)	Rosey Email invite to QCCW Fair
7/21/2025	Ellicott District Councilwoman Halton-Pope	Rosey Email invite to QCCW Fair
7/21/2025	North District CM Golombek	Rosey Email invite to QCCW Fair
7/21/2025	Erie County Legislator Micheal Kooshoian	Rosey Email invite to QCCW Fair
7/21/2025	Erie County Legislator Lawrence Dupre	Rosey Email invite to QCCW Fair
7/21/2025	Erie County Legislator Taisha St. Jean	Rosey Email invite to QCCW Fair
7/29/2025	County Executive - Marc Poloncarz	Rosey Email invite to QCCW Fair
8/19/2025	Assembly Member - Crystal People Stokes	Rosey Email invite to QCCW Fair
8/19/2025	State Senator Sean Ryan	Rosey Email invite to QCCW Fair



FRIDAY, AUG 29th | 4:00 - 7:00 PM | HOYT LAKE IN DELAWARE PARK

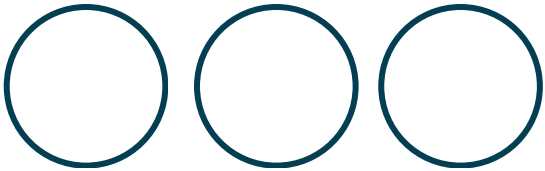


FRIDAY, AUG 29th | 4:00 - 7:00 PM | HOYT LAKE IN DELAWARE PARK

CLEAN WATERS FAIR

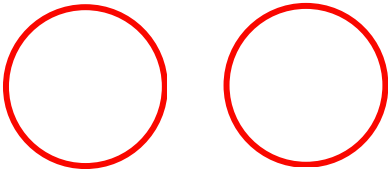
BUFFALO SEWER AUTHORITY TABLES

Visit **at least 1** of the BSA tables and collect **1 sticker.**



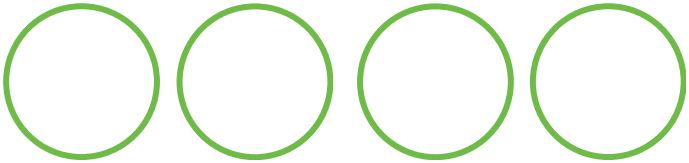
DISTRICT TABLES

Learn about projects in your district and collect **1 sticker**.



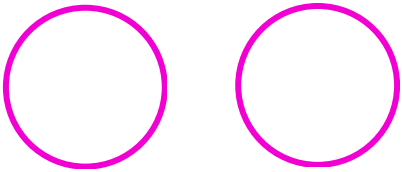
ACTIVITY TABLES

Participate in hands on activities and collect at least **2 stickers**.



BONUS ACTIVITIES

Participate in the book club or the sound bowls for **bonus stickers**.



Collect at least **5 stickers** to receive a **bookbag** (while supplies last).
Collect 10 stickers to be entered into a raffle for a ride on the Pink Swan Boats.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

THANK YOU TO OUR COMMUNITY PARTNERS!

Engineers for a Sustainable World

BUFFALO NIAGARA WATERKEEPER®

aquarium of niagara
WHERE INSPIRATION SWIMS

BEAM
POWERING BRIGHTER FUTURES

SECOND chapter
BOOKSTORE

YOGAMEBLAC
MENTAL ELEVATION TO BE LIBERATED AND CONSCIOUS

PHOENIX INNOVATION GROUP

Stantec

DEPARTMENT OF ENVIRONMENT AND PLANNING
SEAL OF ERIE COUNTY STATE OF NEW YORK

RWC

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

nationalgrid

NORTHLAND
WORKFORCE TRAINING CENTER

ECLIPSE
ERIE COUNTY LOW INCOME PROGRAM FOR SUSTAINABLE ENERGY

BUFFALO 34 AND MORE RECYCLES

M&T Bank Corporation

FOOD

Twisted icee

MONEYBAG$ DUMPLING$

HALF LUNA
DELECTABLE EMPANADAS & LATIN DELIGHTS

What's Pop-in'
GOURMET POPCORN

Welcome

TO QUEEN CITY CLEAN WATERS FAIR

FRIDAY, AUG 29th | 4:00 - 7:00 PM | HOYT LAKE IN DELAWARE PARK

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

QueenCityCleanWaters@buffalosewer.org

July 21, 2025

Leah Halton-Pope
Ellicott District Councilwoman
65 Niagara Street

Dear Councilwoman Halton-Pope,

On behalf of the Buffalo Sewer Authority and the Queen City Clean Waters initiative, we are pleased to invite you to the City of Buffalo Queen City Clean Waters Fair, taking place on Friday, August 29th from 4:00 PM to 7:00 PM at Hoyt Lake in Delaware Park.

This family-friendly event is a celebration of Buffalo's leadership in advancing green infrastructure, environmental stewardship, and community-centered stormwater solutions. The QCCW Fair will feature interactive exhibits, community engagement activities, local vendors, music, food, and opportunities to learn more about this initiative to create a cleaner, greener Buffalo. The QCCW Fair will also highlight the low-income and senior discount programs to ensure that this program does not create an inequitable burden on our most vulnerable residents.

Your presence would be an honor, and we welcome your participation in recognizing the community partners and residents who are driving this important work forward. The Queen City Clean Waters Fair also provides a unique opportunity to connect with constituents, stakeholders, and local organizations committed to improving water quality, climate resilience, and environmental equity across Buffalo.

Please RSVP by August 1, 2025, to Art Hall at art@thehallmarkfirm.com.

We hope you will join us for this exciting celebration. Thank you for your continued leadership and support.

Sincerely,

Rosaleen Nogle, PE, BCEE, BCWRE
Principal Sanitary Engineer
Buffalo Sewer Authority

cc: Walt Walker, Program Manager, BSA Capital Improvement Program
Nadia Mugisha, Deputy Program Manager BSA Capital Improvement Program
Arthur Hall, Project Lead, Queen City Clean Waters Public Engagement Team



Get Help Paying Your Water and Sewer Bill

Annual Discounts Available

	Sewer	Water
Low Income	$60	$106
Very Low Income	$90	$144
Senior Citizen w/Enhanced Star	$106	36%

Residential Affordable Sewer and Water Programs Annual Income Limits

Family Size	Very Low Income	Low Income
1	$33,950	$54,250
2	$38,800	$62,000
3	$43,650	$69,750
4	$48,450	$77,500
5	$52,350	$83,700
6	$56,250	$89,900
7	$60,100	$96,100
8	$64,000	$102,300

2025-2026 Housing Urban Development (HUD) Income Limits.

Behind on your bill? We also have payment plans.

Go to ***buffalo-water.promise-pay.com*** or scan the QR code to see if you qualify.

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

GET WATER WISE

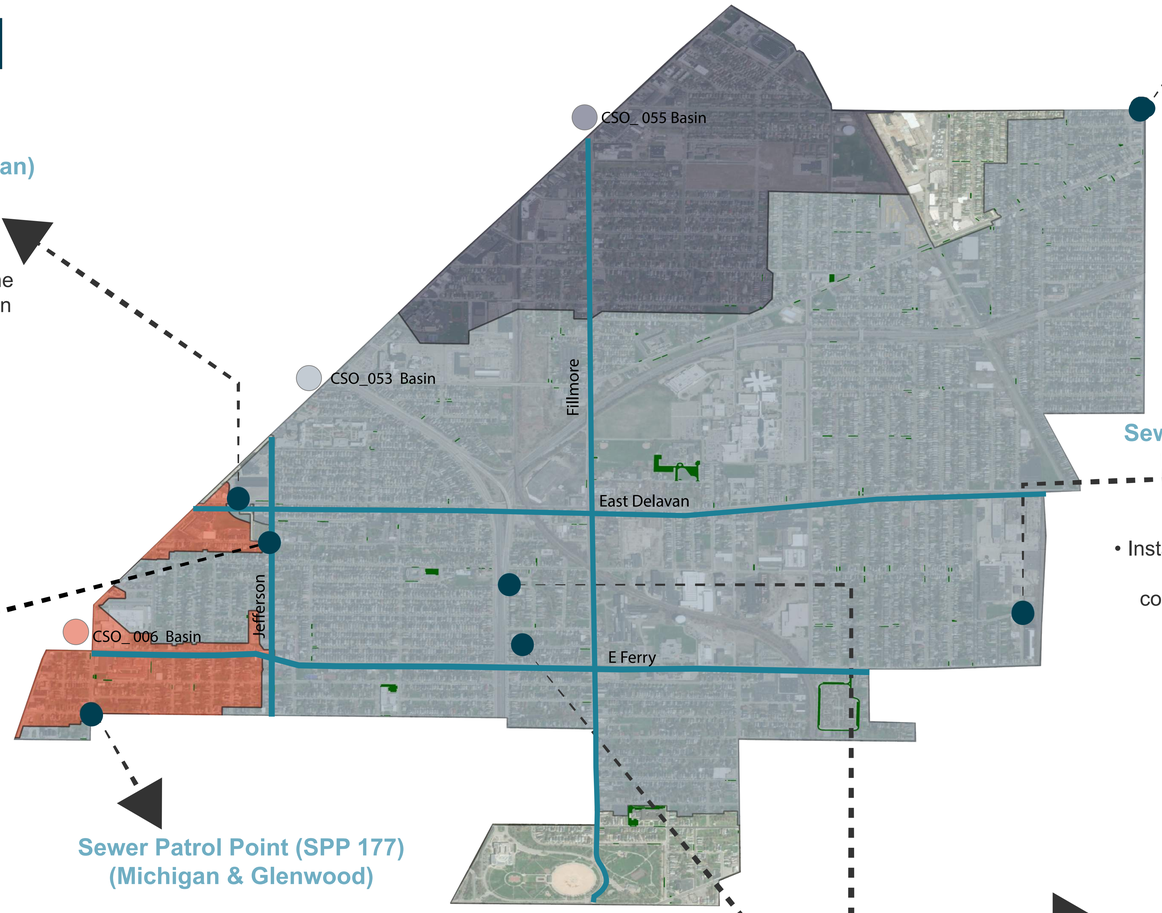
BUFFALO WATER managed by VEOLIA

MASTEN DISTRICT

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS



Offline Storage (OLS) (Jefferson & E Delavan)

Construction Timeline:
2028 - 2032

• Below-ground wastewater storage tank, under the parking lot at Jefferson Avenue and East Delavan Avenue.



Real Time Control Chamber at Sewer Patrol Point (SPP 229A)

IN CONSTRUCTION
Construction Timeline:
Spring 2025 - Fall 2025

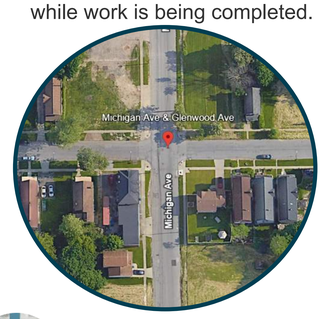
• Install new sanitary sewer, storm sewer, waterline and a storm water treatment device and replace lead water services encountered. Remove and install new trees, sidewalks and pavement.



Sewer Patrol Point (SPP 177) (Michigan & Glenwood)

Construction Timeline: Upcoming (Summer 2026 - Winter 2027)

• Three Locations:
• SPP175 - Michigan & Dodge
• SPP176 - Michigan & Riley
• SPP 177 - Michigan & Glenwood
• All work will be done within three manholes and residents will see traffic cones and signs while work is being completed.



Combined Sanitary & Storm Smart Sewer (Bailey & Amherst)

IN CONSTRUCTION
Construction Timeline:
Summer 2024 - Fall 2025

• Install a gate in the sewer and a control box near the sidewalk.



Sewer Patrol Point (SPP 337) (Colorado & Scajaquada)

Construction Timeline:
Spring 2027 - Winter 2028

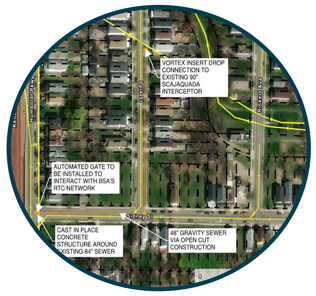
• Install a new chamber and drop shaft connection to the Scajaquada Tunnel. Industrial site entrance will be shifted west during construction, but local traffic should not be affected. Traffic cones and signs will be present.



Sidney Real Time Control

Construction Timeline:
2028 - 2032

• Install a new sewer, chamber, and drop shaft connection to the Scajaquada Tunnel.



Sewer Patrol Point (SPP 336B) (Humbolt & Lark)

Construction Timeline:
Summer 2026 -Winter 2027

• All work will be done within the manhole and residents will see traffic cones and signs while work is being completed.



LEGEND :

Project Locations

Arial View of Project Location

Major roads within the district

Green Infrastructure Projects

CSO_ 055 Basin

CSO_053 Basin

CSO_ 006 Basin

"All highlighted basins are associated with Green Infrastructure Goals"

Scan for more project information!

BUFFALO SEWER AUTHORITY

Breckenridge Street CSO Control

ABOUT THE BRECKENRIDGE STREET COMBINED SEWER OVERFLOW (CSO) CONTROL PROJECT

Why is Buffalo Sewer doing this project?

- Buffalo Sewer is working diligently to improve the City's existing sewer infrastructure in a cost-effective manner that will reduce combined sewer overflows (CSOs) impacting local waterways.
- This project will replace and rehabilitate sewers that are over 100 years old and redirect them on a different path to the wastewater treatment plant, while reducing CSOs to the Black Rock Canal.

What is included in this project?

West Ave. *(from Breckenridge St. to Lafayette Ave.):*

- New combined sewer main
- Replace combined sewers on each side
- Reconnect house / building laterals
- New lead-free water main
- Replacement of any existing lead water services with new copper services
- New road pavement from curb to curb

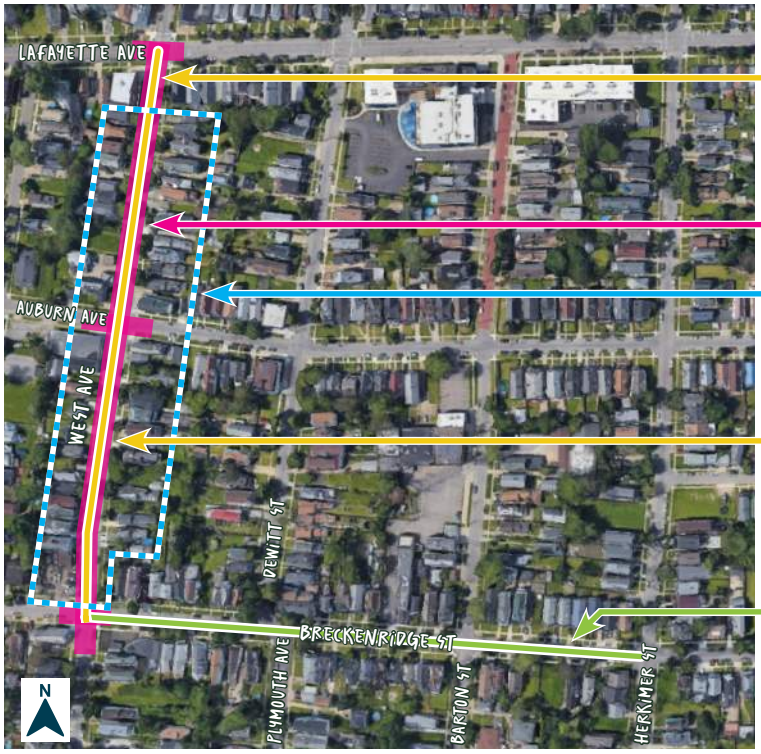
Breckenridge St. *(from West Ave. to Herkimer St.):*

- Lining and repair of the existing combined sewer

WHAT ARE THE BENEFITS?

- ☑ Reduce the Amount of Nutrients Flowing Into The Black Rock Canal During Storm Events and Improve Water Quality
- ☑ 8 Million Gallons of Combined Sewer Overflows Prevented to the Black Rock Canal in a Typical Year

PROJECT AREA



New Combined (Storm and Sanitary) Sewer in the center of **West Ave.** between **Lafayette Ave.** and **Breckenridge St.**, and a New Water Main

Limits of New Road Pavement

Reconnect Building Sewers and Replace Lead Water Services to Existing Building (both sides of **West Ave.**; approximate houses shown)

Replace Combined Sewer on Each Side of **West Ave.** between **Lafayette Ave.** and **Breckenridgedge St.**

Install a Liner in the Existing Sewer in the Center of **Breckenridge St.** between **West Ave.** and **Herkimer St.**

HOW WILL CONSTRUCTION IMPACT LOCAL BUSINESS AND SERVICES?

Construction won't impact local businesses, and detours will ensure that emergency services can access all locations despite any road closures.

WILL THERE BE CHANGES TO PARKING OF PUBLIC TRANSPORTATION DURING CONSTRUCTION?

Temporary changes to parking and public transportation may occur during construction, but services will continue with re-routed routes. Updates will be provided in advance.

TRAFFIC IMPACTS

During construction, residents can expect to see construction equipment in the road and new traffic patterns in place, including:

- Partial or full road closures
- Sidewalk closures
- Limited street parking
- Possible detours

The photos to the right show examples from previous Buffalo Sewer projects of what the traffic controls may look like.









LAFAYETTE AVENUE AND WEST AVENUE CLOSURE DETOUR

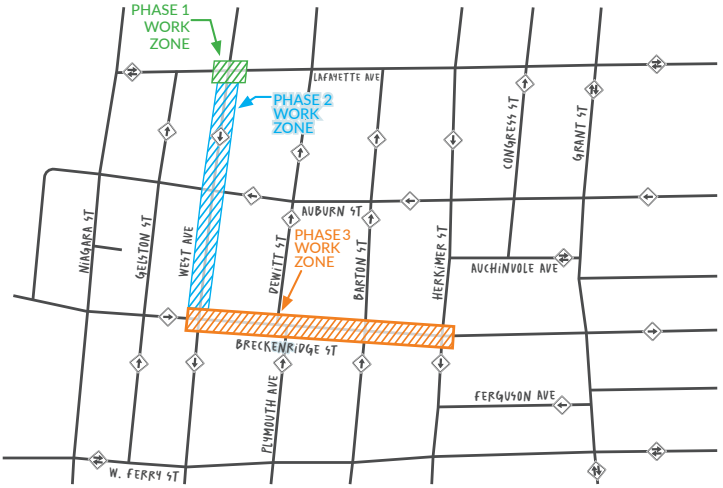
When construction reaches the intersection of Lafayette Avenue and West Avenue, the intersection will need to be closed for several weeks for construction of a new chamber and drop shaft. A detour will be in place during this time, as shown below.



EXPECTED TIMELINES

Construction is scheduled to start in Spring 2026 and finish by the end of 2028. It is expected that construction will be completed in sections (generally one block at a time) as shown in the graphic below. **The phased approach will help minimize temporary disruptions in the neighborhood, such as noise and dust, as much as possible.**

Notices will be hand-delivered to residents at least one week before construction starts with more detailed information.



HOW WILL THIS WORK BE FUNDED?

Buffalo Sewer will pay for this project with low interest loans, and will seek New York State grant funds to supplement the project funding.

BUFFALO SEWER AUTHORITY

QUEEN CITY CLEAN WATERS

Scan the QR code for more information and schedule updates during construction.

CONTACT: 716.851.4664 QueenCityCleanWaters@buffalosewer.org www.buffalosewer.org



Informational Session for Upcoming Buffalo Sewer Capital Projects Solicitations

Join Us to Learn More!

Buffalo Sewer will host a virtual Informational Session on Tuesday, September 16, 2025 at 10:00 AM ET. This session will highlight upcoming capital project opportunities under the Queen City Clean Waters Program for both professional services and construction contracts.

- Bird Island Treatment Facility Upgrades
- Combined Sewer Overflow (CSO) Storage
- Real-Time Control Smart Sewers
- Sewer Improvements & Modifications
- Green Infrastructure Installation
- General Professional Engineering Services Contracts

➜ **Connect** with prime vendors and potential teaming partners.

➜ **Learn** about upcoming Buffalo Sewer Professional engineering services and construction contracts related to capital projects of various sizes.

➜ **Access** small business support services.

All are welcome to attend; women and minority-owned businesses (W/MBE) and service-disabled veteran owned business (SDVOB) are especially encouraged to attend.

A recording of session and the attendance list will be distributed on the Buffalo Sewer website.

Tuesday
September 16, 2025
10:00 AM - 11:30 AM ET

via Microsoft Teams

Register Now!

