# BUFFALO SEWER AUTHORITY

SPDES Permit No. NY0028410

Long Term Control Plan Semi-Annual Status Report Reporting Period: *July through December 2023* Amended Administrative Order CWA-02-2014-3033 (Amends CWA-02-2012-3024)

March 2024

CWA-02-2014-3033 BUFFALO SEWER AUTHORITY

### Long Term Control Plan Semi-Annual Status Report

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## **1. INTRODUCTION**

The Buffalo Sewer Authority (Authority) received approval of its Long-Term Control Plan (LTCP) from the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC) on March 18, 2014. The Authority entered into an Amended Administrative Order on April 16, 2014 (herein after referred to as the AO), with the USEPA. This AO establishes a schedule for implementation of the Authority's LTCP, approved by the USEPA and NYSDEC.

The AO in part requires that the Authority submit written Semi-Annual Status Reports to the USEPA and NYSDEC by September 1<sup>st</sup> for current year January 1– June 30 reporting period, and March 1<sup>st</sup> for the previous calendar year July 1 – December 31 reporting period. The AO requires that the following be provided in each Semi-Annual Status Report:

- The project milestones, deadlines and other terms that the Authority is required to meet since the date of the last Semi-Annual Status Report, whether and to what extent the Authority has met those requirements, and the reason for any anticipated delays and/or noncompliance.
- A general description of the work completed during the reporting period and the applicability of the work to meet indicated design criteria, as well as the projection of work to be performed during the next reporting period and any anticipated delays for the upcoming work. Any changes in key personnel must also be noted.
- Enclosure of public meeting (if held) materials including: advertisements, handouts, formal meeting notes, and a summary of the meeting (see Attachment C).
- Copies (to USEPA only) of all monthly monitoring reports or other reports pertaining to combined sewer overflows (CSOs) and bypasses that Authority submitted to the NYSDEC during the reporting period. Please note DMRs are now submitted electronically directly to the USEPA and no dry weather CSOs occurred during this period, so this item does not apply during this reporting period.

This report covers July through December 2023 which serves as Semi-Annual Report No. 20.

# 2. REQUIREMENTS DUE IN REPORTING PERIOD

Attachment A provides the current status of all projects listed in the Administrative Order. Issues with implementing these projects are detailed in Section 4 of this document.

This document serves as the March 1, 2024, Semi-Annual Report.

Two Certificates of Acceptance and Occupancy were issued during this reporting period for the Broadway at Oak RTC project and the Betterment as Part of the Niagara St Gateway Project Phase 3 (copies are included in Attachment D).

# **3. WORK COMPLETED IN CURRENT REPORTING PERIOD AND PROJECTION OF WORK TO BE PERFORMED NEXT REPORTING PERIOD**

A general description of the work completed on LTCP projects during the current reporting period and the work projected to be performed during the next reporting period is provided in Attachment A. Items that have been completed have been highlighted green. Items with Implementation Issues are highlighted in yellow and discussed in Section 4. Items which are no longer being considered as a result of the 2021 Approved Recalibrated Model are grayed out and discussed in Section 7. Items which are being reevaluated in light of the 2021 Approved Recalibration Model are highlighted in blue and discussed in Section 7. A more detailed description of each project including the location and the goal to be achieved through each project is provided in Attachment B.

With this report, while discussions are ongoing regarding the future of the LTCP, projects as outlined in the Draft LTCP Optimization Selected Alternative dated December 22, 2023, are listed as a separate tables within Attachments A and B. Cost data has been requested in the proposed consent decree language provided by the regulatory agencies and United States Department of Justice, to address this request, in Attachment A, columns have been added, though not yet fully populated. Comments regarding this formatting are requested prior to verify acceptability.

By providing this information now, Buffalo Sewer is demonstrating a good faith effort to ensure that at such time as the Draft LTCP Optimization Selected Alternative replaces the 2014 LTCP as a compliance document, that reporting conforms to formatting agreeable to all parties and that during this transition period the regulatory agencies are kept apprised of our progress,

# 4. IMPLEMENTATION ISSUES

As a reflection of nationwide and local employment trends, during this reporting period, the Buffalo Sewer Authority has experienced unprecedented turnover in staffing and consulting partners have expressed that, together with a significant decrease in the local labor pool for many engineering and other technical trades, has led to increases in periods of vacancies. Nevertheless, the Authority has been, and will continue to, work with internal staff and all necessary outside parties to facilitate the timely completion of LTCP projects.

In demonstration of the ongoing work that Buffalo Sewer has accomplished during this time period Attachment E: Board Items for LTCP Projects has been included in this submission.

## 4.1 Amherst Quarry Off-line Storage and Gates Circle In-Line Storage

The Amherst Quarry Off-line Storage Project is being progressed in phases with the first phase being Real Time Control placement on Bailey Avenue at Minnesota Avenue and Bailey Avenue at East Amherst Street where flows are diverted from and returned to the Bailey Avenue Trunk Sewer together with the installation of additional flow monitoring devices to facilitate a system of globalized control for storage as needed where available for high flow events throughout the city.

This project, in the interest of ensuring competitive bidding, is being combined with the Gates Circle In-line Storage. The Gates Circle In-line Storage project will modify SPP 322 to create a balance of flows between the Scajaquada Tunnel and Bird Avenue Trunk.

Together these projects have been retitled "Scajaquada Creek and Black Rock Canal Smart Sewer Project." Approval of the Engineering Report for this project was issued on June 7, 2023, a construction contract has been awarded and is expected to be executed in the next reporting period, this has been somewhat delayed while funding through the Environmental Facilities Corporation is finalized.

The second phase of the Amherst Quarry project is expected to start Engineering in 2024 and consist of the station rehabilitation and logic improvements.

#### 4.2 Smith Street and Eagle Street In-line Storage

## (Previously known as Montgomery CSO Line Storage)

On December 31, 2021, the Smith Street and Eagle Street In-line Storage project was put into operation with localized Real-Time Control signifying Substantial Completion. The site is in the process of being integrated into the facility's SCADA system, however no Certificate of Acceptance and Occupancy will be issued until a change order to this contract to ensure critical long lead time spare parts are available for both this station and the original Smith Street RTC has been completed. It is expected that the Certificate of Acceptance and Occupancy will be issued in the next reporting period.

#### 4.3 Breckenridge at Niagara Street In-Line Storage

This project is proposed to replace the LTCP project "CSOs 010,008/010, 061, 004 Underflow Capacity Upsizing." CSOs 061 and 008 were determined by the Recalibrated Hydraulic Model to already have achieved activation levels in compliance with the goals of the Long-Term Control Plan. Site considerations for the proposed underflow sewer and the future potential for globalized control logic drove the decision making to pivot towards this option over the underflow sewer. 75% Design Documents were submitted to NYSDEC and USEPA on December 7, 2022 under the title "Scajaquada Creek and Black Rock Canal Smart Sewer Project."

As design progressed, it was found that the interconnection at Niagara Street was less feasible than originally determined and that the age of the Breckenridge Sewer was consistent with other sewers which have failed within the past five years and should be replaced as part of this project. A revised Engineer's Report for this project was submitted for review and approval by NYSDEC in September 2023. Please note that this project has been listed on the New York State Environmental Facilities Corporation's Annual List and Buffalo Sewer intends to advance this project this year with this funding.

#### 4.4 Hamburg Drain Optimizations (Mill Race In-Line Storage)

The Mill Race RTC project together with the Broadway at Oak In-line Storage Project substantially meet the goals of the Hamburg Drain Optimizations as outlined in the Long-Term Control Plan. Substantial completion has been delayed due to supply chain issues related to valves. Both substantial completion and final acceptance are anticipated in the next reporting period.

#### 4.5 Jefferson Avenue & Florida Street (CSO 053) Satellite Storage

Throughout the reporting period, preliminary design work on this project was entered into. Alternatives currently being explored include a tunnel within the right of way of East Delavan and an underground storage tank on Canisius College owned property. To expedite scheduling and facilitate the best use of the money of the people of Buffalo, New York, and the United States, part of the project (CSO053\_10 SPP 229A RTC) has been severed from the larger CSO053\_11 with completion of design and bidding of this smaller portion expected in the next reporting period.

#### 4.6 WWTP Improvement Project Alternative C2

This project is being phased in three parts. The first of these phases is the Secondary System Rehabilitation and Upgrade Project. A groundbreaking ceremony for the Secondary System Rehabilitation and Upgrade Project occurred on October 19, 2022. At this time this phase is under construction and the first battery shutdown is anticipated in the next reporting period.

Approval of the second phase's Engineering Report was provided by NYSDEC on June 8, 2023. It is anticipated that bidding of this phase will occur in the next reporting period. A public participation plan will be prepared for public comment and implementation during the next reporting period as well. The award of the construction administration and inspection contract for this project will also occur in the next reporting period.

On August 2, 2023 a request for proposals was issued for the design of NFA Phase III and non-NFA Phase III Improvements. On November 1, 2023, the Board of the Buffalo Sewer Authority approved the award of this contract to AECOM USA, Inc.

#### 4.7 Existing RTC Issues

In depth data analysis by Buffalo Sewer and our consultants has demonstrated that some meters currently being used to determine overflow volumes and volumes prevented from overflowing are mis-calibrated. The meter for determining flows from the Smith Street RTC back to the Southern Interceptor was over estimating flows being conveyed. Recalculation of the impact of these overestimates are included in the separately submitted 2023 Post-Construction Monitoring Report.

The Smith Street controller has been repaired and is awaiting long-lead time parts to be replaced. Buffalo Sewer is replacing and changing the specifications for several components of the actuator/valve/controller system to ensure greater reliability and accuracy in reporting moving forward.

During the construction of the Smith at Eagle RTC contract, the issue of flooding within the Valley neighborhood and backflow over the Smith Street RTC were identified as issues that will be exacerbated by climate change and will harm the long-term effectiveness of the LTCP. A similar issue of the Hertel Avenue RTC experiencing backflow due to seiche events was also identified. With the Smith Street site, it was determined that a two-pronged approach is necessary, first small backflow valves would be installed in localized combined sewer overflow regulators to prevent basement flooding. The first of these backflow valves were installed in December 2022 and prevented localized flooding at specific locations within the Valley during the Christmas weekend blizzard when the seiche levels peaked at their fourth highest level on record. The majority of these modifications have now been completed; the final one is expected to be completed in the next reporting period, but positive feedback from the neighborhood has already been heard after recent seiche events.

A second, larger scale control system is required for both Smith Street and Hertel Avenue to prevent backflow due to high river levels to ensure that the RTCs remain operational during seiche events and to prevent the widespread backing up of the waterways into the combined sewer during these events. Funding for these larger scale projects is currently being identified with multiple grant sources being explored including FEMA funding.

## 5. CHANGES IN KEY PERSONNEL

On August 17, 2023, Roberta Gaiek, Treatment Facility Administrator took an extended leave of absence. On September 11, 2023, Cheryl Colston, Esq, was hired as General Counsel, Maria Granville was hired as Intergovernmental Coordinator and Gelea James was hired as Director of Employee Relations for Buffalo Sewer. On October 20, 2023, Stephanie Hanson resigned her position as GIS Specialist II with Buffalo Sewer.

In the Fall of 2023, Buffalo Sewer organized a Public Outreach team to improve and facilitate Buffalo Sewer's community outreach and engagement. In November 2023, Buffalo Sewer executed an agreement with Greeley and Hansen to complete Capital Projects Program Management Services.

On October 26, 2023, a Buffalo Sewer Authority vehicle was fired upon while in motion on the I-190 Expressway. Three members of the Green Infrastructure Maintenance team were shot in this incident. Keyshawn Gault passed away from his injuries, the other two members of the team have not yet returned to work. Not only has this event deeply impacted friends, family, and co-workers of these young men and resulted in several lost business days, but it has also introduced new challenges for recruitment and retention.

## 6. PUBLIC MEETINGS

On July 12, 2023, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE gave a presentation at the Buffalo Science Museum on the history of Scajaquada Creek and the upcoming projects at Colorado and Scajaquada. Slides for this presentation are included in Attachment C as "1-Colorado Ave American Axle Presentation".

On July 14, 2023, Buffalo Sewer's Shift Superintendent, Sean Morrison, lead a tour of Buffalo Sewer's Waste Water Treatment Plant for a cohort of students that interned with BSA through a partnership with a nationally recognized program called "Our Story Project."

On July 18, 2023, Buffalo Sewer's Shift Superintendent, Sean Morrison, lead a tour of Buffalo Sewer's Waste Water Treatment Plant for a cohort of students from the Future Innovators in Tech and Engineering program presented by National Grid. Program information is available at the link below and is also included in Attachment C as "2-FITE National Grid Partnership":

https://suny.buffalostate.edu/news/buffalo-state-national-grid-partnership-introduces-high-schoolstudents-engineering-field

On July 18, 2023, Buffalo Sewer's General Manager, Oluwole A. McFoy, PE participated in a panel for the US Water Alliance's Water and Equity Task Force, Great Lakes and Mid-West Regional Cohort. Key take-aways for this event are included in Attachment C "3-2023 USWA Great Lakes Convening."

On October 9, 2023, Buffalo Sewer's Shift Superintendent, Sean Morrison, lead a tour of Buffalo Sewer's Waste Water Treatment Plant for a cohort of students from the University at Buffalo's Department of Learning and Instruction. List of attendees for this tour are included in Attachment C "4- List of Attendees for the UB Department of Learning and Instruction's Tour of the WWTP."

On October 11, 2023, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE gave a presentation on Buffalo Sewer's CSO Long Term Control Plan at the Northumberland Water Visitation in Buffalo NY. Slides for this presentation are included in Attachment C "5-Northumberland Presentation."

On October 18, 2023, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE gave a presentation on the Mill Race Smart Sewer project and led a project site tour for the Western Chapter NYWEA Young Professional Technical Event in Buffalo NY. Slides for this presentation are included in Attachment C "6-Mill Race NYWEA YP."

On December 7, 2023, Buffalo Sewer's Forester, Jordan Roose spoke about the function and proper maintenance of rain gardens at the Niagara Street Adopt-a-Block Meeting for the Niagara River Greenway Trail. Slides and meeting notes for this presentation are included in Attachment C "7-Adopt a Trail- Steps."

On December 12, 2023, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE presented on Green Infrastructure and Stormwater Management in Buffalo during a webinar for NYS Adaption Practitioner's Network. Slides for this presentation are included in Attachment C "8-NYS Adaption Practitioners Learning Session."

On December 13, 2023, Buffalo Sewer's General Manager, Oluwole A. McFoy, PE was invited to present on Equity Through Community Engagement at the 2023 Sustainable Water Infrastructure Management (SWIM) Annual Workshop and Conference. Slides for this presentation are included in Attachment C "9-2023 SWIM Conference- VaTech."

On December 13, 2023, Buffalo Sewer's Principal Sanitary Engineer, Rosaleen B. Nogle, PE was a speaker in a webinar entitled "Creating an Enabling Environment for Nature-based Enterprises" hosted by INTERACT- Bio. Slides for this presentation are included in Attachment C "10-INTERACT-Bio\_webinar#3."

# 7. MODEL MODIFICATIONS

On October 6, 2021, the United States Environmental Protection Agency (EPA) and New York State Department of Environmental Protection (NYSDEC) approved Buffalo Sewer's "Collection System Model- Model Update Report." The Buffalo Sewer Authority has since been utilizing the updated model to review the physical and financial feasibility and efficacy of projects remaining in the Long-Term Control Plan.

Throughout the reporting period, negotiations regarding a revised Long-Term Control Plan between the USEPA, NYSDEC, USDOJ, NYS Attorney General's Office, and the Buffalo Sewer Authority have been ongoing. Additionally, during this period, the renewal of Buffalo Sewer's Publicly Owned Treatment Works (POTW) has been under review and subject to multiple submissions and discussions between Buffalo Sewer, USEPA, and NYSDEC.

## 8. GREEN INFRASTRUCTURE

Buffalo Sewer remains committed to meeting the original conditions of the LTCP under the Amended Administrative Order to use Green infrastructure (GI) to the extent originally approved. At this time GI is not being proposed as a replacement for gray infrastructure, but rather in conformance with the approved LTCP.

Award for Niagara Street phase 4B was provided in July 26, 2023, but Notice to Proceed has been delayed while the Green Infrastructure Grant Program award for this project is finalized. The private property green infrastructure grant program contract has been executed and is currently receiving applicants.

Projects to be funded through the Environmental Impact Bond including a mix of bioretention within the right-of-way, permeable pavement, and offline stormwater green infrastructure storage

projects within parks and other public spaces are being vetted and developed. In general, these projects are being targeted to provide multiple benefits to the community including increasing climate resiliency, eliminating lead service lines, and replacing aging sewer and water lines while also reducing flow and nutrient loading to the combined sewer system. Through these projects, Buffalo Sewer expects to make significant progress towards Green Phase 3. These projects will be developed in conformance with the New York State Stormwater Management Design Manual.

## 9. 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."

Oluwole A. McFoy, P.E., General Manager

3/1/2024

Date

# Attachment A to the Semi-Annual Status Report: March 2024

Work Completed in Current Period/ Projection of Work to be Performed in Next Reporting Period

| Project Name           | Project Milestone              | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status |
|------------------------|--------------------------------|------------------------|----------------------------|----------------|
| Phase I Projects       |                                |                        |                            |                |
| CSO 060 GI Project     |                                |                        | Prior to 1/1/2014          | Complete       |
| Bird/Lang RTC Projects | Construction Start             | 3/17/2014              | 2/24/2014                  | Complete       |
|                        | Completion Date                | 9/2/2014               | 5/9/2016                   | Complete       |
|                        | Operations/ Optimization (RTC) | 9/3/2014 - 9/3/15      | 10/1/2016                  | Complete       |
| Bird RTC Project       | Construction Start             | 3/17/2014              | 2/24/2014                  | Complete       |
|                        | Completion Date                | 9/2/2014               | 5/6/2016                   | Complete       |
|                        | Operations/ Optimization (RTC) | 9/3/2014 - 9/3/15      | 10/1/2016                  | Complete       |
| Lang RTC Project       | Construction Start             | 3/17/2014              | 2/24/2014                  | Complete       |
|                        | Completion Date                | 9/2/2014               | 5/9/2016                   | Complete       |
|                        | Operations/ Optimization (RTC) | 9/3/2014 - 9/3/15      | 10/1/2016                  | Complete       |
| Foundation Projects    |                                |                        |                            |                |
| Foundation 1 - Smith   | Engineering Start              | 3/18/2014              | Prior to 1/1/2014          | Complete       |
| Street Storage         | Engineering Completion         | 3/18/2015              | 6/10/2015                  | Complete       |
|                        | Notice to Proceed              | 3/18/2015              |                            | Complete       |
|                        | Substantial Completion         | 3/18/2017              | 10/9/2017                  | Complete       |
| CSO No. 026 Sewer      | Engineering Start              | 3/18/2014              | Prior to 1/1/2014          | Complete       |
| Separation             | Engineering Completion         | 3/18/2015              | 4/3/2015                   | Complete       |
|                        | Notice to Proceed              | 3/18/2015              | 7/8/2015                   | Complete       |
|                        | Substantial Completion         | 3/18/2017              | 6/22/2016                  | Complete       |
| CSO No. 026 RTC        | Engineering Start              | 3/18/2014              | Prior to 1/1/2014          | Complete       |
| Structure              | Engineering Completion         | 3/18/2015              | 6/10/2015                  | Complete       |
|                        | Notice to Proceed              | 3/18/2015              | 7/13/2016                  | Complete       |
|                        | Substantial Completion         | 3/18/2017              | 10/9/2017                  | Complete       |

| Project Name          | Project Milestone      | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status |
|-----------------------|------------------------|------------------------|----------------------------|----------------|
| Foundation 2 - SPP    | Engineering Start      | 3/1/2014               | Prior to 1/1/2014          | Complete       |
| Optimization (20      | Engineering Completion | 3/18/2015              | 4/20/2015                  | Complete       |
| projects)             | Notice to Proceed      | 3/1/2014               | Prior to 1/1/2014          | Complete       |
|                       | Substantial Completion | 3/18/2017              |                            |                |
| SPP 180 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | 4/20/2015                  | Complete       |
|                       | Notice to Proceed      |                        | 9/8/2015                   | Complete       |
|                       | Substantial Completion | 3/18/2017              | 12/16/2015                 | Complete       |
| SPP 331 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion | 3/18/2015              | 4/20/2015                  | Complete       |
|                       | Notice to Proceed      |                        | 9/8/2015                   | Complete       |
|                       | Substantial Completion | 3/18/2017              | 12/16/2015                 | Complete       |
| SPP 036 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | 1/20/2014                  | Complete       |
|                       | Notice to Proceed      |                        | 5/30/2014                  | Complete       |
|                       | Substantial Completion | 3/18/2017              | 8/4/2014                   | Complete       |
| SPP 217 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | 4/3/2015                   | Complete       |
|                       | Notice to Proceed      |                        | 7/8/2015                   | Complete       |
|                       | Substantial Completion | 3/18/2017              | 12/21/2015                 | Complete       |
| SPP 318 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | 4/3/2015                   | Complete       |
|                       | Notice to Proceed      |                        | 7/8/2015                   | Complete       |
|                       | Substantial Completion | 3/18/2017              | 12/21/2015                 | Complete       |
| SPP 097A Optimization | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | 4/20/2015                  | Complete       |
|                       | Notice to Proceed      |                        | 9/8/2015                   | Complete       |
|                       | Substantial Completion | 3/18/2017              | 12/16/2015                 | Complete       |

| Project Name          | Project Milestone      | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status |
|-----------------------|------------------------|------------------------|----------------------------|----------------|
| SPP 122 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | Prior to 1/1/2014          | Complete       |
|                       | Notice to Proceed      |                        | Prior to 1/1/2014          | Complete       |
|                       | Substantial Completion | 3/18/2017              | Prior to 1/1/2014          | Complete       |
| SPP 163 Optimization  | Engineering Start      |                        | 3/1/2014                   | Complete       |
|                       | Engineering Completion |                        | 11/25/2014                 | Complete       |
|                       | Notice to Proceed      |                        | 3/1/2015                   | Complete       |
|                       | Substantial Completion | 3/18/2017              | 8/6/2015                   | Complete       |
| SPP 165 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | Prior to 1/1/2014          | Complete       |
|                       | Notice to Proceed      |                        | Prior to 1/1/2014          | Complete       |
|                       | Substantial Completion | 3/18/2017              | Prior to 1/1/2014          | Complete       |
| SPP 165A Optimization | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | 4/4/2014                   | Complete       |
|                       | Notice to Proceed      |                        | 7/25/2014                  | Complete       |
|                       | Substantial Completion | 3/18/2017              | 11/3/2014                  | Complete       |
| SPP 178 Optimization  | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | Prior to 1/1/2014          | Complete       |
|                       | Notice to Proceed      |                        | Prior to 1/1/2014          | Complete       |
|                       | Substantial Completion | 3/18/2017              | Prior to 1/1/2014          | Complete       |
| SPP 335B Optimization | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | Prior to 1/1/2014          | Complete       |
|                       | Notice to Proceed      |                        | Prior to 1/1/2014          | Complete       |
|                       | Substantial Completion | 3/18/2017              | Prior to 1/1/2014          | Complete       |
| SPP 336A Optimization | Engineering Start      |                        | Prior to 1/1/2014          | Complete       |
|                       | Engineering Completion |                        | 4/20/2015                  | Complete       |
|                       | Notice to Proceed      |                        | 9/8/2015                   | Complete       |
|                       | Substantial Completion | 3/18/2017              | 12/16/2015                 | Complete       |

| Project Name          | Project Milestone      | AO Project | Actual Completion | Project Status             |
|-----------------------|------------------------|------------|-------------------|----------------------------|
|                       |                        | Deadline   | Dates             |                            |
| SPP 341A Optimization | Engineering Start      |            | 1/1/2014          | Complete                   |
|                       | Engineering Completion |            |                   |                            |
|                       | Notice to Proceed      |            |                   | See 7. Model Modifications |
|                       | Substantial Completion | 3/18/2017  |                   |                            |
| SPP 342B Optimization | Engineering Start:     |            | Prior to 1/1/2014 | Complete                   |
|                       | Engineering Completion |            | Prior to 1/1/2014 | Complete                   |
|                       | Notice to Proceed      |            | Prior to 1/1/2014 | Complete                   |
|                       | Substantial Completion | 3/18/2017  | Prior to 1/1/2014 | Complete                   |
| SPP 001 Optimization  | Engineering Start:     |            | Prior to 1/1/2014 | Complete                   |
|                       | Engineering Completion |            | 3/27/2014         | Complete                   |
|                       | Notice to Proceed      |            | 6/16/2014         | Complete                   |
|                       | Substantial Completion | 3/18/2017  | 12/12/2014        | Complete                   |
| SPP 183 Optimization  | Engineering Start      |            | Prior to 1/1/2014 | Complete                   |
|                       | Engineering Completion |            | Prior to 1/1/2014 | Complete                   |
|                       | Notice to Proceed      |            | Prior to 1/1/2014 | Complete                   |
|                       | Substantial Completion | 3/18/2017  | Prior to 1/1/2014 | Complete                   |
| SPP 283 Optimization  | Engineering Start      |            | Prior to 1/1/2014 | Complete                   |
|                       | Engineering Completion |            | Prior to 1/1/2014 | Complete                   |
|                       | Notice to Proceed      |            | Prior to 1/1/2014 | Complete                   |
|                       | Substantial Completion | 3/18/2017  | Prior to 1/1/2014 | Complete                   |
| SPP 211 Optimization  | Engineering Start      |            | Prior to 1/1/2014 | Complete                   |
|                       | Engineering Completion |            | Prior to 1/1/2014 | Complete                   |
|                       | Notice to Proceed      |            | Prior to 1/1/2014 | Complete                   |
|                       | Substantial Completion | 3/18/2017  | Prior to 1/1/2014 | Complete                   |

| Project Name                            | Project Milestone      | AO Project | Actual Completion | Project Status  |
|---|------------------------|------------|-------------------|---|
|   |                        | Deadline   | Dates             |   |
| Foundation 3 -                          | Engineering Start      | 3/18/2016  | 8/9/2016          | Ongoing   |
| Remaining RTC                           | Notice to Proceed      | 3/18/2017  |                   |   |
| (14 sites)                              | Engineering Completion | 3/18/2023  |                   |   |
|   | Substantial Completion | 3/18/2024  |                   |   |
| Hertel Northwest (Hertel                | Engineering Start      |            | 1/19/2018         | Complete  |
| at Deer)                                | Engineering Completion |            | 12/13/2018        | Complete  |
| In-Line Storage                         | Notice to Proceed      |            | 2/9/2019          | Complete  |
|   | Substantial Completion | 3/18/2024  | 5/6/2020          | Complete  |
| Hertel South                            | Engineering Start      |            | 1/19/2018         | Complete  |
| (Hertel at Deer)                        | Engineering Completion |            | 12/13/2018        | Complete  |
| In-Line Storage                         | Notice to Proceed      |            | 2/9/2019          | Complete  |
|   | Substantial Completion | 3/18/2024  | 5/6/2020          | Complete  |
| Hertel Northeast In-Line                | Engineering Start      |            |                   | See 7.0; significant schedule changes for this project are    |
| Storage                                 | Engineering Completion |            |                   | proposed.   |
|   | Notice to Proceed      |            |                   |   |
|   | Substantial Completion | 3/18/2024  |                   |   |
| Bird East In-Line Storage               | Engineering Start      |            | 2/24/2014         | Complete  |
| (Final Bird location                    | Engineering Completion |            | 5/6/2016          | Complete  |
| between proposed East &                 | Notice to Proceed      |            | 5/6/2016          | Complete  |
| West locations)                         | Substantial Completion | 3/18/2024  | 10/1/2016         | Complete  |
| East Ferry In-Line Storage              | Engineering Start      |            |                   | See 7.0; this project is currently being reevaluated in light |
|   | Engineering Completion |            |                   | of the Approved Recalibrated Hydraulic Model Results.         |
|   | Notice to Proceed      |            |                   |   |
|   | Substantial Completion | 3/18/2024  |                   |   |
| Colorado In-Line Storage                | Engineering Start      |            |                   | See 7.0; this project is currently being reevaluated in light |
| , i i i i i i i i i i i i i i i i i i i | Engineering Completion |            |                   | of the Approved Recalibrated Hydraulic Model Results.         |
|   | Notice to Proceed      |            |                   |   |
|   | Substantial Completion | 3/18/2024  |                   |   |

| Project Name            | Project Milestone      | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status |
|-------------------------|------------------------|------------------------|----------------------------|----------------|
| North Bailey In-Line    | Engineering Start      |                        | 12/8/2017                  | Complete       |
| Storage                 | Engineering Completion |                        | 6/5/2018                   | Complete       |
|                         | Notice to Proceed      |                        | 10/16/2018                 | Complete       |
|                         | Substantial Completion |                        | 5/27/2020                  | Complete       |
| South Bailey In-Line    | Engineering Start      |                        |                            | See 7.0.       |
| Storage                 | Engineering Completion |                        |                            |                |
|                         | Notice to Proceed      |                        |                            |                |
|                         | Substantial Completion | 3/18/2024              |                            |                |
| Roslyn In-Line Storage  | Engineering Start      |                        |                            | See 7.0.       |
|                         | Engineering Completion |                        |                            |                |
|                         | Notice to Proceed      |                        |                            |                |
|                         | Substantial Completion | 3/18/2024              |                            |                |
| Hazelwood (Kay) In-Line | Engineering Start      |                        | 8/9/2016                   | Complete       |
| Storage                 | Engineering Completion |                        | 9/22/2017                  | Complete       |
|                         | Notice to Proceed      |                        | 2/2/2018                   | Complete       |
|                         | Substantial Completion | 3/18/2024              | 6/19/2019                  | Complete       |
| Amherst Quarry Off-Line | Engineering Start      |                        | 4/8/2022                   | Complete       |
| Storage                 | Engineering Completion |                        |                            | See 4.1        |
|                         | Notice to Proceed      |                        |                            |                |
|                         | Substantial Completion | 3/18/2024              |                            |                |
| Fillmore North In-Line  | Engineering Start      |                        |                            | See 7.0.       |
| Storage                 | Engineering Completion |                        |                            |                |
|                         | Notice to Proceed      |                        |                            |                |
|                         | Substantial Completion | 3/18/2024              |                            |                |
| Gibson CSO Line Storage | Engineering Start      |                        |                            | See 7.0.       |
|                         | Engineering Completion |                        |                            |                |
|                         | Notice to Proceed      |                        |                            |                |
|                         | Substantial Completion | 3/18/2024              |                            |                |

| Project Name             | Project Milestone      | AO Project | Actual Completion | Project Status    |
|--------------------------|------------------------|------------|-------------------|-------------------|
|                          |                        | Deadline   | Dates             |                   |
| Montgomery               | Engineering Start      |            | 4/4/2019          | Complete          |
| (Smith at Eagle)         | Engineering Completion |            | 2/27/2020         | Complete          |
| CSO Line Storage         | Notice to Proceed      |            | 7/13/2020         | Complete          |
|                          | Substantial Completion | 3/18/2024  | 12/31/2021        | Complete; See 4.2 |
| Babcock Pump Station In- | Engineering Start      |            | 6/19/2019         | Complete          |
| Line Storage             | Engineering Completion |            | 5/15/2020         | Complete          |
|                          | Notice to Proceed      |            | 7/24/2020         | Complete          |
|                          | Substantial Completion | 3/18/2024  | 9/21/2021         | Complete          |
| Broadway at Oak In-Line  | Engineering Start      |            | 4/4/2019          | Complete          |
| Storage                  | Engineering Completion |            | 10/20/2021        | Complete          |
|                          | Notice to Proceed      |            | 1/21/2022         | Complete          |
|                          | Substantial Completion | 3/18/2024  | 9/28/2023         | Complete          |
| Breckenridge at Niagara  | Engineering Start      |            | 6/15/2021         | Complete          |
| Street In-Line Storage   | Engineering Completion |            |                   | See 4.3.          |
|                          | Notice to Proceed      |            |                   |                   |
|                          | Substantial Completion | 3/19/2024  |                   |                   |
| Gates Circle In-Line     | Engineering Start      |            | 4/8/2022          | Complete          |
| Storage                  | Engineering Completion |            | 6/7/2023          | Complete          |
|                          | Notice to Proceed      |            |                   | See 4.1           |
|                          | Substantial Completion | 3/18/2024  |                   |                   |

| Project Name                  | Project Milestone      | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status    |
|-------------------------------|------------------------|------------------------|----------------------------|-------------------|
| Foundation 4 - Hamburg        | Engineering Start      | 3/18/2015              | Prior to 1/1/2014          | Complete          |
| Drain Optimizations           | Engineering Completion | 3/18/2017              | 2/23/2017                  | Complete          |
|                               | Notice to Proceed      | 3/18/2016              | 5/16/2017                  | Complete          |
|                               | Substantial Completion | 3/18/2018              |                            |                   |
| Mill Race In-Line Storage     | Engineering Start      |                        | 4/4/2019                   | Complete          |
|                               | Engineering Completion |                        | 11/22/2021                 | Complete          |
|                               | Notice to Proceed      |                        | 5/10/2022                  | Complete; See 4.4 |
|                               | Substantial Completion | 3/18/2032              |                            |                   |
| Foundation 4 - Hamburg        | Engineering Start      | 3/18/2028              |                            |                   |
| Drain Storage                 | Engineering Completion | 3/18/2030              |                            |                   |
|                               | Notice to Proceed      | 3/18/2030              |                            |                   |
|                               | Substantial Completion | 3/18/2032              |                            |                   |
| <u>WWTP</u>                   |                        |                        |                            |                   |
| WWTP Improvement              | Engineering Start      | 3/18/2015              | 11/25/2019                 | See 4.6.          |
| Project Alternative C2        | Engineering Completion | 3/18/2019              |                            |                   |
|                               | Notice to Proceed      | 3/18/2017              |                            |                   |
|                               | Substantial Completion | 3/18/2022              |                            |                   |
| Green Infrastructure Proj     | ects                   |                        |                            |                   |
| Green 1 - Pilot Projects –    | Engineering Start      | 3/1/2014               | Prior to 1/1/2014          | Complete          |
| 267-acres of GI control       | Engineering Completion | 3/18/2016              |                            | Complete          |
| SEE DETAILS FOLLOWING         | Substantial Completion | 3/18/2018              | 12/31/2016                 | Complete.         |
| 2001-2016 Residential         | Engineering Start      |                        | Prior to 1/1/2014          | Complete          |
| (traditional) Demolitions     | Engineering Completion |                        | Prior to 1/1/2014          | Complete          |
|                               | Substantial Completion | 3/18/2018              | 12/31/2016                 | Complete.         |
| 2001 - 2016 Commercial        | Engineering Start      |                        | Prior to 1/1/2014          | Complete          |
| and Industrial<br>Demolitions | Engineering Completion |                        | Prior to 1/1/2014          | Complete          |
|                               | Substantial Completion | 3/18/2018              | 12/31/2016                 | Complete.         |

| Project Name              | Project Milestone       | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status  |
|---------------------------|-------------------------|------------------------|----------------------------|---|
| Green 2 – 410 acres of GI | Engineering Start:      | 3/18/2019              | Prior to 1/1/2014          | Complete  |
| Control                   | Engineering Completion: | 3/18/2023              |                            | Complete  |
|                           | Substantial Completion: | 3/18/2024              | 9/21/2022                  | Complete. See 8.  |
|                           | Engineering Start       |                        | Prior to 1/1/2014          | Complete.   |
| 2017 - 2024 Demolitions   | Engineering Completion: |                        | 5/22/2019                  | Complete.   |
|                           | Substantial Completion: | 3/18/2018              | 9/21/2022                  | Complete. See 8.  |
| Croon Domolition Dilot    | Engineering Start       |                        | Prior to 1/1/2014          | Complete  |
| Broject                   | Engineering Completion  |                        |                            | Complete  |
| FIOJECI                   | Substantial Completion  |                        | 7/31/2017                  | Complete.   |
| PUSH Blue Projects        | Engineering Start       |                        | Prior to 1/1/2014          | Complete  |
|                           | Engineering Completion  |                        | Prior to 1/1/2014          | Complete  |
|                           | Substantial Completion  | 3/18/2018              | 7/1/2015                   | Complete.   |
| Carlton Street Porous     | Engineering Start       |                        | Prior to 1/1/2014          | Complete  |
| Asphalt                   | Engineering Completion  |                        | Prior to 1/1/2014          | Complete  |
|                           | Substantial Completion  | 3/18/2018              | 7/25/2014                  | Complete.   |
| Fillmore Avenue Porous    | Engineering Start       |                        | Prior to 1/1/2014          | Complete  |
| Parking and Green Lots    | Engineering Completion  |                        | Prior to 1/1/2014          | Complete  |
|                           | Substantial Completion  | 3/18/2018              | 4/23/2015                  | Complete.   |
| Ohio Street               | Engineering Start       |                        | Prior to 1/1/2014          | Complete  |
|                           | Engineering Completion  |                        | Prior to 1/1/2014          | Complete  |
|                           | Substantial Completion  | 3/18/2018              | 12/1/2014                  | Complete.   |
| Kenmore Avenue            | Engineering Start       |                        | 4/30/2014                  | Complete  |
|                           | Engineering Completion  |                        | 4/20/2015                  | Complete  |
|                           | Substantial Completion  | 3/18/2018              | 3/1/2017                   | Complete.   |
| Genesee Street            | Engineering Start       |                        | Prior to 1/1/2014          | Complete  |
|                           | Engineering Completion  |                        | 6/8/2015                   | Complete  |
|                           | Substantial Completion  | 3/18/2018              | 6/1/2017                   | Complete.   |
| Allen Street              | Engineering Start       |                        | Prior to 1/1/2014          | Green infrastructre will no longer be implemented as part |
|                           | Engineering Completion  |                        |                            | of the Allen Street streetscape project due to site       |
|                           | Substantial Completion  | 3/18/2018              |                            | constraints.  |

| Project Name             | Project Milestone      | AO Project | Actual Completion | Project Status   |
|--------------------------|------------------------|------------|-------------------|------------------|
|                          |                        | Deadline   | Dates             |                  |
| Willert Park             | Engineering Start      |            | 6/1/2016          | Complete         |
|                          | Engineering Completion |            | 2/1/2017          | Complete         |
|                          | Substantial Completion | 3/18/2018  | 4/26/2019         | Complete         |
| Northland Ave            | Engineering Start      |            | 7/1/2016          | Complete         |
|                          | Engineering Completion |            | 3/1/2017          | Complete         |
|                          | Substantial Completion | 3/18/2018  | 12/17/2019        | Complete         |
| 612 Northland Ave        | Engineering Start      |            | 1/1/2019          | Complete         |
|                          | Engineering Completion |            | 6/1/2019          | Complete         |
|                          | Substantial Completion |            | 12/1/2019         | Complete         |
| Niagara Street Phase 1:  | Engineering Start      |            | Prior to 1/1/2014 | Complete         |
| Elmwood Street to        | Engineering Completion |            | 3/19/2014         | Complete         |
| Virgina Street           | Substantial Completion | 3/18/2018  | 12/1/2016         | Complete.        |
| Niagara Street Phase 2:  | Engineering Start      |            | Prior to 1/1/2014 | Complete         |
| Virgina Street to Porter | Engineering Completion |            | 6/3/2015          | Complete         |
| , we have                | Substantial Completion | 3/18/2018  | 11/16/2017        | Complete.        |
| Niagara Street Phase 3:  | Engineering Start      |            | 10/28/2015        | Complete         |
| Hampshire Street to      | Engineering Completion |            | 3/21/2018         | Complete         |
| Scajaquada Expy          | Substantial Completion | 3/18/2024  | 4/25/2022         | Complete. See 8. |
| Niagara Street Phase 4a: | Engineering Start      |            | 10/28/2015        | Complete         |
| Scajaquada Expy to       | Engineering Completion |            | 6/13/2018         | Complete         |
| Hertel Ave               | Substantial Completion | 3/18/2024  | 9/21/2022         | Complete. See 8. |

| Project Name              | Project Milestone       | AO Project | Actual Completion | Project Status                            |
|---------------------------|-------------------------|------------|-------------------|---|
|                           |                         | Deadline   | Dates             |   |
| Niagara Street Phase 5:   | Engineering Start       |            | 10/28/2015        | Complete                                  |
| Porter Avenue to          | Engineering Completion  |            |                   | There are no GI components for this Phase |
| Hampshire Street          | Substantial Completion  | 3/18/2024  |                   |   |
| Green 3 – 375 acres of GI | Engineering Start:      | 3/18/2023  | 10/28/2015        | See 8.                                    |
| Control                   | Engineering Completion: | 3/18/2028  |                   |   |
|                           | Substantial Completion: | 3/18/2029  |                   |   |
| Niagara Street Phase 4b:  | Engineering Start       |            | 10/28/2015        | Complete                                  |
| Hertel Ave to Ontario St  | Engineering Completion  |            | 2/28/2023         | Complete                                  |
|                           | Substantial Completion  | 3/18/2024  |                   | See 8.                                    |
| Green 4 – 263 acres of GI | Engineering Start:      | 3/18/2028  |                   |   |
| Control                   | Engineering Completion: | 3/18/2033  |                   |   |
|                           | Substantial Completion: | 3/18/2034  |                   |   |

| Project Name             | Project Milestone      | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status   |  |  |  |
|--------------------------|------------------------|------------------------|----------------------------|--|--|--|--|
| Gray Projects            | Gray Projects          |                        |                            |  |  |  |  |
| CSOs 014/15 – Erie Basin | Engineering Start      |                        | Prior to 1/1/2014          | See 7.0; per Model Recalibration results, while these      |  |  |  |
| In-line storage and      | Engineering Completion |                        | Prior to 1/1/2014          | projects have been completed as specified, overflows to    |  |  |  |
| optimization projects    | Notice to Proceed      | 3/18/2014              | Prior to 1/1/2014          | the Erie Basin are still in excess of Level of Control and |  |  |  |
|                          | Substantial Completion | 3/18/2015              | 12/29/2014                 | additional work in these basins are being considered.      |  |  |  |
| SPPs 206A&B              | Engineering Start      |                        | Prior to 1/1/2014          | Complete   |  |  |  |
|                          | Engineering Completion |                        | Prior to 1/1/2014          | Complete   |  |  |  |
|                          | Notice to Proceed      |                        | 5/30/2014                  | Complete   |  |  |  |
|                          | Substantial Completion | 3/18/2015              | 12/29/2014                 | Complete   |  |  |  |
| SPP 035                  | Engineering Start      |                        | Prior to 1/1/2014          | Complete   |  |  |  |
|                          | Engineering Completion |                        | Prior to 1/1/2014          | Complete   |  |  |  |
|                          | Notice to Proceed      |                        | Prior to 1/1/2014          | Complete   |  |  |  |
|                          | Substantial Completion | 3/18/2015              | 5/31/2014                  | Complete   |  |  |  |
| SPP 036                  | Engineering Start      |                        | Prior to 1/1/2014          | Complete   |  |  |  |
|                          | Engineering Completion |                        | Prior to 1/1/2014          | Complete   |  |  |  |
|                          | Notice to Proceed      |                        | 5/30/2014                  | Complete   |  |  |  |
|                          | Substantial Completion | 3/18/2015              | 12/5/2014                  | Complete   |  |  |  |
| CSO 013 – Satellite      | Engineering Start      | 1/1/2020               | 3/12/2020                  | See 7.0.   |  |  |  |
| storage, conveyance, FM  | Engineering Completion | 1/1/2021               |                            |  |  |  |  |
| & PS                     | Notice to Proceed      | 1/1/2021               |                            |  |  |  |  |
|                          | Substantial Completion | 1/1/2023               |                            |  |  |  |  |
| North Relief –           | Engineering Start      | 3/18/2019              | 5/15/2015                  | Complete   |  |  |  |
| Interceptor              | Engineering Completion | 3/18/2022              |                            | See 7.0.   |  |  |  |
|                          | Notice to Proceed      | 3/18/2022              |                            |  |  |  |  |
|                          | Substantial Completion | 3/18/2026              |                            |  |  |  |  |
| CSOs 010, 008/010, 061,  | Engineering Start      | 3/18/2021              | 6/15/2021                  | Complete   |  |  |  |
| 004 – Underflow          | Engineering Completion | 3/18/2023              |                            | See 4.3.   |  |  |  |
| capacity upsizing        | Notice to Proceed      | 3/18/2023              |                            |  |  |  |  |

Attachment A to the Semi-Annual Status Report: March 2022

Work Completed in Current and Projection of Work to be Performed in Next Reporting Periods

| Project Name | Project Milestone      | AO Project<br>Deadline | Actual Completion<br>Dates | Project Status |
|--------------|------------------------|------------------------|----------------------------|----------------|
|              | Substantial Completion | 3/18/2024              |                            |                |

| Project Name                                   | Project Milestone       | AO Project | Actual Completion | Project Status |
|--|-------------------------|------------|-------------------|----------------|
| SPP 337 (CSO 053) –                            | Engineering Start       | 3/18/2023  | Dates             | See 7.0.       |
| Satellite storage,                             | Engineering Completion  | 3/18/2025  |                   |                |
| conveyance, FM & PS                            | Notice to Proceed       | 3/18/2025  |                   |                |
|  | Substantial Completion  | 3/18/2027  |                   |                |
| SPP 336A&B (CSO 053) –                         | Engineering Start       | 3/18/2024  |                   | See 7.0.       |
| Satellite storage,                             | Engineering Completion  | 3/18/2026  |                   |                |
| conveyance, FM & PS                            | Notice to Proceed       | 3/18/2026  |                   |                |
|  | Substantial Completion  | 3/18/2029  |                   |                |
| Jefferson Avenue &                             | Engineering Start       | 3/18/2025  | 9/24/2021         | Complete.      |
| Florida Street (CSO 053)                       | Engineering Completion  | 3/18/2027  |                   | See 4.5.       |
| – Satellite storage,                           | Notice to Proceed       | 3/18/2027  |                   |                |
| conveyance and FM                              | Substantial Completion  | 3/18/2030  |                   |                |
| CSO 055 – Satellite<br>storage, conveyance, FM | Engineering Start:      | 3/18/2027  |                   | See 7.0.       |
|  | Engineering Completion: | 3/18/2030  |                   |                |
| & PS   | Notice to Proceed:      | 3/18/2030  |                   |                |
|  | Substantial Completion: | 3/18/2034  |                   |                |
| CSOs 028/044/047 -                             | Engineering Start:      | 3/18/2028  |                   | See 7.0.       |
| Satellite storage,                             | Engineering Completion: | 3/18/2031  |                   |                |
| conveyance, FM & PS                            | Notice to Proceed:      | 3/18/2031  |                   |                |
|  | Substantial Completion: | 3/18/2034  |                   |                |
| CSO 052 – Satellite                            | Engineering Start:      | 3/18/2030  |                   | See 7.0.       |
| storage, conveyance, FM                        | Engineering Completion: | 3/18/2032  |                   |                |
| & PS   | Notice to Proceed:      | 3/18/2032  |                   |                |
|  | Substantial Completion: | 3/18/2034  |                   |                |
| CSO 064 – Satellite                            | Engineering Start:      | 3/18/2030  |                   | See 7.0.       |
| storage, conveyance, FM                        | Engineering Completion: | 3/18/2032  |                   |                |
| & PS   | Notice to Proceed:      | 3/18/2032  |                   |                |
|  | Substantial Completion: | 3/18/2034  |                   |                |

| Project Name and Tag                     | Costs       | Design          | Construct        | Total            | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status                  |
|--|-------------|-----------------|------------------|------------------|-------------------------|-------------------|-------------------|-----------------------------------|
| NFA Phase I                              | Estimated   | \$ 7,190,000.00 | \$ 64,710,000.00 | \$ 71,900,000.00 | Design Start            | 11/25/2019        | 11/25/2019        | Complete                          |
|  | Last Report |                 |                  |                  | Design Completion       | 6/23/2022         | 6/23/2022         | Complete                          |
|  | To Date     |                 |                  |                  | Notice to Proceed       | 9/27/2022         | 9/27/2022         | Complete                          |
|  | This Report |                 |                  |                  | Construction Completion | 5/25/2030         |                   |                                   |
| NFA Phase II                             | Estimated   | \$ 7,400,000.00 | \$ 66,600,000.00 | \$ 74,000,000.00 | Design Start            | 10/28/2020        | 10/28/2020        | Complete                          |
|  | Last Report |                 |                  |                  | Design Completion       | 7/10/2025         |                   | Anticipated Next Reporting Period |
|  | To Date     |                 |                  |                  | Notice to Proceed       | 7/23/2026         |                   |                                   |
|  | This Report |                 |                  |                  | Construction Completion | 12/26/2031        |                   |                                   |
| Jefferson & Florida (SPP                 | Estimated   | \$ 3,000,000.00 | \$ 27,000,000.00 | \$ 30,000,000.00 | Design Start            | 12/1/2021         | 9/24/2021         | Complete                          |
| 170B) (2.6 MG) (M)                       | Last Report |                 |                  |                  | Design Completion       | 5/29/2025         |                   |                                   |
| Replaced by CSO053_11                    | To Date     |                 |                  |                  | Notice to Proceed       | 9/7/2028          |                   |                                   |
| 1.5 MG Canisius/Jefferson<br>Delevan OLS | This Report |                 |                  |                  | Construction Completion | 4/9/2032          |                   |                                   |
| Amherst Quarry OLS (M)                   | Estimated   | \$ 215,087.20   | \$ 1,935,784.80  | \$ 2,150,872.00  | Design Start            | 12/1/2021         | 4/8/2022          | Complete                          |
| Now CSO053_3.2 Bailey                    | Last Report |                 |                  |                  | Design Completion       | 11/27/2024        | 7/26/2024         | Complete                          |
| & Amherst, Amherst                       | To Date     |                 |                  |                  | Notice to Proceed       | 5/28/2025         |                   | Anticipated Next Reporting Period |
| Quarry PS RTC                            | This Report |                 |                  |                  | Construction Completion | 7/6/2028          |                   |                                   |
| Underflow Upsizing (CSO                  | Estimated   | \$ 363,661.70   | \$ 3,272,955.30  | \$ 3,636,617.00  | Design Start            | 3/1/2022          | 6/15/2021         | Complete                          |
| 008/010, 061, 004) (M)                   | Last Report |                 |                  |                  | Design Completion       | 2/25/2025         |                   |                                   |
| Replaced by CSO010_1                     | To Date     |                 |                  |                  | Notice to Proceed       | 8/26/2025         |                   |                                   |
| Breckenridge Niagara RTC                 | This Report |                 |                  |                  | Construction Completion | 1/31/2029         |                   |                                   |
| CSO006_2 Gates Circle                    | Estimated   | \$ 283,528.70   | \$ 2,551,758.30  | \$ 2,835,287.00  | Design Start            | 3/1/2022          | 4/8/2022          | Complete                          |
| RTC                                      | Last Report |                 |                  |                  | Design Completion       | 10/8/2024         | 6/7/2023          | Complete                          |
|  | To Date     |                 |                  |                  | Notice to Proceed       | 4/8/2025          |                   | Anticipated Next Reporting Period |
|  | This Report |                 |                  |                  | Construction Completion | 5/17/2028         |                   |                                   |
| CSO053_10 SPP229A RTC                    | Estimated   | \$ 300,000.00   | \$ 2,700,000.00  | \$ 3,000,000.00  | Design Start            | 3/1/2022          | 9/24/2021         | Complete                          |
|  | Last Report |                 |                  |                  | Design Completion       | 4/23/2024         |                   | Anticipated Next Reporting Period |
|  | To Date     |                 |                  |                  | Notice to Proceed       | 10/22/2024        |                   |                                   |
|  | This Report |                 |                  |                  | Construction Completion | 7/19/2026         |                   |                                   |

| Project Name and Tag   | Costs       | Design        | Construct       | Total           | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status                  |
|------------------------|-------------|---------------|-----------------|-----------------|-------------------------|-------------------|-------------------|-----------------------------------|
| CSO053_12.2 Jefferson  | Estimated   | \$ 152,000.00 | \$ 1,368,000.00 | \$ 1,520,000.00 | Design Start            | 3/1/2022          | 9/14/2020         | Complete                          |
| Ave GI                 | Last Report |               |                 |                 | Design Completion       | 11/5/2024         |                   |                                   |
|                        | To Date     |               |                 |                 | Notice to Proceed       | 5/6/2025          |                   |                                   |
|                        | This Report |               |                 |                 | Construction Completion | 6/14/2028         |                   |                                   |
| CSO053_12.1 Jefferson  | Estimated   | \$ 46,000.00  | \$ 414,000.00   | \$ 460,000.00   | Design Start            | 3/1/2022          | 9/14/2020         | Complete                          |
| Ave GI                 | Last Report |               |                 |                 | Design Completion       | 11/5/2024         |                   |                                   |
|                        | To Date     |               |                 |                 | Notice to Proceed       | 5/6/2025          |                   |                                   |
|                        | This Report |               |                 |                 | Construction Completion | 6/14/2028         |                   |                                   |
| CSO053_3.3 Bailey &    | Estimated   | \$ 23,238.50  | \$ 209,146.50   | \$ 232,385.00   | Design Start            | 3/1/2022          | 4/8/2022          | Complete                          |
| Minnesota SPP254       | Last Report |               |                 |                 | Design Completion       | 4/23/2024         | 6/7/2023          | Complete                          |
| Modification           | To Date     |               |                 |                 | Notice to Proceed       | 10/22/2024        |                   | Anticipated Next Reporting Period |
|                        | This Report |               |                 |                 | Construction Completion | 7/19/2026         |                   |                                   |
| Colorado ILS (M)       | Estimated   | \$ 6,000.00   | \$ 54,000.00    | \$ 60,000.00    | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Replaced by CSO053_2.5 | Last Report |               |                 |                 | Design Completion       | 10/24/2025        |                   |                                   |
| SPP337 Modification    | To Date     |               |                 |                 | Notice to Proceed       | 4/24/2026         |                   |                                   |
|                        | This Report |               |                 |                 | Construction Completion | 11/20/2027        |                   |                                   |
| South Bailey ILS (M)   | Estimated   | \$ 400,000.00 | \$ 3,600,000.00 | \$ 4,000,000.00 | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Replaced with          | Last Report |               |                 |                 | Design Completion       | 10/23/2026        |                   |                                   |
| CSO053_3.1 SPP338      | To Date     |               |                 |                 | Notice to Proceed       | 4/23/2027         |                   |                                   |
| Modification           | This Report |               |                 |                 | Construction Completion | 6/1/2030          |                   |                                   |
| SPP 341A Optimization  | Estimated   | \$ 6,000.00   | \$ 54,000.00    | \$ 60,000.00    | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Genesee & Kearns (M)   | Last Report |               |                 |                 | Design Completion       | 10/24/2025        |                   |                                   |
| Replaced by CSO053_8   | To Date     |               |                 |                 | Notice to Proceed       | 4/24/2026         |                   |                                   |
| SPP341A Modification   | This Report |               |                 |                 | Construction Completion | 11/20/2027        |                   |                                   |