To register, scan the QR code or visit: *https://buffalosewer.org/how-we-can-help-you/consultant-contractor-supplier-opportunities/*

BUFFALO 90 YEARS 1935-2025 SEWER AUTHORITY

BUFFALO SEWER AUTHORITY
QUEEN CITY CLEAN WATERS

APPENDIX H: COMMUNITY QUESTIONS

COMMUNITY QUESTIONS - ENGINEER RESPONSES

Frequently Asked Questions	Where Question Came From	Topic	Answers
Why was the Roosevelt Park location selected?	4/15/25 University District Block Club Coalition Meeting	Roosevelt Park OLS	Projects are occurring all throughout the city, not just this specific location. The park was chosen since it has the ideal amount of public space needed to input this large tank without disrupting the community too much.
Will the tank be underground?	4/15/25 University District Block Club Coalition Meeting	Roosevelt Park OLS	Yes, the storage tank will be underground, about 15ft deep.
Will the park still be usable?	4/15/25 University District Block Club Coalition Meeting	Roosevelt Park OLS	Yes, only a specific portion of the park will be unusable during the duration of construction, but once construction finishes, the park will go back to its full usability.
Are you in contact with the parks department? Does this affect the Roosevelt Park project that was supposed to occur?	4/15/25 University District Block Club Coalition Meeting	Roosevelt Park OLS	Yes, the project team is in contact with the parks department, and it will not affect any of the parks ongoing projects.
Will there be a risk to nearby homes or utilities?	4/15/25 University District Block Club Coalition Meeting	Roosevelt Park OLS	All work will be done within the park, no impact should occur to nearby residences. There will be a fence up during construction.
What happens when the tank gets full?	4/15/25 University District Block Club Coalition Meeting	Roosevelt Park OLS	The tank will be monitored and drained to the wastewater treatment plant when it has capacity. Usually, draining will occur within one to two days. Water won't sit much longer than that.
Can you attend other block club events?	4/15/25 University District Block Club Coalition Meeting	Roosevelt Park OLS	Yes, provide us with information and we will look to attend other events.
Are we still drinking chlorinated water or fluoride-treated water?	North Council District Meeting	Water quality	Yes, to both. The water at Buffalo Water's treatment facility is cleaned with chlorine, and fluoride is also added. You want a certain amount of chlorine to stay in the drinking water because it keeps the water safe to drink. Chlorine prevents waterborne illnesses such as typhoid from becoming an issue. Fluoride is added to help with teeth, specifically children's teeth. Our system has also moved towards the use of liquid bleach rather than chlorine. Please note that Buffalo Sewer Authority is a separate agency from the Buffalo Water Board.
How does Buffalo Sewer Authority deal with the disposal of sludge?	North Council District Meeting	General design	The Buffalo Sewer Authority incinerates their sludge. It is turned into ash, which is then sent to a landfill. Landfills are beginning to fill up, which is a challenge they are facing.
Where are the landfills located that Buffalo Sewer uses to dispose of their ash from sludge incineration?	North Council District Meeting	Land use	Landfills are typically located in rural areas. There are ones up in Porter and others in Chaffee and Gowanda in the Western New York area.
Are you working with Buffalo Niagara Waterkeeper on this initiative?	Niagara Council District Meeting	Pre-construction surveys	Yes, Buffalo Sewer hasa good relationship with Buffalo Niagara Waterkeeper. We often are guest speakers at their events; they also are a part of our stakeholder advisory committee for the initiative. We keep each other in the loop on each of our projects and often work together when we are able.
I live in the North Buffalo area, my basement tends to flood during heavy storm events, why is this?	Niagara Council District Meeting	Environmental Investigation	In North Buffalo, this tends to happen more often due to the shallow rock below ground and how deep the sewer is. The way that pipes connect to sewer mains for many homes in North Buffalo needed to be constructed with the topography in mind. Many of the pipes are built flat and then straight down to the main. Over time due to various reasons the pipes have begun to disconnect from the sewer main, therefore not all flow coming out of the home is getting to the main. That is most frequently the reason for this area of the city.
Why has the Buffalo Sewer Authority instituted programs like Get the Lead Out, Get Water Wise, for example?	Masten Council District Meeting	Water quality	Get the Lead Out is a Buffalo Water program because it's your drinking pipes that have lead. It is not the main pipes; it's the pipe between the main and your home. Get Water Wise is a project between Buffalo Sewer Authority and Buffalo Water that is about saving the people of Buffalo that cannot afford their sewer and water bills. If you are low-income or elderly, you can get breaks on your sewer and water bills. You can learn more at getwaterwisebuffalo.org.
Will Buffalo Sewer be monitoring nearby residences and their utilities when they are blasting/drilling down to the project sites?	Masten Council District Meeting	Pre-construction surveys	Yes, Buffalo Sewer will monitor the surrounding residences and plan to survey foundations in advance of construction work so that if any damage occurs, Buffalo Sewer / contractor will pay for it.
Will there be monitoring for any onsite contaminants in the soil/air/etc. while work is being done?	Masten Council District Meeting	Environmental Investigation	Yes, there will be monitors on site while work is being done, and any disturbed soil will be tested for contaminants prior to construction.

Will hiring be local?	Masten Council District Meeting	Pre-construction surveys	Public procurement law needs to be followed, but included in bids are goals for hiring city residents, local small businesses, and minority and women owned businesses.
How can residents get info?	Masten District - (Sticky note on FAQs Poster)	Pre-construction surveys	https://buffalosewer.org/construction-projects/queen-city-clean-waters/
Is minority hiring a priority?	Masten District - (Sticky note on FAQs Poster)	Pre-construction surveys	Public procurement law needs to be followed, but included in bids are goals for hiring city residents, local small businesses, and minority and women owned businesses.
Are people still getting sick? (In reference to disease from bodies of water where there are sewage overflows)	Lovejoy Council District Meeting	Public health	No, there have not been reported cases of typhoid or cholera in quite a while. People can still experience symptoms of E. coli and other water born illnesses when they go kayaking or otherwise interact with the waters immediately after a storm.
When my bill comes, it's got both the water and sewer on it, they are not the same, right?	Lovejoy Council District Meeting	Sewer/water bill	No, Buffalo Sewer Authority is a separate agency from the Buffalo Water Board. The Buffalo Water Board is a public private partnership between the City of Buffalo and Veolia. Veolia collects both the Buffalo Sewer Authorities rates and the Buffalo Water Authorities water bill rates.
What about green infrastructure? Is there nothing you can do that way to minimize the overflows and that?	Lovejoy Council District Meeting	Green Infrastructure	Buffalo Sewer is implementing green infrastructure, and we will be implementing green infrastructure in Lovejoy. It's going to be a lot less concentrated; we are focusing on the large-scale projects with this outreach. We are currently looking to invest about $80 million as a part of our Raincheck 2.0 in green infrastructure, mostly throughout the East Side, whether it's Lovejoy, Masten, University, Fillmore, and Ellicott districts.
Why did you choose to locate the storage tanks in green areas,	Lovejoy Council District Meeting	General design	Buffalo Sewer chose those areas because they are mostly public lands.
In Houghton Park, part of the park is an old landfill, why can't you put the tank there?	Lovejoy Council District Meeting	Land use	Buffalo Sewer is trying to avoid those areas to minimize the hazardous waste management. We are trying to minimize costs while increasing public benefits. That area of the park is undisturbed and contained and we will do our best to leave it that way.
What is the decomposition rate on the materials used on the underground collection?	Fillmore Council District Meeting	General design	The underground storage facilities are going to dewater within 48 hours and then they are going to be flushed out, it's not expected that there's going to be significant levels of decomposition happening in those tanks. They are also below grade and that lessens the exposure to any odors, it also lowers the rate of decomposition because you are now at ground temperature instead of being exposed to sunlight which increases decompositions rates. So, it's expected that there's going to be minimal issues of decomposition in these tanks.
What are you doing about brownfield contamination?	Fillmore Council District Meeting	Public health	For areas of contamination found during construction, Buffalo Sewer will need to look at what kind of contamination we are dealing with, and the impacts of that contamination on the structures we are working with. Depending on the types of contamination, we may go out significantly into contaminated areas that we do not need to excavate for our construction, because it could have a deleterious effect on the structures themselves, it can degrade the concrete, it can degrade the iron. It does not leech into our system, it does not have the ability to impact our system, we are really only going to go as far as we need to go to protect our workers during installation and construction. Our goal is not to remediate every brownfield site in the City of Buffalo. Our goal is to deal with combined sewer overflows, so we will deal with brownfields as we encounter them during construction, but that's secondary to what we need to accomplish and what we have funding and funding authority to accomplish.
As far as brownfield contamination, are you working with the DEC?	Fillmore Council District Meeting	Public health	Yes, there will be some sites that we are working within, that are within known brownfield areas, and with those we will work from the beginning with DEC on existing remediation strategies that they have in place.
Do you work with Buffalo Waterkeeper?	Fillmore Council District Meeting	Pre-construction surveys	Buffalo Waterkeeper is one of our stakeholders on our overall plan, and they are aware of what we're doing, but their main piece is the waterways themselves. The New York State Department of Environmental Conservation has scientists and engineers that specialize in brownfields and also in spills management. We have very good relationships with all of those individuals as well.
How will you be dealing with rodent control?	Fillmore Council District Meeting	Odor; air quality; rodents	As Buffalo Sewer is doing this work, we are taking best practices from places like New York City and other larger cities that have even worse rodent problems than the City of Buffalo has. Taking their best practices for construction and incorporating them into our design specifications and what we have to hold contractors accountable so that we're protecting the whole City of Buffalo because Buffalo Sewer Authority, we're your neighbors too, we don't want rodents either.

What are the construction hours?	Fillmore Council District Meeting	Pre-construction surveys	We do restrict our contractors, generally it's 8 to 4, it can be 7:30-3:30, it depends on which community specifically we're working in and what that communities waking hours are. It's Monday through Friday, we're off on holidays, throughout the design process we are looking for ways that we can reduce noise impacts, reduce vibration impacts, looking at alternative routings.
What agencies will be doing the soil testing?	Fillmore Council District Meeting	Pre-construction surveys	Ultimately, Buffalo Sewer is responsible for completing the soil testing. For Sidney at Lark, Buffalo Sewer is contracting with consulting firms CHA and Hazen Engineering who will oversee additional environmental testing for design purposes. Preliminary testing has been completed by Atlantic Testing Laboratories. It is not expected that contaminated materials will be encountered for this project, but the bedrock itself does provide hazards to workers that need to be addressed.
Rodent migration?	Fillmore District - (Sticky note on FAQs poster)	Odor; air quality; rodents	As Buffalo Sewer is doing this work, we are taking best practices from places like New York City and other larger cities that have even worse rodent problems than the City of Buffalo has. Taking their best practices for construction and incorporating them into our design specifications and what we have to hold contractors accountable so that we're protecting the whole City of Buffalo because Buffalo Sewer Authority, we're your neighbors too, we don't want rodents either.
Should I drink bottled water?	Ellicott Council District Meeting	Public health	No, because of the microplastics in water bottles. It would be a good idea to invest in a water filter for your home. The main concern would be lead from lead pipes in older homes, but the only way that gets into your water is if any construction work is shaking the pipes underground. Otherwise, your tap water is held to higher safety requirements than bottled water.
What are some opportunities for businesses that are four or five people?	Ellicott Council District Meeting	Pre-construction surveys	There are opportunities in the community outreach, design, and the professional services piece; there are also opportunities for suppliers, special construction, serving as subcontractors, and on some of the smaller projects
More details about Delaware & Hertel in relation to Gates Circle? Are we going to see lots of giant holes in 2 years?	Delaware Council District Meeting	General design	The project at Gates Circle is different. Delaware & Hertel's project is more like the project that occurred at Oak & Broadway. This project is going to be a much larger hole, but it's going to be all in one spot, rather than multiple giant holes. The Delaware & Hertel project is an in-line storage project. The Gates Circle Project will be completed this year (2025).
Why is the Delaware District project scheduled so far out in the QCCW project timeline? Will progress/monitoring of other QCCW projects impact the Delaware Project?	Delaware Council District Meeting	Pre-construction surveys	The Delaware District Projects are the latest because they only impact the Niagara River. Projects impacting the Scajaquada Basin/Black Rock canal were prioritized because the water quality impacts of combined sewers are greater on those waterbodies rather than the Niagara River
What is in jeopardy with EPA/environmental grants? What about 2012 Consent Decree funding? What are state funding sources?	Delaware Council District Meeting	Pre-construction surveys	Any funding coming out of Washington DC right now is in jeopardy. There was no funding associated with the 2012 Consent Decree. NYS has a Clean Water Revolving fund; this funding is fairly well managed and is a source of funding for Buffalo Sewer. NYS also has taken on an Environmental Bond that is another source of Buffalo Sewer funding. At this moment, Buffalo Sewer is not anticipating trying to go after any federal grants.
Buffalo handles ½ of rain "per day", what does future capacity look like?	Delaware Council District Meeting	General design	There is no fixed number of capacities "per day". Modeling is done for each large storm. The major concerns are rainfalls that are coming down extremely fast, such as ¼ inch in 15 minutes.
Is there currently a sewer crossing the bathtub section of Route 33?	Delaware Council District Meeting	Pre-construction surveys	The bathtub section of the 33 is where it is because of the Scajaquada Drain. There needs to be clearance for the Scajaquada Drain to run underneath the road. Underneath the bathtub section does include part of the Scajaquada tunnel, the tunnel is 50ft below ground surface, and the Scajaquada Drain is 10ft below ground surface. Part of the design of the 33 was intentional to be able go around the Scajaquada Drain.
Why was Sidney Street selected?	Northland Taxpayer Association	Sidney-Lark design	The location was selected due to the existing sewer infrastructure in the area. Due to the deep depths of the existing sewers, the underground tank will be designed to drain by gravity, avoiding need for loud and costly pumps to drain the tank. The City of Buffalo also owns the land on the proposed site.
Are these storage tanks or filters?	Northland Taxpayer Association	Sidney-Lark design	These are storage tanks to help collect excess volumes of combined stormwater and wastewater during storm events to prevent combined sewer overflows into the Scajaquada creek.
How large are they?	Northland Taxpayer Association	Sidney-Lark design	The proposed underground tank will be approximately 100 feet by 125 feet.

How will they be emptied/cleaned?	Northland Taxpayer Association	Sidney-Lark design	The tank will be emptied via gravity. After a storm event that activated the tank, a flushing system will wash away any leftover debris.
Are they similar to septic tanks?	Northland Taxpayer Association	Sidney-Lark design	No, these tanks are simply for storage during rain events and waste will be conveyed back to the wastewater treatment plant for treatment.
How much infrastructure will be removed?	Northland Taxpayer Association	Sidney-Lark design	Two sewer connections to the tank are required. The roadway along Sidney Street towards Humboldt Pkwy will be disturbed during construction of the sewer connection from the tank to the main line sewer that runs along Humboldt. Trenchless operation is planned along Lark to limit disturbance for this connection, with the road being disturbed at the connection point only.
What will it look like once the project is completed?	Northland Taxpayer Association	Sidney-Lark design	The tank will be underground and not visible to the community; however, there will be a small utility building to house electrical equipment and the water source to clean the tank.
How will the public and local residents be informed about the final	Northland Taxpayer Association	Sidney-Lark design	Through various stakeholder and community engagement meetings.
What will the project site and surrounding area look like during construction?	Northland Taxpayer Association	Sidney-Lark design	There may be temporary disruptions. Final conditions will be determined as part of the design process.
Why is the construction timeline estimated at five years?	Northland Taxpayer Association	Sidney-Lark design	This is a preliminary estimate and includes mobilization and demobilization activities.
What will the site conditions be like during extended periods of downtime throughout construction?	Northland Taxpayer Association	Sidney-Lark design	During downtime, the contractor will be required to restore the site and minimize closures and disturbances.
Why were Sidney and Lark Streets selected as the project location?	Northland Taxpayer Association	Sidney-Lark design	Based on a hydraulic model created for the Long Term Control Plan, this site was identified as maximizing CSO (combined sewer overflow) reductions.
How will this project impact nearby homes, particularly those with	Northland Taxpayer Association	Sidney-Lark design	This project will not disturb any laterals at homes. Blasting is not permitted.
Will BSA provide any assistance to homeowners for reconnecting their laterals to the new infrastructure?	Northland Taxpayer Association	Water Service	Lead service lines will be replaced if encountered.
Will there be any interruptions to drinking water or sewer service during construction?	Northland Taxpayer Association	Sidney-Lark design	There may be temporary shutdowns, not exceeding 1–2 hours. Homeowners will receive advance notice.
What should residents expect to see once construction is complete?	Northland Taxpayer Association	Sidney-Lark design	All structures will be underground. Disturbed areas (roads, sidewalks, lawns) will be restored. The site may offer opportunities for community uses (e.g., parks, education centers). An above-ground control panel may be visible
Will crews conduct post-construction inspections of the	Northland Taxpayer Association	Sidney-Lark design	Yes, BSA's Sewer Maintenance Department will inspect as needed.
Will old or aging infrastructure be replaced as part of this project? What are the risks of connecting new components to older	Northland Taxpayer Association	Sidney-Lark design	Existing infrastructure will be assessed during construction to determine its condition.
What potential issues might arise after construction is completed?	Northland Taxpayer Association	Sidney-Lark design	The program includes processes for learning from past projects to minimize issues.
What measures will be in place to control rodents, dust, and odors	Northland Taxpayer Association	Odor; air quality; rodents	These controls are included in the contract documents.
Will excavated soils be tested for potential contamination? At what stage does testing occur, and what steps are taken if	Northland Taxpayer Association	Environmental Investigations	Soil borings for contamination testing are part of the design process.
Is this project connected in any way to the 33 Kensington	Northland Taxpayer Association	Highways & Freeways	No. The project team understands the sensitivity of the area and this project is unrelated.
Will Buffalo Niagara Waterkeeper or similar environmental groups	Northland Taxpayer Association	Pre-construction surveys	Yes
Who are the members of the QCCW Program Stakeholder Advisory Committee (SAC), and what is the process for appointing new	Northland Taxpayer Association	QCCW Stakeholder Advisory Committee	The current list of QCCW SAC members can be found at https://buffalosewer.org/construction-projects/queen-city-clean-waters/
How are nearby property owners who do not attend community meetings informed about project updates?	Northland Taxpayer Association	Pre-construction surveys	Through flyers, stakeholder meetings, mailings, and a text message system.
How often and for how long will at-grade vent structures be	Northland Taxpayer Association	Pre-construction surveys	Dedicated BSA Sewer Maintenance staff will manage ongoing cleanout operations.
Is there any possibility of shortening the five-year construction	Northland Taxpayer Association	Sidney-Lark design	The timeline will depend on the final design.
Will construction occur in the center of the road, and will	Northland Taxpayer Association	Pre-construction surveys	When feasible, yes
Does a sewer connection come from Fillmore Avenue or Humboldt	Northland Taxpayer Association	Sidney-Lark design	Humboldt Parkway
What is the process for joining a local project-specific advisory or	Northland Taxpayer Association	Pre-construction surveys	Invitations will be extended to interested residents
What are the standard hours of operation for construction activities?	Northland Taxpayer Association	Pre-construction surveys	Work will occur during standard working hours. The project team will coordinate with other stakeholders to minimize disruptions.
Which organization or contractor will be completing the work?	Northland Taxpayer Association	Pre-construction surveys	Only local contractors who meet all contract requirements.
Will the contractor be a local company?	Northland Taxpayer Association	Pre-construction surveys	Yes. The QCCW program supports local workforce and economic development.
Will there be an on-site inspector or oversight team during	Northland Taxpayer Association	Pre-construction surveys	Yes. Each project will have a designated on-site inspector and safety coordinator.
Is the 90 million gallon reduction in CSO (combined sewer overflow) volume for the entire QCCW program, or is it specific to	Northland Taxpayer Association	Sidney-Lark design	It applies specifically to the Sidney & Lark project.