| Project Name and Tag   | Costs       | Design          | Construct        | Total            | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status                  |
|------------------------|-------------|-----------------|------------------|------------------|-------------------------|-------------------|-------------------|-----------------------------------|
| CSO053_1.5 SPP336B     | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Modification           | Last Report |                 |                  |                  | Design Completion       | 10/24/2025        |                   |                                   |
|                        | To Date     |                 |                  |                  | Notice to Proceed       | 4/24/2026         |                   |                                   |
|                        | This Report |                 |                  |                  | Construction Completion | 11/20/2027        |                   |                                   |
| SPP 336 A/B (SPP165A,  | Estimated   | \$ 2,772,000.00 | \$ 24,948,000.00 | \$ 27,720,000.00 | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| SPP165B, SPP336A, SPP  | Last Report |                 |                  |                  | Design Completion       | 12/18/2026        |                   |                                   |
| 336B) (4.2 MG) (M)     | To Date     |                 |                  |                  | Notice to Proceed       | 6/18/2027         |                   |                                   |
| Replaced by CSO053_1.4 | This Report |                 |                  |                  | Construction Completion | 5/29/2032         |                   |                                   |
| CSO053_13 SPP165B      | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Modification           | Last Report |                 |                  |                  | Design Completion       | 10/24/2025        |                   |                                   |
|                        | To Date     |                 |                  |                  | Notice to Proceed       | 4/24/2026         |                   |                                   |
|                        | This Report |                 |                  |                  | Construction Completion | 11/20/2027        |                   |                                   |
| CSO053_14 SPP175       | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Modification           | Last Report |                 |                  |                  | Design Completion       | 10/24/2025        |                   |                                   |
|                        | To Date     |                 |                  |                  | Notice to Proceed       | 4/24/2026         |                   |                                   |
|                        | This Report |                 |                  |                  | Construction Completion | 11/20/2027        |                   |                                   |
| CSO053_5.2 Edison      | Estimated   | \$ 3,724,000.00 | \$ 33,516,000.00 | \$ 37,240,000.00 | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Martha OLS             | Last Report |                 |                  |                  | Design Completion       | 12/18/2026        |                   |                                   |
|                        | To Date     |                 |                  |                  | Notice to Proceed       | 6/18/2027         |                   |                                   |
|                        | This Report |                 |                  |                  | Construction Completion | 4/30/2033         |                   |                                   |
| NFA Phase III          | Estimated   | \$ 7,500,000.00 | \$ 67,500,000.00 | \$ 75,000,000.00 | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
|                        | Last Report |                 |                  |                  | Design Completion       | 7/15/2027         |                   |                                   |
|                        | To Date     |                 |                  |                  | Notice to Proceed       | 1/13/2028         |                   |                                   |
|                        | This Report |                 |                  |                  | Construction Completion | 9/3/2031          |                   |                                   |

| Project Name and Tag     | Costs       | Design          | Construct        | Total            | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status                  |
|--------------------------|-------------|-----------------|------------------|------------------|-------------------------|-------------------|-------------------|-----------------------------------|
| Non-NFA Phase III        | Estimated   |                 |                  |                  | Design Start            | 3/2/2024          |                   | Anticipated Next Reporting Period |
| Improvements             | Last Report |                 |                  |                  | Design Completion       | 7/15/2027         |                   |                                   |
|                          | To Date     |                 |                  |                  | Notice to Proceed       | 1/13/2028         |                   |                                   |
|                          | This Report |                 |                  |                  | Construction Completion | 3/31/2033         |                   |                                   |
| CSO014_1.1 SPP206A&B     | Estimated   | \$ 400,000.00   | \$ 3,600,000.00  | \$ 4,000,000.00  | Design Start            | 3/3/2025          |                   |                                   |
| RTC                      | Last Report |                 |                  |                  | Design Completion       | 8/27/2027         |                   |                                   |
|                          | To Date     |                 |                  |                  | Notice to Proceed       | 2/25/2028         |                   |                                   |
|                          | This Report |                 |                  |                  | Construction Completion | 2/9/2030          |                   |                                   |
| System_2 Schiller Park   | Estimated   | \$ 8,596,000.00 | \$ 77,364,000.00 | \$ 85,960,000.00 | Design Start            | 3/3/2025          |                   |                                   |
| OLS                      | Last Report |                 |                  |                  | Design Completion       | 12/17/2027        |                   |                                   |
|                          | To Date     |                 |                  |                  | Notice to Proceed       | 6/16/2028         |                   |                                   |
|                          | This Report |                 |                  |                  | Construction Completion | 5/28/2033         |                   |                                   |
| System_2_3 SPP339        | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2025          |                   |                                   |
| Modification             | Last Report |                 |                  |                  | Design Completion       | 10/23/2026        |                   |                                   |
|                          | To Date     |                 |                  |                  | Notice to Proceed       | 4/23/2027         |                   |                                   |
|                          | This Report |                 |                  |                  | Construction Completion | 11/18/2028        |                   |                                   |
| System_2_4 Schiller Park | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2025          |                   |                                   |
| OLS SPP340 Modification  | Last Report |                 |                  |                  | Design Completion       | 10/23/2026        |                   |                                   |
|                          | To Date     |                 |                  |                  | Notice to Proceed       | 4/23/2027         |                   |                                   |
|                          | This Report |                 |                  |                  | Construction Completion | 4/7/2029          |                   |                                   |
| CSO-014/015 (0.8 MG)     | Estimated   | \$ 6,244,000.00 | \$ 56,196,000.00 | \$ 62,440,000.00 | Design Start            | 3/3/2026          |                   |                                   |
| (M) Updated to larger    | Last Report |                 |                  |                  | Design Completion       | 9/23/2028         |                   |                                   |
| tank: CSO014_1.2 5.55    | To Date     |                 |                  |                  | Notice to Proceed       | 3/24/2029         |                   |                                   |
| MG Erie Basin Marina     | This Report |                 |                  |                  | Construction Completion | 3/5/2034          |                   |                                   |

| Project Name and Tag    | Costs       | Design          | Construct        | Total            | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status |
|-------------------------|-------------|-----------------|------------------|------------------|-------------------------|-------------------|-------------------|------------------|
| CSO-013 (0.3 MG) (M)    | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2026          |                   |                  |
| Replaced with CSO013_1  | Last Report |                 |                  |                  | Design Completion       | 10/23/2027        |                   |                  |
| SPP304 Modification     | To Date     |                 |                  |                  | Notice to Proceed       | 4/22/2028         |                   |                  |
|                         | This Report |                 |                  |                  | Construction Completion | 11/18/2029        |                   |                  |
| CSO017_8 SPP326         | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2026          |                   |                  |
| Modification            | Last Report |                 |                  |                  | Design Completion       | 10/23/2027        |                   |                  |
|                         | To Date     |                 |                  |                  | Notice to Proceed       | 4/22/2028         |                   |                  |
|                         | This Report |                 |                  |                  | Construction Completion | 11/18/2029        |                   |                  |
| CSO011_1.2 SPP024       | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2026          |                   |                  |
| Modification            | Last Report |                 |                  |                  | Design Completion       | 10/23/2027        |                   |                  |
|                         | To Date     |                 |                  |                  | Notice to Proceed       | 4/22/2028         |                   |                  |
|                         | This Report |                 |                  |                  | Construction Completion | 11/18/2029        |                   |                  |
| CSO012_1.2 SPP023       | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2026          |                   |                  |
| Modification            | Last Report |                 |                  |                  | Design Completion       | 10/23/2027        |                   |                  |
|                         | To Date     |                 |                  |                  | Notice to Proceed       | 4/22/2028         |                   |                  |
|                         | This Report |                 |                  |                  | Construction Completion | 11/18/2029        |                   |                  |
| CSO012_2.1 SPP296       | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2026          |                   |                  |
| Modification            | Last Report |                 |                  |                  | Design Completion       | 10/23/2027        |                   |                  |
|                         | To Date     |                 |                  |                  | Notice to Proceed       | 4/22/2028         |                   |                  |
|                         | This Report |                 |                  |                  | Construction Completion | 11/18/2029        |                   |                  |
| CSO026_1.3 Collins Park | Estimated   | \$ 3,010,000.00 | \$ 27,090,000.00 | \$ 30,100,000.00 | Design Start            | 3/3/2027          |                   |                  |
| OLS                     | Last Report |                 |                  |                  | Design Completion       | 12/18/2029        |                   |                  |
|                         | To Date     |                 |                  |                  | Notice to Proceed       | 6/18/2030         |                   |                  |
|                         | This Report |                 |                  |                  | Construction Completion | 5/30/2035         |                   |                  |

| Project Name and Tag   | Costs       | Design          | Construct        | Total            | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status |
|--|-------------|-----------------|------------------|------------------|-------------------------|-------------------|-------------------|------------------|
| CSO027_1 SPP 317   | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2027          |                   |                  |
| Modification   | Last Report |                 |                  |                  | Design Completion       | 10/24/2028        |                   |                  |
|  | To Date     |                 |                  |                  | Notice to Proceed       | 4/24/2029         |                   |                  |
|  | This Report |                 |                  |                  | Construction Completion | 11/20/2030        |                   |                  |
| CSO027_2 Babcock PS  | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2027          |                   |                  |
| Weir Modification  | Last Report |                 |                  |                  | Design Completion       | 10/24/2028        |                   |                  |
|  | To Date     |                 |                  |                  | Notice to Proceed       | 4/24/2029         |                   |                  |
|  | This Report |                 |                  |                  | Construction Completion | 4/9/2031          |                   |                  |
| CSO-055 (7.5 MG) (M)   | Estimated   | \$ 9,688,000.00 | \$ 87,192,000.00 | \$ 96,880,000.00 | Design Start            | 8/27/2027         |                   |                  |
| Updated to larger tank   | Last Report |                 |                  |                  | Design Completion       | 6/13/2030         |                   |                  |
| with new location:   | To Date     |                 |                  |                  | Notice to Proceed       | 12/12/2030        |                   |                  |
| CSO055_1.5 11.55 MG<br>Military Rd OLS                         | This Report |                 |                  |                  | Construction Completion | 1/2/2037          |                   |                  |
| Northern Relief Sewer/   | Estimated   | \$ 7,281,074.40 | \$ 65,529,669.60 | \$ 72,810,744.00 | Design Start            | 8/27/2027         |                   |                  |
| North Relief -   | Last Report |                 |                  |                  | Design Completion       | 12/23/2032        |                   |                  |
| Interceptor (M) New  | To Date     |                 |                  |                  | Notice to Proceed       | 6/23/2033         |                   |                  |
| Configuration, tagged as<br>System_1 Northern Relief<br>Tunnel | This Report |                 |                  |                  | Construction Completion | 6/1/2040          |                   |                  |
| CSO017_9 SPP059  | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2029          |                   |                  |
| Modification   | Last Report |                 |                  |                  | Design Completion       | 10/25/2030        |                   |                  |
|  | To Date     |                 |                  |                  | Notice to Proceed       | 4/25/2031         |                   |                  |
|  | This Report |                 |                  |                  | Construction Completion | 11/20/2032        |                   |                  |

| Project Name and Tag    | Costs       | Design           | Construct         | Total             | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status |
|-------------------------|-------------|------------------|-------------------|-------------------|-------------------------|-------------------|-------------------|------------------|
| CSO027_3 SPP097         | Estimated   | \$ 6,000.00      | \$ 54,000.00      | \$ 60,000.00      | Design Start            | 3/3/2029          |                   |                  |
| modification            | Last Report |                  |                   |                   | Design Completion       | 10/25/2030        |                   |                  |
|                         | To Date     |                  |                   |                   | Notice to Proceed       | 4/25/2031         |                   |                  |
|                         | This Report |                  |                   |                   | Construction Completion | 11/20/2032        |                   |                  |
| CSO033_2 Clinton St OLS | Estimated   | \$ 16,380,000.00 | \$ 147,420,000.00 | \$ 163,800,000.00 | Design Start            | 3/3/2029          |                   |                  |
| _                       | Last Report |                  |                   |                   | Design Completion       | 8/29/2031         |                   |                  |
|                         | To Date     |                  |                   |                   | Notice to Proceed       | 2/27/2032         |                   |                  |
|                         | This Report |                  |                   |                   | Construction Completion | 3/8/2036          |                   |                  |
| CSO033_3 SPP104         | Estimated   | \$ 6,000.00      | \$ 54,000.00      | \$ 60,000.00      | Design Start            | 3/3/2029          |                   |                  |
| Modification            | Last Report |                  |                   |                   | Design Completion       | 10/25/2030        |                   |                  |
|                         | To Date     |                  |                   |                   | Notice to Proceed       | 4/25/2031         |                   |                  |
|                         | This Report |                  |                   |                   | Construction Completion | 11/20/2032        |                   |                  |
| CSO017_10 SPP051        | Estimated   | \$ 6,000.00      | \$ 54,000.00      | \$ 60,000.00      | Design Start            | 3/3/2029          |                   |                  |
| Modification            | Last Report |                  |                   |                   | Design Completion       | 10/25/2030        |                   |                  |
|                         | To Date     |                  |                   |                   | Notice to Proceed       | 4/25/2031         |                   |                  |
|                         | This Report |                  |                   |                   | Construction Completion | 11/20/2032        |                   |                  |
| CSO-064 (0.1 MG) (M)    | Estimated   | \$ 400,000.00    | \$ 3,600,000.00   | \$ 4,000,000.00   | Design Start            | 3/3/2030          |                   |                  |
| Replaced with           | Last Report |                  |                   |                   | Design Completion       | 9/24/2032         |                   |                  |
| CSO064_1.1 CSO-064 ILS  | To Date     |                  |                   |                   | Notice to Proceed       | 3/25/2033         |                   |                  |
|                         | This Report |                  |                   |                   | Construction Completion | 3/10/2035         |                   |                  |
| CSO006_3 Delavan Drain  | Estimated   | \$ 400,000.00    | \$ 3,600,000.00   | \$ 4,000,000.00   | Design Start            | 3/3/2030          |                   |                  |
| Weir Raising & RTC      | Last Report |                  |                   |                   | Design Completion       | 8/27/2032         |                   |                  |
|                         | To Date     |                  |                   |                   | Notice to Proceed       | 2/25/2033         |                   |                  |
|                         | This Report |                  |                   |                   | Construction Completion | 4/5/2036          |                   |                  |

| Project Name and Tag           | Costs       | Design          | Construct        | Total            | Project Milestone       | Proposed Deadline | Actual Compeltion | Milestone Status |
|--------------------------------|-------------|-----------------|------------------|------------------|-------------------------|-------------------|-------------------|------------------|
| CSO064_1.2 SPP 137             | Estimated   | \$ 6,000.00     | \$ 54,000.00     | \$ 60,000.00     | Design Start            | 3/3/2030          |                   |                  |
| Modification                   | Last Report |                 |                  |                  | Design Completion       | 10/24/2031        |                   |                  |
|                                | To Date     |                 |                  |                  | Notice to Proceed       | 4/23/2032         |                   |                  |
|                                | This Report |                 |                  |                  | Construction Completion | 11/19/2033        |                   |                  |
| CSO-028/044/047 (2.3           | Estimated   | \$ 1,764,000.00 | \$ 15,876,000.00 | \$ 17,640,000.00 | Design Start            | 3/3/2031          |                   |                  |
| MG) (M) Updated to             | Last Report |                 |                  |                  | Design Completion       | 9/23/2033         |                   |                  |
| smaller tank: CSO028_1         | To Date     |                 |                  |                  | Notice to Proceed       | 3/24/2034         |                   |                  |
| 0.95 MG Hopkins &<br>Osage OLS | This Report |                 |                  |                  | Construction Completion | 3/5/2039          |                   |                  |
| CSO017_6 Bass Alley OLS        | Estimated   | \$ 3,262,000.00 | \$ 29,358,000.00 | \$ 32,620,000.00 | Design Start            | 3/3/2031          |                   |                  |
|                                | Last Report |                 |                  |                  | Design Completion       | 9/23/2033         |                   |                  |
|                                | To Date     |                 |                  |                  | Notice to Proceed       | 3/24/2034         |                   |                  |
|                                | This Report |                 |                  |                  | Construction Completion | 3/5/2039          |                   |                  |
| CSO033_1 Bailey &              | Estimated   | \$ 5,362,000.00 | \$ 48,258,000.00 | \$ 53,620,000.00 | Design Start            | 3/2/2032          |                   |                  |
| Regent OLS (Moreland           | Last Report |                 |                  |                  | Design Completion       | 9/23/2034         |                   |                  |
| Park)                          | To Date     |                 |                  |                  | Notice to Proceed       | 3/24/2035         |                   |                  |
|                                | This Report |                 |                  |                  | Construction Completion | 3/4/2040          |                   |                  |
| CSO064_2 Perry Street          | Estimated   | \$ 480,000.00   | \$ 4,320,000.00  | \$ 4,800,000.00  | Design Start            | 3/3/2033          |                   |                  |
| Sanitary Sewer                 | Last Report |                 |                  |                  | Design Completion       | 9/26/2035         |                   |                  |
|                                | To Date     |                 |                  |                  | Notice to Proceed       | 3/26/2036         |                   |                  |
|                                | This Report |                 |                  |                  | Construction Completion | 6/3/2038          |                   |                  |
| CSO017_1.1 SPP054              | Estimated   | \$ 70,000.00    | \$ 630,000.00    | \$ 700,000.00    | Design Start            | 3/3/2033          |                   |                  |
| Sewer Separation               | Last Report |                 |                  |                  | Design Completion       | 9/26/2035         |                   |                  |
|                                | To Date     |                 |                  |                  | Notice to Proceed       | 3/26/2036         |                   |                  |
|                                | This Report |                 |                  |                  | Construction Completion | 6/3/2038          |                   |                  |
| Hertel North East ILS (M)      | Estimated   | \$ 400,000.00   | \$ 3,600,000.00  | \$ 4,000,000.00  | Design Start            | 3/3/2034          |                   |                  |
| Updated design                 | Last Report |                 |                  |                  | Design Completion       | 10/23/2036        |                   |                  |
|                                | To Date     |                 |                  |                  | Notice to Proceed       | 4/23/2037         |                   |                  |
|                                | This Report |                 |                  |                  | Construction Completion | 6/1/2040          |                   |                  |

| Project Name and Tag                  | Costs       | Design          | Construct        | Total            | Project Milestone | Proposed Deadline | Actual Compeltion | Milestone Status |
|---------------------------------------|-------------|-----------------|------------------|------------------|-------------------|-------------------|-------------------|------------------|
| Green Infrastructure Projects         |             |                 |                  |                  |                   |                   |                   |                  |
| Waterbody and GI Projects<br>Included | Costs       | Design          | Construct        | Total            | Project Milestone | Proposed Deadline | Actual Compeltion | Milestone Status |
| CC0053 0                              | Estimated   | \$ 334,400.00   | \$ 3,009,600.00  | \$ 3,344,000.00  | Start Date        | 3/2/2028          |                   |                  |
| (16.7 acros managod)                  | Last Report |                 |                  |                  | 20% Completion    | 3/1/2029          |                   |                  |
| (10.7 acres managed)<br>Scalaguada    | To Date     |                 |                  |                  | 40% Completion    | 3/1/2030          |                   |                  |
| Creek                                 | This Report |                 |                  |                  | 60% Completion    | 3/1/2031          |                   |                  |
|                                       |             |                 |                  |                  | 80% Completion    | 3/1/2033          |                   |                  |
|                                       |             |                 |                  |                  | 100% Completion   | 3/1/2034          |                   |                  |
| CS0006 F                              | Estimated   | \$ 1,050,600.00 | \$ 9,455,400.00  | \$ 10,506,000.00 | Start Date        | 3/3/2031          |                   |                  |
| (E2 E acros managed)                  | Last Report |                 |                  |                  | 20% Completion    | 3/1/2032          |                   |                  |
| Black Bock                            | To Date     |                 |                  |                  | 40% Completion    | 3/1/2033          |                   |                  |
| Canal                                 | This Report |                 |                  |                  | 60% Completion    | 3/1/2034          |                   |                  |
| Canal                                 |             |                 |                  |                  | 80% Completion    | 3/1/2036          |                   |                  |
|                                       |             |                 |                  |                  | 100% Completion   | 3/1/2037          |                   |                  |
|                                       | Estimated   | \$ 398,200.00   | \$ 3,583,800.00  | \$ 3,982,000.00  | Start Date        | 3/2/2032          |                   |                  |
| CSO011_1.1                            | Last Report |                 |                  |                  | 20% Completion    | 3/1/2034          |                   |                  |
| (19.9 acres managed)                  | To Date     |                 |                  |                  | 40% Completion    | 3/1/2036          |                   |                  |
| Niagara River                         | This Report |                 |                  |                  | 60% Completion    | 3/1/2037          |                   |                  |
|                                       |             |                 |                  |                  | 80% Completion    | 3/1/2039          |                   |                  |
|                                       |             |                 |                  |                  | 100% Completion   | 3/1/2040          |                   |                  |
|                                       | Estimated   | \$ 5,203,200.00 | \$ 46,828,800.00 | \$ 52,032,000.00 | Start Date        | 3/2/2032          |                   |                  |
|                                       | Last Report |                 |                  |                  | 20% Completion    | 3/1/2034          |                   |                  |
|                                       | To Date     |                 |                  |                  | 40% Completion    | 3/1/2036          |                   |                  |
| (260.2 acres managed)                 | This Report |                 |                  |                  | 60% Completion    | 3/1/2037          |                   |                  |
| wagara River                          |             |                 |                  |                  | 80% Completion    | 3/1/2039          |                   |                  |
|                                       |             |                 |                  |                  | 100% Completion   | 3/1/2040          |                   |                  |

| Project Name and Tag  | Costs       | Design          | Construct        | Total            | Project Milestone | Proposed Deadline | Actual Compeltion | Milestone Status |
|-----------------------|-------------|-----------------|------------------|------------------|-------------------|-------------------|-------------------|------------------|
| 000017 4              | Estimated   | \$ 749,000.00   | \$ 6,741,000.00  | \$ 7,490,000.00  | Start Date        | 3/2/2032          |                   |                  |
| (27 5 ceres menaged)  | Last Report |                 |                  |                  | 20% Completion    | 3/1/2033          |                   |                  |
| (37.5 acres managed)  | To Date     |                 |                  |                  | 40% Completion    | 3/1/2035          |                   |                  |
| Bullato River         | This Report |                 |                  |                  | 60% Completion    | 3/1/2036          |                   |                  |
|                       |             |                 |                  |                  | 80% Completion    | 3/1/2038          |                   |                  |
|                       |             |                 |                  |                  | 100% Completion   | 3/2/2039          |                   |                  |
|                       | Estimated   | \$ 2,510,400.00 | \$ 22,593,600.00 | \$ 25,104,000.00 | Start Date        | 3/2/2032          |                   |                  |
| CSO026_4              | Last Report |                 |                  |                  | 20% Completion    | 3/1/2033          |                   |                  |
| (125.5 acres managed) | To Date     |                 |                  |                  | 40% Completion    | 3/1/2035          |                   |                  |
| Buffalo River         | This Report |                 |                  |                  | 60% Completion    | 3/1/2036          |                   |                  |
|                       |             |                 |                  |                  | 80% Completion    | 3/1/2038          |                   |                  |
|                       |             |                 |                  |                  | 100% Completion   | 3/2/2039          |                   |                  |

# Attachment B to the Semi-Annual Status Report: March 2024

Detailed Project Descriptions
| Project Name              | Project Description   | Project Purpose*   |
|---------------------------|---|--|
| Phase I Projects          |   |  |
| CSO 060 GI Project        | This project consisted of the construction of 4768 CF of rain garden<br>on Windsor, Parkdale and Elmwood Avenues between Bird and<br>Forest Avenues and 39,600 SF of permeable pavement on<br>Clarendon and Claremont Avenues between Bird and Forest<br>Avenues, installation of a Stormceptor unit at Bird Avenue and<br>Granger Place and a total of 6,125 LF of 12-30 inch sewer designed<br>to carry street flow to the existing storm overflow sewer on Forest<br>Avenue from the above mentioned street segments. Additionally,<br>weirs were raised in SPPs 230, 231, 232, 233, 234, 235, 236, 237,<br>238, 239, and 240. | This project was designed to treat 13,600 cf of stormwater runoff from the 0.9 inch<br>water quality storm event and remove 49.5 cfs of peak flow from the combined<br>sewer system. Thereby reducing overflows through SPPs 230, 231, 232, 233, 234,<br>235, 236, 237, 238, 239, 240, and 241 to CSO 060. Together with other LTCP projects,<br>this project is projected reduce CSO 060 discharges to Scajaquada Creek based on the<br>1993 Modified Typical Year (TY) to negligible activations and flow. |
| Bird/Lang RTC<br>Projects | These RTC projects utilize available capacity of large sewers to<br>provide flow control measures during wet weather events through<br>the use of gates which allow continuous dry weather underflow.   |  |
| Bird RTC Project          | The Bird RTC Project is located on Bird Avenue between Parkdale<br>Avenue and Hoyt Street.  | The Bird RTC project is designed to provide 1.01 MG of storage volume, thereby reducing discharges through SPP 013 to CSO 004. Together with other LTCP projects, this project is projected reduce CSO 004 discharges to the Black Rock Canal based on the TY to 3 activations.  |
| Lang RTC Project          | The Lang RTC Project is located on Lang Avenue between Courtland Avenue and Hagen Street.   | The Lang RTC project is designed to have a storage volume of 0.84 MG, thereby reducing discharges through SPP 340 to CSO 053. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the 1993 Modified Typical Year (TY) to 4 activations.   |

| Project Name                              | Project Description  | Project Purpose*   |
|---|--|--|
| Foundation Projects                       | 5  |  |
| Foundation 1 -<br>Smith Street<br>Storage | Originally envisioned as a single project, these two projects have<br>been separated to realize cost advantages due to the different<br>levels of skill required for the projects and to expedite the sewer<br>separation component.   |  |
| CSO No. 026 Sewer<br>Separation           | This project consisted of the installation of collection sewers for<br>street receiver flows on Leddy Street, South Park Avenue, Owahn<br>Place, Prenatt Street, Bolton Place, St. Stephen's Place, and Buffalo<br>River Place, tributary to to SPP 88 and 90, in order to discharge<br>these storm flows downstream of regulators, in conjuction with the<br>optimization projects for SPP 217 and SPP 318. | Together with the Smith Street in-line storage project, the Smith Street partial sewer<br>separation project is designed to divert storm flows directly to the Smith Street Drain<br>thereby reducing CSO 026 discharges. Together with other LTCP projects, this project<br>is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6<br>activations or less.             |
| CSO No. 026 RTC<br>Structure              | The second contract consists of an in-line storage project which is<br>designed to detain wet weather flows along the western side of<br>Smith Street using a weir structure between the I-190 and the I-190<br>off ramp within the Smith Street Drain for discharge to the South<br>Interceptor thereby diverting combined sewer flows from CSO 026.  | Together with the Smith Street partial sewer separation project, the Smith Street in-<br>line storage project is designed to divert and detain the equivalent of a storage<br>volume of 1.94 MG, thereby reducing CSO 026 discharges. Together with other LTCP<br>projects, this project is projected to reduce CSO 026 discharges to the Buffalo River<br>based on the TY to 6 activations or less. |

| Project Name  | Project Description  | Project Purpose*   |
|---|--|--|
| Foundation 2 - SPP<br>Optimization (20<br>projects) | Project consists of multiple smaller projects that will overlap in<br>engineering and construction. SEE DETAILS FOLLOWING FOR<br>SPECIFIC PROJECTS   | In general, these projects will reduce discharges to the CSOs by detaining flows within the BSA's system through the modification of existing control structures.  |
| SPP 180<br>Optimization                             | This project consisted of raising of the weir associated with SPP 180<br>by 2.0' along its entire length. SPP 180 is located on Delaware<br>Avenue at the intersection with West Delavan. As part of the<br>revised SPP 331 Optimization, this weir will be raised an additional<br>1.75' along its entire length.   | The SPP 180 Optimization project was designed to increase the capacity of the CSS at SPP 180 thereby decreasing CSO 006 discharges. Together with other LTCP projects, this project is projected to reduce CSO 006 discharges to the Black Rock Canal based on the TY to 4 activations.        |
| SPP 331<br>Optimization                             | SPP331 is located at the intersection of Elmwood Avenue and West<br>Delavan Avenue. Preliminary plans were for the diversion of flows<br>from this point through a new sewer to Bird Avenue along the<br>centerline of Elmwood Avenue. This would have required major<br>disruption of a very high traffic commercial area and was deemed<br>impractical. Plans have been developed to instead divert the same<br>flow that was to have been diverted through this project through a<br>system of localized weir modifications rather than extensive pipe<br>installation. These modifications include raising the weir at SPP<br>180 by 1.75' and the bench located in SPP 332 on the northeast<br>quadrant of Gates Circle which currently directs dry weather flows<br>into the interceptor will be removed and replaced with a 6.2' weir<br>and restored sewer trough which will direct dry weather flows into<br>the Bird Avenue trunk sewer. | The SPP 331 Optimization project is designed to increase the underflow capacity at<br>SPP 331 thereby decreasing CSO 006 discharges. Together with other LTCP projects,<br>this project is projected to reduce CSO 006 discharges to the Black Rock Canal based<br>on the TY to 4 activations. |
| SPP 036<br>Optimization                             | This project consisted of the reconstruction of 35' of 30" sewer<br>associated with SPP 036 to reverse the slope. It was located on<br>Church Street between the off and on ramps of the Skyway (State<br>Route 5).  | The SPP 036 Optimization project was designed to increase the underflow capacity at SPP 036 thereby decreasing CSO 015 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Erie Basin through CSO 015 to 0 activations.       |
| SPP 217<br>Optimization                             | In association with the Smith Street partial sewer separation<br>project, this project consisted of the removal of two bottom orifice<br>plates totaling 1.42' in height, increasing the orifice size and<br>conveyance capacity of the Emslie Street Sewer. SPP 217 is located<br>on Emslie Street at its intersection with Eagle Street.   | The SPP 217 Optimization project is designed to increase the underflow capacity at SPP 217 thereby decreasing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations.             |

| Project Name             | Project Description   | Project Purpose*  |
|--------------------------|---|---|
| SPP 318<br>Optimization  | In association with the Smith Street partial sewer separation<br>project, this project consisted of the removal of an orifice plate,<br>increasing the orifice size and conveyance capacity of the Clinton<br>Avenue Sewer. SPP 318 is located east of the intersection of<br>Fillmore Avenue and Clinton Street. | The SPP 318 Optimization project is designed to increase the underflow capacity at SPP 318 thereby decreasing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations.  |
| SPP 097A<br>Optimization | This project consisted of abandoning an inactive combined sewer,<br>converting another to a storm sewer and abandoning the<br>underflow connection. SPP 097A is located at the intersection of<br>the extension of Prenatt and Orlando Streets.   | The SPP 097A Optimization project is designed to eliminate SPP 097A thereby decreasing CSO 026 discharges. Together with other LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo River based on the TY to 6 activations.   |
| SPP 122<br>Optimization  | This project consisted of raising of the weir associated with SPP 122<br>by 0.5' along its entire length. SPP 122 is located on South Legion<br>Drive just north of the intersection with Meriden Street.   | The SPP 122 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 122 thereby decreasing CSO 037 discharges. Together with other LTCP projects, this project is projected to reduce CSO 037 discharges to the Buffalo River based on the TY to 6 activations.  |
| SPP 163<br>Optimization  | The SPP 163 Weir Optimization project consisted of replacing the existing weir with a new weir 0.75' higher. It is located to the East of the intersection of Fillmore Avenue and Northland on Northland Avenue.  | The SPP 163 Optimization project is designed to increase the flow volume conveyed<br>by the CSS at SPP 163 thereby decreasing CSO 053 discharges. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations.   |
| SPP 165<br>Optimization  | This project consisted of raising of the weir associated with SPP 165<br>by 0.5' along its entire length. SPP 165 is located on Fillmore<br>Avenue just north of the intersection with East Delavan Street.   | The SPP 165 Optimization project was designed to increase the capacity of the CSS at SPP 165 thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.   |
| SPP 165A<br>Optimization | The weir associated with SPP 165A located at the intersections of Fillmore and Kensington Avenues.  | The SPP 165A Optimization project was designed to increase the capacity of the CSS at SPP 165A by raising the weir by 0.75' and upsizing 675' of 15" pipe to 18" pipe to reduce CSOs in association with CSO 053. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. |
| SPP 178<br>Optimization  | This project consisted of raising of the weir associated with SPP 178<br>by 0.5' along its entire length. SPP 178 is located on Masten<br>Avenue just north of the intersection with Northland Avenue.  | The SPP 178 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 178 thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.   |

| Project Name | Project Description  | Project Purpose*   |
|--------------|--|--|
| SPP 335B     | This project consisted of raising of the weir associated with SPP  | The SPP 335B Optimization project was designed to increase the flow volume       |
| Optimization | 335B by 1.0' along its entire length. SPP 335B is located on Hager | conveyed by CSS at SPP 335B thereby decreasing CSO 053 discharges. Together with |
|              | Street just south of the intersection with Florida Street.         | other LTCP projects, this project is projected to reduce CSO 053 discharges to   |
|              |  | Scajaquada Creek based on the TY to 4 activations.                               |
|              |  |  |

| Project Name             | Project Description  | Project Purpose*  |
|--------------------------|--|---|
| SPP 336A<br>Optimization | This project has been constructed in association with the SPP 331<br>optimization. The project consist sof removing a sluice gate and<br>orifice plate and modifying the existing structure by changing the<br>existing side channel opening from 24" to 30". SPP 336A is located<br>on Humboldt Parkway North of the Scajaquada Drain.                | The SPP 336A Optimization project is designed to increase the underflow capacity of<br>the CSS at SPP 336A thereby decreasing CSO 053 discharges. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations.   |
| SPP 341A<br>Optimization | SPP 341A is located on Genesee Street east of Kerns Avenue. This<br>project is on hold pending the results of post-construction<br>monitoring of Lang and Hazelwood RTCs.  | The SPP 341A Optimization project would increase the flow volume conveyed by the CSS at SPP 341A thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations. Field conditions may require modification to this planned optimization. |
| SPP 342B<br>Optimization | This project consisted of raising of the weir associated with SPP 342B by 1.0' along its entire length. SPP 342B is located on Sprenger Avenue adjacent to Schiller Park.  | The SPP 342B Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 342B thereby decreasing CSO 053 discharges. Together with other LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on the TY to 4 activations.   |
| SPP 001<br>Optimization  | The weir associated with SPP 001 located at the discharge of<br>Cornelius Creek into the Niagara River and tributary to CSO 055 has<br>been raised 1.0' to reduce CSOs.  | The SPP 001 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 001 thereby decreasing CSO 055 discharges. Together with other LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara River based on the TY to 9 activations.  |
| SPP 183<br>Optimization  | This project consisted of raising of the weir associated with SPP 183<br>by 2.0' along its entire length. SPP 183 is located at the intersection<br>of Bradley Avenue and Dewitt Street.   | The SPP 183 Optimization project was designed to increase the flow volume conveyed by the CSS at SPP 183 thereby decreasing CSO 059 discharges. Together with other LTCP projects, this project is projected to reduce CSO 059 discharges to Scajaquada Creek based on the TY to 0 activations.   |
| SPP 283<br>Optimization  | SPP 283 is located in the median between the I-190 South ramp to<br>Porter Avenue and a service road near the West Side Rowing Club.<br>This project consisted of removing an orifice plate which restricted<br>flows from entering the Swan Trunk and the installation of a new<br>1.0' tall weir to restrict flows from discharging through CSO 063. | The SPP 283 Optimization project was designed to increase the underflow capacity of the CSS at SPP 283 thereby decreasing CSO 063 discharges. Together with other LTCP projects, this project is projected to reduce CSO 063 discharges to the Niagara River based on the TY to 4 activations.  |

| Project Name | Project Description   | Project Purpose*  |
|--------------|---|---|
| SPP 211      | This project consisted of constructing a weir to an elevation above | The SPP 211 Optimization project was designed to increase the flow volume           |
| Optimization | the overflow raised pipe invert at SPP 211. SPP 211 is located at   | conveyed by the CSS at SPP 211 thereby decreasing CSO 066 discharges. Together      |
|              | the South East corner of the intersection of Clinton and South      | with other LTCP projects, this project is projected to reduce CSO 066 discharges to |
|              | Ogden Streets.  | the Buffalo River based on the TY to 4 activations.                                 |

| Project Name   | Project Description   | Project Purpose*  |
|--|---|---|
| Foundation 3 -<br>Remaining RTC<br>(14 sites)            | These RTC projects propose to utilize available capacity in the CSS to provide flow control measures during wet weather events through the use of active controls.  | In general, these projects are designed to reduce discharges to the CSOs through the detention of flows within the BSA's CSS system.  |
| Hertel Northwest<br>(Hertel at Deer) In-<br>Line Storage | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is within the northern portion of the two large<br>combined sewers which are located under Hertel Avenue.                    | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara<br>River based on the TY to 9 activations.    |
| Hertel South<br>(Hertel at Deer) In-<br>Line Storage     | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is within the southern portion of the two large<br>combined sewers which are located under Hertel Avenue.                    | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara<br>River based on the TY to 9 activations.    |
| Hertel Northeast In-<br>Line Storage                     | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. This project will<br>be located within the northern portion of the two large combined<br>sewers which are located under Hertel Avenue.                        | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 055 discharges to the Niagara<br>River based on the TY to 9 activations.    |
| Bird East In-Line<br>Storage                             | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. This project will<br>be located to the east of the above mentioned Bird RTC project<br>along the same Bird Avenue sewer.                                      | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 004 discharges to the Black<br>Rock Canal based on the TY to 3 activations. |
| East Ferry In-Line<br>Storage                            | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is along the Ferry Street sewer upstream of its<br>leaping weir overflow to the Scajaquada Drain north of Florida<br>Street. | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations.     |

| Project Name                        | Project Description  | Project Purpose*  |
|-------------------------------------|--|---|
| Colorado In-Line<br>Storage         | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is along the Colorado Avenue sewer which runs<br>underneath the manufacturing facility located at 1001 East Delavan<br>Avenue.            | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations. |
| North Bailey In-Line<br>Storage     | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is along Bailey Avenue north of Scajaquada Street.  | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations. |
| South Bailey In-Line<br>Storage     | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is along Bailey Avenue north of Scajaquada Street<br>and south of the afore mentioned North Bailey In-Line Storage<br>project.            | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations. |
| Roslyn In-Line<br>Storage           | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is near Roslyn Street on Lang Avenue.   | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations. |
| Hazelwood (Kay) In-<br>Line Storage | This RTC project, now known as Hazelwood, is proposed to utilize<br>available capacity in the CSS capacity of a large sewer to provide<br>flow control measures during wet weather events while allowing<br>continuous dry weather underflow. The proposed project location<br>is on Hazelwood Avenue between East Delavan and Easton<br>Avenues.                        | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 053 discharges to Scajaquada<br>Creek based on the TY to 4 activations. |
| Amherst Quarry<br>Off-Line Storage  | This RTC project proposes to utilize available capacity within the<br>active Amherst Quarry to provide flow control measures during wet<br>weather events, once downstream capacity is available, flows will<br>then be pumped back into the system. The Amherst Quarry is<br>located in an area bounded by Parkridge Avenue, East Amherst<br>Street, and Hewitt Avenue. | This RTC project is proposed to utilize available capacity of the quarry to detain flows<br>until downstream capacity becomes available. Together with other LTCP projects,<br>this project is projected to reduce CSO 053 discharges to Scajaquada Creek based on<br>the TY to 4 activations.                |

| Project Name   | Project Description   | Project Purpose*   |
|--|---|--|
| Fillmore North In-<br>Line Storage                     | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. This project is<br>proposed to be located on Fillmore Avenue, however pending the<br>results of post-construction monitoring, it may be eliminated<br>depending on the efficancy of the Smith Street Storage project.   | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo<br>River based on the TY to 6 activations. |
| Gibson CSO Line<br>Storage                             | This project is proposed to utilize the available capacity of the CSO<br>pipe downstream of the SPP, but before the discharge point or<br>outfall. It would be designed to convey water to prevent surface<br>flooding and overflows through upstream SPPs. Once the storm<br>event has subsided, it would be designed to dewater back into the<br>combined system. The dewatering rate would be controlled so that<br>it would not cause overflows downstream from the control<br>structure. The proposed project location is on Gibson Street,<br>however pending the results of post-construction monitoring, it<br>may be eliminated depending on the efficancy of the Smith Street<br>Storage project. | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo<br>River based on the TY to 6 activations. |
| Babcock Pump<br>Station In-Line<br>Storage             | This RTC project is proposed to modify the function of an existing<br>pump station to utilize available capacity of a large sewer to<br>provide flow control measures during wet weather events. The<br>proposed project location is at the existing pump staion on New<br>Babcock Street at Howard Street.   | This RTC project is proposed to utilize available capacity within the collection system<br>to reduce the peak flow into the Swan Trunk. Together with other LTCP projects, this<br>project is projected to reduce CSO 027 discharges to the Buffalo River based on the<br>TY to 6 activations.                 |
| Montgomery CSO<br>(Smith at Eagle) In-<br>Line Storage | This RTC project is proposed to utilize available capacity in the<br>Smith St Drain to provide flow control measures during wet<br>weather events while allowing continuous dry weather underflow.<br>The proposed project location is upstream of the existing CSO 026<br>RTC project on Smith St. and Eagle St.   | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 026 discharges to the Buffalo<br>River based on the TY to 6 activations. |

| Project Name  | Project Description   | Project Purpose*  |
|---|---|---|
| Broadway at Oak<br>In-Line Storage                    | This RTC project is proposed to utilize available capacity in the collection system to provide flow control measures during wet weather events while allowing continuous dry weather underflow. The proposed project location is on Broadway St. at Oak St.   | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 017 discharges to the Buffalo<br>River based on the TY to 6 activations.  |
| Breckenridge at<br>Niagara Street In-<br>line Storage | This RTC project is proposed to replace the CSOs 010, 008/010, 061-<br>Underflow capacity upsizing project and will be designed to store<br>flows in the Breckenridge Street Sewer and release these flows<br>back into the Northern Interceptor as capacity is available. It will be<br>located at Niagara and Breckenridge Streets.   | This RTC project is proposed to utilize available capacity within the existing<br>Breckenridge combined sewer to store flows and then release them when there is<br>available capacity to the Northern Interceptor Sewer rather than directly connecting<br>into the syphon gates connection. It is anticipated to reduce CSO 010 discharges to<br>the Black Rock Canal based in the TY to 4 activations.                         |
| Gates Circle In-line<br>Storage                       | This project is proposed to be located at the North East corner of<br>Gates Circle and will provideThis project is an additional project<br>that was not originally included in the Long-Term Control Plan<br>which is proposed to modify SPP 322 to create a globalized control<br>logic balancing of flows between the Scajaquada Tunnel and Bird<br>Avenue Trunk. An engineering contract for this project is expected | This RTC project is proposed to balance flows between the Bird Avenue Trunk and Scajaquada Tunnel to work together with other projects to reduce discharges to the Black Rock Canal through CSO 061 and CSO 004 in the TY to 4 activations.   |
| Foundation 4 -<br>Hamburg Drain<br>Optimizations      | This project will entail several in-system optimizations, e.g.<br>rerouting of flows, installation of weirs, partial sewer separations<br>etc. and/or green infrastructure to reduce the overflow events at a<br>number of upstream SPPs in order to control flows through CSOs<br>017, 022, and 064. These optimizations would be located within the<br>Hamburg Basin.   | These optimization projects are proposed to increase the flow volume conveyed by the CSS upstream of the SPPs and diverting stormwater flows out of the CSS thereby decreasing CSO 017, 022, and 064 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Buffalo River through CSO 017 to 4 activations, CSO 022 to 5 activations, and CSO 064 to 3 activations. |
| Foundation 4 -<br>Hamburg Drain<br>Storage            | Together with the Hamburg Drain Optimizations, this project would<br>be designed to provide the equivalent of 5 MG of offline storage.<br>This facility would be located within the Hamburg Basin and may<br>involve the installation of RTCs.  | This storage project is proposed to provide off-line storage thereby decreasing CSO 017, 022, and 064 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Buffalo River through CSO 017 to 4 activations, CSO 022 to 5 activations, and CSO 064 to 3 activations.  |

| Project Name                                     | Project Description   | Project Purpose*   |
|--|---|--|
| Mill Race In-Line<br>Storage                     | This RTC project is proposed to utilize available capacity of a large<br>sewer to provide flow control measures during wet weather events<br>while allowing continuous dry weather underflow. The proposed<br>project location is on Larkin Street near Roseville Street. | This RTC project is proposed to utilize available capacity within the collection system<br>to detain flows until downstream capacity becomes available. Together with other<br>LTCP projects, this project is projected to reduce CSO 017 discharges to the Buffalo<br>River based on the TY to 6 activations. |
| WWTP   |   |  |
| WWTP<br>Improvement<br>Project Alternative<br>C2 | The proposed project is expected to rehabilitate the existing primary clarifiers by adding high rate disinfection and provide additional secondary clarifiers at the Bird Island WWTP.  | This project would be designed to provide treatment of wet weather flows and increased secondary treatment capacity.   |

| Project Name  | Project Description  | Project Purpose*  |
|---|--|---|
| Green Infrastructure                                      | e Projects   |   |
| Green 1 - Pilot<br>Projects – 267-<br>acres of GI control | Projects consist of multiple green infrastructure projects that will overlap in engineering and construction.                        | In general, this phase is designed to control stormwater flow from 267 acres of impervious area in the various sewer sheds within the targeted areas. |
| 2001-2016<br>Residential<br>Demolitions                   | This project consists of the demolition of vacant houses thereby replacing impervious with pervious surfaces.                        | This project is designed to remove 256 total acres of impervious area and manage stormwater on site.  |
| 2001-2016<br>Commercial and<br>Industrial<br>Demolitions  | This project consists of the demolition of commercial and industrial structures thereby replacing impervious with pervious surfaces. | This project is designed to control stormwater flow from 78 total acres of impervious area.   |

| Project Name  | Project Description  | Project Purpose*   |
|---|--|--|
| Green 2 – 410<br>acres of GI Control                        | These projects will consist of multiple green infrastructure projects<br>that will overlap in engineering and construction. Details will be<br>provided in future reports.   | In general, these projects would be designed to retain stormwater flow from 410 acres of impervious area in the various sewer sheds in the targeted areas.             |
| 2017 -2024<br>Demolitions                                   | This project consists of the demolition of vacant and dilapidated structures thereby replacing impervious surface with pervious surface  | This project is designed to control stormwater flow for each post demolition vacant<br>lot. Total acreate TBD on a rolling basis depending upon demolitions completed. |
| Green Demolition<br>Pilot Project                           | A three year pilot study where the City of Buffalo's demolition<br>specifications were altered to allow for the use of shallow<br>bioretention to increase onsite infiltration   | Over the course of the pilot project the revised demolition<br>specifications/bioretention approach was applied to 221 sites impacting a total of<br>19.03 acres.      |
| PUSH Blue Projects  | PUSH-Buffalo will install rain gardens, porous pavement and a green roof and distribute rain barrels within the CSO 012 sewershed.   | This project is designed to control stormwater flow from 1 acre of impervious area.  |
| Carlton Street<br>Porous Asphalt                            | This project consisted of the installation of pervious pavement to<br>retain stormwater from the area tributary to the Right-of-Way on<br>Carlton Street between Michigan and Jefferson Avenues in the City<br>of Buffalo as part of the City's streetscape project. | This project is designed to control stormwater flow from a 5.9 acre sewershed.   |
| Fillmore Avenue<br>Porous Parking<br>Lots and Green<br>Lots | This project consisted of the installation of porous pavement<br>parking lots and modified rain gardens to retain stormwater from<br>the area tributary to the Right-of-Way of Fillmore Avenue in the<br>City of Buffalo as part of the City's streetscape project.  | This project is designed to control stormwater flow from 0.4 total acres of impervious area.   |
| Ohio Street   | This project consisted of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way on<br>Ohio Street in the City of Buffalo as part of the City's streetscape<br>project.  | This project is designed to control stormwater flow from 6.1 total acres of impervious area.   |
| Kenmore Avenue  | This project consists of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way on<br>Kenmore Avenue in the City of Buffalo as part of the City's<br>streetscape project.                                      | This project is designed to control stormwater flow from 5.17 total acres of impervious area.  |
| Genesee Gateway<br>Project                                  | This project consists of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way on<br>Genesee Street in the City of Buffalo as part of the City's<br>streetscape project.                                      | This project is designed to control stormwater flow from 2.8 total acres of impervious area.   |

| Project Name  | Project Description   | Project Purpose*  |
|---|---|---|
| Allen Street  | This project will consist of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way for<br>the portion of Allen Street between Main Street and Elmwood<br>Avenue in the City of Buffalo as part of the City's streetscape<br>project. | This project is designed to control stormwater flow from 2.5 total acres of impervious area.  |
| Willert Park  | This project will consist of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way for<br>the portion of William Street between Michigan and Jefferson in<br>the City of Buffalo.  | This project is designed to control stormwater flow from 13.9 total acres of impervious area. |
| Northland Ave   | This project will consist of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way for<br>the portion of Northland Avenue between Fillmore and Grider in<br>the City of Buffalo.   | This project is designed to control stormwater flow from 6.1 total acres of impervious area.  |
| 612 Northland Ave   | The project consists of a rain garden, permeable gravel pavement,<br>and conversion of impervious pavement to lawn/shrubs.  | The project is designed to control stormwater flow from 0.26 acres of impervious area.        |
| Niagara Street<br>Phase 1: Elmwood<br>Street to Virgina<br>Street             | This project consists of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way for<br>the length of Niagara Street in the City of Buffalo as part of the<br>City's streetscape project.  | This project is designed to control stormwater flow from 2 total acres of impervious area.    |
| Niagara Street<br>Phase 2: Virgina<br>Street to Porter<br>Avenue              | This project consists of the installation of green infrastructure to<br>retain stormwater from the area tributary to the Right-of-Way for<br>the length of Niagara Street in the City of Buffalo as part of the<br>City's streetscape project.  | This project is designed to control stormwater flow from 7.3 total acres of impervious area.  |
| Niagara Street<br>Phase 3:<br>Hampshire Street<br>to Scajaquada<br>Expressway | This project consists of the installation of groon infrastructure to  |   |

| Project Name        | Project Description  | Project Purpose*  |
|---------------------|--|---|
| Niggara Street      | This project consists of the installation of green intrastructure to |   |
| Niuguru Street      | retain stormwater from the area tributary to the Right-of-Way for    | This project is designed to control stormwater flow from 15 total acres of impervious |
| Phase 4a:           |  |   |
| Coninguada Eurov to | the length of Niagara Street in the City of Buffalo as part of the   | area in MS4 drainage areas and 25.5 in CSO drainage areas.                            |
| Scajaquada Expy to  | City's streetscape project   |   |
| Hertel Ave          |  |   |
|                     |  |   |

| Project Name        | Project Description   | Project Purpose*  |
|---------------------|---|---|
| Niagara Street      |   |   |
| Phase 5: Porter     |   |   |
| Avenue to           |   |   |
| Hampshire Street    |   |   |
| Green 3 – 375       | These projects will consist of multiple green infrastructure projects | In general, these projects would be designed to retain stormwater flow from 375 |
| acres of GI Control | that will overlap in engineering and construction. Details will be    | acres of impervious area in the various sewer sheds in the targeted areas.      |
|                     | provided in the Phase 2 Green Infrastructure Master Plan.             |   |
| Ningan Charact      |   |   |
| Niagara Street      |   |   |
| Phase 4b: Hertel    |   |   |
| Ave to Ontario St   |   |   |
| Green 4 – 263       | These projects will consist of multiple green infrastructure projects | In general, these projects would be designed to retain stormwater flow from 263 |
| acres of GI Control | that will overlap in engineering and construction. Details will be    | acres of impervious area in the various sewer sheds in the targeted areas.      |
|                     | provided in the Phase 2 Green Infrastructure Master Plan.             |   |
|                     |   |   |