What is the purpose of the specific project?	East Delavan FAQ	East Delavan Sewer Improvements design	This project will upgrade the Buffalo Sewer Authority's sewer system along East Delavan Avenue, Florida Street, and Spillman Place. New underground facilities will store rainwater and sewage, (also known as combined sewage), and send it to the Bird Island Wastewater Treatment Facility. Goals: Reduce the number and volume of Combined Sewer Overflows, also known as CSOs, Prevent combined sewage from backing up into buildings or flooding streets during large rain events, and improve the water quality in Scajaquada Creek, Hoyt Lake, and Black Rock Canal.
How does the specifc project benefit the surrounding community?	East Delavan FAQ	East Delavan Sewer Improvements design	This project will support the overall health of the community and protect our evironment by: reducing pollution entering our waterways and reducing future flooding events. It also includes community betterment initiatives, like: new trees and revitalized landscaping in the project vicinity, new water and sewer pipes and workforce development opportunities.
What is the timeline for the construction (start and end date)?	East Delavan FAQ	Pre-construction surveys	Construction on Florida Street is planned to start in the Fall of 2024 and end in the Spring of 2025. Construction on East Delavan and Spillman Place is anticipated to begin in 2026 and last up to 5 years.
Will there be noise during construction?	East Delavan FAQ	Pre-construction surveys	Yes, while construction is happening, when you are in the vicinity of the construction activities you will experience more noise than usual.
Will construction expose asbestos?	East Delavan FAQ	Air Quality during Construction	Asbestos pipe is rare in Buffalo, however, a small amount is present in this area. It will be replaced with PVC or reinforced concrete pipe. Construction contractors who disturb asbestos materials must be certified and licensed according to New York State law, as regulated by the Department of Labor. https://dol.ny.gov/system/files/documents/2024/02/p224-2-23-2024.pdf
How will the project affect air quality?	East Delavan FAQ	Air Quality during Construction	BSA will monitor air quality before and after construction to ensure the project doesn't negatively impact your neighnorhood's air quality. Workers will use hand-held and tripod-mounted monitors to detect chemical odors. The data will be included in an Environmental Impact Statement which will be available to the public for review and comment.
How will the construction affect traffic in the area? What about medical transport?	East Delavan FAQ	Traffic Control	It is anticipated some roadwats will be fully or partially closed during portions of the construction period. Traffic will be redirected or rerouted so you will be able to reach your destination. All traffic will be redirected based on the City of Buffalo guidelines.
How will the construction impact local businesses and services?	East Delavan FAQ	Pre-construction surveys	Construction won't impact local businesses, and detours will ensure emergency services can access all locations despite any road closures.
Will there be changes to parking or public transporation during construction?	East Delavan FAQ	Traffic Control	Temporary changes to parking and public transporation may occur during construction, but services can access all locations despite any road closures.
Will trees be cut down as part of this project?	East Delavan FAQ	Trees	On Florida Street, some trees located within the public right-of-way will be removed. BSA will plant new trees once construction is completed. Working with the City of Buffalo Bureau of Forestry, residents may help determine the species of the new trees.
Are there any community meetings or updates planned to keep the residents informed about the progress of the construction?	East Delavan FAQ	Pre-construction surveys	Community engagement began in August 2024, with updates via council district breakfasts, community events, and a Community Advisory Committee (CAC) of local residents and stakeholders. Interested in joing our CAC? Email: info@clementinegoldgroup.com
What is the decomposition rate expected and tested on the materials used for the underground collection units?	Fillmore District Community Meeting	Environmental Investigations	The materials used for the underground collection units are expected to have a 100-year design life with some rehabilitation likely at 50 years.
Please explain if soil site is found to be contaminated, how many feet away from the dig site and placement of overflow container will be remediated? What is the process and impact experience to adjacent residents?	Fillmore District Community Meeting	Pre-construction surveys	Testing will be conducted to the extent of the excavation, including those areas that may be disturbed for shoring and access rather than the structures themselves. In general, the total area of testing will extend 3-10 feet away from the structures. If contaminated material is encountered, it will be kept covered while stored on-site behind fencing and it will be covered before being removed from the site. The impact to adjacent residents would be limited to truck traffic from the removal of materials and noise associated with the excavation. Testing to date has not shown any contamination for the Sidney & Lark project site; however, there are concerns with the bedrock that will require air purification for workers within the deep shaft. Surface level odors and exposure to hazards is expected to be minimal.

Specifically what agencies will be responsible to complete the environment (soil etc) testing?	Fillmore District Community Meeting	Pre-construction surveys	Ultimately Buffalo Sewer is responsible to complete the soil testing. For Sidney at Lark, Buffalo Sewer is contracting with consulting firms CHA and Hazen Engineering who will oversee additional environmental testing for design purposes. Preliminary testing has been completed by Atlantic Testing Laboratories. It is not expected that contaminated materials will be encountered for this project, but the bedrock itself does provide hazards to workers that needs to be addressed.
How will this project affect Ralph Wilson Park Project? (Niagara/LaSalle)	QCCW Fair	Parks	It should not impact the (DWIP) parks project work.
What can I expect during construction?	Breckenridge CSO Brochure	Pre-construction surveys	Construction will be completed in sections (one block at a time) so that temporary distruptions in the neighborhood, such as noise and dust, will be minimized as much as possible. Sewage odors will NOT be present in homes, but may be present outside. During construction, residents can expect to see equipment in the road and new traffic patterns in place, as listed and shown below: partial or full roads closures, sidewalk closures, limited street parking, possible detours
Will my service (water and sewage) be affected?	Breckenridge CSO Brochure	Water Service	Residents may experience temporary sewer and water service interruption/ limited use. Residents will be notified of construction in advance and details will be provided at that time.
Why is Buffalo Sewer doing this project?	Breckenridge CSO Brochure	General design	Buffalo Sewer is working diligently to improve the City's existing sewer infrastructure in a cost-effective manner that will reduce combined sewer overflows (CSOs) impacting surface waters. This project will replace sewers that are over 100 years old and redirect them on a different path to the wastewater treatment plant. A water line on West Ave. will also be replaced, as well as any lead water services encountered.
What is included in this project?	Breckenridge CSO Brochure	General design	New combined sewer main, new water main on West Ave., from Breckenridge St. to Lafayette Ave., House/ building lateral replacement from the property line to the sewer main on both sides on West Ave., Reconnection of house/building laterals on Breckenridge St., Replacement of any leads water services
How is this project being funded?	Breckenridge CSO Brochure	Pre-construction surveys	Buffalo Sewer will pay for this project with a combination of New York State grant funds and low interest loans.
Where can I find more information?	Breckenridge CSO Brochure	Pre-construction surveys	For further information, please call / email Buffalo Sewer or scan the QR code below to see our website for information about this and other current projects. Phone: 716-851-4664 Email: QueenCityCleanWaters@buffalosewer.org Website: www.buffalosewer.org

APPENDIX G: Technical Memoranda on Project Scope and Schedule Updates

ITEM NO. 12

CHANGE ORDER NO. 1– SCAJAQUADA CREEK AND BLACK ROCK CANAL SMART SEWER PROJECT CONTRACT NO 82000074

CONTRACTOR:	ORIGINAL CONTRACT COST	$5,987,000.00
Mark Cerrone Inc.	PREVIOUS CHANGE ORDER	N/A
2368 Maryland Ave.	THIS CHANGE ORDER	$493,196.62
Niagara Falls, New York 14210	ADJUSTED CONTRACT COST	$6,480,196.62

WORK: Scajaquada Creek and Black Rock Canal Smart Sewer Project

---

DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1	Addition of project SPP 338 overflow weir modifications at Bailey Avenue & Kerns Avenue SPP338 work including installing a new weir wall, riser, and roof slab along with site restorations at Bailey Avenue & Kerns Avenue.
Item #2	Increase of existing allowance pay item G-6 budget due to additional insurance requirements and unforeseen subsurface conditions at several project sites under this contract.

REASON FOR CHANGE OR EXTRA WORK:

Item #1	Work at the intersection of Bailey and Kerns was already included in original contract and the addition of the modification to SPP 338 will reduce overall costs and ensure timely completion of this required work.
Item #2	The original contract included a $100,000.00 contingency allowance to be used to cover unforeseen site conditions related to the six project sites comprised under the contract. This existing contingency has been used for additional insurance premium and multiple unknown subsurface conditions.

COST OF CHANGE ORDER NO. 1:

Item #1	$268,196.62
Item #2	$225,000.00
THE TOTAL COST OF CHANGE ORDER NO 1:	$493,196.62

WHEREAS: On July 26, 2023 the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with Mark Cerrone, Inc., for Scajaquada Creek and Black Rock Canal Smart Sewer Project at a cost not to exceed $5,987,000.00; and

WHEREAS: The New York State Environmental Facilities Corporation (EFC) has awarded this project $3,333,000.00 in Bipartisan Infrastructure Law grant funding and $3,333,000.00 in Bipartisan Infrastructure Law subsidized financing; and

WHEREAS: The adjusted contract including Change Order No. 1 would remain within the original $3,500,000.00-$6,500,000.00 Engineer's Estimate range ; and

WHEREAS: The Project Consulting Engineer, T.Y. Lin (formerly Greeley and Hansen), Principal Sanitary Engineer, and staff have reviewed a request for Change Order No. 1 to Contract No. 82000074 in the amount of $493,196.62 as detailed above and recommend its approval.

NOW THEREFORE
BE IT RESOLVED: That the Board of the Buffalo Sewer Authority hereby approves Change Order No. 1 to Contract No. 82000074 as written in the above Agenda Item, increasing the contract cost in the amount of $493,196.62, making the adjusted contract cost $6,480,196.62. Expenses from this contract will be funded from Account No. 02000550-490740.

MOTION TO APPROVE

MADE BY DR. CAULFIELD

2ND BY MS. YOUNG -WATKINS

AYES 3 NOES 0

Board Meeting of June 25, 2025

MEMO



Date: December 22, 2025

To: Buffalo Sewer Authority

C: Rosaleen Nogle

From: Angela Hintz, JM Davidson Engineering, DPC

Subject: SPP 336B Modification
Addendum to CSO-053 Various Sewer Patrol Point (SPP) Modifications Projects

In early 2025, BSA submitted the Preliminary Engineering Report (PER) for the CSO-053 Various Sewer Patrol Point (SPP) Modifications Project (prepared by JM Davidson Engineering, DPC) for a series of SPP improvements projects tributary to CSO-053. One of those projects included removing the orifice plate at SPP 336B.

An associated weir raising was initially envisioned in this location as part of the Sidney Off-Line Storage (OLS) project (which has subsequently changed to the Sidney Real-Time Control (RTC) Project currently in final design). However, because the Sidney RTC design is still in progress and the regulatory deadlines for the SPP 336B improvements are well ahead of the deadlines for the Sidney RTC project as shown in Table 1, it was decided during final design of the Various SPP Projects to include the weir raising within this SPP as part of the CSO-053 Various SPP Projects, in addition to the originally-defined orifice plate removal in this location.

Table 1: Summary of Regulatory Deadlines for Sidney RTC and SPP 336B Improvements

Regulatory Deadline	SPP-336B	Sidney RTC
Design Finish	12/31/2025	6/30/2027
Notice to Proceed	6/30/2026	12/31/2027
Construction Complete	12/31/2027	12/31/2032

SPP 336B (**Figure 1**) is located along the northbound lanes of Humboldt Parkway, just north of the intersection with Sidney Street, near the existing pedestrian bridge over Route 33. SPP 336B receives flow from a 7-ft diameter combined sewer from the south. At the SPP, dry weather flow is conveyed west through a 36-inch gate and then north through a 36-inch diameter pipe and a 42-inch diameter dropshaft to the Scajaquada Tunnel. Under wet weather flow conditions, flow overtops the existing weir at elevation 39.78 (City datum) and the flow spills into the 7-ft diameter overflow sewer.

Originally the project was envisioned as removal of the orifice plate only, with the assumption that BSA's Sewer Maintenance Department could complete the work. However, the Sidney OLS (now the Sidney RTC) is currently in final design and requires weir modifications to SPP 336B as part of that project. It was decided

to complete both improvements at the SPP under this project, as it fits better in line with modifications taking place at the other locations contained within this project.

After submission of the PER, JMD was able to inspect this chamber (the cover was initially welded shut, so Sewer Maintenance had to remove the weld for inspection purposes). During our inspection, JMD found that the orifice plate had already been removed; the gate was present, but the orifice plate was not. Therefore, there is no need to remove the orifice plate under the current project.

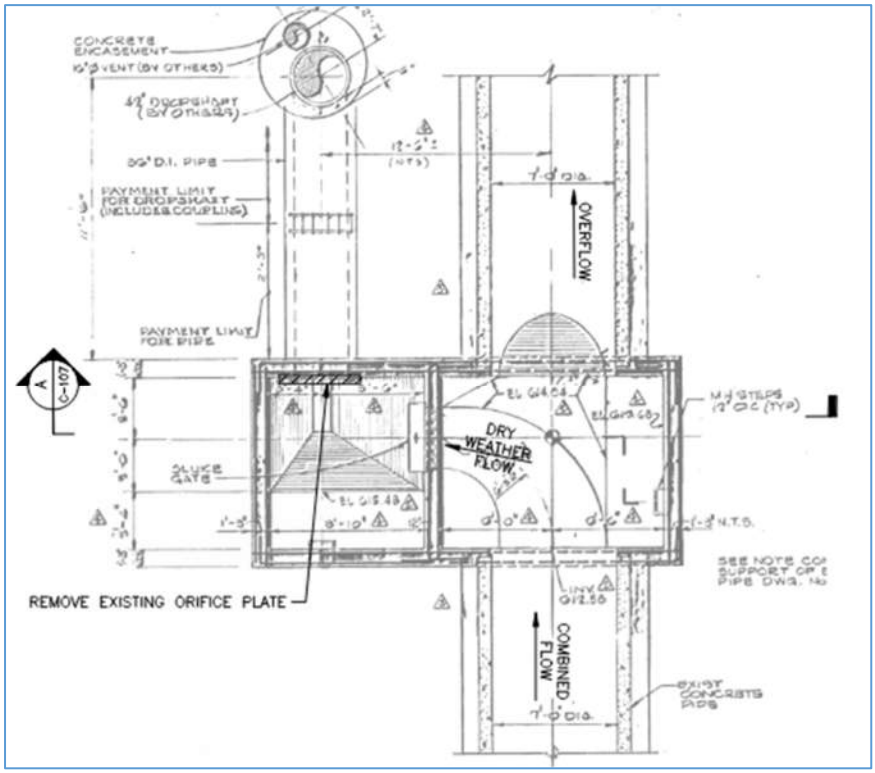


Figure 1: Configuration of SPP 336B

The SPP 336B weir modification was designed to handle the peak full pipe flow upstream of the SPP, to assist in the implementation of either an OLS or an RTC at the Sidney location. **Table 2** shows the design parameters obtained from collection system modeling, which set the length and height of the weir. To capture the increased weir length required, a labyrinth weir was designed, as shown in **Figure 2** below.

Table 2: SPP 336B Weir Modifications Design Properties

SWMM Design Parameters SPP336B Weir	
Design peak flow, mgd	312.59
Weir coefficient, Cd	3.1
Weir Length, ft.	12
Site Invert Elevation, ft.	36.16 (=611.61 elevation in dwgs above)
Maximum Weir Elevation, ft.	42.10
Critical Elevation, ft.	47.48
Critical Elevation Basis	8 ft of freeboard at 4392 (SPP336B chamber)
Design Weir Elevation, ft.	40.89 (=616.34 in dwgs above; current weir is shown as 614.84 in dwgs above or 39.39 in City datum)

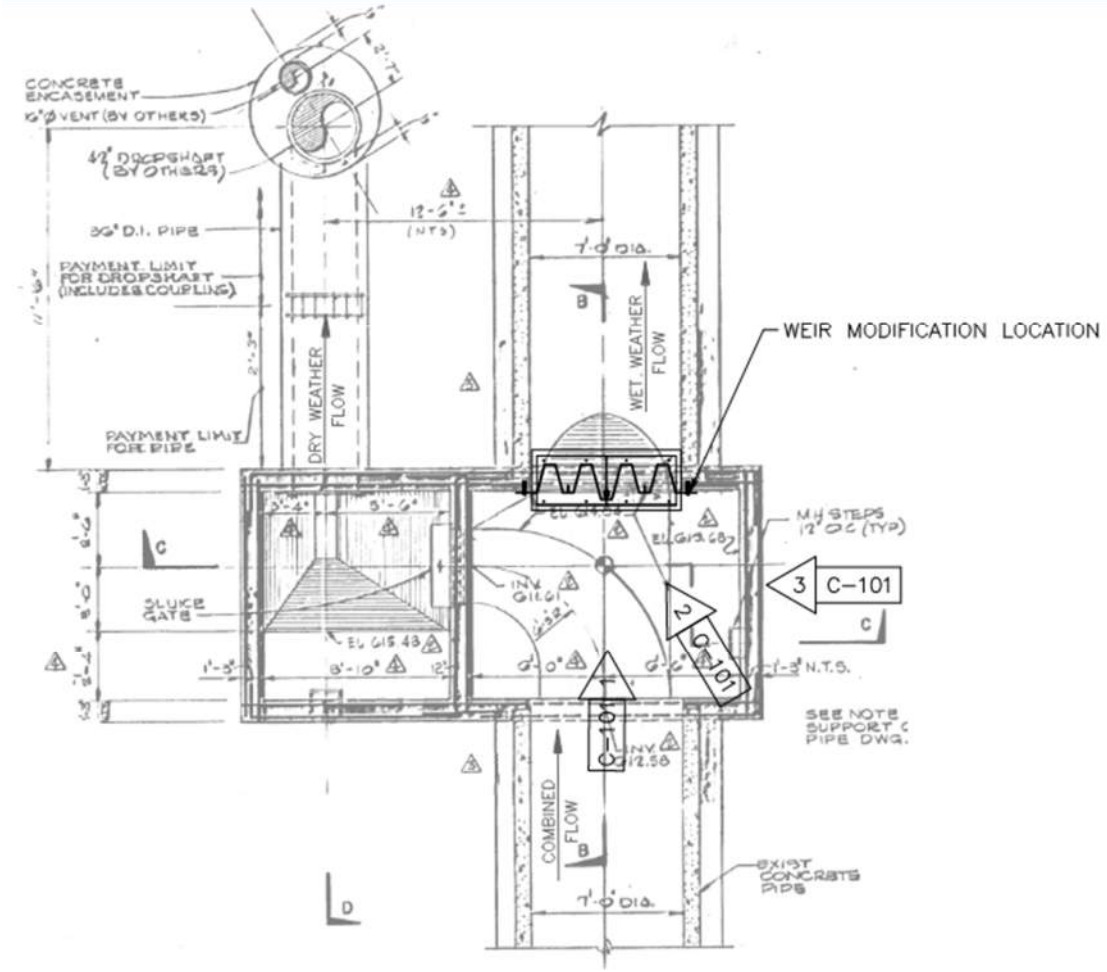


Figure 2: Proposed Labyrinth Weir for SPP 336B

Opinions of probable construction costs (OPCCs) were initially developed for the Various SPP Modifications as part of the PER. At the PER stage, costs were developed using New York State Department of

Transportation costs, as well as costs from recently estimated projects, and were consistent with Class III estimates as defined by the Association for the Advancement of Cost Engineering (AACE). Class III estimates are typically -15 percent to +20 percent accurate (AACE, 2012) and are estimated when the project is only approximately 10 to 40 percent defined. This level of accuracy is typically considered sufficient for design development, budget authorization, and feasibility level evaluations. Because it was originally only a removal of an orifice plate, the cost for this project in the PER was negligible.

With the addition of the designed weir, the OPCCs were further defined by NASCO, a cost estimation subconsultant, at the 90% stage. The total cost for the weir installation at SPP 336B was estimated at $220,128 (see attached estimate from NASCO for a breakdown of the estimate).