| Project Name   | Project Description  | Project Purpose*   |  |
|--|--|--|--|
| Gray Projects  | ray Projects   |  |  |
| CSOs 014/15 – Erie<br>Basin In-line<br>storage and<br>optimization | SEE DETAILS FOLLOWING FOR SPECIFIC PROJECTS  |  |  |
| SPPs 206A&B  | A new 113,000 gallon in-line storage facility was constructed in<br>association with SPPs 206A&B to reduce CSOs at CSO 014. This site<br>is located at Trenton Road/ Village Court north east of Fourth<br>Street.   | This project was designed to provide in-line storage thereby decreasing CSO 014 discharges through SPPs 206A&B. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Erie Basin through CSO 014 to 2 activations.  |  |
| SPP 035  | A new 50,000 gallon in-line storage facility was constructed<br>between the Genesee Trunk and Swan Trunk sewers to create<br>additional storage capacity in association with SPP 035 (CSO 015).<br>This project is located to the north west of the intersection of South<br>Elmwood Avenue and West Genesee Street.   | This project was designed to provide in-line storage thereby decreasing CSO 015<br>discharges through SPP 35. Together with other LTCP projects, this project is<br>projected based on the TY to reduce discharges to the Erie Basin through CSO 015 to<br>0 activations.  |  |
| SPP 036  | This project consisted of the reconstruction of 35' of 30" sewer<br>associated with SPP 036 to reverse the slope. This site is located on<br>Church Street between the off and on ramps of the Skyway bridge<br>(State Route 5).   | This sewer reconstruction project was designed to increase the underflow capacity of the CSS thereby decreasing CSO 015 discharges. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Erie Basin through CSO 015 to 0 activations.  |  |
| CSO 013 – Satellite<br>storage,<br>conveyance, FM &<br>PS          | CSO 013 is located at the extension of Virginia Street, in LaSalle<br>Park, into the Black Rock Canal, the structure is tentatively planned<br>to be built between the last SPP structure and the Canal. The<br>proposed satellite storage facility would consist of a covered,<br>concrete, underground tank. This project is currently on hold<br>pending the Model Recalibration. | This storage project would provide off-line storage thereby decreasing CSO 013 discharges. Preliminary design is for a 0.3 MG offline storage facility. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Black Rock Canal through CSO 013 to 4 activations.  |  |
| North Relief –<br>Interceptor                                      | The original conception of this project was of a deep tunnel relief<br>sewer to run in the vicinity of Niagara Street between Bird Avenue<br>and Albany Street with an additional line connecting the tunnel to<br>the WWTP influent siphon. Preliminary design is for 5,310' of<br>96"pipe and 571' of 120" pipe. Due to site constraints this project<br>may be redesigned.        | The purpose of this project is to reduce discharges through CSOs 004, 011, and 012, by creating a new relief sewer thereby creating offline storage capacity capacity in the CSS. Together with other LTCP projects, this project is projected based on the TY to reduce discharges to the Black Rock Canal through CSO 004 to 3 activations, CSO 011 to 4 activation, and CSO 012 to 2 activations. |  |

| Project Name  | Project Description  | Project Purpose*   |
|---|--|--|
| CSOs 010,<br>008/010, 061, 004<br>– Underflow<br>capacity upsizing                                | This Project is No Longer being Considered and is being superceded<br>by Breckenridge at Niagara Street In-Line Storage  | This underflow capacity upsizing project would increase the capacity of the CSS thereby decreasing CSO 010, 008, 061 and 004 discharges. Together with other LTCP projects, this project is projected based on the 1993 Modified Typical Year to reduce discharges to the Black Rock Canal through CSO 004 to 3 activations, CSO 010 to 1 activations, CSO 008 to 0 activations, and CSO 061 to 4 activations. |
| SPP 337 (CSO 053)<br>– Satellite storage,<br>conveyance, FM &<br>PS                               | SPP 337 is located at Colorado Street North of Scajaquada Street.<br>The proposed satellite storage facility would consist of a covered,<br>concrete, underground tank.  | The purpose of this project is to reduce discharges through CSO 53 to the Scajaquada<br>Creek. Preliminary design is for a 0.7 MG off-line storage facility. Together with<br>other LTCP projects, this project is projected reduce CSO discharges to Scajaquada<br>Creek based on the TY to 4 activations.  |
| SPP 336A&B (CSO<br>053) – Satellite<br>storage,<br>conveyance, FM &<br>PS                         | SPP 336A&B are located on Humboldt Parkway on each side of the<br>Scajaquada Drain. The proposed satellite storage facility would<br>consist of a covered, concrete, underground tank.   | The purpose of this project is to reduce discharges through CSO 53 to the Scajaquada<br>Creek. Preliminary design is for a 4.2 MG off-line storage facility. Together with<br>other LTCP projects, this project is projected reduce CSO discharges to Scajaquada<br>Creek based on the TY to 4 activations.  |
| Jefferson Avenue<br>& Florida Street<br>(CSO 053) –<br>Satellite storage,<br>conveyance and<br>FM | The proposed location for this facility is in the vicinity of the<br>intersection of Jefferson Avenue and Florida Street. The proposed<br>satellite storage facility would consist of a covered, concrete,<br>underground tank.  | The purpose of this project is to reduce discharges through CSO 53 to the Scajaquada<br>Creek. Preliminary design is for a 1.5 MG off-line storage facility. Together with<br>other LTCP projects, this project is projected reduce CSO discharges to Scajaquada<br>Creek based on the TY to 4 activations.  |
| CSO 055 – Satellite<br>storage,<br>conveyance, FM &<br>PS   | For CSO 055, the proposed storage facility would be located<br>upstream of the regulator, near Military Road. At this location, an<br>offline facility would be constructed and flows above 26 MGD<br>(instantaneous peak) would be diverted from the South Hertel<br>Trunk sewer into the storage facility. The proposed satellite<br>storage facility would consist of a covered, concrete, underground<br>tank. | The purpose of this project is to reduce discharges through CSO 55 to the Niagara<br>River. Preliminary design is for a 7.5 MG off-line storage facility. Together with other<br>LTCP projects, this project is projected reduce CSO discharges to the Niagara River<br>through CSO 55 based on the TY to 9 activations.   |

| Project Name   | Project Description   | Project Purpose*   |
|--|---|--|
| CSOs 028/044/047<br>- Satellite storage,<br>conveyance, FM &<br>PS | The proposed location for this facility is underneath the Tops<br>parking lot between South Park Avenue and the Buffalo River. The<br>proposed satellite storage facility would consist of a covered,<br>concrete, underground tank.        | The purpose of this project is to reduce discharges through CSO 28 to the Buffalo<br>River and through CSOs 047 and 044 to Cazenovia Creek. Preliminary design is for a<br>2.3 MG off-line storage facility. Together with other LTCP projects, this project is<br>projected reduce CSO discharges based on the TY to 6 activations through CSO 028, 2<br>activations through CSO 044 and 3 activations through CSO 047. |
| CSO 052 – Satellite<br>storage,<br>conveyance, FM &<br>PS          | The proposed location for this facility is in the vicinity of South<br>Ogden Street between Mineral Springs Road and Cazenovia Creek.<br>The proposed satellite storage facility would consist of a covered,<br>concrete, underground tank. | The purpose of this project is to reduce discharges through CSO 52 to the Buffalo<br>River. Preliminary design is for a 0.6 MG offline storage facility. Together with other<br>LTCP projects, this project is projected reduce CSO discharges to the Buffalo River<br>through CSO 052 based on the TY to 3 activations.   |
| CSO 064 – Satellite<br>storage,<br>conveyance, FM &<br>PS          | The proposed location for this facility is in the vicinity of the confluence of Ohio, Louisiana and Saint Claire Streets. The proposed satellite storage facility would consist of a covered, concrete, underground tank.                   | The purpose of this project is to reduce discharges through CSO 064 to the Buffalo<br>River. Preliminary design is for a 0.1 MG off-line storage facility. Together with other<br>LTCP projects, this project is projected reduce CSO discharges to the Buffalo River<br>through CSO 064 based on the TY to 3 activations.   |

\*Note: Black Rock Canal Performance Criterion is 4 Activations in the Typical Year Buffalo River Performance Criterion is 6 Activations in the Typical Year Cazenovia Creek - B Performance Criterion is 4 Activations in the Typical Year Cazenovia Creek - C Performance Criterion is 6 Activations in the Typical Year Erie Basin Performance Criterion is 2 Activations in the Typical Year Niagara River Performance Criterion is 9 Activations in the Typical Year Scajaquada Creek - Performance Criterion is 4 Activations in the Typical Year

| Project Name  | Project Description   | Project Purpose*  |  |  |
|---|---|---|--|--|
| Proposed Revised LTCP Projects  |   |   |  |  |
| NFA Phase I   | The first phase of the Treatment Facility upgrades consists of replacement of the diffusers, removal of grit, and replacement and upgrading of piping and valves for the return activated sludge system.  | The NFA Phase 1 project is designed to restore the secondary system's capacity and facilitate work specified in NFA Phase 3 while also increasing the aeration efficiency.  |  |  |
| NFA Phase II  | The second phase of the Treatment Facility upgrades consists of installation of a new chlorine contact tank, dosing system, and pumping station for the primary system together with odor controls and primary sludge pumping station upgrades.   | The NFA Phase 2 project is designed to provide reliable disinfection to flows diverted to the primary treatment system during wet weather events.   |  |  |
| Jefferson & Florida (SPP 170B) (2.6 MG)<br>(M) Replaced by CSO053_11 1.5 MG<br>Canisius/Jefferson Delevan OLS | 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 proposed Canisius/Jefferson Delevan 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.   |  |  |
| Amherst Quarry OLS (M) Now<br>CSO053_3.2 Bailey & Amherst, Amherst<br>Quarry PS RTC                           | This RTC project includes adding RTC at SPP255 (Bailey Avenue and East<br>Amherst Street) as well as improving the efficiency of Amherst Quarry<br>dewatering operations to reduce overflows.   | The proposed CSO053_3.2 Bailey & Amherst, Amherst Quarry PS RTC would replace<br>the Amherst Quarry OLS. It is anticipated that the proposed project together with<br>other proposed projects will reduce activations from 37 to 4 for CSO-053 upon<br>completion of the Selected Alternative.  |  |  |
| Underflow Upsizing (CSO 008/010, 061,<br>004) (M) Replaced by CSO010_1<br>Breckenridge Niagara RTC            | The proposed design was similar to the Smith St. and Mill Race RTC projects,<br>with a static weir in the 36" diameter pipe upstream of SPP021 diverting flow to<br>a new controlled connection to the North Interceptor. This project also has the<br>potential to reduce overflows at CSO-011 (SPP024) and CSO-055 (SPP001).            | Regarding the Selected Alternative model, the proposed Breckenridge<br>Niagara RTC is planned to replace the Underflow Pipe Upsizing project. In this<br>Selected Alternative, it is anticipated that the new project with other LTCP projects<br>will reduce activations from 5 to 2 for CSO 004, from 33 to no activations for CSO 008,<br>and from 14 to no activations for CSO 010 upon completion of the Selected<br>Alternative. In the new model's baseline and Selected Alternative scenarios, CSO-061<br>is already in compliance. |  |  |

| Project Name   | Project Description   | Project Purpose*   |
|--|---|--|
| CSO006_2 Gates Circle RTC                            | 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.   | Together with other projects, this project is projected to reduce CSO 006 discharges to Scajaquada Creek from 47 to 1 activation.  |
| CSO053_10 SPP229A RTC                                | SPP229A would be modified by incorporating an additional 24" diameter<br>underflow pipe downstream of a 24" dynamically controlled gate. The gate<br>would open when there is available capacity in the Scajaquada Tunnel or there<br>is a risk for overflow at SPP229A   | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations  |
| CSO053_12.2 Jefferson Ave GI                         | Permeable pavement would be installed in the parking lanes along Jefferson<br>Avenue from the intersection with Beverly Road to the intersection with Best<br>Street. The design for this project is not complete, but it is assumed that the<br>depth and pore space would match the Kenmore GI project. This project would<br>manage 7.6 acres of impervious area upstream of SPP229A | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations. |
| CSO053_12.1 Jefferson Ave GI                         | Permeable pavement would be installed in the parking lanes along Jefferson<br>Avenue from the intersection with Main Street to the intersection with Beverly<br>Road. The design for this project is not complete, but it is assumed that the<br>depth and pore space would match the Kenmore GI project. This project would<br>manage 2.3 acres of impervious area upstream of SPP333. | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations. |
| CSO053_3.3 Bailey & Minnesota SPP254<br>Modification | The overflow weir at SPP254 (located at the intersection of Minnesota Avenue<br>and Bailey Avenue) would be replaced. The new weir elevation would be 82.90<br>ft (City datum), which is slightly lower than the weir elevation in the LTCP<br>model. Lowering the weir results in more flow being routed to the Amherst<br>Quarry PS storage.  | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations. |

| Project Name  | Project Description  | Project Purpose*   |
|---|--|--|
| Colorado ILS (M) Replaced by CSO053_2.5 SPP337 Modification   | SPP337 would be modified by incorporating an additional 30" diameter underflow pipe.   | 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                              |
| South Bailey ILS (M) Replaced with CSO053_3.1 SPP338 Modification   | 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'.   | 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.  |
| SPP 341A Optimization Genesee &<br>Kearns (M) Replaced by CSO053_8<br>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.  | The proposed CSO053_8 SPP341A Modification is planned to replace the SPP 341A<br>Optimization Genesee & Kearns project. It is anticipated that<br>the proposed project together with other proposed projects will reduce activations<br>from 37 to 4 for CSO-053 upon completion of the Selected Alternative                     |
| CSO053_1.5 SPP336B Modification   | SPP336B would be modified by removing the underflow orifice plate, reducing overflows at CSO-053.  | Together with other projects, this project is projected to reduce CSO053 discharges to Scajaquada Creek from 37 to 4 activations.  |
| SPP 336 A/B (SPP165A, SPP165B,<br>SPP336A, SPP 336B) (4.2 MG) (M)<br>Replaced by CSO053_1.4 3.26 MG Sidney<br>OLS | Satellite Storage at Humboldt Parkway will be replaced with a smaller 3.26 MG tank at the corner of Sidney Street and Lark Street. 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. | The proposed Sidney OLS (CSO053_1.4) is planned to replace the SPP 336 A&B (CSO-<br>053) Satellite Storage. In this Selected Alternative, it is anticipated that the proposed<br>smaller tank together with other LTCP Projects will reduce activations from 37 to 4 for<br>CSO-053 upon completion of the Selected Alternative. |
| CSO053_13 SPP165B Modification  | SPP165B underflow orifice would be upsized to 24" and underflow pipe to 36".<br>The overflow weir would also be raised to 54.81 ft (City datum). These<br>modifications would reduce overflows at CSO-053.   | Together with other projects, this project is projected to reduce CSO053 discharges to Scajaquada Creek from 37 to 4 activations.  |
| CSO053_14 SPP175 Modification   | SPP175 at Dodge Street and Michigan Ave would be raised to 56.10 ft (City<br>datum). SPP176 at Michigan Avenue and Riley Street and SPP177 at Michigan<br>Avenue and Glenwood Avenue would both be raised to 52.85 ft (City datum).  | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.   |

| Project Name                   | Project Description   | Project Purpose*  |
|--------------------------------|---|---|
| CSO053_5.2 Edison Martha OLS   | This project consists of a 2.61 MG tank at the northwest corner of Edison<br>Avenue and Kensington Expressway. The storage would dewater via gravity<br>when there is available capacity in the Edison Avenue trunk sewer.  | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.  |
| NFA Phase III                  | The NFA Phase III improvements consist of increasing the penetrations to the<br>existing secondary clarifiers, adding two new secondary clarifiers, and adding an<br>additional chlorine contact tank.  | These improvements will be designed to provide 400 MGD of secondary treatment during wet weather events and reduce bypasses of the secondary system.  |
| Non-NFA Phase III Improvements | The non-NFA Phase III Improvements are improvements to the secondary system that were not specified in the 2014 LTCP, but will be incorporated into the contracts for the Phase III NFA Improvements.   | These improvements will ensure the long-term reliability of those systems installed and upgrades as part of the NFA Phase III.  |
| CSO014_1.1 SPP206A&B RTC       | The proposed RTC project adds a 24" dewatering gate and connection to the<br>South Interceptor. The gate would open to send more flow to the South<br>Interceptor when it has available capacity, and close when it is near full<br>capacity. This would further reduce overflows at SPP206A&B and could provide<br>additional benefit downstream at SPP024 (CSO-011).  | Together with other projects, this project is projected to reduce CSO-014 discharges to Erie Basin Marina from 12 to 2 activations.   |
| System_2 Schiller Park OLS     | This projects consists of an 8.0 MG offline storage project to divert inflows from<br>Cheektowaga to an 8.00 MG storage facility during wet weather until the BSA<br>collection system has capacity to receive and treat it. This project would help<br>buffer peak flows to the Bird Island Treatment Facility and reduce overflows at<br>SPPs along the North and South Interceptor, including SPP001 and SPP024. The<br>OLS is currently configured as gravity-driven storage with dynamically controlled<br>inlet and outlet gates. | Together with other projects, this project is projected to reduce CSO012 discharges to<br>Black Rock Canal from 35 to 3 activations., CSO-053 discharges to Scajaquada Creek<br>from 37 to 4 activations, and CSO-055discharges to Niagara River from 38 to 9<br>activations. |
| System_2_3 SPP339 Modification | 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.   | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.  |

| Project Name  | Project Description  | Project Purpose*  |
|---|--|---|
| System_2_4 Schiller Park OLS SPP340<br>Modification   | 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.  | Together with other projects, this project is projected to reduce CSO053 discharges to Scajaquada Creekfrom 37 to 4 activations.  |
| CSO-014/015 (0.8 MG) (M) Updated to<br>larger tank: CSO014_1.2 5.55 MG Erie<br>Basin Marina OLS | The OLS would consist of a 5.55 MG tank north of the intersection of Trenton<br>Road and Fourth Street. The storage would dewater when there is available<br>capacity in the Swan trunk sewer. The Proposed OLS configuration requires a<br>pump station for dewatering.   | The proposed Erie Basin Marina OLS (CSO014_1.2) is planned to replace the CSO-<br>014/015 Satellite Storage. In this Selected Alternative, it is anticipated that the new<br>project together with other LTCP projects will reduce activations from 12 to 2 for CSO-<br>014. In the newmodel's baseline and the Selected Alternative scenarios, there were<br>no activations observed at CSO-015. |
| CSO-013 (0.3 MG) (M) Replaced with<br>CSO013_1 SPP304 Modification                              | For this SPP modification project, SPP304 (CSO-013, Virginia St. & Busti Ave.) would be modified by removing the underflow orifice plate. 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. | The proposed SPP304 Modification (CSO013_1) is planned to replace the CSO-013<br>Satellite Storage. In this Selected Alternative, it is anticipated that the target of 4 CSO<br>activations at CSO-013 in the Black Rock Canal will be sustained from the initial<br>baseline conditions to the implementation of the Selected Alternative.   |
| CSO017_8 SPP326 Modification  | This project consists of upsizing SPP 326 underflow pipe to 36" to utilize capacity created by CSO014_1.2 Erie Basin Marina OLS.   | Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activations.   |
| CSO011_1.2 SPP024 Modification  | 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.  | Together with other projects, this project is projected to reduce CSO-011 discharges to Niagara River from 39 to 4 activations.   |

| Project Name  | Project Description  | Project Purpose*   |
|---|--|--|
| CSO012_1.2 SPP023 Modification  | This project consists of enlarging SPP 023 underflow opening to 5 ft by 5 ft and by raise the overflow weir to 1.55'(City Datum).  | Together with other projects, this project is projected to reduce CSO-012 discharges to Black Rock Canal from 35 to 3 activations.   |
| CSO012_2.1 SPP296 Modification  | This project consists of enlarging SPP 296 underflow opening to 5 ft by 5 ft and by raise the overflow weir to 1.55' (City Datum).   | Together with other projects, this project is projected to reduce CSO-012 discharges to Black Rock Canal from 35 to 3 activations.   |
| CSO026_1.3 Collins Park OLS   | This project consists of a 2.56 MG Storage Tank with Gravity Dewatering  | Together with other projects, this project is projected to reduce CSO-026 discharges to Buffalo River from 9 to 6 activations.   |
| CSO027_1 SPP 317 Modification   | 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 reductionin overflows at CSO027.  | Together with other projects, this project is projected to reduce CSO-027 discharges to Buffalo River from 10 to 4 activations.  |
| 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.   | Together with other projects, this project is projected to reduce CSO-027 discharges to Buffalo River from 10 to 4 activations.  |
| CSO-055 (7.5 MG) (M) Updated to larger<br>tank with new location: CSO055_1.5<br>11.55 MG Military Rd OLS                    | 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 proposed Military Rd OLS (CSO055_1.5) is planned to replace the CSO-055<br>Satellite Storage. In this Selected Alternative, it is anticipated that the proposed larger<br>tank together with other LTCP Projects will reduce activations from 38 to 9 for CSO-<br>055 upon completion of the Selected Alternative. |
| Northern Relief Sewer/ North Relief -<br>Interceptor (M) New Configuration,<br>tagged as System_1 Northern Relief<br>Tunnel | This tunnel system is anticipated to have three parts, North of Scajaquada<br>Creek, South of Scajaquada Creek, and the Southern Relief Tunnel. The<br>Northern Relief Tunnel is designed to create more conveyance capacity to the<br>WWTP, supplement capacity in the North and South Interceptors, and increase<br>the ability of the system to store wet-weather flows. It is anticipated that the<br>tunnel will have an inside diameter of 12-feet based on the most recent system<br>simulations. | 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.   |
| CSO017_9 SPP059 Modification  | This project consists of upsizing the underflow pipe to 24" and raising the overflow weir to 3.25' (City Datum).   | Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activations.  |

| Project Name   | Project Description  | Project Purpose*   |
|--|--|--|
| CSO027_3 SPP097 modification                                 | 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.   | Together with other projects, this project is projected to reduce CSO-027 discharges to Buffalo River from 10 to 4 activations.  |
| CSO033_2 Clinton St OLS                                      | 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. | Together with other projects, this project is projected to reduce CSO-033 discharges<br>to Buffalo River from 15 to 2 activations.   |
| CSO033_3 SPP104 Modification                                 | 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.  | Together with other projects, this project is projected to reduce CSO-033 discharges to Buffalo River from 15 to 2 activations.  |
| CSO017_10 SPP051 Modification                                | This project consists of removing the orifice plate and raising the overflow weir to -1.35 ft (City Datum).  | Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activations.  |
| CSO-064 (0.1 MG) (M) Replaced with<br>CSO064_1.1 CSO-064 ILS | The existing 24" sewer upstream of SPP137 between South Street and Republic<br>Street along Louisiana Street would be replaced by two 60" diameter sewers.<br>These sewers would provide inline storage volume to help reduce overflows at<br>SPP137.  | The proposed CSO-064 ILS (CSO064_1.1) is planned to replace CSO-064 Satellite<br>Storage. It is anticipated that the proposed project together with other proposed<br>projects will reduce activations from 10 to 4 for CSO-064upon completion of the<br>Selected Alternative. |

| Project Name   | Project Description  | Project Purpose*  |
|--|--|---|
| CSO006_3 Delavan Drain Weir Raising &<br>RTC   | This project consists of replacing existing permanently closed sluice gate with<br>dynamically real-time controlled interconnection between the Delavan Drain<br>and North Interceptor and modification (raising of weir)of SPP 170A to divert<br>flows from Scajaquada Creek to the Delavan Drain during only the most<br>extreme storm events for flood prevention purposes. | Together with other projects, this project is projected to reduce CSO 006 discharges<br>to Scajaquada Creek from 47 to 1 activation.  |
| CSO064_1.2 SPP 137 Modification  | 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.  | Together with other projects, this project is projected to reduce CSO-064 discharges to Buffalo River from 10 to 4 activations.   |
| CSO-028/044/047 (2.3 MG) (M) Updated<br>to smaller tank: CSO028_1 0.95 MG<br>Hopkins & Osage OLS | To address CSO-028 overflows, the Hopkins and Osage OLS would store flow<br>from the Hopkins Street sewer in a 0.95 MG tank at the eastern end of Osage<br>Street. The storage would dewater when there is available capacity in the South<br>Park Avenue sewer and no risk of overflow at the downstream SPPs 125 and<br>126.   | 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. |
| CSO017_6 Bass Alley OLS  | This project will consist of a 3.60 MG Storage Tank with Dewatering Pump<br>Station  | Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activations.   |

| Project Name   | Project Description   | Project Purpose*  |
|--|---|---|
| CSO033_1 Bailey & Regent OLS<br>(Moreland Park)          | This project consists of a 4.50 MG tank at Moreland Field between Regent<br>Street and Moreland Street along Bailey Avenue. The storage would dewater<br>when there is available capacity in the downstream sewer and no risk of<br>overflow at the downstream SPP 104. The Proposed OLS configuration requires<br>a pump station for dewatering.   | Together with other projects, this project is projected to reduce CSO-033 discharges to Buffalo River from 15 to 2 activations.   |
| CSO064_2 Perry Street Sanitary Sewer                     | This project would replace an existing sewer partially built into Hamburg Drain.<br>The new sewer would start on Scott St near Illinois St to Louisiana St, then<br>continue along Perry St to the Hamburg St. Pump Station. The total length of<br>new sewer would be 6,417 ft, with the largest pipe diameter being 42".  | Together with other projects, this project is projected to reduce CSO-064 discharges to Buffalo River from 10 to 4 activations.   |
| CSO017_1.1 SPP054 Sewer Separation                       | This project consists of converting the sewer upstream of SPP054 to a separate storm sewer. This would eliminate SPP054 as an SPP   | Together with other projects, this project is projected to reduce CSO-017 discharges to Buffalo River from 24 to 4 activations.   |
| Hertel North East ILS (M) Updated<br>design (CSO055_1.1) | The Hertel North East / Hertel Delaware ILS (CSO055_1.1) is designed to take<br>advantage of additional storage capacity available on Hertel Avenue North<br>barrel upstream of the existing Hertel at Deer RTC structure. Since there is a<br>short travel time between the two locations, the preliminary control strategy<br>would start storage when the depth upstream of the Hertel North East / Hertel<br>Delaware ILS (CSO055_1.1) structure indicates wet weather. This project will<br>work in conjunction with the CSO-055/ Military Road OLS project. | The proposed updated design of the Hertel North East / Hertel Delaware ILS<br>(CSO055_1.1) together with other LTCP Projects will reduce activations from 38 to 9<br>for CSO-055 upon completion of the Selected Alternative. |

| Project Name                            | Project Description  | Project Purpose*  |  |
|---|--|---|--|
| Proposed Revised Green Infrastructure P | Proposed Revised Green Infrastructure Projects   |   |  |
| CSO053_9<br>(16.7 acres managed)        | 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.  | Together with other projects, this project is projected to reduce CSO-053 discharges to Scajaquada Creek from 37 to 4 activations.    |  |
| CSO006_5<br>(52.5 acres managed)        | Green infrastructure projects would be constructed within the basin sufficient<br>to control runoff from 20% of the impervious area within the basin (52.5 acres<br>managed). The exact list of projects to be implemented would be determined<br>during the design phase. | Together with other projects, this project is projected to reduce CSO 006 discharges<br>to Scajaquada Creek from 47 to 1 activations. |  |
| CSO011_1.1<br>(19.9 acres managed)      | 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.          | Together with other projects, this project is projected to reduce CSO-011 discharges to Niagara River from 39 to 4 activations.       |  |
| CSO055_3<br>(260.2 acres managed)       | 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.   | Together with other projects, this project is projected to reduce CSO-055 discharges to Niagara River from 38 to 9 activations.       |  |
| CSO017_4<br>(37.5 acres managed)        | The exact list of projects to be implemented would be determined during the design phase.  | Together with other projects, this project is projected to reduce CSO017 discharges to Buffalo River from 24 to 4 activations.        |  |
| CSO026_4<br>(125.5 acres managed)       | The CSO-026 basin would have green infrastructure managing 125.5 acres of impervious area.   | Together with other projects, this project is projected to reduce CSO-026 discharges to Buffalo River from 9 to 6 activations.        |  |

#### Attachment C to the Semi-Annual Status Report: March 2024

Public Meeting Materials

## BUFFFALO SEWER AUTHORITY

Rosaleen B. Nogle, PE Principal Sanitary Engineer

### Modern Sewer Mapping





#### East Ferry Trunk (1890-1892)

### Scajaquada Creek Before the Drain (Pre-1925)



# Scajaquada Creek and Colorado Before the Drain (Pre-1925)


#### Colorado/Norfolk Sewer Before the Drain



#### What Do We Mean by Drain and Who Thought Burying a Creek Was a Good Idea?

THREE years ago, at a general election, the people of Buffalo declared the Scajaquada Creek a public nuisance and voted in favor of having a large portion of it—that which flows through the east side residential district—converted into an underground drain. This, in substance, is now being taken care of.