Rev 10/3/2025

Spreadsheet Level	Takeoff Quantity	Total Cost/Unit	Total Amount	Notes
01 CSO053 VARIOUS SPP MODIFICATIONS				
LS-1 SPP 336B Weir Modifications	**1.00 LS**	**220,128.37 /LS**	**220,128**	
LS-2 SPP 175 Weir Modifications	**1.00 LS**	131,212.00 /LS	131,212	
LS-3 SPP 176 Weir Modifications	**1.00 LS**	**73,195.82 /LS**	**73,196**	
LS-4 SPP 177 Weir Modifications	**1.00 LS**	**89,542.13 /LS**	**89,542**	
01 CSO053 VARIOUS SPP MODIFICATIONS			514,078	Humboldt/Michigan
LS-5 SMITH STREET WEIR REPAIR	1.00 LS	153,062.04 /LS	153,062	Smith Street

Estimate Totals

TOTAL ALL WORK: 667,140

Item no. 5 Allowance 20,000

Total 687,140

Spreadsheet Level	Takeoff Quantity	Labor Hours	Labor Cost/Unit	Labor Amount	Material Cost/Unit	Material Amount	Equip Cost/Unit	Equip Amount	Other Cost/Unit	Other Amount	Total Cost/Unit	Total Amount	Grand Total Amount	Notes
01 CSO053 VARIOUS SPP MODIFICATIONS														
LS-1 SPP 336B Weir Modifications														
10 SITE WORK														
01 General Requirements														
0110 Site Maintenance														
011010 Maintenance and Protection of Traffic														
Maintenance and protection of traffic, full time flagger and traffic devices	20.00 days	160.000	643.81 /days	12,876	50.00 /days	1,000	-	-	-	-	693.81 /days	13,876	26,243	
011010 Maintenance and Protection of Traffic	**1.00 LS**	**160.000**	**12,876.16 /LS**	**12,876**	**1,000.00 /LS**	**1,000**	**/LS**		**/LS**		**13,876.16 /LS**	**13,876**	**26,243**	
0110 Site Maintenance		**160.000**		**12,876**		**1,000**						**13,876**	**26,243**	
0120 Access Requirements														
012010 Work Platform														
Construct work platform over dry weather flow channel	120.00 sf	80.040	60.12 /sf	7,214	10.00 /sf	1,200	-	-	-	-	70.12 /sf	8,414	15,931	
Remove work platform	120.00 sf	40.080	30.10 /sf	3,613	-	-	-	-	-	-	30.10 /sf	3,613	6,824	
012010 Work Platform	**1.00 LS**	**120.120**	**10,826.90 /LS**	**10,827**	**1,200.00 /LS**	**1,200**	**/LS**		**/LS**		**12,026.90 /LS**	**12,027**	**22,756**	
012020 Confined Space Requirements														
Confined space monitoring	4.00 week	160.000	5,000.00 /week	20,000	-	-	-	-	-	-	5,000.00 /week	20,000	37,782	
Ventillation	4.00 week	160.000			-	-	2,500.00 /week	10,000	-	-	2,500.00 /week	10,000	20,066	
012020 Confined Space Requirements	**1.00 LS**	**320.000**	**20,000.00 /LS**	**20,000**	**/LS**		**10,000.00 /LS**	**10,000**	**/LS**		**30,000.00 /LS**	**30,000**	**57,848**	
0120 Access Requirements		**440.120**		**30,827**		**1,200**		**10,000**				**42,027**	**80,604**	
01 General Requirements		**600.120**		**43,703**		**2,200**		**10,000**				**55,903**	**106,847**	
02 Existing Conditions														
0210 Site Demolition														
021010 Selective Demolition, Sewer Structures														
Cut out concrete for new weir	1.00 ls	80.000	6,544.48 /ls	6,544	-	-	668.64 /ls	669	200.00 /ls	200	7,413.12 /ls	7,413	14,069	Other cost for disposal of material
Clean chamber surfaces in area of new weir	1.00 ls	32.000	2,575.23 /ls	2,575	0.37 /ls	0	446.11 /ls	446	-	-	3,021.71 /ls	3,022	5,761	
021010 Selective Demolition, Sewer Structures	**1.00 LS**	**112.000**	**9,119.71 /LS**	**9,120**	**0.37 /LS**	**0**	**1,114.75 /LS**	**1,115**	**200.00 /LS**	**200**	**10,434.83 /LS**	**10,435**	**19,829**	
0210 Site Demolition		**112.000**		**9,120**		**0**		**1,115**		**200**		**10,435**	**19,829**	
02 Existing Conditions		**112.000**		**9,120**		**0**		**1,115**		**200**		**10,435**	**19,829**	
03 Concrete														
0310 Cast In Place Concrete														
031010 Concrete Weir Base														
Concrete forming	21.00 sf	13.622	58.14 /sf	1,221	10.00 /sf	210	-	-	-	-	68.14 /sf	1,431	2,709	
Reinforcing steel	70.00 lb	1.867	2.17 /lb	152	1.00 /lb	70	-	-	-	-	3.17 /lb	222	422	
Structural concrete, ready mix	2.00 cy		-	-	300.00 /cy	600	-	-	-	-	300.00 /cy	600	1,151	
Structural concrete, placing	2.00 cy	6.400	265.81 /cy	532	-	-	47.45 /cy	95	-	-	313.25 /cy	627	1,195	
Concrete finishing	41.00 sf	3.644	6.68 /sf	274	0.03 /sf	1	-	-	-	-	6.71 /sf	275	520	
Adhesive anchors	12.00 ea	35.556	252.56 /ea	3,031	9.55 /ea	115	23.41 /ea	281	-	-	285.52 /ea	3,426	6,509	
031010 Concrete Weir Base		**61.088**		**5,209**		**996**		**376**				**6,581**	**12,506**	
0310 Cast In Place Concrete		**61.088**		**5,209**		**996**		**376**				**6,581**	**12,506**	
03 Concrete		**61.088**		**5,209**		**996**		**376**				**6,581**	**12,506**	
05 Metals														
0510 Metal Fabrications														
051010 Stainless Steel Weir														
Anchor bolts	16.00 ea	4.000	22.53 /ea	361	20.00 /ea	320	-	-	-	-	42.53 /ea	681	1,295	
Adhesive anchors	16.00 ea	47.407	252.56 /ea	4,041	9.55 /ea	153	23.41 /ea	375	-	-	285.52 /ea	4,568	8,678	
Fabricated labyrinth weir and base plate, 1/2" 316 SST material allowance	850.00 lbs		-	-	20.00 /lbs	17,000	-	-	-	-	20.00 /lbs	17,000	32,625	
Lbyrinth weir installation	1.00 ls	160.000	15,031.20 /ls	15,031			4,959.84 /ls	4,960	-	-	19,991.04 /ls	19,991	38,348	
051010 Stainless Steel Weir	**1.00 LS**	**211.407**	**19,432.65 /LS**	**19,433**	**17,472.80 /LS**	**17,473**	**5,334.41 /LS**	**5,334**	**/LS**		**42,239.86 /LS**	**42,240**	**80,946**	
0510 Metal Fabrications		**211.407**		**19,433**		**17,473**		**5,334**				**42,240**	**80,946**	
05 Metals		**211.407**		**19,433**		**17,473**		**5,334**				**42,240**	**80,946**	
10 SITE WORK		**984.616**		**77,465**		**20,669**		**16,825**		**200**		**115,159**	**220,128**	
LS-1 SPP 336B Weir Modifications	**1.00 LS**	**984.616**	**77,464.85 /LS**	**77,465**	**20,669.00 /LS**	**20,669**	**16,824.97 /LS**	**16,825**	**200.00 /LS**	**200**	**115,158.82 /LS**	**115,159**	**220,128**	

BUFFALO
SEWER AUTHORITY



Technical Memorandum

NFA Phase II

Primary Treatment Renovation Project Evaluation of Gravity Conveyance Hydraulics for the new High-Rate Disinfection Facility

February 25, 2026

Table of Contents

1 Introduction 4
1.1 Background 4
1.2 Operating Modes 4
1.3 Purpose 5
1.4 Phase II Projects 6
2 Evaluation of Peak Plant Flows 7
3 Hydraulic Analysis 8
3.1 Evaluation of River Levels 8
3.2 Hydraulic Analysis of Gravity Flow Through the CCT 9
3.3 Evaluation of 160 MGD by Gravity 9
4 Chlorine Contact Tank Design 11
4.1 Design 11
4.2 HRD Building 12
4.3 Chemical Mixing 13
4.4 Chemical Dosing and Storage 13
5 Cost Savings and Greenhouse Gas Emission Reduction 14
5.1 Capital Cost Savings 14
5.2 Operational and Maintenance Cost Savings 16
6 Schedule 18
7 Summary 18

List of Figures

Figure 1-1: Normal Operating Mode Flowchart 4
Figure 1-2: Primary Bypass Mode Flowchart 5
Figure 1-3: Partial Treatment Mode Flowchart 5
Figure 1-4: New HRD CCT Gravity Flow System Diagram 6
Figure 2-1: Plant Flow Hydrograph 7
Figure 3-1: Plant Flow Hydrograph 8
Figure 4-1: New CCT Design 11

List of Tables

Table 3-1: Key numbers for River Analysis 9
Table 3-2: River elevations required to maintain various freeboard values at the PST weirs 10
Table 4-1: BOD table for New Contact Tanks Design at High River Level, -5.7 ft BCD 12
Table 5-1: Potential Capital Cost Savings 15
Table 5-2: Pump and Power Summary 16
Table 5-3: Operational and Maintenance Saving Summary 16
Table 5-4: Building HVAC Savings Summary 17
Table 5-5: GHG Savings Summary 17
Table 7-1: Overall Savings Summary 19

1 Introduction

1.1 Background

The Buffalo Sewer Authority (BSA) entered into an Administrative Order (AO) with New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) as part of their approved Combined Sewer Overflow Long Term Control Plan (LTCP) that was approved on March 18, 2014. As part of the approved LTCP No Feasible Alternative (NFA), the BSA committed to meet the Bird Island Wastewater Treatment Facility (WWTF) design peak capacity of 560 million gallons per day (MGD). As part of the NFA, the primary treatment system will be renovated to include a new disinfection facility and the secondary treatment capacity will be increased from 360 MGD to 400 MGD.

To address the requirements of the LTCP and NFA, a new 160 MGD High-Rate Disinfection (HRD) Facility will be constructed to provide disinfection of primary effluent prior to discharge though Outfall 001. This is referred to as the Phase II project. Primary effluent will be conveyed to a new Chlorine Contact Tank (CCT) to be constructed north of the existing Primary Sedimentation Tanks (PSTs). New sodium hypochlorite storage and feed pumps will be constructed to support the disinfection process. The 30% Design Deliverable, submitted July 2021, included a hydraulic evaluation to determine how flow would be conveyed through the new CCT to Outfall 001. Through this hydraulic evaluation, it was determined that pumping would be required after the CCT to convey up to 160 MGD through Outfall 001.

1.2 WWTF Operating Modes

The WWTF has three operating modes. See operating mode schematics below each description:

- During Normal Operating Mode, flow up to 160 MGD will receive preliminary treatment (i.e., screening and grit removal), primary, and secondary treatment, disinfection, and be discharged through Outfall 002.

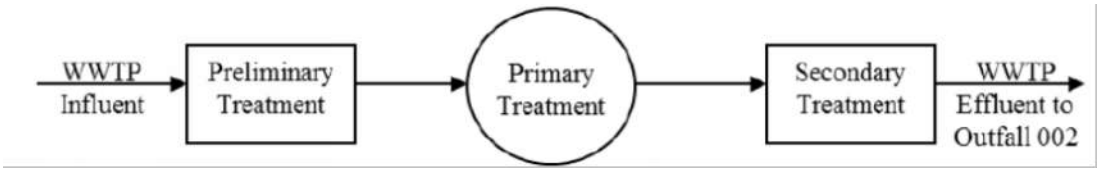


Figure 1-1: Normal Operating Mode Flowchart

- In Primary Bypass Mode, all flow will receive preliminary treatment, flows that exceed the capacity of the primary system (160 MGD) will bypass the primary settling tanks, re-combine with settled wastewater from the primary settling tanks, receive secondary treatment, and be disinfected and discharged through Outfall 002. The hydraulic capacity of the secondary treatment system after Phase III will increase capacity to 400 MGD (i.e., 160 MGD receiving preliminary and primary treatment and up to 340 MGD receiving preliminary treatment only prior to secondary treatment).

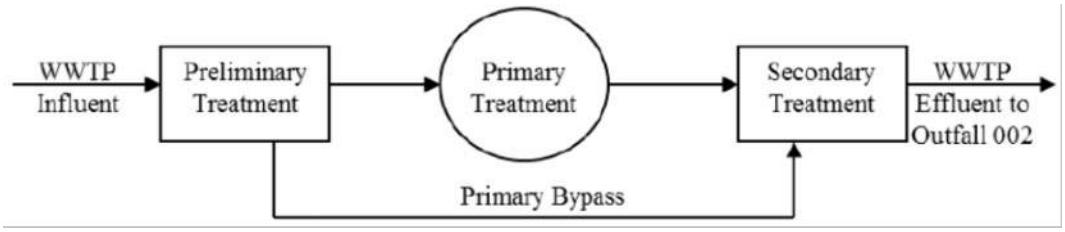


Figure 1-2: Primary Bypass Mode Flowchart

– In Partial Treatment Mode, all flow will receive preliminary treatment, 160 MGD will receive primary treatment and disinfection prior to discharge through Outfall 001, and flows up to 400 MGD (after Phase III is complete) will receive preliminary treatment, bypass primary treatment, receive secondary treatment, and be disinfected and discharged through Outfall 002.

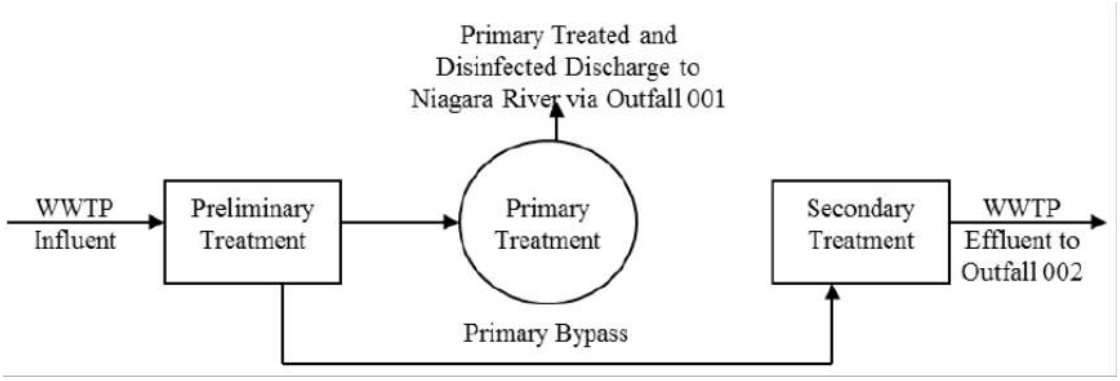


Figure 1-3: Partial Treatment Mode Flowchart

1.3 PURPOSE

BSA requested that the new HRD System using a gravity flow option, with no HRD Pumps, be evaluated prior to the new HRD Facility being advertised for bid in 2026. The conceptual arrangement of a gravity HRD system is presented in **Figure 1-5** and was evaluated with removal of the new pumps. Hydraulic calculations determined that it would be possible to convey the 160 MGD design capacity using gravity flow alone.

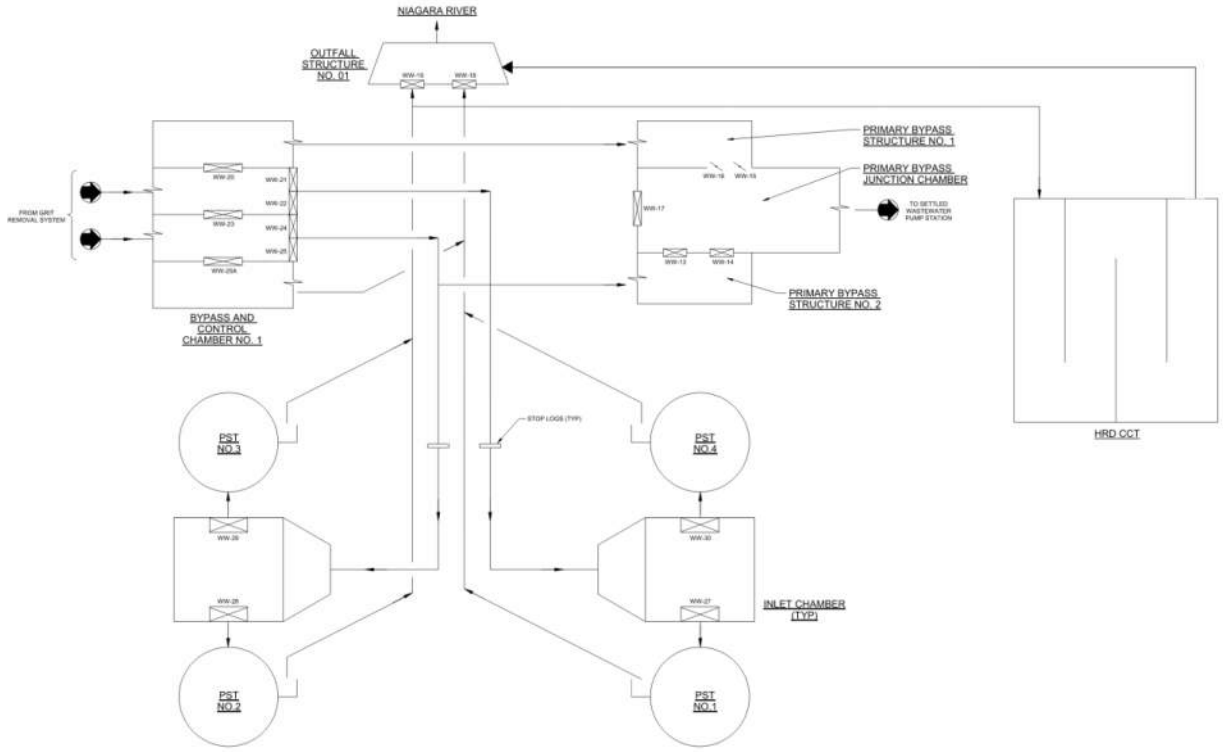


Figure 1-4: New HRD CCT Gravity Flow System Diagram

1.4 PHASE II PROJECTS

The Phase II improvements were separated into Phase IIA and Phase IIB.

- Phase IIA includes PST rehabilitation, Sludge Pump Station rehabilitation, and new odor control facilities.
- Phase IIB includes the HRD system, including the CCT, pump station, and chemical feed and storage facilities.
    - The original design basis for the HRD system was a new HRD facility sized for 240 MGD, which was submitted in the *BSA Primary Treatment Renovation Engineering Report* in October 2021.
    - The design was updated to decrease the size of the new HRD Facility to 160 MGD. The *BSA Primary Treatment Renovation Engineering Report*, submitted May 2022.
        - This engineer report was approved by NYSDEC June 8, 2023.

Both the Phase IIA and B projects were bid in early 2024. Phase IIA was awarded and is under construction. Phase IIB was not awarded.

2 Evaluation of Peak Plant Flows

As part of the LTCP, a collection system model has been developed, updated, and refined. The collection system model was used to quantify influent flows to the Bird Island WWTF over a typical year. The resulting hydrograph is presented in **Figure 2-1**. The model indicates a peak influent flow of approximately 560 MGD. When flow to the plant exceeds 400 MGD, partial treatment is started and the new HRD Facility begins operation. Partial treatment mode will be used approximately 3.3% of a typical year. These results demonstrate that the maximum HRD design flow of 160 MGD will occur only 0.11% of a typical year.

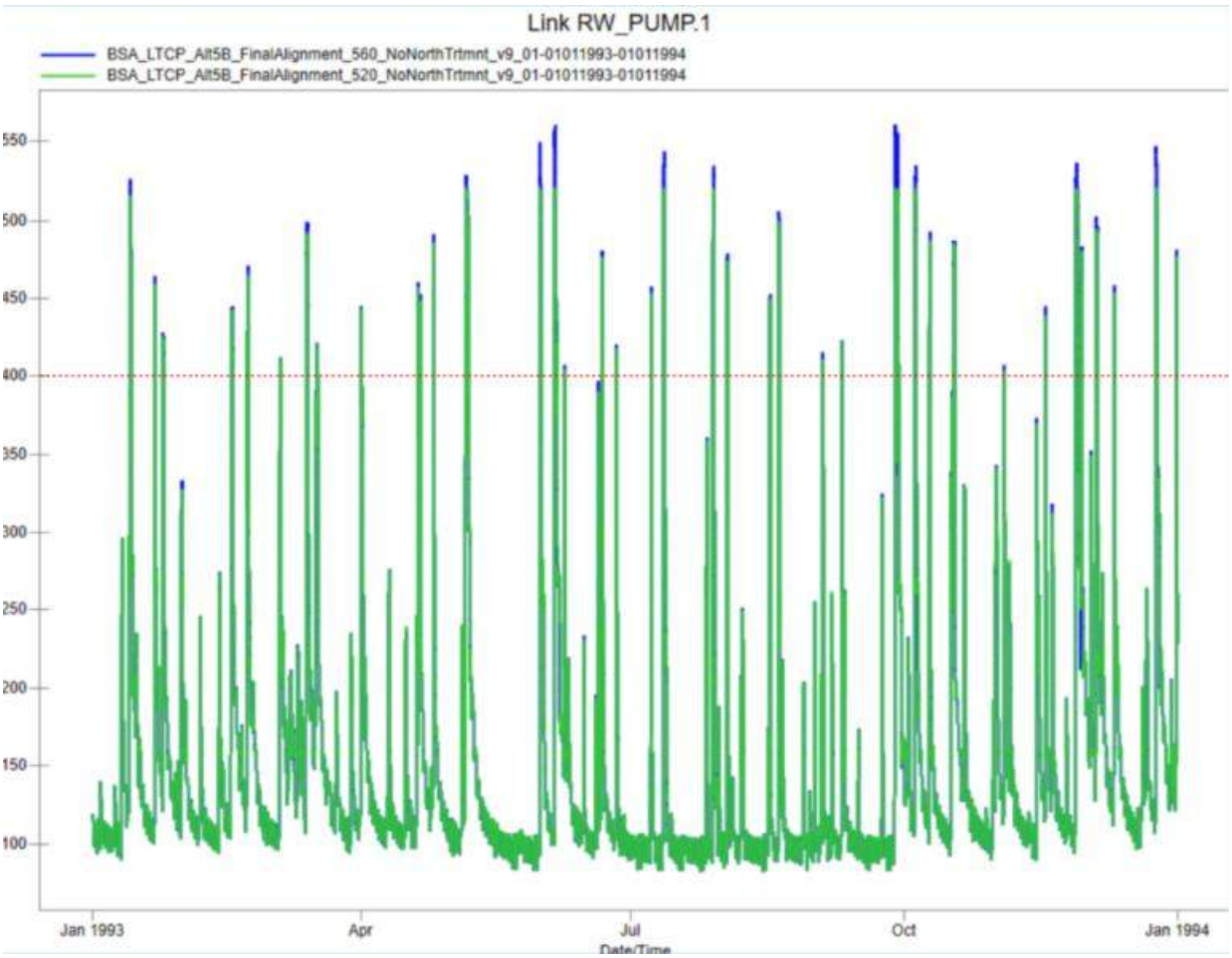


Figure 2-1: Plant Flow Hydrograph

3 Hydraulic Analysis

3.1 Evaluation of River Levels

To evaluate the ability to convey flow through the new HRD system through gravity, Niagara River levels at Outfall 001 were evaluated. The evaluation of river levels used data from two U.S. Geological Survey (USGS) gages covering the period from October 1985 through October 2025.

- The first dataset was obtained from the Lake Erie gage (USGS–04215900). The second from the Niagara River gage located downstream of the Black Rock Lock (USGS–04216220).
- To estimate the river level at Outfall 001, a linear water-surface slope was calculated between the two gage locations. The slope was used to interpolate the river elevation at the Outfall 001 location.
    - The distance between the Lake Erie gage and the Black Rock Lock gage is approximately 22,500 feet.
    - The distance between the Lake Erie gage and Outfall 001 is approximately 16,700 feet.
    - The location of Outfall 001 and the two gages is shown in **Figure 3-1** below.
- Interpolated river elevations from USGS are referenced to the International Great Lakes Datum 1985 (IGLD85). These values were converted to Buffalo City Datum (BCD) by subtracting 574.94 feet.

A summary of key values from the river level evaluation is shown in **Table 3-1** below.



Figure 3-1: Plant Flow Hydrograph

Table 3-1: Key numbers for River Analysis

Item	Units	Value
Minimum Elevation at Outfall 001 (approximate)	ft BCD	-11.1
Maximum Elevation at Outfall 001 (approximate)	ft BCD	-4.2
Average Elevation at Outfall 001 (approximate)	ft BCD	-7.7
High River Elevation at Outfall 001, (approximate), happens 99.73rd percentile	ft BCD	-5.7
Average drop between the two gages	ft	6.36
Average drop between Lake Erie Gage and Outfall 001	ft	4.72

3.2 Hydraulic Analysis of Gravity Flow Through the CCT

To evaluate gravity flow, a steady state hydraulic model of the New HRD Facility was developed in spreadsheet form. The model is predicated on subcritical flow conditions, where head losses are accrued along an imaginary streamline from the water surface elevation of the Niagara River upstream through the New HRD Facility and ending at the PST effluent weirs. The hydraulic grade line (HGL) must remain below the effluent weir crests of the PSTs of -1.67 feet Buffalo City Datum (BCD) to not backflow and provide a functional system.

To evaluate the feasibility of a gravity flow solution, the hydraulics were simulated for the upper bound of the normal operating envelope to determine the potential of overflowing the PST weirs.

The assumptions made in the hydraulic analysis are as follow:

- Peak flow of 160 MGD
- A high river level of -5.70 ft BCD .
- Conveyance through the concrete conduits was evaluated using Manning's equation.
- A Manning's roughness coefficient (n_) = 0.017[1].

3.3 Evaluation of 160 MGD by Gravity

The primary design criterion of the CCT was to maintain a 5-minute contact time while continuing to meet 10 States Standards and TR-16 Standard.

Alternative configurations of the influent and effluent conduits and the CCT were evaluated to determine if 160 MGD could be conveyed by gravity. As part of this assessment, areas with high

[1] n ranges: n = 0.013 to n = 0.017 for concrete conduits per Open-Channel Hydraulics, Table 5-6, Part A-2.d.4 by Ven Te Chow.

head losses were reviewed and opportunities to reduce head loss were evaluated. Items examined included the number of passes, width of channels, conduit sizes, weir configuration, and freeboard at PSTs.

The conceptual layout of the HRD system that can convey 160 MGD is:

- CCT
    - Two passes
    - 16-foot wide passes
    - Each pass contains two over/under baffle walls
    - A weir structure at the end of the second pass of the CCT with a weir crest at elevation of -5.5 ft BCD
    - At high flows and high river levels, the weir at the CTs will be submerged.
- The HRD Influent Conduit is an 8.5-foot x 8.5-foot cast-in-place concrete conduit.
- The HRD Effluent Conduit consists of three cast-in-place concrete flow segments measuring 8.5-foot x 8.5-foot, 6-foot x 12-foot, and 5-foot x 12-foot.

The hydraulic model indicates that this configuration can convey a maximum gravity flow of 155 MGD at the high river elevation of -5.7 feet (BCD), with approximately 0.03 feet of freeboard at the PST weir. To achieve the required peak flow of 160 MGD, the required river level would be -5.96 feet BCD, with no freeboard at the PSTs.

Table 3-2 below shows the river elevations required to maintain various freeboard values at the PST weirs for this configuration, along with the percentage of the year that each condition occurs based on the river level dataset.

Table 3-2: River elevations required to maintain various freeboard values at the PST weirs

Item	River Elevation (ft BCD)	% of Time River Elevation is Not Exceeded
High River Level at Outfall 001	-5.7	--
River elevation required to convey 160 MGD by Gravity through Outfall 001 – 6 inches of freeboard at PSTs	-6.61	93.16%
River elevation required to convey 160 MGD by Gravity through Outfall 001 – 3 inches of freeboard at PSTs	-6.28	97.02%
River elevation required to convey 160 MGD by Gravity through Outfall 001 – 0 inches of freeboard at PSTs	-5.96	99.00%

Based on BSA's historical knowledge of the Niagara River level, the biggest impact to river level is wind and long-term precipitation in the Great Lakes basin. Wet weather events and peaks flows at the Bird Island WWTF are not correlated with the high river levels.

4 Chlorine Contact Tank Design

4.1 Design

As discussed in Section 3, to achieve gravity flow at 160 MGD, the CCT design was modified to reduce headloss. The conceptual CCT configuration developed is shown in **Figure 4-1**.

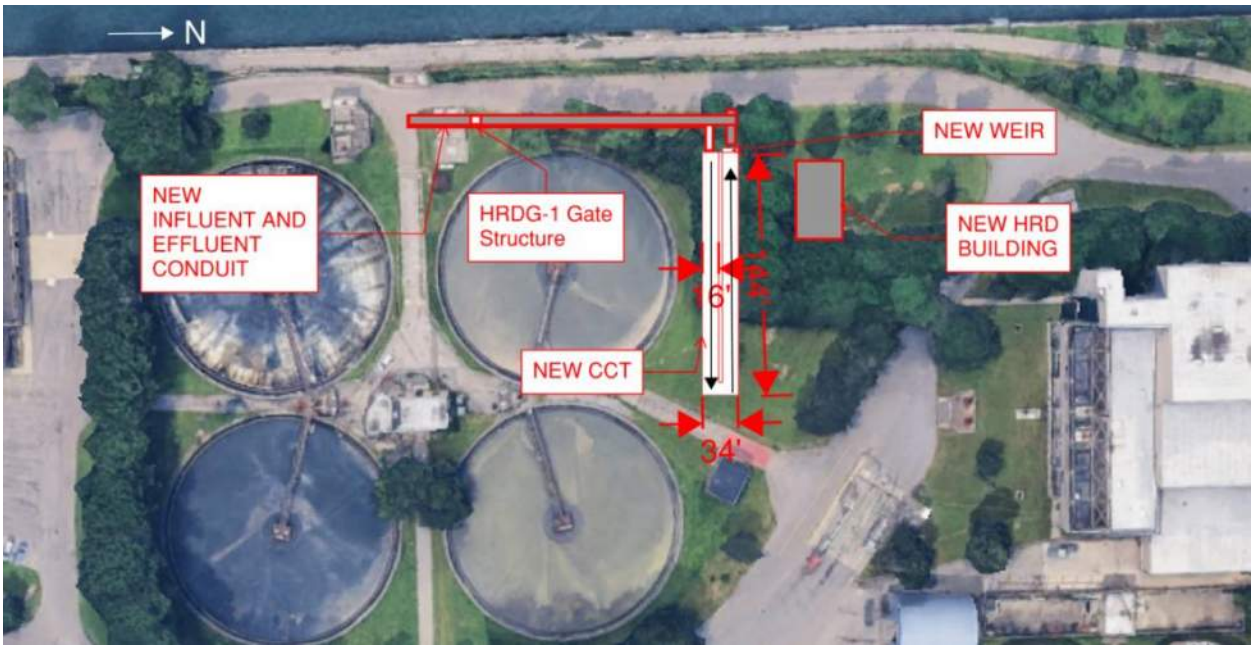


Figure 4-1: New CCT Design

The primary design criteria for the revised configuration is to maintain the 5-minute contact time while minimizing head loss to preserve gravity flow conditions.

- The contact time starts at the injection point at the Gate structure.
- At peak flow, one minute of contact time occurs in the Influent Conduit upstream of the CCT.
- The CCT has a pass length of 144 feet, resulting in a total flow path length of approximately 290 feet. Each pass has a width of 16 feet. The structural tank depth is 24.25 feet.
- A weir structure will be at the end of CCT Pass No. 2 and connect to the HRD Effluent Conduit.

The layout shown in **Figure 4-1** is conceptual and intended for planning level evaluation only. Internal baffling will be incorporated to improve mixing promote plug-flow conditions, and minimize short-circuiting. The specific baffle configuration, spacing, and type have not been designed yet. Channel transitions, inlet and outlet structures, and weir details will be finalized during subsequent design phases. The Influent and Effluent Conduits would be stacked for the majority of their length, with the Influent Conduit below the Effluent Conduit.

The total contact time, including the one-minute contact time from the Influent Conduit, is 6 minutes and 30 seconds.

Table 4-1 summarizes the basis of design and key parameters at various flow conditions

Table 4-1: BOD table for New Contact Tanks Design at High River Level, -5.7 ft BCD

	Flows (MGD)			
Item	40	80	120	160
Tank Invert Elevation, ft BCD	-18.25			
Weir Crest Elevation, ft BCD	-2.70			
Weir Length, ft	200			
Flow, cfs	61.9	123.8	185.6	247.5
Head on Weir, ft	0.33	0.53	1.05	1.91
Water Surface Elevation, ft BCD	-2.37	-2.17	-1.65	-0.79
Water Depth, ft	15.9	16.1	16.6	17.46
Volume, cf	73,195	74,100	76,486	80,443
Volume, 1000 gal	547.54	554.31	572.16	601.76
Contact Time in Tank (theoretical), minutes	19.7	10.0	7.0	5.5
Contact Time in Influent Conduit, minutes	4.1	2.0	1.4	1.0
Total Contact Time, minutes	23.8	12.0	8.4	6.5
Flow Length, ft	288			
Flow Length : Width Ratio	18			
Depth : Width Ratio at peak flow	1.09			

As calculated from the dimensions, the length to width ratio of 18:1 is lower than the minimum length to width ratio of 40 referenced in the TR-16 Standards, White's handbook of chlorination recommends a minimum length to width ratio of 10, a ratio that we are achieving.

4.2 HRD Building

The proposed HRD Building, as currently designed, includes the following:

- Pump Access Room with wet well below
  - 5 submersible 40-million-gallon capacity pumps.
  - Each pump is 300 horsepower (HP).
- Chemical Feed Room that houses the sodium hypochlorite storage tanks and feed pumps
- Personnel space that includes restrooms, janitor's closet, and a sampling room.
- A Fire Pump Room to boost the water pressure to provide sprinklers in the Chemical Feed

Room

- The Electrical Room is on the second floor, above the Rump Access Room, and contains variable frequency drives for 3 pumps, soft starts for two pumps, a new switchgear, and other appurtenances.
- Two stairwells to access to the Electrical Room

With the ability to convey flows up to 160 MGD by gravity based on the conceptual design in this technical memorandum, the HRD Building can be simplified, saving both capital and long-term operational and maintenance costs.

- The overall footprint of the HRD Building can be reduced and brought down to a single level.
- The Pump Access Room and wet well will be removed
- The Electrical Room can be simplified with the removal of the variable frequency drives, soft starts, and significant loads of the 300 HP submersible pumps.

4.3 Chemical Mixing

The mixing system configuration and design remain unchanged from approved Engineering Report and will be implemented as previously specified.

4.4 Chemical Dosing and Storage

The chemical dosing and storage systems remain unchanged from approved Engineering Report and will be implemented as previously specified.

5 Cost Savings and Greenhouse Gas Emission Reduction

5.1 Capital Cost Savings

As discussed in Section 4, the conceptual layout of the new HRD System varies from the original design. The Influent and Effluent Conduits to and from the CCT and HRD Building. The opinion of probable construction cost from the latest design with the HRD Building with pumps was used to review potential capital cost savings. These costs are presented in **Table 5-2**.

Notes and assumptions on potential capital cost savings:

- These costs are conceptual and equivalent to an AACE Class 5 OPCC. These numbers will be refined when the project proceeds with design.
- The equipment and piping associated with the submersible pumps were removed and included the pumps, piping, valves, bridge crane, VFDs, and soft starts.
- Estimates were made to reduce the overall amount of concrete and piles that would be required for a reduced HRD Building footprint.
- Estimates were made to reduce the overall amount of excavation for the CCT and HRD Building.
- With the reduced HRD Building footprint, the HVAC system can be reduced in size. The exhaust fans for the Pump Access Room were removed.

Table 5-1: Potential Capital Cost Savings

Summary	Cost (without HRD Pump Station)	Cost (with HRD Pump Station)	Difference
DIVISION 2 - DEMOLITION	$243,000	$ 243,000	$ -
DIVISION 3 - CONCRETE	$8,611,000	$ 12,325,000	$ (3,714,000)
DIVISION 4 - MASONRY	$2,228,000	$ 2,228,000	$ -
DIVISION 5 - METALS	$960,000	$ 960,000	$ -
DIVISION 6 - WOOD AND PLASTICS	$298,000	$ 298,000	$ -
DIVISION 7 - THERMAL & MOISTURE PROTECTION	$915,000	$ 915,000	$ -
DIVISION 8 - OPENINGS	$230,000	$ 230,000	$ -
DIVISION 9 - FINISHES	$339,000	$ 339,000	$ -
DIVISION 10 - SPECIALTIES	$18,000	$ 18,000	$ -
DIVISION 12 - FURNISHINGS	$44,000	$ 44,000	$ -
DIVISION 21 - FIRE PROTECTION	$237,000	$ 237,000	$ -
DIVISION 22 - PLUMBING	$402,000	$ 402,000	$ -
DIVISION 23 - HVAC	$767,000	$ 1,007,000	$ (240,000)
DIVISION 26 - ELECTRICAL	$3,896,000	$ 6,003,000	$ (2,107,000)
DIVISION 31 - EARTHWORK	$7,789,000	$ 9,511,000	$ (1,722,000)
DIVISION 32 - SITE IMPROVEMENTS	$655,000	$ 655,000	$ -
DIVISION 33 - SITE UTILITIES	$7,797,000	$ 7,807,000	$ (10,000)
DIVISION 40 - PROCESS INTEGRATION	$9,064,000	$ 9,064,000	$ -
DIVISION 41 - MATERIALS PROCESSING AND HANDLING EQUIPMENT	$0	$ 180,000	$ (180,000)
DIVISION 43 - LIQUID HANDLING AND PURIFICATION	$1,223,000	$ 5,041,000	$ (3,818,000)
DIVISION 46 - WATER AND WASTEWATER EQUIPMENT	$1,558,000	$ 1,558,000	$ -
SUB-TOTAL	$47,274,000	$ 59,055,000	$ (11,781,000)
GENERAL CONDITIONS	$7,091,100	$8,858,250	$ (1,767,150)
OVERHEAD AND PROFIT	$8,154,765	$10,186,988	$ (2,032,223)
CONTINGENCY	$7,752,463	$9,684,429	$ (1,931,966)
ESCALATION	$8,713,769	$10,885,299	$ (2,171,530)
SUBTOTAL	$79,000,000	$ 98,670,000	$ (19,670,000)

Based on the construction estimate breakdown in **Table 5-1**, the overall OPCC savings can range anywhere from $20 M ± 20% based on further design and site conditions.

5.2 Operational and Maintenance Cost Savings

A cost evaluation was done to determine the potential savings that could be realized by removing the HRD pumps and conveying flow by gravity. Potential cost savings for capital and operational and maintenance costs were considered.

Elimination of the pump station avoids both recurring annual O&M expenditures and long-term capital replacement obligations, providing measurable lifecycle cost savings to BSA. Operational savings for the pumps were calculated as shown in **Table 5-2**. An average event above 400 MGD in partial treatment mode was used to determine the flow rate and the operational time for the pumps. All the assumptions for the various parameters are listed below the table.

Table 5-2: Pump and Power Summary

Number of Pumps Operating	Flow Rate per Pump (gpm)	TDH (ft)	Pump η (%)	Motor η (%)	Power Draw Per Pump (kW)	Total Power Draw (kW)	Annual Operating Hours	Annual Averate Energy Usage (kWh)
2	26,040	36	80%	95%	240	480	292	140,000

Notes:

1. Two pumps in operation are required to meet the 75 MGD flow for an average partial treatment mode event based on hydrograph modeled data for a typical operational year.
2. Pump Efficiency and total dynamic head (TDH) were taken from the KSB pump curves.
3. Power draw per pump is based on the pump curves for the KSB K-700 submersible pumps
4. Annual operating hours is based on the total hours that the pumps would be operating based on the hydrograph modeled data for a typical operational year.

The total annual energy savings just from the pumps would be approximately 1,400 MWh which would be roughly estimated to roughly $21,000 annually as shown in **Table 5-3** below.

Table 5-3: Operational and Maintenance Saving Summary

Cost Summary	Amount ($ USD)
Av. Blended Utility Rate ($/kWh)	0.15
Av. Annual Pump Electric Savings	21,000
Pump Maintenance Costs[1]	75,600

[1]Assuming 1.5% of total equipment costs= $5.04 M (from 100% Estimate from July 2025)

Additional energy and cost savings would be realized due to size of the HRD Building being reduced and reduce the size of the HVAC equipment. See Table 5-4 of the breakdown.

Table 5-4: Building HVAC Savings Summary

Building Loads	Amount Reduced(kWh)
Cooling	8,800
Fans	19,700
Heat	59,700
VFD Load	160,000
Lighting	6,500
Total Reduction	**254,700**

Based on the overall reduction in electrical demand associated with elimination of the pumps, the resulting annual greenhouse gas (GHG) emissions reductions are summarized below. Emission factors were obtained from the EPA eGRID 2023 dataset for the NPCC Upstate New York (NYUP) subregion.

Table 5-5: GHG Savings Summary

Parameter	Values based on Pump Reduction
MWh Reduction	**140**
CO2 avoided (MT/year)	**16.9**
CO2,e avoided (MT/year)	**17.0**
CH4 avoided (lb/year)	**1.5**
N2O avoided (lb/year)	**0.1**
SO2 avoided (lb/year)	**3.8**
Annual NOx avoided (lb/year)	**14.0**

The proposed improvements are projected to reduce annual electricity consumption at the wastewater treatment plant by approximately 140,000 kWh per year. Based on the U.S. EPA eGRID emission factor for the NYUP (Upstate New York) region (242.8 lb CO_2e/MWh), this reduction corresponds to an avoided greenhouse gas impact of approximately 33,890 pounds (17 metric tons) of CO_2e annually.

The annual avoided emissions are equivalent to removing approximately 4 passenger vehicles from the road each year. In addition to GHG reductions, decreased grid electricity demand results in minor reductions in criteria air pollutants (e.g., NO_x and SO_2), further supporting regional air quality goals. Collectively, these outcomes advance the Authority's sustainability objectives and contribute to local and statewide GHG reduction targets.

6 Schedule

The original construction duration for the Phase IIB project was approximately three years (1,125 days). With the removal of the pump station room and the associated reduction in electrical, HVAC, and process system requirements, the overall construction duration is expected to decrease by approximately **6 to 10 months**. The specific duration for the construction project will be confirmed during detailed design.

- Consolidating the HRD building into a single-floor configuration and eliminating the second story significantly reduces above-grade structural framing, building envelope construction, and architectural finishes. This simplified the mechanical and electrical distribution system for the building. These modifications reduce construction complexity, coordination requirements, and system integration efforts.
- The primary schedule impacts are anticipated within HRD building construction activities—including below- and above-grade structural and civil work—as well as process equipment installation and associated HVAC and plumbing systems. Secondary schedule efficiencies may also be realized through reduced commissioning, testing, and startup duration due to the simplified building layout and removal of the pumps.
- In addition to building-related reductions, modest schedule and cost efficiencies are anticipated within site work activities, including excavation, backfill, utility installation, and grading. The reduced building footprint and elimination of pump station-related infrastructure will decrease earthwork quantities and simplify utility routing.

The next steps for the project are to update the project basis of design for the gravity flow condition, set the revised layout of the new HRD Building, and complete the detailed design. The construction schedule and OPCC will be updated based on the new design. The Engineering Report will be updated to account for these revisions. These revisions are excepted to be complete and resubmitted to DEC in fall 2026.

7 Summary

The new HRD Facility will be operated intermittently only during partial treatment mode. This will occur approximately 3.3% of a typical year. The design peak flow of 160 MGD represents an even less frequent event, occurring 0.11% of the time annually.

As part of this hydraulic evaluation to eliminate the HRD pump station and operate the system under gravity flow conditions the CCT configuration and HRD Influent and Effluent Conduits were assessed to review opportunities to reduce the hydraulic head losses and improve gravity flow feasibility. The probability of high river level and impacts to the hydraulics were analyzed to determine impacts to the gravity flow scenarios.