"Building the Scajaquada Creek Drain", Patrick Kane, Jr., Contractors' and Engineers Monthly Vols. 6-7, 1923.



BUILDING THE SCAJAQUADA CREEK DRAIN IN FLORIDA STREET, BUFFALO

## Survey For Moving the Creek (1919)



#### Scajaquada Drain Extent



## Where Does the Scajaquada Drain Go?



### Impact of Drain on Colorado Street Sewer (1925-1982)



# Impact of Drain on Colorado Street Sewer (1925-1982)





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# Scajaquada Tunnel Impact at Colorado (1978-1982)



# Scajaquada Tunnel Impact at Colorado (1978-1982)



### Impact of Scajaquada Tunnel on Colorado

- No Flows from North of Scajaquada Drain Conveyed to South
- Dry Weather Flows Taken to Treatment Facility by Deep Tunnel
- Number and Volume of Overflows to Scajaquada Drain Decreased

NORTHEAST BUFFALO PARKWAY (PHASE I) FROM E. DELAVAN AVE. TO KENSINGTON EXPRESSWAY (N.Y. RTE 33)

CITY OF BUFFALO

GROUP 434



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ANTHONY M MASIELLO MAYOR, CITY OF BUFFALO









# Upcoming Work at Colorado and Scajaquada

- 2014 LTCP
  - In-line Storage within Colorado Ave. Sewer
  - Off-line 0.7 MG Underground Storage Tank with Pump Station (Approximate Size of an Olympic Pool)
- 2023 Proposed LTCP Update
  - Modifications to 1978-1982 Structure Only
  - Address Air Relief Issues
  - Increase Capacity of Sewer to Tunnel



## Get help paying your Buffalo Water bill

Apply for assistance in 10 minutes



SNAP, HEAP, SSI, or Public Assistance enrollment automatically provides proof of eligible income.

# BUFFFALO SEWER AUTHORITY

Rosaleen B. Nogle, PE Principal Sanitary Engineer

# Modern Sewer Mapping



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# Scajaquada Drain Extent



# Where Does the Scajaquada Drain Go?



# Impact of Drain on Colorado Street Sewer (1925-1982)



# Impact of Drain on Colorado Street Sewer (1925-1982)








# Scajaquada Tunnel (1978-1982)



# Scajaquada Tunnel Impact at Colorado (1978-1982)



# Scajaquada Tunnel Impact at Colorado (1978-1982)



# Impact of Scajaquada Tunnel on Colorado

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NORTHEAST BUFFALO PARKWAY (PHASE I) FROM E. DELAVAN AVE. TO KENSINGTON EXPRESSWAY (N.Y. RTE 33)

**CITY OF BUFFALO** 

#### GROUP 434

AWARD DATE JUNE 10, 199 COMPLETION DATE FINAL ACCEPTANCE DATE: FINAL CONSTRUCTION COST: NOVEMBER 19, 1998 JUNE 1, 1999 \$ 3,653,552,26





ANTHONY & HAZZAN GENERAL MANAGER BUFFALO SEWER AUTHORITY

PAUL J. GAREIS, P.E. PRINCIPAL ENGINEER CITY OF BUFFALO DIVISION OF WATER

ANTHONY M MASIELLO MAYOR, CITY OF BUFFALO

JOSEPH N. GIAMBRA COMMISSIONER OF PUBLIC WORKS DANIEL KREUZ, PEC FOR COMMISSIONER OF PUBLIC WORKS









# Upcoming Work at Colorado and Scajaquada

## • 2014 LTCP

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Apply for assistance in 10 minutes

Apply now  $\rightarrow$ 

SNAP, HEAP, SSI, or Public Assistance enrollment automatically provides proof of eligible income.





# Free STEM Summer Program July 10-21, 2023



## Buffalo State-National Grid Partnership Introduces High School Students to Engineering Field

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l understand.

Buffalo State University, in a partnership with **National Grid**, is offering a free technology camp for local high school students that will take place July 10–21 on campus.

The second annual **Future Innovators in Tech and Engineering (FITE)** camp is open to 50 rising sophomores, juniors, and seniors from the city of Buffalo and first-ring suburbs and will include electrical engineering technology and creative and critical thinking lessons. Students will also tour a National Grid facility and visit the Niagara Power Vista.

The university's **Continuing Professional Studies Office** is overseeing the camp, and faculty and alumni from the **Engineering Technology Department** and the **Center for Applied Imagination** will provide instruction over the two weeks.

Applicants must submit a statement explaining why they want to attend the FITE camp and identify a teacher or counselor who supports their application.

## "The camp is a great introduction to our engineering technology programs and the STEM fields that will need more highly trained workers in the future."

- Cecilia Pershyn, Programming Coordinator, Buffalo State Continuing Professional Studies Office

"As an urban-engaged campus, our primary focus of recruitment is Buffalo Public Schools and first-ring suburban schools, including Cheektowaga, Lackawanna, Kenmore, and Tonawanda," said Katie Welsted, Buffalo State director of corporate and foundation relations. "We want to make it accessible to students who may not otherwise have the

directly aligns with this initiative, and the FITE camp was designed with the future workforce in mind. It embodies the type of program that we like to support so that students can continue to learn how to apply technical skills with creative problem-solving as they consider STEM careers."

During the camp, which runs from 9:00 a.m. to 4:00 p.m. each day in the Technology Building, students will work in Buffalo State's **Smart Grid Lab** and tackle a real-life challenge provided by National Grid.

This year's challenge is to figure out how to make various rooms on campus more energy efficient, said Cecilia Pershyn, programming coordinator with the Continuing Professional Studies Office.

"The camp provides a unique opportunity for students to work on a real smart grid and learn more about the engineering field," Pershyn said. "It's a great introduction to our engineering technology programs and the STEM fields that will need more highly trained workers in the future."

On the last day of the camp, Friday, July 21, participants will present their solutions to the challenge to National Grid employees during a celebration in which parents are invited to attend.

Pershyn noted that last year's camp went very well, which is why both Buffalo State and National Grid wanted to replicate it this summer.

"Students came away with a greater understanding of creative problem-solving through the lens of energy and electricity," Pershyn said. "They really engaged with the National Grid employees, who told us they were impressed by the solutions the students presented."

In addition to funding for the summer camp, National Grid established the National Grid Diversity in STEM Scholarship last year to support two first-year engineering technology majors through four years of study. The two recipients from last year will continue to receive support this year as sophomores.

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#### **News & Events**

## Meeting Regulations and Prioritizing Equity: A Utility Leader Perspective

December 18, 2023

From the release of An Equitable Water Future and the launch of our seven-city Water Equity Taskforce in 2017 to the inception of the Water Equity Network in 2020, the Alliance and our members understand that equity is a major concern for water utilities and the communities they serve. Our Water Equity Network now supports over 40 communities across the country committed to building cross-sector partnerships to forge progress on the three pillars of water equity: ensuring all people have access to clean, safe, and affordable water service; maximizing the community and economic benefits of water infrastructure investment; and fostering community resilience in the face of a changing climate.

As the Water Equity Network grows, we are excited to create new opportunities to collectively advance water equity. Geography can sometimes dictate culture, history, climate, and water stress, so the Alliance piloted regional gatherings in 2023 to connect in person, share insights, and support equitable One Water policies and practices.



In July, we held our fifth and final regional gathering of 2023 in Chicago, IL, uniting Water Equity Network cities located in the Great Lakes and Midwestern United States. We were joined by representatives from nine cities—Buffalo, NY; Chicago, IL; Cincinnati, OH; Cleveland, OH; Detroit, MI; Milwaukee, WI; Minneapolis, MN; Pittsburgh, PA; and Saint Paul, MN. The convening was held at the Metropolitan Planning Council (MPC) offices in downtown Chicago. MPC transforms policies and practices to advance racial and economic justice in the Chicago region's communities, infrastructure, and public systems. They do this through applied research, collaborative policy development, advocacy, and technical assistance to support implementation.

Convening participants represented a range of cross-sector leaders, and one of the highlights of the two-day event was a panel led by seven executive utility leaders who intentionally opted into the Water Equity Network. The panelists not only shared their hopes for their organizations and communities but were also posed with the question: *As you balance regulatory and operational needs and navigate that tightrope, how do you set water equity goals and agendas?* 

Each of the leaders shared a thoughtful response that illuminated how meeting regulatory needs and prioritizing equity can go hand-in-hand.

#### Will Pickering, Pittsburgh Water and Sewer Authority

"It became inevitable that we needed to invest in replacing lead service lines. It was a once-in-a-generation opportunity—but how would we prioritize who'd get their lead line replaced? We made an early decision to replace the full line at no cost to the customer, which really made our program successful. It wasn't easy, but it was the right thing to do. In Pittsburgh, there are 300,000 residents within 91 neighborhoods, and we're planning to replace lead lines in each of them systematically. We created the Community Lead Response Advisory Committee and developed criteria to determine which neighborhoods would be prioritized for investment by looking at a variety of risk and economic factors. This is just one example of how we're scaling down to the neighborhood level to best determine where the dollars flow while acknowledging that the need is widespread. Pittsburgh is an old city with aging infrastructure and thousands of lead service lines, so we wanted to make sure that we were taking an equity approach to how we prioritize the work, which I think has been pretty successful."

"This is just one example of how we're scaling down to the neighborhood level to best determine where the dollars flow while acknowledging that the need is widespread." – Will Pickering

#### Racquel Vaske, Saint Paul Regional Water Services (SPRWS)

"One of the biggest eye-opening pieces for me in this industry has been the lack of competition that we all take for granted. Without it, we have to push ourselves constantly to not get too comfortable; to look around and learn from those around us. We want our customers to know that we're doing the best we can do for them in our communities, and that means something different for each and every one of us. Taking a step back and doing thoughtful strategic planning has been key. We have two monumental projects currently in the works: Lead Free SPRWS, our project to remove all 26,000 lead service lines, and a \$300 million treatment plant upgrade. With so many moving parts in each of these projects, equity and real community investments could have been an afterthought. Our leadership team has really acknowledged that, and we've consistently asked how we could do better and ensure that an equity lens was integrated into all projects—regardless of size and complexity."

#### Cathy Bailey, Greater Cincinnati Water Works

"Internally, you have to have hard conversations to educate your employees standing up to the pushbacks of continuing certain inequitable traditions. For example, I challenged our engineering division to tell me how they selected specific projects, and it turned out that more capital projects were being completed in affluent, predominantly white neighborhoods, mainly because those were the communities most loudly communicating their needs to Council and city leaders. Those neighborhoods repeatedly received water main upgrades while other neighborhoods were ignored or on a slower schedule, so we had to go back and reevaluate that process. Those early exercises really helped change the conversation, leading us to the way we prioritize our lead service line replacement program today."

"Internally, you have to have hard conversations to educate your employees—standing up to the pushbacks of continuing certain inequitable traditions." –Cathy Bailey

#### Brian Perkovich, Metropolitan Water Reclamation District of Greater Chicago

"We are enhancing our communications regarding projects that we're doing. We formed a Community Partnership Council to enhance engagement between the community and our staff, helping ensure our community members are aware of us, what we do, what problems are coming up, and how we can improve our service. To fund our projects, we use grant funding, FEMA funding, EPA Section 319 funding, and Community Development Block Grant Funding."

#### Oluwole (OJ) McFoy, Buffalo Sewer Authority

"Our first priority in this process was affordability, and then we moved to address water quality and workforce. Throughout the process, we've changed our community partners because we need folks with expertise on the ground. For a long time, we followed a business-as-usual approach, and jobs were passed down as if they were inherited. Breaking those cycles and communicating more with the public about how we prioritize projects to ensure they have a say became priorities. To become more transparent, we put all our water testing sites on a map so that everyone could visualize them. We asked ourselves: is testing being done in Black and Brown communities? Why or why not? Let's call it out. Building trust with your communities doesn't happen overnight. Trust needs to be earned; it doesn't happen immediately with your community partners, frontline organizations, or residents. Say what you're going to do, and do what you say."

"Building trust with your communities doesn't happen overnight. Trust needs to be earned." –OJ McFoy

#### Sam Paske, Metropolitan Council of the Twin Cities

"Working with partner organizations to preserve water for future generations, we strive to build trust and credibility. We rely on relationships and trust to find solutions that work. The Metropolitan Council is governed by 17 Council Members who represent our region through diversity of language, race, place of residence, immigration, Tribal affiliation, and more. Our impact is increased through diverse representation at the leadership level where decisions are made and throughout the organization. Our throughline is our commitment to preserving a vast supply of clean water that will serve our population now and well into the future."

#### Dr. Jennifer Zuchowski, Metropolitan Council of the Twin Cities

"I've been inspired to listen to my colleagues and hear the things that they've brought forward, and it makes me incredibly proud to be part of an organization that really wants to do the right thing in a region that has large, widespread racial disparities. When we look at what this means for clean water and public health, we must ask ourselves: what is our role and what power and influence do we hold? We should also establish how we can be a key leader—how can we be that anchor institution that successfully puts our plans into action?"

"How can we be that anchor institution that successfully puts our plans into action?" –Dr. Jennifer Zuchowski

## More from the Alliance and our members



#### July 13, 2023 | Blog What Does it Take to Address Climate-Related Challenges?

#### List of Attendees for the UB Department of Learning and Instruction's Tour of the WWTP

Alexa Dean

Areej Mullick

Ashtyn Gregoire

Tierra Purdue

Lauren Fogle

Alexa Schindel

# Buffalo Sewer's CSO Long Term Control Plan

ROSALEEN B. NOGLE, PE PRINCIPAL SANITARY ENGINEER BUFFALO SEWER AUTHORITY



- Buffalo Sewer Authority's System
- Development of Long-Term Control Plan
- Eight Years of Progress
- Recalibration and Retooling



Where is Buffalo, NY?



## Buffalo Sewer Authority

- Founded on April 8, 1935
- Created to "provide an effectual means for relieving the Niagara River, Buffalo River and Lake Erie from pollution by sewage and waste"
- Approximately 200 employees
- Serves Buffalo and 11 Outlying Communities



## Bird Island Treatment Facility

- ▶ 90 MGD Average Flow
- Rated for 180 MGD
- Current Peak Flow 520 MGD
- Long-Term Peak Flow 560 MGD



## Buffalo Sewer's Collection System

## Draining of City

- Wetlands
- Flat topography
- Rapid expansion
  - Erie Canal and West
  - Most pipes laid by 1900
- Today
  - ▶ 850 Miles of Pipe
  - ▶ 8" PVC 32' x 17' RCP Box
  - ▶ 52 CSOs
  - 258 Regulators



#### 8

## A History of Continuous Improvements

- Swan Trunk System: Flushed Canal System to Mighty Niagara
- Scajaquada Creek Drain
- Primary Treatment Facility and Interceptors
  - Effectively Eliminated Typhoid in Downstream Communities
  - Formation of Buffalo Sewer Authority



## A History of Continuous Improvements Continued

- Storm Relief Sewers
- Clean Water Act Improvements
  - Scajaquada Tunnel
  - Kelly Island Separate Sanitary and Pumping Station System
  - Bird Island Treatment Facility Secondary System
- Sewer Separation and Regulator Adjustments



## Development of LTCP



## 11

## Modeling

## Malcolm Pirnie/Arcadis Hosted

- Data Analysis Split Among 3 Consultants
- North District: Niagara River
- Scajaquada District: Scajaquada Creek and Black Rock Canal
- South Central District: Cazenovia Creek and Buffalo River

### XP-SWMM

- 2000-2003 Initial Model
- 2008-2009 Focused Recalibration
- Larger diameter pipes (and CSOs) only



## Components of LTCP

- 2-9 Activations Allowable per Waterway in Typical Year
- > 20 Year Plan: 3/18/2014-3/18/2034
- \$380 M (2012 Dollars)
- Real Time Control Smart Sewers
- Green Infrastructure
- Gray Infrastructure
  - Optimizing Existing System
  - Off-line Pumped Storage Tanks
  - Treatment Facility Upgrades (NFA)

## Gray

Expanding the capacity and efficiency of our pipes, pumps, and underground infrastructure.

## Smart

Using "real time" sensors to move stormwater away from parts of the sewer system hit with lots of rain and snowmelt.



Green Preventing or

Preventing or slowing water from reaching the sewer system with "green infrastructure."



## Work Completed to Date

## Real-Time Controlled Smart Sewers

- Overflow Recapture
  - ▶1 Complete
  - ▶1 in Construction
- Inline Storage
  - ▶6 Complete
  - ▶1 in Construction
- Pumping Station


#### **RTC Site Locations**

#### In Service

Smith St, Bird, Lang, Hazelwood – coordinates with Lang's operations, and North Bailey, Hertel at Deer, Babcock PS

- Completed, undergoing tuning:
  - Smith at Eagle, Broadway at Oak
- In Construction: Mill Race
- Construction Beginning Soon: Gates Circle and Bailey Ave Sites



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### Work Completed to Date Continued

- Optimizations
- Green Infrastructure
  - ▶ 602 Acres Demolitions
  - 53 Acres Permeable Pavement
  - ▶ 14 Acres Bioretention
- Sewer Separations
- NFA Secondary System Preliminary Work



#### **Recalibration Effort**

#### Required by LTCP

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#### Implementation Issues to Date

#### Pre-Construction and Construction

- ▶ NFA Preparation Work Required
- Betterment Lessens Control of Consultants and Contractors
- Land Acquisition
- Electrical Connections
- Industrial Legacy
  - Superfund Sites
  - Radioactive Road Base

- Post-Construction
  - Gates, Valves, and Actuators
  - Level Sensors and Communications
  - Site Access and Maintenance

### Feasibility of Remaining Projects

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#### Basements and Connecting Sewers

- Project Constructability
  - Superfund Sites
  - Rock Depth
- Project Costs and Timelines
  - Land Acquisition
  - Pumping Stations
  - Bridging
- Maintenance

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### Equity Issues

- History of Environmental Justice Issues
- One of the Most Segregated Metropolitan Areas in the United States
- Proposed Neighborhood Demolitions
- Large Storage Tanks and Pump Stations

Instructions to HOLC Agents: Any threat of infiltration of foreign-born, negro or lower grade population? If so, indicate these by nationality and rate of infiltration like this: "Negro-rapid."



#### Draft Financial Capability Analysis

- \$180 M Increase in Costs in 2012 Dollars
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  - ▶ \$80 M for GI
- ▶ \$25 M Increase for Inflation
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  - Existing LTCP Projects; 2019 Costs
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#### Climate Change

- Climate Refuge
  - Average Rainfall Stable
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  - Winds: Poorly Modeled, But Likely Increasing
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Historic Crests (Station Established 4/1/1860)

- (1) 12.08 ft on 12/02/1985
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Benefits with Existing Smart Sewer Installations

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- Gravity Flow Systems and Flipping the Script on Smart Sewers
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#### Moving Forward Short-Term

- Development of project lists
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A CERTIFIED WBE/DBE ENGINEERING FIRM

#### **Development of Project Lists**

- Holistic and watershed thinking over individual CSO
  - Informed by Individual CSO Needs
  - Globalization Opportunities
- City owned lands
  - Parks
  - Vacant Lots
  - Right of Ways
- Minimizing maintenance
- Relief Sewers
- Synergistic Thinking



### High Level Feasibility Analysis

#### Brownfields

- Active Superfund Sites
- Historic Industrial locations
- Allowability of "Slag"
- Depth to Bedrock
- Ownership
- Revised Cost-Estimation
- Current Land Uses and Community Impacts
- Model Runs with Different Combinations: Local and Global Controls



### Continuous Project Work

#### Smart Sewers

- Jefferson & Delavan Tunnel Smart Sewer Project
- Black Rock Canal & Scajaquada Creek Smart Sewers
- Backflow Prevention



#### Draft Revised Plan







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# **Development of LTCP**

• 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 agencies)

2014

2012

199.

2004

 $200^{\circ}$ 

2009

Final LTCP Report Approved by USEPA/NYSDEC

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BUFFALO

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JM Davidson Engineering, D.P.C.

A CERTIFIED WBE/DBE ENGINEERING FIRM

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- Backflow Prevention



## Draft Revised Plan











# Mill Race Smart Sewer Project

#### **Buffalo Sewer Authority**

WESTERN CHAPTER NYWEA YP TECHNICAL EVENT



Rosaleen Nogle BSA Principal Sanitary Engineer

Casey Cowan GHD Project Manager Agenda Introduction and History BSA CSO Long Term Control Plan Water Quality Benefit **Design Overview Construction Overview** Site Visit

## Little Buffalo Creek - 1872



### BSA's Collection System and CSO LTCP

- 850 miles of sewers
- 790 miles are combined sewers
- 258 Sewer Patrol Points (SPPs or Regulators)
- 52 Permitted Combined Sewer Overflows (CSOs)

BSA's LTCP finalized in 2014

Multi-million \$\$, Multi-year Program to Abate Impacts of CSOs and Improve Water Quality

<u>Mill Race Project Area</u> CSO No. 17 Sewershed SPP-67 is major contributor for CSO activations Modeled 23 CSO activations in the typical year (TY) 250 MGD peak flow Targeting 6 or less CSO activations to the Buffalo River





# Water Quality Benefits

- Reduces CSO discharges to the Commercial Slip and River
- Lowers SPP-67 activations from 23 down to 10 per TY
- Eliminates 28 Mgal of discharges in the TY
- Provides 800,000 gallons of CSO storage
- Balances HGL between Swan Trunk and South Interceptor

# Mill Race Sewer

- CSO / Storm Conveyance No Dry Weather Flow
- 12' wide by 10' tall
- Stone walls and invert, Brick arch ceiling
- Sewer passes under Larkin Bldg and Alp Steel Bldgs
- Invert is below Lake Erie water surface level
- Water depth in sewer averages 3-4 feet, peaks at 9-10 feet +
- Lake Erie seiches (wind) pushes water towards Buffalo
- Water levels can rise 3-5 feet quickly for several hours

#### Construction must account for Bi-Direction Sewer Flows

# Construction

- Weir structure with 80 LF of weir length
- Valve chamber with 2 electric actuated 24" plug valves
- Flow meter chamber with 24" partial flow magmeter
- Level sensors in MR (up/downstream of weir) and SI
- 24" DIP drain line with tie in connection to SI
- PLC automation of drain valves and CSO storage
- 18' deep excavation
- 48" temporary bypass pipe
- Started May 2023 Completion in Spring 2024
- Construction Cost \$5.4 million





Florance NURBANARLappayDearups/NDearups/NDE0006/1195081+85/WII Rate RTC BoulawACRD 2018/RgmosRTC BoulawITT 64081+832\_Usq Pht Date 4 December 2019-128 /W

















Temporary 48" Bypass Pipe

Bidirectional for CSO Conveyance or High Lake Levels


















# Mill Race Smart Sewer Project

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WESTERN CHAPTER NYWEA YP TECHNICAL EVENT



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# Adopt A Trail: Shoreline Trail



### Adopt a Trail:

- What does that mean?
  - Organizing 3 to 4 activities per year
    - Clean ups, walking / biking events, weeding or planting
  - Assist with Shoreline Trail amenities, seating, bike repair stations, lighting, art, or gardens
  - Be the eyes and ears of your trail segment









### **Benefits of Adopting a Trail:**

- Having your club recognized by:
  - A designated Trail Adopter sign that identifies your trail segment
  - Listed on the NRG Website as a Trail Adopter and trail event promotion
- Opportunity to engage community
- It's fun, rewarding and good for you!



https://www.google.com/maps/d/u/0/edit?mid=1s87KeFG1dKR4h8ar1ito5AWTF0ApF8v9&usp=sharing

### **Steps to Adopting a Trail:**

- Work with NRG to identify a segment that suits your organization
  - Check the Adopt a Trail map for availability <u>https://bit.ly/3LHazml</u>
- Sign appropriate Agreement and Waiver forms, provided by municipality or government agency – NRG helps to coordinate
- Raise approximately \$750 for Adopt a Trail signs – work with NRG and the municipality to have it approved and installed
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- 2 Kenmore Rotary
- Tonawanda Rotary
- 💪 BNMC Rotary
- 💪 Buffalo Rotary
- $\zeta$  Grand Island Rotary
- 👢 Casella Waste Systems
- 🔱 UB Rotaract
- 💪 West River Parkway
- North Buffalo/Tonawanda
- 💪 Niagara Scenic Pkwy
- 👢 NOCO
- 💪 Buffalo Sunrise Rotary
- Riverside High School
- $\zeta$  Hamilton to Hampshire St.