Based on the hydraulic modeling performed, modifications of the CCT geometry and HRD Effluent Conduit allow a maximum gravity-driven flow of 155 MGD at a river elevation 0f -5.7 feet BCD. To achieve full peak flow of 160 MGD under gravity conditions, the river elevation would be at approximately -5.96 feet BCD. Review of historical river elevation records indicate that this river level condition would allow 160 MGD gravity flow approximately 99% of the time. Based on BSA's historical knowledge of the plant flows relative to river elevation, it is unlikely that peak flows to the Bird Island WWTF correspond to high river levels.

Implementation of the gravity-based alternative would allow for a reduced HRD building footprint by eliminating the need for an additional pump station. Chemical mixing, dosing, and storage remain consistent with the previous engineering report and will be implemented as originally specified. Due to these modifications, cost savings for both capital and operational and maintenance costs are summarized in Table 7-1.

Table 7-1: Overall Savings Summary

Summary of Annual Savings	**Amount ($ USD)**
Total Average Pump operation	21,000
Total Building HVAC Savings	38,200
Total Pump Maintenance Costs	75,600
Total Annual Savings	134,800
Greenhouse Gas Parameter	**Annual GHG Savings**
CO_2 emissions (MT)	16.9
CH4 avoided (lb/year)	1.5

MEMO

Date: March 3, 2026

To: Rosaleen Nogle, BSA

C: Kate Mignone, AECOM, Katheryn Ferrarese, PMT

From: Dax Blake, PMT

Subject: Roosevelt Park OLS Inlet Pipe Configuration and Tank Size Evaluation

The purpose of this memorandum is to evaluate inlet pipe configurations and tank sizes for the Roosevelt Park Offline Storage (OLS) project. Buffalo Sewer Authority's (BSA's) preferred approach for Roosevelt Park will inform the design of other OLS projects in the collection system. The Roosevelt Park Tank is currently oversized for the required level of control. The PMT and AECOM recommend dynamically controlled diversion structure or RTC to minimize the number of times the tank is put into service. There are two operation scenarios with regards to the outfall condition of the tank inlet sewer discussed further below.

Background and Preliminary Design

The Proposed Amended Long Term Control Plan (LTCP) recommended constructing a 2.6 million gallon (MG) buried concrete tank in Roosevelt Park, with an associated diversion structure in Edison Avenue for the tank inlet and outlet sewers. The storage tank is designed to control the downstream SPP340 to no more than four overflows in a typical year. The original model configuration included a static weir within the diversion structure that was 100 feet long and approximately 0.2 feet above the sewer invert to control flow into the storage tank. In the preliminary engineering report titled "CSO053_5.2 Edison Martha Offline Storage (OLS) Tank," the static weir was modified to be 20 feet long and 0.5 feet above the sewer invert. The revised static weir prevented dry weather flow from entering the tank but resulted in many unnecessary tank activations during wet weather events.

To address the operational concerns around frequent and unnecessary tank activations, the preliminary design briefly examined a dynamic control scenario that would limit flow into the tank. The control logic was simple and proved that dynamic control could reduce tank activation to less than 20 activations per year. However, due to time constraints, the dynamic solution was not optimized or integrated into the preliminary design.

During the preliminary design the PMT also realized the tank was oversized for the level of control at SPP 340. At the time, the tank volume was considered a prescriptive part of the LTCP. During the LTCP Validation effort that began in mid-2025, it was re-confirmed that several tanks in the LTCP Optimization Study were oversized including the Roosevelt Park OLS. Since the validation is redefining the portfolio of projects necessary for the overall system, now is also an appropriate time to consider the volume of the Roosevelt Park Tank.

AECOM Early Design Involvement

AECOM has been hired by BSA and managed by the PMT to complete the design of the Roosevelt Park Tank. AECOM proposed several design changes and sought to test different approaches to the static weir in the preliminary design, including raising the height of the static weir. The Program Management Team (PMT) worked with AECOM to examine multiple diversion structure designs. Initial evaluations focused on static weir options but eventually evolved into evaluating dynamically controlled options similar to what was

started in the preliminary design. The PMT and AECOM determined that a dynamically controlled diversion structure as the best option for the Roosevelt Park Tank, as it would reduce the number of tank activations to approximately 12 activations per year.

The PMT recommended a dynamic control structure like those used in real time control (RTC) sites in BSA's collection system. A structure like Hazelwood RTC (Figure 1) was used as an example. The high-level weir in the RTC would only exist on one side of the structure and the diversion pipe to the proposed tank would be placed on the opposite side. In high flow events, the gates would throttle flow initiating inline storage and raising the hydraulic grade line (HGL) until flow begins to divert into the Roosevelt Park Tank. Xylem was engaged to determine the height and length of the high flow overflow weir and to develop control logic that incorporated operation into the overall RTC strategy for the system.



Figure 1: Hazelwood RTC from Xylem Vue Dashboard

Roosevelt Park Tank Volume Analysis

At the request of AECOM, a model was configured with an oversized tank to operate the tank with a free discharge from the tank inlet sewer into the tank. Based on modelling results, the tank volumes for the five largest events in the typical year are shown below along with the activation frequency at SPP340:

- Largest = 6.2 MG, 0 overflows per typical year, exceeds level of control
- 2nd largest = 6.0 MG, 1 overflows per typical year, exceeds level of control
- 3rd largest = 2.3 MG, 2 overflows per typical year, exceeds level of control
- 4th largest = 2.0 MG, 3 overflows per typical year, exceeds level of control
- 5th largest = 1.7 MG, 4 overflows per typical year, meets level of control

SPP 340 has a target activation of four overflows in a typical year; therefore, the minimum tank volume required for Roosevelt Park is 1.7 MG. Based on these results, building a 2.3 MG tank would reduce SPP

340 activations to two times per year exceeding the required level of control. Constructing a 2.6 MG tank as originally proposed does not provide any further activation benefit than a 2.3 MG tank.
Within the watershed (053 basin), there are 4 activations at other SPPs including: 203, 204, 229A, 335B, 336B, 337, and 342B. Overcontrolling SPP 340 would not lower the number of activations for the watershed.

Inlet Pipe Configuration & Tank Size Evaluation

This memorandum explores two inlet pipe configurations:

1. A free discharge option where the inlet pipe is above the max WSEL in the tank and,
2. A submerged inlet option where the inlet pipe is below the max WSEL in the tank.

These configurations are schematically shown in Figure 2 attached.

The submerged discharge configuration would have the design volume of the tank based on 6-inches below the high overflow weir elevation in the RTC diversion structure. This configuration would also utilize inline storage in the existing sewer in Edison Avenue in addition to the selected design volume. The free discharge solution would have the design volume of the tank based on the downstream invert elevation of the tank inlet sewer. In this configuration, additional headspace could be built into the tank allowing operation greater than the design volume to fill the tank and inline storage in a submerged condition. The additional volume gained above the design level of control would depend on the tank footprint and height of additional headspace. Additional volume would also be added with the inline storage in Edison Avenue.

The table below describes advantages and disadvantages for both inlet pipe configuration options:

Table 1: Advantages and Disadvantages of Inlet Pipe Configuration Options

Inlet Pipe Configuration	**Advantages**	**Disadvantages**
Free Discharge	If the tank is allowed to surcharge, additional headspace would provide ~20% more storage above the design volume plus inline storage in Edison Avenue sewer. Reduces potential for sediment deposition within inlet pipe.	Higher cost due to greater depth of excavation. More bedrock excavation and potential blasting, more truck traffic, more construction materials, and longer construction duration. More potential for odor due to hydrogen sulfide (H_2S) release.
Submerged Inlet	Lower cost Provides extra storage and utilizes it more frequently with inline storage available in the Edison Avenue Sewer. Shallower excavation with less bedrock excavation and potential blasting, reduces truck traffic, less construction materials and optimizes construction schedule and duration.	Potential debris buildup in pipe, requiring mitigation methods. Provides minimal extra storage in headspace above max WSEL.

Based on the model results discussed above, this memorandum also explores two tank sizes:

1. 1.7 MG
2. 2.3 MG

As discussed previously, any tank greater than 1.7 MG exceeds the size necessary to meet the prescribed level of control at SPP 340 while not improving the level of control for the watershed. A larger tank has similar disadvantages of the free discharge option described in the Table 1 such as more bedrock excavation and more construction materials such as steel and concrete. Scaling the simplified cost models to the estimate provided in the 2024 preliminary design, cost may be greater than $10M to build a 2.3 MG tank. The cost difference would likely increase more for a 2.3 MG tank with a free discharge configuration.

Summary and Recommendations

The PMT considered four options for this site in this most recent evaluation:

1. 1.7 MG tank with free discharge inlet pipe
2. 2.3 MG tank with free discharge inlet pipe
3. **1.7 MG tank with submerged inlet pipe (Recommended Option)**
4. 2.3 MG tank with submerged inlet pipe

The PMT recommends designing a 1.7 MG tank to meet the required level of control for SPP 340. Other SPPs in the watershed discharge four times per year so overcontrolling SPP 340 does not change the level of control for the watershed. This is consistent with the LTCP Validation work that has been underway evaluating alternative solutions and right-sizing projects to minimize the total program cost. The PMT also recommends designing the tank using a submerged inlet. BSA already employs inline storage in multiple locations within the collection system using structures like what may be built for Roosevelt Park Tank. The reduced excavation of a 1.7 MG tank with a submerged inlet reduces the overall project cost and reduces the impacts of construction on the surrounding community.

From: Blake, Dax
To: Rosaleen Nogle
Cc: Kathryn Ferrarese; Donovan, Brenna; Hothem, Jonathan; Lenz, Mark; King, Alexandria; Horvath, Ross
Subject: Canisius/Delevan Storage Tank
Date: Tuesday, March 3, 2026 3:00:19 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png

Rosey,

The PMT and Hazen have been meeting since last year to discuss Scajaquada Tunnel Interceptor (STI) and relevance to the Canisius Storage Tank. These have been productive overall including a lengthy call with Auburn about management of air in the STI near Hazen's project site. Up until recently, the PMT did not focus on the Canisius site as part of the overall validation as this project was thought to be well underway. That is not the case especially considering the more recent challenge with acquiring the land for the project.

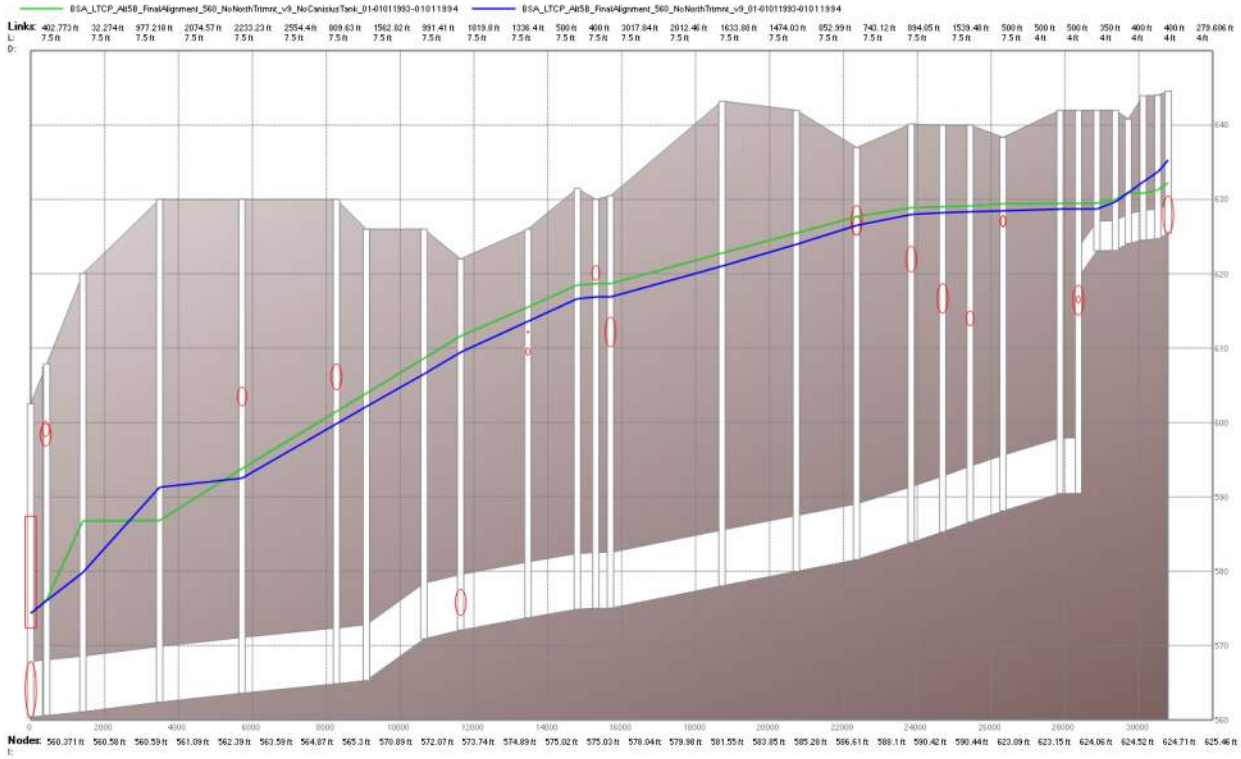
Given the current progress on the project, we collectively questioned if a no-tank option would be possible. Hazen performed initial testing and shared their proposed no-tank solution with the PMT. The PMT has tested the solution with the latest full system configuration and the typical year. We found the target activations were met for the scenario with no storage and no controls. There is an increase for the typical year max HGL. Like other analyzes, the typical year HGL is not an issue for the STI. We will test the 1-year + 10-year extreme condition but it is unlikely to show significant differences with and without the tank in those extreme scenarios.

We understand there is a meeting soon regarding the land acquisition needs and the PMT and Hazen wanted to provide you with this information given the impact on the land acquisition needs at the site. The PMT has also requested from Hazen an updated construction cost estimate for a no-tank solution so the CIP can be adjusted appropriately.

We are tentatively proceeding with this modification to the LTCP unless you have any concerns. Please don't hesitate to inquire further.

Thank you,
Dax

The screen capture below shows the peak HGL for the TY for the no storage scenario (green) vs the scenario with the storage that was originally proposed (blue).



Dax Blake, P.E.
Vice President | Intelligent Wet Weather Management
Arcadis | Arcadis, U.S., Inc.
4665 Cornell Road Suite 200 | Cincinnati OH | 45241 | USA
M. + 1 614 205 2476
www.arcadis.com
ARCADIS

This email and any files transmitted with it are the property of Arcadis and its affiliates. All rights, including without limitation copyright, are reserved. This email contains information that may be confidential and may also be privileged. It is for the exclusive use of the intended recipient(s). If you are not an intended recipient, please note that any form of distribution, copying or use of this communication or the information in it is strictly prohibited and may be unlawful. If you have received this communication in error, please return it to the sender and then delete the email and destroy any copies of it. While reasonable precautions have been taken to ensure that no software or viruses are present in our emails, we cannot guarantee that this email or any attachment is virus free or has not been intercepted or changed. Any opinions or other information in this email that do not relate to the official business of Arcadis are neither given nor endorsed by it.

[ATTENTION] This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

MEMO

Date: March 11, 2026

To: Buffalo Sewer Authority

C: Program Management Team

From: Angela Hintz, PE, JM Davidson Engineering, DPC

Subject: Revision to Planned Improvements at SPP326 Modification (CSO017_8)

Purpose

This memorandum documents a revision to the originally planned SPP326 Modification (CSO017_8) project identified in the LTCP Optimization Selected Alternative. The original project scope called for upsizing the underflow pipe at Sewer Patrol Point (SPP) 326 to increase conveyance capacity to the Swan Trunk and reduce overflow activations at CSO-017 to the Buffalo River. During preliminary investigation and site review, significant constructability constraints were identified at SPP326 that make implementation of the originally planned work impractical. This memorandum summarizes those constraints and documents a revised approach that achieves the same hydraulic objective through improvements at SPP327.

Existing Conditions and Constructability Constraints

Field investigation and review of available record drawings determined that the structure at SPP326 is highly complex and difficult to modify. The existing SPP326 underflow pipe is located beneath the chamber where it connects to the Swan Trunk Sewer. As a result, upsizing the underflow pipe would require significant reconstruction of the existing chamber structure and modifications at the connection to the Swan Trunk Sewer (Figure 1).

An alternative concept involving installation of a new pipe connection alongside the Kensington Sewer to convey flow directly to the Swan Trunk Sewer was also evaluated. However, the required construction footprint, combined with the need for extensive traffic staging and potential utility relocations within the surrounding roadway network, posed significant constructability challenges.

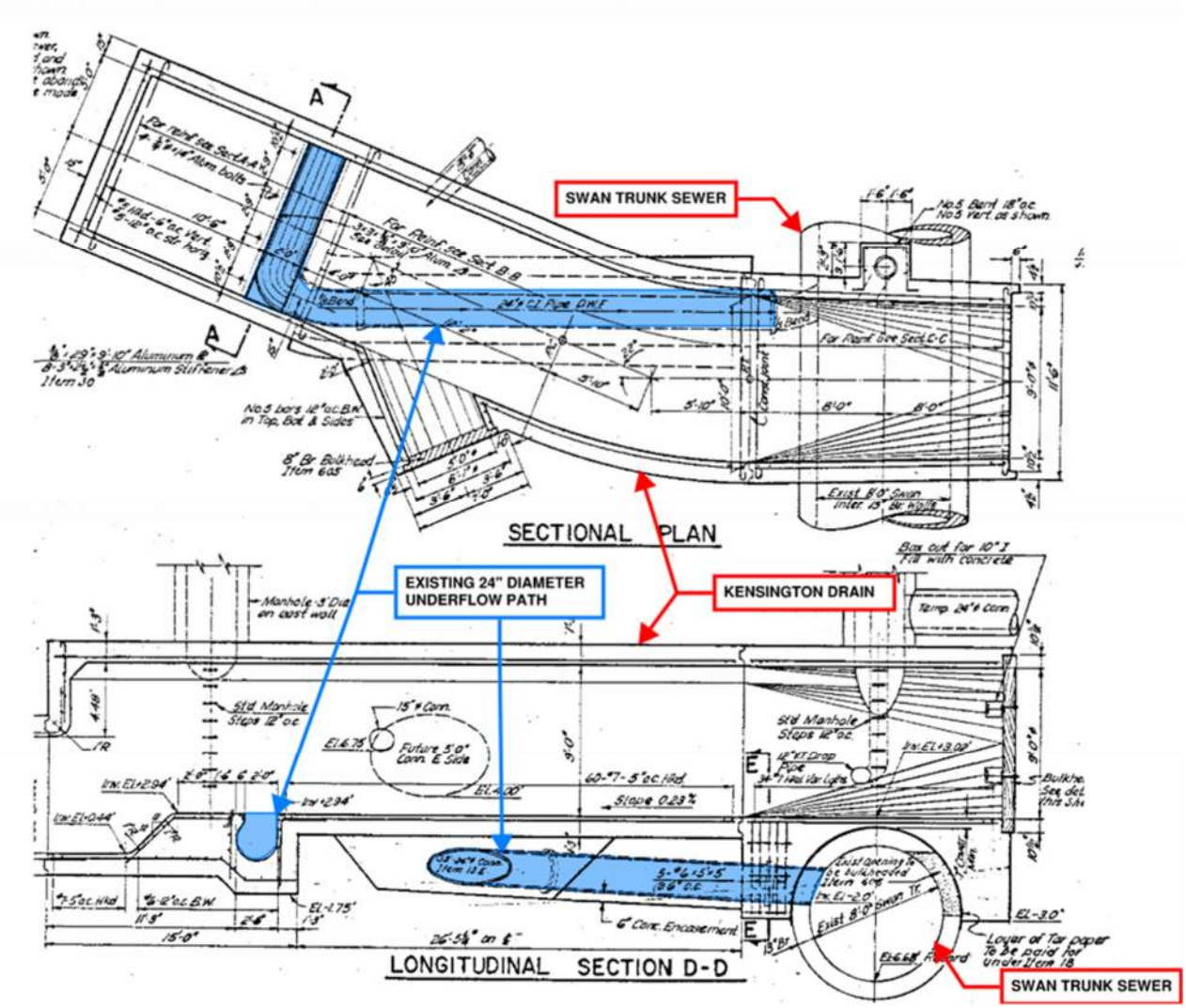


Figure 1: Record Plan of SPP326

In addition to the structural complexity, SPP326 is located within the center of the intersection of Oak Street and Swan Street, which is a heavily traveled roadway providing a major connection between downtown Buffalo and Interstate-190 northbound and southbound ramps. Construction at this location would require long-term occupation of the intersection and complex traffic control measures to maintain high traffic volumes. Maintaining adequate traffic operations while performing deep utility reconstruction within the intersection would substantially increase project cost and construction risk.

Based on these constraints, implementation of the originally planned SPP326 modification would be logistically difficult, highly disruptive to traffic, and cost prohibitive relative to the magnitude of the improvement.

Revised Improvement Concept

To achieve the same LTCP objective of reducing CSO activations associated with CSO-017, the project team evaluated alternative methods of utilizing available downstream capacity within the South Interceptor Sewer. Based on this evaluation, the planned improvements will instead be implemented at SPP327, located downstream of SPP326.