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### Niagara St. Cycle Track – Adopt a Block Meeting December 7, 2023 @ 10 AM Rich Products

### In attendance:

| Greg Stevens     | Niagara River Greenway        |
|------------------|-------------------------------|
| Michelle Lockett | Niagara River Greenway        |
| Rachel Ireland   | Rich Products                 |
| Reed Stevens     | West Side Veterinary Clinic   |
| Jill Fox         | Veterans One Stop Center      |
| Bill Breeser     | BREE                          |
| Jennifer Bohlen  | Local Honey                   |
| Dan Arnold       | Veterans One Stop Center      |
| Anne McCooey     | BRRAlliance                   |
| Barbara Rowe     | Vision Niagara                |
| Vae Malia        | Niagara District Office       |
| Alyssa Weiss     | Assemblyman John Rivera       |
| Scott Steinwald  | COB (Buffalo Sewer Authority) |
| Joann Tomasulo   | Senator Ryan                  |

| Jordan Roose    | COB (Buffalo Sewer Authority)     |
|-----------------|-----------------------------------|
| Eric Schmarder  | COB (DPW Engineering)             |
| Sierra Acosta   | Wild Root                         |
| Mary Ann Kedron | Black Rock Historical Association |
| Ethan Johnson   | Campus Wheelworks                 |

### Flyer for Next Meeting (2/15):



### Niagara Street Community Groups supporting NRG initiative:

- Barb Rowe *Vision Niagara, (716) 912-14328* wants NRG to lead this initiative, influence the business owners, leverage the city, and she will support us in anyway she can. She thinks someone like Wild Roots or Local Honey can offer us a prize for volunteer events to raffle off, and or bars can offer drinks after an event to publicize their business.
- Anne McCoey *BRRA*, (716) 213-8304 wants to sponsor our next meeting **February 15th**. LVM will send her email. Suggests a meeting then a follow-up to pique interest and then get organizations to commit. Her suggestions for the meeting are detailed below.
- Mary Ann Kedron (716) 440-9016 founder of BRRA -- supports our initiative, wants NRG to lead with supplemental support from BRRA; and our work should be to organize volunteer efforts to supplement, not replace, what the city should remain responsible for. She suggests we get more follow up info from the city and communicate that back to Niagara street organizations with a thank you for what they have already done to pick up trash and adjust their parking to keep the cycle track open. Follow up from the city should include street sweeper operating plan for 2024 and BSRA bio wale information.
- Eric Schmarder COB DPW Streets Engineer kindly offered to liase with relevant departments in City Hall and reports that COB has two service vehicles that could better support our goals for Niagara St with more regular use. One is a mini street sweep and the other is a vacuum truck. We are working to have a proposed maintenance schedule for these vehicles to report back to our 15Feb working group meeting.
- Jordan Roose *Buffalo Sewer Authority* Provided us with useful info on the BSA and Green Infrastructure for people to reference...
  - O <u>https://raincheckbuffalo.org/</u> This is the raincheck website that has a lot of links and documents people can go through on Green Infrastructure at the BSA, including "A tour of Buffalo Breen Infrastructure" towards the bottom of the page.
  - O <u>https://raincheckbuffalo.org/rain-check-1-0/</u> This is the Raincheck 1.0 Report, which gives background about green infrastructure and what Buffalo has done so far.
  - O <u>https://raincheckbuffalo.org/opportunityreport/</u> This is the Raincheck 2.0 Report, which gives insight into future green infrastructure possibilities, with an emphasis in environmental justice areas, that public and private entities can implement (this is not to be confused with what the BSA is planning on doing in the future).

### December 7th, 2023

### Rich's Kick Off Meeting for Niagara St Friends of the Cycle Track:

Purpose of the meeting: convene COBDPW and BRSA with Niagara St resident Businesses and Orgs to explore what we could collectively do to improve maintenance of the cycle track and create a better business environment on Niagara St.

### **Discussion Notes:**

Greg Stevens from Niagara River Greenway opened the meeting by expressing the need for a better vision for the future of Niagara St and posing the question to the group, "what could your role be in

helping to improve the current conditions?". WNY is very fortunate to have this cycle track, which connects Niagara St to the Empire State Trail. "It is the only one like it in NYS, and you have to go to Portland OR to find a better one."

Campus Wheelworks is the only bike shop located on the Empire State Trail. Ethan from Campus Wheelworks bikes the Empire State Trail all the time and can attest to how nice the Cycle Track is and notices the people from all over the world who ride it. Ethan had a few recommendations and request for the City of Buffalo; 1. Can the cycle track be plowed in the winter? Many people use it during the winter to commute to work. It also can serve as a pedestrian route to the bus stop. 2. Need to keep the glass off the cycle track, many bikers are coming into the shop with flat tires and claim that Campus Wheelworks is putting the glass out there to bring in customers. 3. The cycle track offers great potential, as more and more people want to use their cars less and bike more.

Research has found that bicycles bring business to "trail towns". Not only should we focus on the cycle track being clean, but the sidewalks on both sides of the street need to be kept clean. The more we can keep them free of trash and debris the less people will litter.

Eric Schmarder from the DPW of COB talks about the cycle track in Portland Oregon as the model for the Niagara St. cycle track. He states that maintenance of the cycle track has been a challenge and admits that the city is still working on the best process of how to tackle maintenance issues. Snow removal would be handled by the streets department and they lack equipment that is narrow enough for the track. They do appreciate the 311 calls because they cannot have eyes on all parts of the city so extra eyes are useful. Eric was not aware the city has a cycle track sweeper.

Mary Ann Kedron from Black Rock Riverside Alliance has seen the trash sweeper and says they come when requested. The City needs to create and utilize a routine schedule for the use of the sweeper. She suggested the sweeper should be run once a week from Porter to Hertel and then under the bridge to Tow Path Park. The addition of more trash containers with more frequent emptying of the containers would be helpful. Parking compliance has gotten much better, with no cars parking in the cycle track any longer. Communication should be improved between the City and the residents and tenants on Niagara St. A letter should go out to all residents and tenants thanking them for their cooperation in building the track and informing them of what they should be doing to help with maintenance and what they shouldn't do.

The Sewer Authority maintains the rain gardens and bioswales along the cycle track and has been doing a wonderful job. Jordan Roose and Scott Steinwald explained that maintaining a delicate balance of vegetation and proper drainage in the rain gardens is extremely important for them to work correctly and they work hard at keeping that balance. They do not want anyone to plant anything or pull weeds in the rain gardens, nor do they want them to stand or walk on them for an extended period of time. However, they do appreciate volunteers removing trash and grit from the rain gardens. BSA is working on outreach materials to the community and are excited about and thankful for this group.

Discussion of how to encourage less littering, a possible billboard sign. The cleaner we can keep it, the less likely people will litter.

Various businesses have expressed interest in wanting to help keep their properties and immediate areas clean. Niagara River Greenway would like to continue to help coordinate these efforts by holding organization meetings. We would like to map out sections where businesses have committed to cleaning and possibly work on recommended clean up schedules. We would also like to work with COBDPW to install some signage that recognizes all of your efforts, and lets the public know we care. Design, placement, and sections to be determined by COBDPW in the near future.

### Next Meeting: February 15 at BRRA at 9:30 AM

### 1 – The meeting:

- Including all the businesses and property owners along the Niagara Street strip (both sides of the street). An invite will go out explaining that the meeting is to discuss the use and maintenance of the new street design and to learn more about the landscape, the benefits of the design to the community, and how each owner / business can be part of and capitalize on the cycling culture.

- The BSA will participate and someone from Streets and Sanitation will also be there in order to address garbage cans and the streetsweeper schedule –in advance of the meeting, they will have a schedule laid out.

- A handout will be available at the meeting about the adopt a block initiative so people can sign up.

- A map with each section/block will be marked off, so people can put their names on the section/block they are willing to adopt. We will have guidelines outlined for how they can participate and the expectations for their role (i.e. pick up trash on their side of the street -in the bioswales and the bike path if applicable- once a week)

- Plan for a late summer adopter event (Market Square Park is a possibility suggested by Anne McCooey) for a thank you party

### 2- The follow-up:

- Send the more detailed brochure/informational piece to everyone that was invited that didn't show up along with a map of the sections that need to still be adopted and then perhaps call a few "targeted" businesses or residents in those areas to nudge them to respond. Anne McCooey can help identify some of those targets once we know which areas specifically are not already adopted.

### Roster of participating and prospective resident organizations:

### **Committed Adopt a Block Players:**

- 1. Rich's Ferry to Breckenridge
- 2. Breezer Enterprises Breckenridge Auburn
- 3. Campus Wheelworks Auburn Lafayette
- 4. WEDI Bazaar -- Delavan Forest

### **Prospective Adopt a Block:**

- 1. National Grid, Ken Kajawa, via Sean Ryan
- 2. Douglas Jamal group, Julian Looney
- 3. Ellicott Development Tom Fox (716) 572 2442 Tim Hortons
- 4. Natale Builders, Natale Development -- Roost -- Martin (confirms he is interested)
- 5. Ciminelli
- 6. Free Street Tavern
- 7. Roost
- 8. Dival Safety
- 9. Turning Bridge Tavern (Joe and Mo Jacobi)

### Committed residents for volunteer projects:

- 1. Veterans One Stop Center, Dan Arnold
- 2. West Side Veterinary Clinic
- 3. Mint
- 4. Wildroots, Kayla
- 5. Local Honey, Jenny
- 6. Mint Allison Clancey

### Prospective residents for volunteer projects:

\*\* These are businesses on Niagara Street that have not previously been mentioned / approached

- 1. Twin Petrals Seltzer
- 2. Russ's Bait Shop
- 3. Beulah's Dinner
- 4. Buffalo Brow and Lash Lounge
- 5. Stitch Buffalo
- 6. Frost Artisan Bakery
- 7. Marco's Italian Deli
- 8. Niagara Street Pediatrics
- 9. QRS Music
- 10. LD Vision Group
- 11. Restaurante Mi Isla
- 12. Emily Ball Therapeutic Massage
- 13. Santasiero's Restaurant
- 14. DeCarlo Collision and Auto Painting
- 15. Sports City Pizza Pub
- 16. Taquiera Ranchos La Delicias
- 17. Great American News

- 18. Papercraft Miracles
- 19. Doyle's Deli
- 20. Niagara Deli & Pizzeria
- 21. Shear Madness
- 22. Auto Wash Car Cleaning
- 23. To be continued

# Niagara Street Cycle Track: Adopt-A-Block

Working together for a safe and attractive Niagara Street, with a healthy pedestrian and cycling culture & vibrant retail scene!

## **CURRENT PARTICIPANTS:**

Vision Niagara Campus Wheelworks City of Buffalo Sewer Authority & DPW Rich Products Corporation WEDI Veterans One Stop Center Local Honey Breeser Group West Side Pet Clinic Black Rock Riverside Alliance



Be a part of making Niagara Street an active community!

Next Steps: Follow up meeting February 15th 9:30 am at Black Rock Riverside Alliance

Contact Hannah.Fisher@parks.ny.gov with any questions or concerns



# Green Infrastructure and Stormwater Management in Buffalo

ROSALEEN B. NOGLE, PE, CFM, BCEE, BC WRE PRINCIPAL SANITARY ENGINEER 12/12/2023

BUFFALO SEWER AUTHORITY



# Topography of Buffalo

2

## Buffalo Sewer Authority

### Founded on April 8, 1935

- Created to "provide an effectual means for relieving the Niagara River, Buffalo River and Lake Erie from pollution by sewage and waste"
- Approximately 230 employees
- Serves Buffalo and 11 Outlying Communities



3

# Combined Sewer Systems

Stormwater and wastewater in one pipe

- Typical of older cities
- During dry weather all flows go to treatment facility
- During wet weather, first flush gets to treatment facility, but as storm progresses, more flows overflows
- 90%+ of City of Buffalo's landmass
- 97% of sewers



## Separate Storm Sewer Systems

- Typical of systems constructed after World War II
- Parallel pipes for wastewater and stormwater
- Designed to carry wastewater to treatment facility
- Stormwater directly discharges to surface waters
- New construction since 2003 may have some treatment of stormwater
- Inflow and infiltration can lead to sanitary sewer overflows



## Green Code

- Rewrite of zoning code for first time in fifty years
  - Erosion and sediment control
  - $\ge$  1/4 acre of land
- Separate Storm and Storm Overflow Sewers
  - Contribute sediment and other pollutants to receiving water bodies
  - Increase flashiness of rivers and streams
  - High velocity flows cause erosion within rivers and streams
  - Attenuate post-construction flows to pre-construction 1, 10, 100 year storms
  - Treatment of water quality volume
- Combined and Storm Relief Sewers
  - Grit and FOG restrict capacity
  - Pollutants to WWTP (including heavy metals)
  - Post-development peak discharge from 25 year storm has been attenuated to predevelopment 2 year storm peak discharge

## Long-Term Control Plan

- 1994 USEPA Issued CSO Control Policy
- 2014 Final Long-Term Control Plan Approved by **USEPA/NYSDEC**
- 20 year plan
- **Real Time Control Smart Sewers**
- Green Infrastructure
- Gray Infrastructure
  - Optimizing Existing System
  - Off-line Pumped Storage Tanks
  - Treatment Facility Upgrades (NFA)



### Smart

parts of the sewer

system hit with lots of

Expanding the capacity and efficiency of our pipes, pumps, and underground infrastructure.

#### Green Using "real time" sensors to move stormwater away from

**Preventing or** slowing water from reaching the sewer system with "green infrastructure."





## Work Completed to Date

8

- Optimizations
- Green Infrastructure
  - 602 Acres Demolitions
  - 53 Acres Permeable Pavement
  - ▶ 14 Acres Bioretention
- Sewer Separations
- NFA Secondary System Preliminary Work



## Equity Issues

- History of Environmental Justice Issues
- One of the Most Segregated Metropolitan Areas in the United States
  Historical disinvestment

Instructions to HOLC Agents: Any threat of infiltration of foreign-born, negro or lower grade population? If so, indicate these by nationality and rate of infiltration like this: "Negro-rapid."





9







CSO14 CSO26 CSO27

CSO28 CSO33



land area is within the six priority basins





Buffalo, NY 14206

District: South Central

**Retrofit Opportunity** 

Total Parcel Area: 0.66 Acres

CSO Impervious Ranking: 167 Maximum Head Available: 6.5 Feet

Parcel Impervious Area: 0.56 Acres

Receiving Waterbody: Buffalo River

Retrofit Location: Small Parking Lot

Retrofit Drainage Area: 0.12 Acres

**Retrofit Practice Dimensions:** 

Retrofit Practice Area(s):

Retrofit #1: 26.56' x 16.82' Retrofit Description:

Notes on Drainage Area:

Visibility: Medium visibility

Retrofit #1:229 lbs

Retrofit #1: 0.19 lbs

parkinglot slopes away from street, has 2 driveways and 2 catch basins at low points in lot.

Light Availability: Partial sun/shade

Annual Air Quality PM10 Removed: Retrofit #1: 0.17 lbs Total: 0.17 lbs

Annual Carbon Dioxide Sequestered:

Annual Air Quality Ozone Removed:

Retrofit #1: 395 SF

Retrofit Practice: Bioretention or Rain Garden

Total: 395 SF

Total: 229 lbs

Total: 0.19 lbs

small rain garden in corner of lot around catch basin, tie in with existing green space around lot. would require loss of 2-3 parking

#### Green Infrastructure Types





Parking Bioswales



#### **CSO** Information

Owner Name: United House of Prayer

Land Use: Community Service

Neighborhood: EMSLIE

CSO Target Reduction: 63.6 Acres CSO Total Area: 1901.1 Acres

#### Site Information

Drainage Area Land Use: Institutional Potential Site Constraints: None

Adjacent Land Use Classes: Residential, Commercial, Institutional Utility Constraints: None

Dominant Soil Type: Unknown







RRI Survey Proposed Retrofit Practice Retrofit Drainage Area RRI Parcel - Combined Sewer - Interceptor Sewer - Storm Overflow Sewer - Storm Relief Sewer - Sanitary Sewer

 Existing Street Tree Catch Basin / Receiver

**RRI** Reference Location Survey Parcel CSO Boundary



US Feet







# Environmental Impact Bond

- Opportunity Areas
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  - \$200,000.00/Acre
  - ▶ 0.90" Storm
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# Seiche Events

Historic Crests

(Station Established 4/1/1860)

- \* 12.08 ft 12/2/1985
- \* 11.12 ft 11/15/2020
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- \* 10.67 ft 12/23/2022
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# Moving Forward



### Grant

- \$500,000.00 Allocated Each Year
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- ✤ ½ acre or more in Priority Basins
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  - Railroad Viaducts
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### **Priority CSO Basins**

CSO14 CSO26 CSO27 CSO28 CSO33 CSO53

**48**% of Buffalo's population

lives in the six priority basins

26% of Buffalo's land area is within the six priority basins



### Retrofit # 94-1 CSO: 26

#### Address

60 HOWARD Buffalo, NY 14206 District: South Central Owner Name: United House of Prayer Land Use: Community Service Neighborhood: EMSLIE

#### Parking Bioswales

ales Porous Paving

Green Infrastructure Types

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#### 0 25 50 100 150 200

#### RRI Survey

- Proposed Retrofit Practice Retrofit Drainage Area
- RRI Parcel
- Combined Sewer
- Interceptor Sewer
- ----- Storm Overflow Sewer
- ----- Storm Relief Sewer
- Sanitary Sewer
- Existing Street Tree
   Catch Basin / Receiver
- RRI Reference Location

CSO Boundary





#### Surveyed Properties by Land Use and Ownership

GIS sources: Erie County data, Buffalo Sewer Authority data



#### The site analysis reviewed 59% of the basin and found 25.5 acres of potential drainage area. 89.4 ac surveyed 153 total basin area 77.7 ac impervious 8% of sites are in full sun total 52 83% O/ of sites are O highly visible of the sites were surveyed sites suitable for green infrastructure.

#### LARGEST PROPERTY OWNERS BY LAND USE AND OWNERSHIP

#### COMMERCIAL Blue Cross/Blue Shield of WNY

#### 6.0 Imperv. acres

New Era Store 2.4 Imperv. acres Delaware North Building 1.7 Imperv. acres

Embassy Suites by Hilton 1.6 Imperv. acres

The Benchmark Group 1.6 Imperv. acres INSTITUTIONAL AllPro Parking Lot (Elmwood) 1.4 Imperv. acres St. Anthony's Parking 1.2 Imperv. acres Lot 23 Parking 0.6 Imperv. acres

Swan Street Parking 0.5 Imperv. acres

#### SURVEY NOTE:

The survey team reviewed most sites intersecting the perimeter of the basin resulting in a surveyed area greater than the basin area. This is reflected in the survey summary numbers on this page.





# Environmental Impact Bond

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- ✤ ½ acre or more in Priority Basins
- EIB Focus
  - Public Housing
  - Railroad Viaducts
- New Development Enforcement

# Q & A













### **GET HELP TH YOUR** BI

#### **CITY OF BUFFALO WATER AFFORDABILITY PROGRAM**

Eligible Buffalo residents can receive a discount



#### PARTICIPANT QUALIFICATIONS:

#### ELIGIBILITY:

| 1 | \$41,850 | 5 | \$64,450 | FAMILY SIZE |
|---|----------|---|----------|-------------|
| 2 | \$47,800 | 6 | \$69,350 | MAX INCOME  |
| 3 | \$53,800 | 7 | \$74,100 |             |
| 4 | \$59,750 | 8 | \$78,800 |             |

Households are automatically eligible if any member receives

GET

- Supplemental Security Income (SSI)
  Public Assistance
  Supplemental Nutrition Assistance Program (SNAP or Food Stamps)

See back for details

| Buffalo Water | English V  |
|---------------|--|
| Buffalo Water | Powered by PromisePay<br>Powered by PromisePay<br>View your options<br>Account number<br>ZIP code<br>Enter your billing ZIP code<br>View now > |
| Need help?    | () Неір  |

















#### Thank You!

For more information:

Oluwole "OJ" McFoy, P.E.

1038 City Hall 65 Niagara Square Buffalo, NY 14202

omcfoy@buffalosewer.org



### **WEBINAR Creating an enabling environment** for nature-based enterprises 13 December, 9 - 10 am CET





Supported by



the German Bundestag



based on a decision of

## **WEBINAR Creating an enabling environment** for nature-based enterprises 13 December, 4 - 5 pm CET





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based on a decision of







SiobhanJMcQuaidThTrinity CollegeDublin, Ireland& Horizon Nua

**Jess Gildener** The Melting Pot, UK



**Liezl de Villiers** Overstrand Municipality, South Africa



Rosaleen Nogle Buffalo Sewer Authority, USA

### **Moderators**





Daniela Rizzi ICLEI Europe

Olga Horn ICLEI World Secretariat









# Creating an enabling environment for nature-based entrepreneurship

- Market Access and Networking: Platforms for connecting with peers, fostering collaboration and shared learning, market trends and best practices, visibility of these enterprises for potential buyers
- Education and Capacity Building: Training programs, skill-building webinars and workshops for entrepreneurs
- Accelerator programmes: knowledge and insights on emerging technologies for NBS, incubation of innovative enterprise ideas, support for business development, marketing and finance/ investment opportunities





**Siobhan McQuaid** Trinity College Dublin, Ireland





Supported by:



based on a decision of the German Bundestag



1 a decision of nan Bundestag







### NATURE-BASED ENTREPRENEURSHIP

What can cities do to boost nature-based entrepreneurship and create a market for nature-based solutions?

Siobhán McQuaid

Trinity College Dublin & Horizon Nua



Funded by the European Union

NBS EduWORLD is funded by the European Union (Grant Agreement No. 101060525). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them



### NBS Market – Demand and Supply



UNEP State of Finance for Nature 2021 EC Expert Publication NBS in NPE, 2022

### **Demand for NBS:**

- Public sector
- Private sector i.e. corporates
  - Third sector e.g. community projects

#### Supply:

•

- Public sector e.g. environment / parks department
- Private sector i.e. large multisector corporates e.g. ARUP nature-based enterprises (NBEs)





### Significant potential for job creation







Nature-Based Enterprise (NBE) is an umbrella term used to describe businesses or organisations from multiple economic sectors that are driven by a common mission to work with, and for, nature to address climate change and biodiversity challenges. NBEs deliver 'nature-based solutions' which, by definition, contribute to nature protection, conservation and restoration while simultaneously benefiting people and society.







### NBEs: delivering NBS





Source: Connecting Nature Framework Guidebook




### How to support nature-based innovation and entrepreneurship?

https://connectingnature.eu/guidebooks





Step 1: Awareness and strategic alignment

Step 2: Taking stock & building alliances

Step 3: Planning, implementing, monitoring a customized support programme



#### WHAT CAN I DO AS A MUNICIPALITY?

"Our NBS was about working with kindergartens across the city to dig up their concrete yards and put in nature-oriented playgrounds instead. When we started the first pilot in 2018, **awareness wasn't high**. We even had to **look for a specialist** landscape designer and co-creation expert **in another city**!

We launched a **training programme aimed at upskilling our own local businesses on what a NBS is**. Today, having a network of 21 natural playgrounds and experienced designers and contractors we can make the next step and start transforming more schoolyards into green ones, increasing impact on quality of life for Poznań residents."

> Agnieszka Osipiuk Miasto Poznań/City of Poznań







#### WHAT CAN I DO AS A MUNICIPALITY?

Genk municipality used nature-based solutions to transform a polluted 8km stream into a multi- functional linear park - the Stiemer Valley. They launched 'Stiemer Deals' to create new partnerships with citizens and businesses leveragin nature to support social innovation.





"We had never really thought about how nature could be used for social innovation or for economic development. When we launched the Stiemer Deals programme in 2019 offering citizens the opportunity to use nature for social innovation we didn't know

what would happen.

Today we're delighted that this programme has been a great success with over 50 deals agreed between citizens and local businesses and charities to use our Stiemer Valley NBS for a huge number of projects – from new products such as Stiemer beer and ice-cream to educational programmes for children with special needs.

Mien Quartier



Stad Genk / Citv of Genk



#### What's next? Join us on the Connecting Nature Enterprise Platform



#### https://naturebasedenterprise.com/





#### Industry (Ambassador) Led Communities











#### Thank you.

#### Let's connect...





Funded by NBS E the European Union and op

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Supported by:











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# Fostering market opportunities for nature-based solutions

- Policy and Planning Support: Tax incentives, grants, and subsidies for nature-focused businesses, masterplans, ordinances, and construction codes including naturebased solutions, etc.
- Regulatory Framework: Clear and transparent regulations in favour of nature-based solutions
- Nature-based Procurement: Incorporate sustainable sourcing and procurement practices





Liezl de Villiers Overstrand Municipality, South Africa





Supported by:







**Rosaleen Nogle** Buffalo Sewer Authority, USA





Supported by:





## Land Acknowledgement

The land on which the City of Buffalo is located and from where I greet you this morning is the territory of the Seneca Nation, a member of the Haudenosaunee/Six Nations Confederacy. This territory is covered by The Dish with One Spoon Treaty of Peace and Friendship, a pledge to peaceably share and care for the resources around the Great Lakes. It is also covered by the 1794 Treaty of Canandaigua, between the United States Government and the Six Nations Confederacy, which further affirmed Haudenosaunee land rights and sovereignty in the State of New York. Today, this region is still the home to the Haudenosaunee people including colleagues at the Buffalo Sewer Authority, residents of our City, and consultants at the University at Buffalo.











#### **Popular Misconception**







- Combined Sewer Overflows ~35 Times per Year
- Under Administrative Order to Abate
- Neighborhood Betterment
- Flood Management







- New Development Regulations
  - Implemented 2014
  - Acre (~1000 m<sup>2</sup> )or More Sites
  - Work Privately Funded
- \$50 Million Environmental Impact Bond
  - Issued 2021
  - Completion of Work by 2028
  - Public Loan of Private Money
  - Priority Basin Restricted
- Private Development Grant
  - \$500,000.00 Allocated Each Year from Publicly Funded Budget
  - 1/2 acre (~2000 m<sup>2</sup>) or more in Priority Basins







- City Wide
- Erosion and Sediment Control for All Development
- Nature Based Solutions Prioritized
- Stormwater to Waterways
  - Attenuate post-construction flows to pre-construction 1, 10, 100 year storms
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    - Viaducts
    - Public Housing
- Maintenance by Workforce Development Team
  - Priority Neighborhoods
  - Developing Trade, Business Development and Other Skills













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    Priority Basins
- Non-profit preference
  - Churches
  - Community Based Organizations
  - Hospitals
  - Social Service Agencies
- Low homeowner occupancy in priority basins











Supported by:









#### **Guide** to Biodiversity Financing for Cities and Regions





TAP Actions

CLE

of financing and technical assistance opportunities in China, Colombia and South Africa in 2023 - 2024

Programs for biodiversity projects at the subnational level

INTERACT-BIO

• KI .....