The revised scope of work includes construction of a new 24-inch diameter pipe connection between the Kensington Expressway Sewer (7 ft × 10 ft box sewer) and the South Interceptor Sewer (approximately 11 ft wide). See attached preliminary site plan drawing attachment for further details. The proposed improvements include:

1. Installation of a new 24-inch diameter dry-weather flow pipe connecting the Kensington Expressway Sewer to the South Interceptor.

2. Construction of a 3-foot-tall diversion weir within the Kensington Drain structure located downstream of the new connection.

3. The diversion weir will direct a portion of wet-weather flow through the new connecting pipe and into the South Interceptor, allowing excess flow to utilize available interceptor capacity.

This configuration will divert additional flow to the South Interceptor during wet weather events and thereby reduce the frequency and volume of overflows associated with CSO-017. Hydraulic modeling indicates that the revised diversion configuration will provide an equivalent reduction in CSO activations to that achieved by the originally proposed SPP326 underflow modification.

Advantages of the Revised Approach

The revised project location at SPP327 provides several significant constructability advantages:

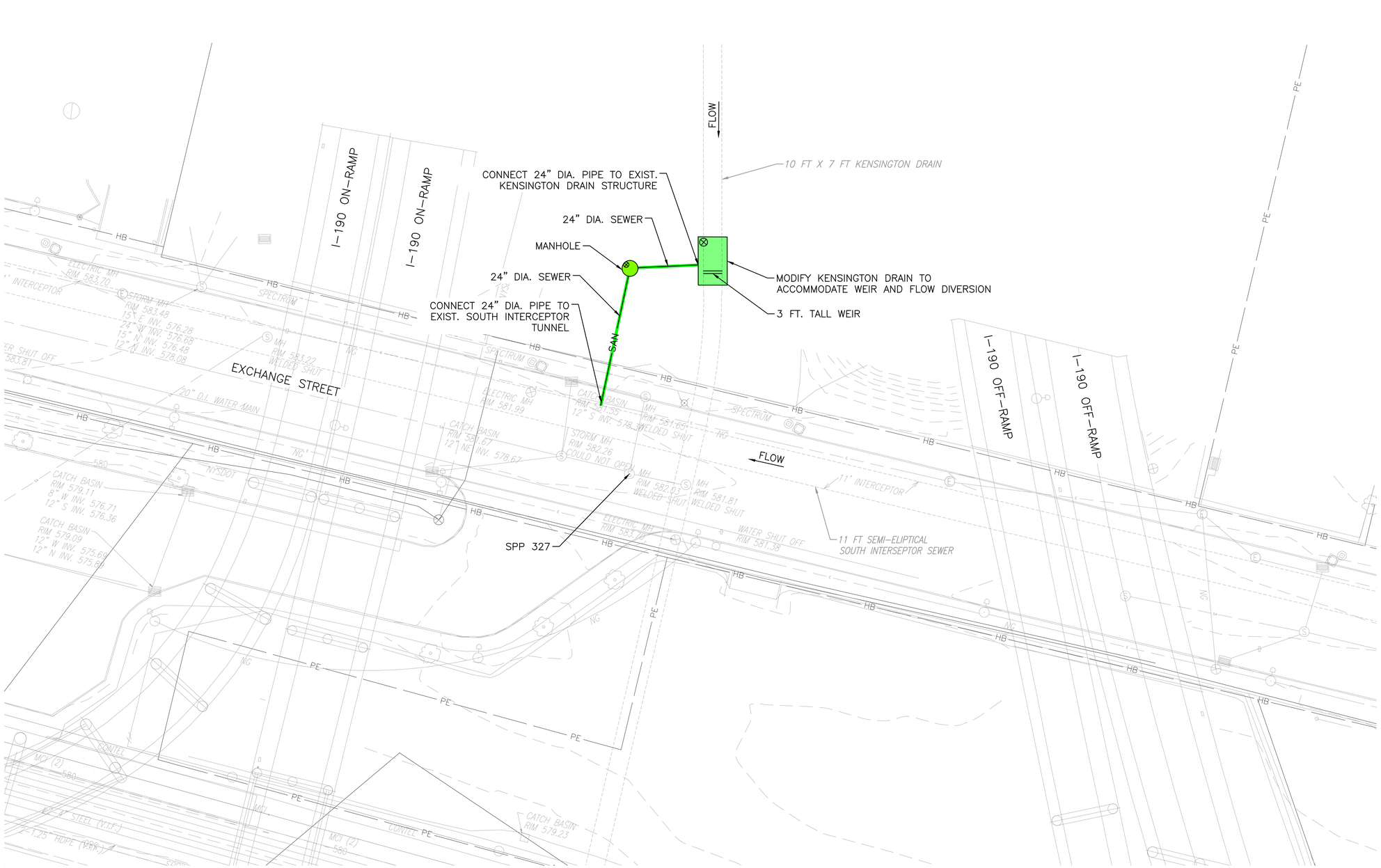
1. Much of the required construction can occur within an existing parking lot located on New York State Thruway Authority right-of-way along Exchange Street, not in a busy intersection.

2. Roadway impacts are limited primarily to the north parking and travel lanes of Exchange Street, where traffic can be maintained by staging construction along the south side of the roadway and temporarily closing parking lanes.

3. The work avoids extensive excavation within the Oak Street and Swan Street intersection, thereby minimizing traffic disruption and reducing construction risk and associated costs.

Conclusion

Based on the constructability challenges identified at SPP326 and the availability of a more practical diversion opportunity at SPP327, the LTCP improvement originally planned for SPP326 will be relocated to SPP327. The revised project will create a new controlled connection between the Kensington Expressway Sewer and the South Interceptor, allowing additional flow to utilize available interceptor capacity. This approach achieves the same objective of reducing CSO-017 overflow activations while substantially improving constructability and minimizing impacts to traffic.



SPP 327 IMPROVEMENT PRELIMINARY DESIGN SITE PLAN

1"=20' 20 0 20

JMDavidson
Engineering, D.P.C.
935 SHERIDAN DRIVE – SUITE 120
TONAWANDA, NEW YORK 14150
PHONE: 716-453-1646
WWW.JMDAVIDSONENG.COM

SEALS

NOT FOR CONSTRUCTION
30% DESIGN SUBMITTAL

WARNING – IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145, SECTION 7209 FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM ON THIS DRAWING IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK LAW, SECTION 7209.

QUEEN CITY CLEAN WATERS
BUFFALO SEWER AUTHORITY

SEWER PATROL POINT 327 MODIFICATIONS: EXCHANGE STREET

REVISIONS

NO.	DATE	ISSUED FOR	BY

COPYRIGHT: JM DAVIDSON ENGINEERING 2025

PROJECT STATUS: 30% DESIGN

PROJECT NO.: 262401.04
DATE: FEBRUARY 2026
DESIGNED BY: M. TERRANA
DRAWN BY: E. OLSON
CHECKED BY: M. TERRANA

SHEET TITLE

CIVIL

SPP327
SITE PLAN

SCALE: 1"=20'
BAR IS ONE INCH ON UNREDUCED DRAWING

DRAWING NO.: C1-01
SHEET NO.: 1 OF 2

User:MICHAELTERRANA File:C – PRELIMINARY.DWG Plot Date: Michael Terrana; 3/11/2026; 10:31 ; Layout:60 INCH PRELIMINARY DESIGN

MEMO

Date: April 1, 2026

To: New York State Department of Environmental Conservation (NYSDEC)

C: Rosaleen Nogle, PE

From: Dax Blake, PE (Arcadis) and Brenna Donovan, EIT (Arcadis) - Program Management Team

Subject: Updates to Albany Street SPP Projects Scope and Schedule

In October 2024, The Program Management Team (PMT) for the Buffalo Sewer Authority's (BSA) Queen City Clean Waters (QCCW) Program performed a preliminary evaluation of the ten Long-Term Control Plan projects intended to begin design in 2025 and 2026. The results of the evaluation were summarized in the memorandum entitled "Suggested Project Packaging for 2025-2026 Queen City Clean Waters Projects," dated October 31, 2024. In this memorandum, the PMT recommended that the **Albany Street projects (Sewer Patrol Point (SPP) 023, SPP296, and SPP024)** should be packaged as one project. Additionally, it was recommended that the project package be evaluated further to refine the scope of improvements due to challenging constructability of SPP024,located under Interstate 190 (I-190).

In the memorandum entitled "Recommended LTCP Accelerated Projects," dated December 12, 2024, the PMT discussed the challenges with the Albany Street project package and recommended QCCW projects that could be accelerated to maintain Program progress. The memorandum identified Erie Basin Marina Offline Storage (OLS), SPP326, and SPP317 as projects to accelerate and the PMT initiated work on these projects prior to their scheduled design start dates.

In late Spring of 2025, the PMT performed an LTCP Validation task as a result of substantial challenges with preliminary design of the projects launched in 2024 and 2025. During this time, the PMT continued to evaluate the remaining QCCW control projects, which included SPP023, SPP296, and SPP024 in the vicinity of Albany Street. This updated evaluation determined that the existing 48-inch underflow pipe that receives the daily dry weather flow as well as wet weather flow was limiting the capacity to convey flow to the Bird Island Wastewater Treatment Facility (WWTF). Modeling demonstrated that upsizing the 48-inch sewer to a 72-inch sewer improved overall capture by the collection system and conveyance to the WWTF. Multiple options have been evaluated to provide capacity relief to the existing 48-inch sewer including re-routing the underflows from both SPPs 023 and 296 into a new underflow sewer connected to the South Interceptor.

Original & Updated Design Scopes

Project Name	Original Project Description	Updated Project Description
COL.01-26 - CSO012_1.2 **SPP023 Modification**	For this project, SPP023 (CSO-012, Albany St. and Niagara St.) would be modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum). These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012.	For this project, the existing SPP023 (CSO-012, Albany St. and Niagara St.) will be modified by bulkheading the existing underflow opening. In its place, a new SPP023 will be constructed upstream and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor, reducing overflows at CSO-012. The new SPP023 will be configured to achieve the prescribed performance metrics for CSO-012, mirroring or improving upon the objectives of the previously proposed project.
COL.01-27 - CSO012_2.1 **SPP296 Modification**	For this project, SPP296 (CSO-012, Albany St. and Niagara St.) would be modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum). These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would be implemented after or in parallel with the SPP023 modification since it is directly upstream of the SPP023 underflow.	For this project, the existing SPP296 (CSO-012, Albany St. and Niagara St.) will be modified by bulkheading the existing underflow opening. In its place, a new SPP296 will be constructed upstream and a new underflow pipe common to SPP023 and SPP296 will be used to send more flow to the South Interceptor, reducing overflows at CSO-012. The new SPP296 will be configured to achieve the prescribed performance metrics for CSO-12, mirroring or improving upon the objectives of the previously proposed project.
COL.01-30 - CSO011_1.2 **SPP024 Modification**	For this project, SPP024 (CSO-011, Albany St. and Niagara St.) would be modified by enlarging the underflow opening to 4.8 ft, which would send more flow to the South Interceptor and reduce overflows at CSO-011.	This project, SPP024 (CSO-011, Albany St. and Niagara St.) would no longer be necessary under the updated QCCW Program. SPP024 would have a dedicated underflow connection through the existing 48-inch sewer to the South Interceptor.

Anticipated Benefit of the Updated Design Scope

The updated design scope eliminates work needed at SPP024. This removes the significant constructability challenges associated with working on a major trunk sewer located directly beneath I-190.

The proposed solution has improved constructability by locating the new common underflow pipe to flow north of the intersection of Niagara Street, Albany Street, and Fargo Avenue, then east across Niagara Avenue likely using a construction method that avoids open cutting in Niagara Street. Additionally, constructing new locations for SPP023 and SPP296 helps remediate a sewer pipe erosion problem that BSA has experienced along Albany Street. The new Albany Street project will allow the PMT to redesign the complicated pipe network in the area, resulting in an updated, streamlined network of pipes and SPPs that connect the South Interceptor to the Bird Island Wastewater Treatment Facility (WWTF). The new network will reduce the existing bottleneck in the 48-inch, allowing more flow to get to the WWTF, thereby increasing utilization of the existing treatment facility. The new project will meet the necessary levels of control for CSO-011 and CSO-012, eliminate the bottleneck, simplify the pipe and SPP network, and improve operations and maintenance by replacing pipe that needs repair, all while reducing the construction impacts and health and safety concerns associated with the original proposed designs.

Attachments

1. “Suggested Project Packaging for 2025-2026 Queen City Clean Waters Projects” Memorandum (October 31, 2024)
2. “Recommended LTCP Accelerated Projects” Memorandum (December 12, 2024)

MEMO

Date: October 31, 2024

To: Rosaleen Nogle, PE

From: Angela Hintz (JM Davidson Engineering, D.P.C.), Program Management Team

Subject: Suggested Project Packaging for 2025-2026 Queen City Clean Waters Projects

The Program Management Team (PMT) for the Buffalo Sewer Authority's (BSA) Queen City Clean Waters (QCCW) Program (QCCWP) has performed a preliminary evaluation of the ten Projects slated to begin design in 2025 and 2026. The following memo presents a brief description of the projects and the proposed "packaging" of contracts to:

- Obtain BSA consensus on the project groupings that seek to package projects based on common work, while making each project of such a size that would be amenable to bidding and encouraging competitive bids by several contracts.
- Better understand the potential complexities of the various projects that may impact implementation schedules, to proactively mitigate or eliminate issues that may cause adverse impacts on the overall schedule already approved by regulatory agencies.
- Develop a preliminary idea of additional studies or evaluations (i.e., topographical survey, geotechnical borings, etc.) that may be required for design.
- Identify potential stakeholders (regulatory and other) early to inform the strategy for engaging with them.

The following projects listed in Table 1 are slated to begin design in March 2025 per the approved regulatory schedule, with design completion dates represented in the fourth column of the table. Projects in which design is slated to begin in March 2026 per the approved regulatory schedule are summarized in Table 2. Note that the design completion dates given in the tables below are the latest such dates designs could be completed per New York State Department of Environmental Conservation (NYSDEC) requirements; actual final design completion dates are to be determined as part of preliminary design for these projects and will be set ahead of the regulatory deadlines given in Tables 1 and 2 to ensure that BSA meets the required deadlines.

Existing drawings of the involved Sewer Patrol Points (SPPs) and conceptual sketches for the proposed offline storage (OLS) facilities were reviewed to determine existing configurations, proposed project complexities, and potential challenges/considerations that could impact design and construction, especially in terms of completion schedules. Following this review, we recommend that implementation of the projects take place as follows:

- Projects Nos. 1 and 5 to be completed in the same project since Project No. 5 appears to be a smaller project than the others (i.e., removing a weir plate only) and could easily be coupled with Project No. 1. Alternatively, it may be possible for BSA staff (or one of its term contractors) to self-perform project No. 5, as this project only involves removing an orifice plate.

- Project No. 2 to be completed as a separate project, and Projects Nos. 3 and 4 combined into a second project. Completing these projects under separate contracts would allow smaller projects that may enable a larger number of local contractors to bid on them, increasing the likelihood of competitive bids, as well as allow the simultaneous construction of all four projects. While design is not scheduled to start until June 2025, it may be advantageous to BSA to authorize preliminary investigations, such as topographical survey and geological explorations earlier. This would enable the Preliminary Engineering Reports (PERs) to be completed and relevant funding applications submitted in 2025, while allowing more time for the PMT and subsequent final design engineering firms to execute the overall design to meet the design completion deadlines. In addition, conversations can begin early between the BSA and the City of Buffalo Parks Department to gain approvals for the Schiller Park OLS project.
- Projects Nos. 6, 7, and 10 are recommended to be completed under a single project due to their close proximity to each other and the interrelations between the SPPs in this area. This would avoid conflicts that may be experienced with different contractors at the same site. Similar to the earlier projects, it may be advantageous for BSA to authorize preliminary investigations at these sites ahead of the proposed June 2026 design start dates. and implement Project Nos. 6, 7, and 8 as a single capital project. In addition, these projects are located in close proximity to Interstate I-190 and a CSX railroad, which will require coordination with those entities.
- Project No. 8 is recommended to be implemented as its own project, due to its location in an extremely busy traffic corridor under the jurisdiction of the NYSDOT. Even though design for this project is not slated until June 2026, it is recommended to perform geotechnical and topographical surveys as soon as possible, as well as coordination with NYSDOT, as this is estimated to be a complex project, involving significant traffic control.
- Project 9, which is the Erie Basin Marina OLS, should be implemented as a separate project due to the project size.

Table 3 summarizes the proposed grouping of projects and indicates next steps for implementation within the short-term future to meet the necessary regulations. Project identification numbers have been assigned to show the scheduled year for the initiation of design and then sequentially numbered using A, B, C, etc. to differentiate between different projects in the same year.

Table 1: Summary of Projects Slated to Begin Design in March 2025

ID	Project Name	Latest Design Start Date for Regulatory Compliance	Latest Design Completion Date for Regulatory Compliance	Scope of Project (from ***LTCP Optimization Selected Alternative*** Technical Memorandum prepared by Xylem)
1	COL.01-21 - CSO014_1.1 SPP206A&B RTC	03/03/25	08/27/27	There is an existing static control ILS project at SPP206A&B (4th and Georgia) that was completed as part of the Swan Trunk Improvements project. The storage relieves the Swan Trunk (reducing overflows at SPP206A&B) and gradually dewaters to the South Interceptor. The proposed RTC project **adds a 24-inch dewatering gate and connection to the South Interceptor**. The gate would open to send more flow to the South Interceptor when it has available capacity, and close when it is near full capacity. This would further reduce overflows at SPP206A&B and could provide additional benefit downstream at SPP024 (CSO-011).
2	COL.01-22 - System_2 Schiller Park OLS	03/03/25	12/17/27	The Schiller Park OLS project is an offline storage project that would **divert inflows from Cheektowaga to an approximately 8 MG storage facility** during wet weather until the BSA collection system has capacity to receive and treat it. This project would help buffer peak flows to the Bird Island Treatment Facility and reduce overflows at SPPs along the North and South Interceptor, including SPP001 and SPP024. The OLS is currently configured as a gravity-driven storage with dynamically controlled inlet and outlet gates.
3	COL.01-23 - System_2_3 SPP339 Modification	03/03/25	10/23/26	SPP339 is located north of the intersection of Kerns Avenue and Texas Street. For this project, **SPP339 would be modified by increasing the diameter of the underflow pipe to 48-inch, and by raising the elevation of the overflow weir to 52.71 ft (City datum)**. These modifications would reduce CSO-053 overflows and would benefit from the implementation of Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.
4	COL.01-24 - System_2_4 Schiller Park OLS SPP340 Modification	03/03/25	10/23/26	SPP340 is located north of the intersection of Kerns Avenue and Hagen Street. For this project, **SPP340 would be modified by increasing the diameter of the underflow orifice to 24 inches**. A **flap gate would also be applied** to prevent backflow from the Scajaquada Drain. This modification would reduce CSO-053 overflows and would benefit from the implementation of Schiller Park OLS or Sidney OLS to free up capacity in the Scajaquada Tunnel.

Table 2: Summary of Projects Slated to Begin Design in June 2026

ID	Project Name	Latest Design Start Date for Regulatory Compliance	Latest Design Completion Date for Regulatory Compliance	Scope of Project (from ***LTCP Optimization Selected Alternative*** Technical Memorandum prepared by Xylem)
5	COL.01-25 - CSO-013 (0.3 MG) (M) Replaced with CSO013_1 SPP304 Modification	03/03/26	10/23/27	For this project, SPP304 (CSO-013, Virginia St. & Busti Ave.) would be **modified by removing the underflow orifice plate**, reducing overflows at CSO-013. Since this project sends more flow to the Swan Trunk, it would benefit from the implementation of OLS projects in the South Central District.
6	COL.01-26 - CSO012_1.2 SPP023 Modification	03/03/26	10/23/27	For this project, SPP023 (CSO-012, Albany St. and Niagara St.) would be **modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum)**. These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.
7	COL.01-27 - CSO012_2.1 SPP296 Modification	03/03/26	10/23/27	For this project, SPP296 (CSO-012, Albany St. and Niagara St.) would be **modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum)**. These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would be implemented after or in parallel with the SPP023 modification since it is directly upstream of the SPP023 underflow.
8	COL.01-28 - CSO017_8 SPP326 Modification	03/03/26	10/23/27	SPP326 is located south of the intersection of Swan Street and Oak Street. For this project, the **SPP326 underflow pipe would be upsized to 36 inches**. This modification would reduce overflows at CSO-017. Since this modification sends more flow to the Swan Trunk, it would benefit from the implementation of the Erie Basin OLS project.
9	COL.01-29 - CSO-014/015 (0.8 MG)(M) Updated to larger tank: CSO014_1.2 5.55 MG Erie Basin Marina OLS	03/03/26	09/23/28	To address CSO-014 overflows, **flow from Swan Trunk would be diverted to the proposed Erie Basin Marina OLS**. The OLS would consist of an approximately **5.55 MG tank** north of the intersection of Trenton Road and Fourth Street. The storage would dewater when there is available capacity in the Swan trunk sewer. The current OLS configuration requires a pump station for dewatering. The inlet for this storage is near SPP206A&B, so it would be beneficial to implement the OLS in conjunction with the SPP206A&B RTC project.
10	COL.01-30 - CSO011_1.2 SPP024 Modification	03/03/26	10/23/27	For this project, SPP024 (CSO-011) would be **modified by enlarging the underflow opening to 4.8 ft**, which would send more flow to South Interceptor and reduce overflows at CSO-011. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.

Table 3: Proposed Project Grouping for 2025-2026 Collection System Projects

Project ID	Project Name and Short Description	Latest Design Start Date for Regulatory Compliance	Latest Design Completion Date for Regulatory Compliance	Identified External Stakeholders	Next Steps
2025A	COL.01-21 - CSO014_1.1 SPP206A&B RTC – addition of 24-inch dewatering gate and connection to South Interceptor COL.01-25 - CSO-013 (0.3 MG) Replaced with CSO013_1 SPP304 Modification - remove underflow orifice plate	03/03/25 03/03/26	08/27/27 10/23/27	City of Buffalo Environmental Management Buffalo Parks Dept. Buffalo Schools Buffalo Streets Dept.	• Topographical survey • Geotechnical evaluation • Brownfields are present in vicinity of SPP206A & B, which would require coordination with Environmental Management
2025B	COL.01-22 - System_2 Schiller Park OLS – 8 MGD offline storage facility	03/03/25	12/17/27	Buffalo Parks Department	• Topographical survey • Geotechnical evaluation • Coordination with Buffalo Parks Department
2025C	COL.01-23 - System_2_3 SPP339 Modification – increase in underflow pipe size and weir modification COL.01-24 - System_2_4 Schiller Park OLS SPP340 Modification – increase underflow orifice size to 24-inch and add flap gate	03/03/25	10/23/26	Buffalo Streets Dept. Buffalo Water (water main work anticipated)	• Topographical survey • geotechnical evaluation • Appears to require drop shaft modification. • Evaluate additional scope for driveway, sidewalk, and curb repair on Texas. Poor drainage has been observed in this area; cannot do sewer upgrade without improving drainage.
2026A	COL.01-26 - CSO012_1.2 SPP023 Modification - enlarge underflow opening to 5 ft x 5 ft and raising weir elevation COL.01-27 - CSO012_2.1 SPP296 Modification - enlarge underflow opening to 5 ft x 5 ft and raising weir elevation COL.01-30 - CSO011_1.2 SPP024 Modification - enlarge underflow opening to 4.8 ft –	03/03/26	10/23/27	CSX Railroad New York State Thruway Authority US Army Corps of Engineers Coast Guard	• Obtain prior survey information from Wendel; boring logs on March 2011 drawings for SPP023, SPP296, and SPP304. • Begin coordination with NYSTA and CSX for work in and along I-190. • Begin conceptual evaluation to identify if there are any other options available to divert flow from the South Interceptor
2026B	COL.01-28 - CSO017_8 SPP326 Modification – increase underflow pipe size to 36-inches –	03/03/26	10/23/27	New York State Department of Transportation	• Topographical survey • Geotechnical evaluation • Coordination with NYSDOT

Project ID	Project Name and Short Description	Latest Design Start Date for Regulatory Compliance	Latest Design Completion Date for Regulatory Compliance	Identified External Stakeholders	Next Steps
2026C	COL.01-29 - CSO-014/015 (0.8 MG) Updated to larger tank: CSO014_1.2 - 5.55 MG Erie Basin Marina OLS	03/03/26	09/23/28	Buffalo Parks Department, City of Buffalo Environmental Management	• Topographical survey and • Geotechnical evaluation • Coordination with Buffalo Parks Department • Brownfield due to coal tar from National Fuel • Could be a possible location to use fill from the Schiller Park OLS implementation.

Based on Table 3, it appears that topographical surveys and geotechnical evaluations could commence now. In addition, BSA has initiated discussions with the Buffalo Parks Department for these future projects and close coordination with the Parks Department should be continued going forward, in terms of the off-line storage projects, so that public considerations can be taken into account and disruption to the community's ongoing recreation within the parks can be minimized.

Two projects may require additional conceptual evaluations to further refine the scope of the improvements:

- 2026A SPP024 Modification – While the scope currently requires an enlargement of the existing underflow opening to 4.8 ft, the location of SPP024 under Interstate 190 and the challenging configuration of the existing structure will make this project difficult to construct. Consideration will need to be given to identify and vet alternatives that may be implemented in lieu of the SPP024 work, including alternatives for pulling flow off the Swan Trunk further upstream (i.e. in the area of SPP206A&B) and conveying it to the South Interceptor, or storing the flow in the vicinity of Albany Street to reduce overflows at CSO011.
- 2026B SPP326 Modification – This project was initially envisioned as increasing the existing underflow pipe size to 36-inches. This SPP is located within the busy intersection of Swan and Oak Streets and presents a challenge in that the existing underflow pipe lies below the SPP, which would make construction difficult. Alternatives such as diverting flow within Swan (between Oak and Ellicott Streets) or adding a leaping weir close to the existing SPP should be considered.

While these projects are not slated to begin design until March 2026, it would be advantageous to start these preliminary evaluations in early 2025 to determine the most appropriate courses of action, so that the project scopes are adequately defined before design is to begin in 2026.

LEGEND

2025-26 Priority Project

Municipal Boundary

SPP296 Modification

SPP024 Modification

SPP023 Modification

SPP304 Modification

Erie Basin Marina OLS

SPP206A&B ILS Optimization/206 A&B RTC

SPP326 modification

Schiller Park OLS SPP339 Modification

Schiller Park OLS SPP340 Modification

Schiller Park OLS

NORTH

NIAGARA

DELAWARE

UNIVERSITY

MASTEN

ELLICOTT

FILLMORE

LOVEJOY

SOUTH

Grand Island

Tonawanda

Amherst

Cheektowaga

West Seneca

Lackawanna

Buffalo

Sheridan Dr

Military Rd

Delaware Ave

Englewood Ave

Kenmore Ave

Eggert Rd

Main St

Harlem Rd

Interstate 290

Colvin Ave

Tacoma Ave

Hertel Ave

Amherst St

Interstate 190 Southbound

Kensington Ave

W Delavan Ave

E Delavan Ave

Elmwood Ave

Bailey Ave

E Ferry St

West Ave

Niagara St

Walden Ave

Ellicott St

Sycamore St

William St

Clinton St

Interstate 90

Seneca St

State Route 5

Tifft St

S Park Ave

Indian Church Rd

Abbott Rd

Ridge Rd

United States Route 219

Orchard Park Rd

0 1 2 mi

QUEEN CITY CLEAN WATERS PROGRAM

2025-26 PRIORITY PROJECTS

BUFFALO SEWER AUTHORITY

MEMO

Date: December 12, 2024

To: Rosaleen Nogle, PE

From: Laura McGinnis (Arcadis) Program Management Team

Subject: Recommended LTCP Accelerated Projects

The Buffalo Sewer Authority's (BSA) Queen City Clean Waters (QCCW) initiative has requested the Program Management Team (PMT) identify Long Term Control Plan (LTCP) projects that may be accelerated in schedule to offset three other projects that have been identified as more complicated, thereby requiring more time in the current schedule to evaluate and construct. BSA's extension request applies to three Sewer Patrol Points (SPPs) currently scheduled to start design in March 2026 and construction completed in by November 2029. The constructability of the three SPP projects is extremely complicated including one that is located directly under I-190 and will require additional time for planning to identify if other options exist for either design or construction. The goal is to accelerate other projects to offset the projects that require delay. The following memo presents a brief description of the drivers behind the request, the process of identifying projects to accelerate and the recommended accelerated projects.

Three projects referenced in the "Suggested Project Packaging for 2025-2026 Queen City Clean Waters Projects" memo dated October 31, 2024, have been identified as requiring additional evaluations to address constructability issues and further refine the scope of the improvements necessary to meet the LTCP performance measures:

Table 1: Summary of Projects Requiring Additional Evaluation Slated to Begin Design in March 2026

ID	Project Name	Latest Design Start Date for Regulatory Compliance	Latest Design Completion Date for Regulatory Compliance	Scope of Project (from ***LTCP Optimization Selected Alternative*** Technical Memorandum prepared by Xylem)
6	COL.01-26 - CSO012_1.2 SPP023 Modification	03/03/26	10/23/27	For this project, SPP023 (CSO-012, Albany St. and Niagara St.) would be **modified by enlarging the underflow opening to 5 ft by 5 ft and by raisin the overflow weir to 1.55 ft (City datum)**. These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.

ID	Project Name	Latest Design Start Date for Regulatory Compliance	Latest Design Completion Date for Regulatory Compliance	Scope of Project (from *LTCP Optimization Selected Alternative* Technical Memorandum prepared by Xylem)
7	COL.01-27 - CSO012_2.1 SPP296 Modification	03/03/26	10/23/27	For this project, SPP296 (CSO-012, Albany St. and Niagara St.) would be **modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum)**. These modifications would send more flow to the South Interceptor and reduce overflows at CSO-012. This project would be implemented after or in parallel with the SPP023 modification since it is directly upstream of the SPP023 underflow.
10	COL.01-30 - CSO011_1.2 SPP024 Modification	03/03/26	10/23/27	For this project, SPP024 (CSO-011) would be **modified by enlarging the underflow opening to 4.8 ft**, which would send more flow to South Interceptor and reduce overflows at CSO-011. This project would benefit from the additional downstream conveyance capacity provided by the Northern Relief Tunnel and OLS projects in the South Central District.

The assumption in the LTCP Optimization Study submitted in 2023 was that SPP Modification Projects were minor changes to the sewer structures that required shorter design and construction times, and were initially assumed to just include weir modifications within the structures themselves (i.e., no improvements outside of the structure). However, the location of these projects relative to I-190 and complexities of access within the SPPs, particularly SPP024, and construction make it evident that more time is required to develop and coordinate the design and construction of each project, and the total cost is likely to increase significantly to address the sewer overflows.

Table 2: Description of Project Concerns

ID	Project Name	Project Concerns
6	COL.01-26 - CSO012_1.2 SPP023 Modification	For this project, SPP023 (CSO-012, Albany St. and Niagara St.) would be **modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum)** to send more flow to the South Interceptor and reduce overflows at CSO-012. This project was packaged together with SPP296 and SPP024, because the SPPs are located in close proximity to each other and having a single contractor complete the proposed improvements at all three SPPs will be easier than having potentially three separate contractors working simultaneously on one site.
7	COL.01-27 - CSO012_2.1 SPP296 Modification	For this project, SPP296 (CSO-012, Albany St. and Niagara St.) would be **modified by enlarging the underflow opening to 5 ft by 5 ft and by raising the overflow weir to 1.55 ft (City datum)** to send more flow to the South Interceptor and reduce overflows at CSO-012. This project was packaged together with SPP023 and SPP024, because the SPPs are located in close proximity to each other and having a single contractor complete the proposed improvements at all three SPPs will be easier than having potentially three separate contractors working simultaneously on one site.
10	COL.01-30 - CSO011_1.2 SPP024 Modification	While the scope currently requires an enlargement of the existing underflow opening to 4.8 ft, **the location of SPP024 under Interstate 190 and the challenging configuration of the existing structure, while protecting contractor health and safety, will make this project difficult to construct**. Consideration will need to be given to identify and vet alternatives that may be implemented in lieu of the SPP024 work, including alternatives for pulling flow off the Swan Trunk further upstream (i.e. in the area of SPP206A&B) and conveying it to the South Interceptor, or storing the flow in the vicinity of Albany Street to reduce overflows at CSO011.

The Authority is fully committed to addressing the CSOs in the system, recognizes the impact of delaying projects, and desires to offset the impacts by advancing other projects in the program. To begin selecting potential projects to accelerate, BSA and the PMT considered several factors:

- Projects that will recognize a CSO benefit once constructed (i.e., not reliant on the completion of other projects at later dates, to gain a significant reduction in CSO activations and volumes)
- Projects already in the design phase
- Projects scheduled to begin design in 2025 or 2026
- Financial implications
- Previous drivers for project bundling

The recommended projects to delay and the projects to accelerate are detailed in the table below:

Table 3: Recommended Projects to Delay to Evaluate Further and Projects to Accelerate

		Design Start Date	Design Finish Date	Capital Cost* (from Optimization memo)	Drivers and Benefits	Concerns
PROJECTS TO EVALUATE FURTHER						
6	COL.01-26 - CSO012_1.2 SPP023 Modification	06/17/26	10/22/27	$60,000	• Will result in reduction in activations from 36 to 24, assuming full plant capacity of 560 mgd.	• See Table 2.
7	COL.01-27 - CSO012_2.1 SPP296 Modification	06/17/26	10/22/27	$60,000		
10	COL.01-30 - CSO011_1.2 SPP024 Modification	06/17/26	10/22/27	$60,000		
PROJECTS TO ACCELERATE / PRIORITIZE						
	COL.01-29 - CSO-014/015 (0.8 MG)(M) Updated to larger tank: CSO014_1.2 5.55 MG Erie Basin Marina OLS	06/17/26	09/22/28	$62,440,000	• Already part of the 2025-2026 projects • Planning work has already started • Will aid in reducing activations from 22 to 19 and a reduction in volume from 429.7 MG to 377.8 MG in the typical year. • Addresses BSA's sole sensitive area in the LTCP.	• Project will be completed in conjunction with SPP206A&B inline storage project, which will involve work under the portion of I-190 that is elevated on piers, which will make construction more complex.
	COL.01-28 - CSO017_8 SPP326 Modification	06/17/26	10/22/27	$60,000	• Already part of the 2025-2026 projects • Planning work has already started • Will aid in reducing activations at CSO017 from 10 to 5 and a volume reduction of 24 MG to 8.9 MG.	• Full benefits of reduction in activations will not be observed until remainder of projects for CSO017 are implemented, the largest of which is the Bass Alley offline storage tank.
	CSO-064_1.2 SPP 137 Modification	03/03/30	10/24/31	$60,000	• Will reduce activations from 10 to 1 and volumes from 2.7 MG to 0.1 MG	

Note: Capital costs are from the 2023 optimization memo and represent placeholder costs. These costs do not currently represent site-specific physical constraints that may increase costs. Project design phases will identify and quantify impacts on costs.

The observed benefit of the accelerated projects will meet or exceed the CSO reduction goals of the projects to be reevaluated. As with the LTCP program, the full benefit of a specific project might not be recognized until further into the project.

BSA presents the recommended projects as shown in Table 3 be accelerated in lieu of the SPP023, SPP024, and SPP296 projects, to allow for additional evaluations for the latter projects.

MEMO

Date: April 15, 2026

To: Rosaleen Nogle, PE

C: K. Ferrarese, W. Walker, D. Blake, B. Donovan

From: A. Hintz, JM Davidson Engineering, D.P.C.

Subject: Revision of Several SPP Project Schedules

JM Davidson Engineering (JMD) is currently advancing several Queen City Clean Waters (QCCW) projects in accordance with the most recent schedule issued by the New York State Department of Environmental Conservation (NYSDEC), dated December 2024.

To date, project progress has remained on track, with milestones shown in green having been achieved without delay and those in yellow representing near-term upcoming deliverables. Several projects are already under construction or in contract execution, including SPP338 (Bailey Ave. and Kerns Ave.), which has been incorporated into the existing Smart Sewer project and is anticipated to be completed in April 2026—well ahead of the contractual construction completion date. Similarly, contracts for SPP341A (Genesee St.) and various SPPs (336B, 175, 176, and 177) are currently being executed by the Buffalo Sewer Authority (BSA), while multiple additional projects are actively progressing through design.

Project Name	Design Start	Design Completion	Notice to Proceed (NTP)	Construction Completion	Status
SPP337 Modification – Colorado Ave	3/2/2024	6/30/2026	12/31/2026	12/31/2028	To be advertised 4/30/2026
SPP338 Modification – Bailey Ave. and Kerns Ave.	3/2/2024	12/31/2026	6/30/2027	12/31/2029	In Construction; added as change order to existing Smart Sewer project – will be finished in April 2026, well ahead of scheduled construction completion date
SPP341A Modification – Genesee St.	3/2/2024	12/31/2025	6/30/2026	12/31/2027	BSA is executing contract
Various SPPs (336B, 175, 176, 177)	3/2/2024	12/31/2025	6/30/2026	12/31/2027	BSA is executing contract

Project Name	Design Start	Design Completion	Notice to Proceed (NTP)	Construction Completion	Status
SPP 339 Modification (Texas and Kerns)	3/3/2025	12/31/2026	6/30/2027	6/30/2029	In Design
SPP 340 Modification (Hagen and Kerns)	3/3/2025	12/31/2026	6/30/2027	6/30/2029	In Design
SPP304 Modification (Virginia and Busti)	3/3/2026	12/31/2027	6/30/2028	12/31/2029	In Design
SPP 326 Modification (Oak and Swan)	3/3/2026	12/31/2028	6/30/2029	12/31/2030	In Design
CSO-064 ILS (Louisiana)	3/3/2025	6/30/2028	12/31/2028	6/30/2031	In Design
SPP 137 Modification (Louisiana)	3/3/2025	6/30/2028	12/31/2028	6/30/2031	In Design

In consideration of current project conditions, coordination requirements, and opportunities to optimize sequencing, JMD is requesting a modification to the established schedule. Specifically, we propose deferring the SPP339 and SPP340 projects (Texas St./Kerns Ave. and Hagen St. /Kerns Ave., respectively) in favor of accelerating SPP326 (recently revised and now proposed as a new structure near SPP327 on Exchange Street), SPP304 (Virginia Ave. and Busti Ave.), and the combined CSO-064 ILS/SPP137 projects along Louisiana Street.

This request is driven by several key factors. First, the City of Buffalo is planning significant streetscape improvements along Louisiana Street. Advancing the CSO-064 ILS and SPP137 projects ahead of the City's work will allow for proper coordination of underground infrastructure improvements and surface restoration, thereby avoiding redundant construction activities and eliminating the risk of newly constructed assets being disturbed or replaced during subsequent City work. This coordination will result in more efficient use of project funding and minimize disruptions to the public.

Second, the SPP326 project has recently undergone a substantial scope refinement, with the facility relocated from the previously constrained Oak and Swan site to a parking lot on Exchange Street. This change significantly simplifies constructability and design complexity. JMD has already initiated survey efforts for the new site, and the revised configuration is expected to streamline the design process, with the primary remaining coordination effort involving the New York State Thruway Authority. There will also likely be minor changes at the existing SPP326, to direct flow from the Swan Trunk to the South Interceptor.

Conversely, SPP339 and SPP340 present notable challenges that warrant additional time. Subsurface investigations have identified significant utility conflicts that will require further coordination with utility owners and may necessitate relocations or design adjustments. Allowing additional time for these efforts will reduce design risk and improve overall project execution.

Finally, JMD believes there is considerable value in incorporating lessons learned from projects currently nearing construction, including SPP341A (Genesee St.) and SPP337 (Colorado Ave.). In particular, the SPP339 (Texas St.) design is anticipated to closely mirror SPP337 in terms of structural configuration, site constraints, and the complexity of maintaining flows during construction. Advancing SPP337 through bidding and initial delegated design phases prior to finalizing SPP339/340 will provide critical insights that can be leveraged to refine design details, reduce construction risk, and improve bid competitiveness.

Based on these considerations, JMD proposes to revise the schedule by extending the design and construction timelines for SPP339 and SPP340, while accelerating the CSO-064 ILS and SPP137 projects, as shown in the table below. Under the proposed adjustment, SPP339/340 would complete design in mid-2028 with construction concluding in 2031, while CSO-064 ILS and SPP137 would advance to design completion by the end of 2026, enabling earlier construction and improved coordination with City initiatives.

Project Name	Design Start	Proposed Design Completion	Proposed NTP	Proposed Construction Completion
SPP 339 Modification (Texas St. and Kerns Ave.)	3/3/2025	6/30/2028	12/31/2028	6/30/2031
SPP 340 Modification (Hagen Ave. and Kerns Ave.)	3/3/2025	6/30/2028	12/31/2028	6/30/2031
CSO-064 ILS (Louisiana Street)	3/3/2025	12/31/2026*	6/30/2027	6/30/2029
SPP 137 Modification (Louisiana Street)	3/3/2025	12/31/2026*	6/30/2027	6/30/2029

**The JMD team is targeting completion by this date and believes it is reasonably achievable based on the current project understanding. However, successful adherence to this schedule will require timely coordination between BSA's project and the City DPW project. JMD will proactively engage all stakeholders and prioritize coordination efforts to maintain the schedule to the greatest extent possible, while recognizing that delays may occur if coordination milestones are not fully achieved.*

JMD believes this revised sequencing represents a more strategic and coordinated approach that will enhance project delivery, reduce overall risk, and maximize the effectiveness of ongoing infrastructure investments within the QCCW program.