Text do the second





### Join our upcoming webinar! Tapping into private sector investment for NbS & biodiversity Wednesday, 31 January



### Thank you!

#### Get in touch: olga.horn@iclei.org



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INTERNATIONAL CLIMATE INITIATIVE **Technical lead** 



**Technical support** 



#### **WEBINAR**

Creating an enabling environment for nature-based enterprises 13 December, 9 - 10 am CET



Integrated action on biodiversity



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#### **WEBINAR**

Creating an enabling environment for nature-based enterprises 13 December, 4 - 5 pm CET



Integrated action on biodiversity



Local Governments for Sustainability Supported by:

Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection



#### **Speakers**





Siobhan McQuaid Trinity College Dublin, Ireland & Horizon Nua

**Jess Gildener** The Melting Pot, UK



**Liezl de Villiers** Overstrand Municipality, South Africa



Rosaleen Nogle Buffalo Sewer Authority, USA

#### **Moderators**





Daniela Rizzi ICLEI Europe Olga Horn ICLEI World Secretariat



#### Agenda

#### • Fostering nature-based entrepreneurship

- Q&A
- Creating market opportunities for NbS
- Q&A
- Outlook



## **Creating an enabling environment for nature-based entrepreneurship**

- Market Access and Networking: Platforms for connecting with peers, fostering collaboration and shared learning, market trends and best practices, visibility of these enterprises for potential buyers
- Education and Capacity Building: Training programs, skill-building webinars and workshops for entrepreneurs
- Accelerator programmes: knowledge and insights on emerging technologies for NBS, incubation of innovative enterprise ideas, support for business development, marketing and finance/ investment opportunities





**Siobhan McQuaid** Trinity College Dublin, Ireland



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#### NATURE-BASED ENTREPRENEURSHIP

What can cities do to boost nature-based entrepreneurship and create a market for nature-based solutions?

Siobhán McQuaid

Trinity College Dublin & Horizon Nua



Funded by the European Union

NBS EduWORLD is funded by the European Union (Grant Agreement No. 101060525). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them



#### **NBS Market – Demand and Supply**



UNEP State of Finance for Nature 2021 EC Expert Publication NBS in NPE, 2022

#### **Demand for NBS:**

- Public sector
- Private sector i.e. corporates
- Third sector e.g. community projects

#### Supply:

- Public sector e.g. environment / parks department
- Private sector i.e. large multi sector corporates e.g. ARUP nature-based enterprises (NBEs)





#### Significant potential for job creation







#### What is a nature-based enterprise?

**Nature-Based Enterprise (NBE)** is an umbrella term used to describe businesses or organisations from multiple economic sectors that are driven by a common mission to work with, and for, nature to address climate change and biodiversity challenges. NBEs deliver 'nature-based solutions' which, by definition, contribute to nature protection, conservation and restoration while simultaneously benefiting people and society.









#### NBEs: delivering NBS



**Stewardship**: e.g. community enterprise take over long-term



Funded by the European Union



### How to support nature-based innovation and entrepreneurship?

https://connectingnature.eu/guidebooks





#### Step 1: Awareness and strategic alignment

Step 2: Taking stock & building alliances

Step 3: Planning, implementing, monitoring a customized support programme



#### WHAT CAN I DO AS A MUNICIPALITY?

"Our NBS was about working with kindergartens across the city to dig up their concrete yards and put in nature-oriented playgrounds instead. When we started the first pilot in 2018, **awareness wasn't high**. We even had to **look for a specialist** landscape designer and co-creation expert **in another city**!

We launched a training programme aimed at upskilling our own local businesses on what a NBS is. Today, having a network of 21 natural playgrounds and experienced designers and contractors we can make the next step and start transforming more schoolyards into green ones, increasing impact on quality of life for Poznań residents."

> Agnieszka Osipiuk Miasto Poznań/City of Poznań






# WHAT CAN I DO AS A MUNICIPALITY?

Genk municipality used nature-based solutions to transform a polluted 8km stream into a multi- functional linear park - the Stiemer Valley. They launched 'Stiemer Deals' to create new partnerships with citizens and businesses leveragin nature to support social innovation.



"We had never really thought about how **nature** could be used for **social innovation** or for economic development. When we launched the Stiemer Deals programme in 2019 offering citizens the opportunity to use nature for social innovation we didn't know what would happen.

Today we're delighted that this programme has been a great success with **over 50 deals agreed between citizens and local businesses and charities** to use our Stiemer Valley NBS for a huge number of projects – from new products such as Stiemer beer and ice-cream to educational programmes for children with special needs.



Mien Quartier



Stad Genk / City of Genk



## What's next? Join us on the Connecting Nature Enterprise Platform



## https://naturebasedenterprise.com/





# Industry (Ambassador) Led Communities



+ Smart Tech

## https://naturebasedenterprise.com/



NBS

EduWORLD





# Thank you.

# Let's connect...





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Jess Gildener The Melting Pot, UK



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# Fostering market opportunities for nature-based solutions

- Policy and Planning Support: Tax incentives, grants, and subsidies for nature-focused businesses, masterplans, ordinances, and construction codes including naturebased solutions, etc.
- Regulatory Framework: Clear and transparent regulations in favour of nature-based solutions
- Nature-based Procurement: Incorporate sustainable sourcing and procurement practices





Liezl de Villiers Overstrand Municipality, South Africa



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Rosaleen Nogle Buffalo Sewer Authority, USA



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based on a decision of the German Bundestag

# Land Acknowledgement

The land on which the City of Buffalo is located and from where I greet you this morning is the territory of the Seneca Nation, a member of the Haudenosaunee/Six Nations Confederacy. This territory is covered by The Dish with One Spoon Treaty of Peace and Friendship, a pledge to peaceably share and care for the resources around the Great Lakes. It is also covered by the 1794 Treaty of Canandaigua, between the United States Government and the Six Nations Confederacy, which further affirmed Haudenosaunee land rights and sovereignty in the State of New York. Today, this region is still the home to the Haudenosaunee people including colleagues at the Buffalo Sewer Authority, residents of our City, and consultants at the University at Buffalo.





# Where is Buffalo, NY?





## BUFFALO SEWER AUTHORITY

# Where is Buffalo, NY? Popular Misconception





## BUFFALO SEWER AUTHORITY

# Why Nature Based Solutions?

• Combined Sewer Overflows ~35 Times per Year

BUFFALO

SEWER AUTHORITY

- Under Administrative Order to Abate
- Neighborhood Betterment
- Flood Management



# **How Is It Being Implemented?**

- New Development Regulations
  - Implemented 2014
  - ¼ Acre (~1000 m<sup>2</sup> )or More Sites
  - Work Privately Funded

## • \$50 Million Environmental Impact Bond

- Issued 2021
- Completion of Work by 2028
- Public Loan of Private Money
- Priority Basin Restricted
- Private Development Grant
  - \$500,000.00 Allocated Each Year from Publicly Funded Budget
  - <sup>1</sup>/<sub>2</sub> acre (~2000 m<sup>2</sup>) or more in Priority Basins





# **New Development Regulations**

- City Wide
- Erosion and Sediment Control for All Development
- Nature Based Solutions Prioritized
- Stormwater to Waterways
  - Attenuate post-construction flows to pre-construction 1, 10, 100 year storms
  - Treatment of water quality volume
- Stormwater to Combined Sewers
  - Post-development peak discharge from 25 year storm has been attenuated to pre-development 2 year storm peak discharge





# **Environmental Impact Bond**

- Opportunity Areas
  - Nature Based Solutions Limited
  - Public Sites Only
- Impervious Surface Capture
  - \$200,000.00/Acre (~4000 m<sup>2</sup>)
  - 0.90" Storm
  - Total: \$49.2 M
- Planning Focus
  - Viaducts
  - Public Housing
- Maintenance by Workforce Development Team
  - Priority Neighborhoods
  - Developing Trade, Business Development and Other Skills







## BUFFALO SEWER AUTHORITY

# **Private Development Grant**

## • Private Development Grant

- \$500,000.00 Allocated Each Year
  from Publicly Funded Budget
- ½ acre (~2000 m<sup>2</sup>) or more in
  Priority Basins
- Non-profit preference
  - Churches
  - Community Based Organizations
  - Hospitals
  - Social Service Agencies
- Low homeowner occupancy in priority basins



comes less than 2x th



## BUFFALO SEWER AUTHORITY





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# Out now!



## **Guide** to Biodiversity Financing for Cities and Regions



## Catalogue

of financing and technical assistance opportunities in China, Colombia and South Africa in 2023 - 2024

Programs for biodiversity projects at the subnational level









Join our upcoming webinar!

# Tapping into private sector investment for NbS & biodiversity

Wednesday, 31 January





## Get in touch: olga.horn@iclei.org



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**Technical lead** 

Local Governments | Cities Biodiversity for Sustainability | Center

#### **Technical support**



| toster<br>servation  | nber: RTC-33649-33<br>Location: CCR            | Have Signature<br>Huele Bog 9:<br>My J W Job   |  |
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| swater Course Renewal Training Sign - In R<br>k State Department of Environmental Cons | Provise Date: 10.30.33<br>Block #1- 69M-79M    | Operator Certification Number  |  |
| Waste  | Course Name: Consource Taume<br>Contact Hours: | Abhey Ressmert<br>MARK GIGLIO<br>MARK GIGLIO<br>Casey Wiles<br>Rol Hart<br>Rol Hart<br>Andrew Williams |  |

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|   | mber: RTC-23649-23          | Location: CCR         |                       | Signature                            |  | - |  |  |  |  |  |  |  |  |
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|   | RTC NU                      | Course Date: 10.30.33 | DOUC # - CHIVI- THIVI | <b>Operator Certification Number</b> |  |   |  |  |  |  |  |  |  |  |
| - | Course Name: BOAISUG TRUNIN | Contact Hours:        |                       | Name                                 |  |   |  |  |  |  |  |  |  |  |

| Roster servation   | Imber: CTC-23649-23  | Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signature<br>Signat |  |
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| tewater Course Renewal Training Sign - In<br>rk State Department of Environmental Co | RTC NU<br>Course Date: 10-30-33<br>Block #1 - 9 AM - 10 AM | Operator Certification Number<br># 14871<br># 17760<br># 17053   |  |
| Wast<br>New Yo   | Course Name: GOARUA TRUM                                   | BRIANNA LARKIN<br>BRIANNA LARKIN<br>Crinis Shinner<br>Josh Brady<br>Nicolo Aran<br>Aricolo Aran<br>Aricolo Aran<br>Permene Brenner<br>San France<br>Stephen O'Connell<br>Stephen O'Connell<br>Justin Lewis<br>Justin Lewis   |  |

| umber: RTC-B31049-23<br>Location: Taining Room | Signature                     |  |  |   |  |  |   |  | - |  |  |
|--|-------------------------------|--|--|---|--|--|---|--|---|--|--|
| Block #1 - 9AM- 10AM                           | Operator Certification Number |  |  | • |  |  |   |  | × |  |  |
| Course Name: 60A15UA Trainit                   | Name                          |  |  |   |  |  | 3 |  |   |  |  |

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| Roster<br>servation  | nber: RTC - 33649-33         | Location: TLUINING ROOM                            | Signature                            | h fre     |              |  |  |  |  |  |  |
|--|------------------------------|--|--------------------------------------|-----------|--------------|--|--|--|--|--|--|
| water Course Renewal Training Sign - In K<br>k State Department of Environmental Con | C RTC Nur                    | Course Date: 10-30-33<br>Block # 3 - 10 AM - 11 AM | <b>Operator Certification Number</b> | 13/26     |              |  |  |  |  |  |  |
| Waste  | Course Name: GOAISUG TRUIDID | Contact Hours:                                     | Name                                 | Hernh mon | San In which |  |  |  |  |  |  |

| Location: Training Room                       | Signature                            |  |  |  |  |  |  |  |  |   |  |  |
|---|--------------------------------------|--|--|--|--|--|--|--|--|---|--|--|
| Course Date: 10.80.33<br>Block #2 - 10AM-11AM | <b>Operator Certification Number</b> |  |  |  |  |  |  |  |  | × |  |  |
| Course Name: COA SUA TOULIN                   | Name                                 |  |  |  |  |  |  |  |  |   |  |  |

| Roster<br>servation  | mber: <u>RTC-33649-33</u><br>Location: <u>CCR</u>       | Signature<br>Minut Minut Month<br>Minut Month<br>Part Part Month<br>Part Part Month<br>Part Month<br>P |  |
|--|---|--|--|
| ewater Course Renewal Training Sign - In F<br>rk State Department of Environmental Con | RTC Nur<br>Course Date: 10.30.33<br>Block #1 - SPM-LOPM | Operator Certification Number<br>17627<br>17915<br>14915   |  |
| Wast New Yor   | Course Name: CoArgua Trainin<br>Contact Hours:          | Nichael Zawistowcki<br>Denuld Ort<br>Denuld Ort<br>Denuld Ort<br>Chorles Myner<br>David Wagner<br>David Wagner   |  |

| Number: <u>RTC-331049-33</u><br>Location: <u>CCR</u> | Signature                            |  |  |  |  |  |  |  |   | с. |    |
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| Course Date: 10.30.33<br>Bock #1 - SPM - 6PM         | <b>Operator Certification Number</b> |  |  |  |  |  |  |  |   |    | e. |
| Course Name: CO AISUA TRUM                           | Name                                 |  |  |  |  |  |  |  | 3 |    |    |

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Wastewater Course Renewal Training Sign - In Roster New York State Department of Environmental Conservation



| 0000             | e Date: (U·SU·d) |
|------------------|------------------|
| gua Tauning      | Course           |
| Course Name: GOA | Contact Hours:   |

RTC Number: RTC - 331049-33

Location:

| Signature                            |  |  |  |  |  |  |  |   |  |
|--------------------------------------|--|--|--|--|--|--|--|---|--|
| <b>Operator Certification Number</b> |  |  |  |  |  |  |  |   |  |
| Name                                 |  |  |  |  |  |  |  | • |  |

| Imber: <u>LTC-030049-03</u><br>Location: | Signature                     |  |  |  |  |  | • |  |  |  |
|--|-------------------------------|--|--|--|--|--|---|--|--|--|
| Course Date: 10.30.33                    | Operator Certification Number |  |  |  |  |  |   |  |  |  |
| course Name: GOAISUG TOULIN              | Name                          |  |  |  |  |  |   |  |  |  |

### Attachment D to the Semi-Annual Status Report: March 2024

Certificates of Acceptance and Occupancy

#### ITEM NO. 19

#### CONTRACT NO. 81900012

#### **CERTIFICATE OF ACCEPTANCE AND OCCUPANCY**

| PROJECT:                         | Bette                 | rment as Part of the Niagara Street Gateway Project Phase 3   |
|----------------------------------|-----------------------|---|
| CONTRACTOR:                      | CAT<br>1266<br>Alder  | CO<br>Townline Road<br>1, NY 14004  |
| WHEREAS:                         | The<br>Watts<br>accor | Buffalo Sewer Authority Principal Sanitary Engineer and Staff and<br>s Engineering have certified that the Contractor completed the work in<br>dance with the plans and specifications on December 6, 2023. |
| NOW THEREFORE<br>BE IT RESOLVED: | That<br>that:         | the Board of the Buffalo Sewer Authority hereby finds and determines  |
|                                  | a.                    | The work to be performed under the terms of the Contract has been complete and is accepted;   |
|                                  | b.                    | The date of entrance and occupancy be fixed as of $12/6/2023$ ;   |
|                                  | c.                    | The maintenance period commences on 12/6/2023;  |

d. The Board approved the Contract in the amount of \$2,117,293.19 and all funds have been expended in accordance with the contract making the final contract amount \$2,117,293.19.

| MOTION             | TO <u>APPROVE</u> |      |   |
|--------------------|-------------------|------|---|
| MADE BY            | MRS. PETRUCCI     |      |   |
| 2 <sup>ND</sup> BY | MR. ROOSEVELT     |      |   |
| AYES               | 3                 | NOES | 0 |

Board Meeting of December 6, 2023

#### ITEM NO. 28

#### CONTRACT NO. 82000039

#### **CERTIFICATE OF ACCEPTANCE AND OCCUPANCY**

| PROJECT:                         | Broadway at Oak Real Time Control Project   |   |
|----------------------------------|---|---|
| CONTRACTOR:                      | STC Construction, Inc.<br>63 Zoar Valley Road<br>Springville, NY 14141  |   |
| WHEREAS:                         | The Buffalo Sewer Authority Principal Sanitary Engineer and Staff and CHA have certified that the Contractor completed the work in accordance with the plans and specifications on 9/28/2023. |   |
| NOW THEREFORE<br>BE IT RESOLVED: | That<br>that:   | the Board of the Buffalo Sewer Authority hereby finds and determines  |
|                                  | a.  | The work to be performed under the terms of the Contract has been complete and is accepted;   |
|                                  | b.  | The date of entrance and occupancy be fixed as of 9/28/2023;  |
|                                  | c.  | The maintenance period commences on 9/28/2023;  |
|                                  | d.  | The Board approved Change Order No. 4 on September 28, 2023, resulting in a net decrease of \$31,550.49 thereby making the adjusted contract cost \$4,224,349.96. |
|                                  |   |   |

| MOTION TO          | APPROVE       |      |   |  |
|--------------------|---------------|------|---|--|
| MADE BY            | MRS. PETRUCCI |      |   |  |
| 2 <sup>ND</sup> BY | MR. ROOSEVELT |      |   |  |
| AYES               | 3             | NOES | 0 |  |

Board Meeting of September 28, 2023

### Attachment E to the Semi-Annual Status Report: March 2024

Board Items for LTCP Projects

#### ITEM NO. 12

#### <u>CHANGE ORDER NO. 1, BIRD ISLAND WASTEWATER TREATMENT FACILITY</u> <u>SECONDARY SYSTEM REHABILITATION AND UPGRADES, CONTRACT A – PIPING,</u> CONTRACT NO. 82000052

| CONTRACTOR:  | ORIGINAL CONTRACT COST                      | \$16,430,069.00       |
|--|---|-----------------------|
| John W. Danforth Company<br>300 Colvin Woods Parkway | PREVIOUS CHANGE ORDERS<br>THIS CHANGE ORDER | N/A<br>\$5,373,100.57 |
| Tonawanda, New York 14150                            | TOTAL ADUJTED CONTRACT                      | \$21,803,169.57       |
|  |   |                       |

| VENDOR N | NO. 2645   | ACCOUNT NO.   | 02000531-490740 |
|----------|--|---|-----------------|
| WORK:    | Contract A – Pip<br>large diameter (2<br>actuators on the<br>effluent, and retu<br>aeration tank pip | ing: This contract consists of the replacemen<br>24" – 48") ductile iron pipe, fittings, valves, a<br>settled wastewater influent, aeration tank<br>irn activated sludge (RAS) systems in the<br>e galleries. | it of<br>ind    |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Escalated bid pricing in response to the extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices (See Appendix A).

#### REASON FOR CHANGE OR EXTRA WORK:

Item #1 Due to extenuating circumstances, the execution of the Construction Contracts experienced significant delays; from an anticipated Notice to Proceed (NTP) date of October 2021 to a NTP date of September 27, 2022. During that time, the domestic construction industry experienced extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices. These pressures are in part due to the lingering impacts of a global pandemic and the ongoing supply chain variability. As such, the cost and lead time to provide the materials required for implementation of the Project have increased significantly.

#### COST OF CHANGE OR EXTRA WORK:

Item #1 \$5,373,100.57

THE TOTAL COST OF THE CHANGE OR EXTRA WORK:

\$5,373,100.57
- WHEREAS: On June 23, 2021, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with John W. Danforth Company (Danforth) for Bird Island Treatment Facility Secondary System Rehabilitation and System Upgrades project as the responsible low bidder at a cost not to exceed \$16,430,069.00; and
- WHEREAS: On September 27, 2022, Notice to Proceed was issued for Contract No. 82000052 in accordance with the above Board approval; and
- WHEREAS: The Treatment Plant Administrator, Senior Instrumentation Technician and AECOM reviewed Change Order No. CR-A-01 to Contract No. 82000052 in the amount of \$5,373,100.57 as detailed above and recommend approval.

## CONTRACT SUPPLEMENT CONDITIONS:

- The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>247</u> calendar days, resulting in a final completion date of <u>March</u> <u>31, 2027</u>.
- 2. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 3. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 4. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).
- 5. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves Change Order No. CR-A-01 to Contract No. 82000052 as written in the above Agenda Item, increasing the contract cost in the amount of \$5,373,100.57 making the adjusted contract cost \$21,803,169.57 Expenses from this contract will be paid from Account no. 02000531-490740.

| MOTION T           | OO | APPROV      | /E   |
|--------------------|----|-------------|------|
| MADE BY            |    | MR. ROOSEV  | /ELT |
| 2 <sup>ND</sup> BY | Ν  | ARS. PETRUC | CI   |
| AYES _             | 3  | NOES        | 0    |

## <u>CHANGE ORDER NO. CR-B-01, BIRD ISLAND WASTEWATER TREATMENT FACILITY</u> <u>SECONDARY SYSTEM REHABILITATION AND UPGRADES, CONTRACT B – CLEANING,</u> <u>CONTRACT NO. 82000050</u>

| CONTRACTO                                       | DR:  | ORIGINAL CONTRACT COST  | \$10,220,036.38                                 |
|---|--|---|---|
| J.A. Brundage<br>1400 College<br>Niagara Falls, | the Drain Doctor Inc.<br>Ave<br>New York 14305   | PREVIOUS CHANGE ORDERS<br>THIS CHANGE ORDER<br>ADJUSTED CONTRACT COST   | N/A<br><u>\$5,386,339.16</u><br>\$15,606,375.54 |
| VENDOR NO.                                      | 1944   | ACCOUNT NO.   | 02000532-490740                                 |
| WORK:   | Contract B – Cleaning: '<br>removal of grit and de<br>secondary system over<br>isolation capabilities. | This contract includes the cleaning and<br>ebris which have accumulated in the<br>r time, reducing the plant flow and |   |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Escalated bid pricing in response to the extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices.

#### REASON FOR CHANGE OR EXTRA WORK:

Item #1 Due to extenuating circumstances, the execution of the Construction Contracts experienced significant delays; from an anticipated Notice to Proceed (NTP) date of October 2021 to a NTP date of September 27, 2022. During that time, the domestic construction industry experienced extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices. These pressures are in part due to the lingering impacts of a global pandemic and the ongoing supply chain variability. As such, the cost and lead time to provide the materials required for implementation of the Project have increased significantly.

#### COST OF CHANGE OR EXTRA WORK:

Item #1 <u>\$5,386,339.16</u>

THE TOTAL COST OF THE CHANGE OR EXTRA WORK:

\$5,386,339.16

- WHEREAS: On June 23, 2021, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with J.A. Brundage the Drain Doctor Inc. for Bird Island Treatment Facility Secondary System Rehabilitation and System Upgrades project as the responsible low bidder at a cost not to exceed \$10,220,036.38; and
- WHEREAS: On September 27, 2022, Notice to Proceed was issued for Contract No. 82000050 in accordance with the above Board approval; and
- WHEREAS: The General Manager, Treatment Plant Superintendent, Principal Sanitary Engineer, and Senior Instrumentation Technician concur with AECOM, who on behalf of the Authority has reviewed Change Order No. CR-B-01 to Contract No. 82000050 in the amount of <u>\$5,386,339.16</u> as detailed above and recommend approval.

## ,CONTRACT SUPPLEMENT CONDITIONS:

- The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>247</u> calendar days, resulting in a final completion date of <u>March</u> <u>31, 2027</u>.
- 2. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 3. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 4. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).
- 5. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves Change Order No. CR-B-01 to Contract No. 82000050 as written in the above Agenda Item, increasing the contract cost in the amount of \$5,386,339.16 making the adjusted contract cost \$15,606,375.54. Expenses from this contract will be paid from account No. 02000532-490740.

| MOTION TO          |   | APPROV      | Έ    |
|--------------------|---|-------------|------|
| MADE BY            |   | MRS. PETRU  | ICCI |
| 2 <sup>ND</sup> BY | Ν | AR. ROOSEVE | LT   |
| AYES               | 3 | NOES        | 0    |

Board Meeting of November 1,2023

## <u>CHANGE ORDER NO. 1 BIRD ISLAND WASTEWATER TREATMENT FACILITY</u> <u>SECONDARY SYSTEM REHABILITATION AND UPGRADES, CONTRACT C – GATES</u> CONTRACT NO. 82000048

| CONTRACT                  | ΓOR:   | ORIGINAL CONTRACT COST  | \$6,744,000.00  |
|---------------------------|--|---|-----------------|
| American Co<br>Environmen | ontracting &<br>tal Services Inc   | PREVIOUS CHANGE ORDERS  | N/A             |
| 10330 Old C               | Columbia Road  | THIS CHANGE ORDER   | \$2,853,798.00  |
| Columbia, M               | /ID 21046  | TOTAL ADJUSTED COST   | \$9,597,798.00  |
| VENDOR N                  | IO. 17697  | ACCOUNT NO.   | 02000533-490740 |
| WORK:                     | Contract C – Sluice C<br>of ninety (90) 54" sta<br>iron Ni-Resist sluice<br>gates. | Gates: This contract includes the installation<br>inless steel sluice gates, three (3) 120" cast<br>gates, and eight (8) cast iron 72" sluice |                 |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

- Item #1 Escalated bid pricing in response to the extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices (See Appendix A).
- Item #2 Installation and maintenance of temporary stormwater underdrainage systems in the east and west side staging areas and the temporary parking area north of aeration until Substantial Completion of the project has been achieved.

#### **REASON FOR CHANGE OR EXTRA WORK:**

- Item #1 Due to extenuating circumstances, the execution of the Construction Contracts experienced significant delays; from an anticipated Notice to Proceed (NTP) date of October 2021 to a NTP date of September 27, 2022. During that time, the domestic construction industry experienced extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices. These pressures are in part due to the lingering impacts of a global pandemic and the ongoing supply chain variability. As such, the cost and lead time to provide the materials required for implementation of the Project have increased significantly.
- Item #2 An increase in groundwater accumulation and stormwater runoff has been observed since the installation of the temporary stone lots at the north end of aeration, west side staging area, and east side staging area. The implementation of a temporary stormwater management system will mitigate hazards stemming from this issue including freezing/thawing, wet work sites, and water damage to equipment and facilities.

## COST OF CHANGE OR EXTRA WORK:

Item #1 \$2,454,798.00

Item #2 \$399,000.00

## THE TOTAL COST OF THE CHANGE OR EXTRA WORK: \$2,853,798.00

- WHEREAS On June 23, 2021, the Board of the Buffalo Sewer Authority authorized the General
  Manager to enter into and execute a contract with American Contracting & Environmental Services, Inc. (ACE), for Bird Island Treatment Facility Secondary System Rehabilitation and System Upgrades project as the responsible low bidder at a cost not to exceed \$6,744,000.00; and
- WHEREAS On September 27, 2022, Notice to Proceed was issued for Contract No. 82000048 in accordance with the above Board approval; and
- WHEREAS: The Treatment Plant Administrator, Senior Instrumentation Technician and AECOM reviewed Change Order No. CR-C-01 to Contract No. 82000048 in the amount of \$2,853,798.00 as detailed above and recommend approval.

#### CONTRACT SUPPLEMENT CONDITIONS:

- 6. The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>247</u> calendar days, resulting in a final completion date of <u>March</u> <u>31, 2027</u>.
- 7. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 8. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 9. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).
- 10. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves Change Order No. CR-C-01 to Contract No. 82000048 as written in the above Agenda Item, increasing the contract cost in the amount of \$2,853,798.00 making the adjusted contract cost \$9,597,798.00. Expenses from this contract will be paid from Account no. 02000533-490740.

| MOTION TO          |                 | APPROV      | VE  |
|--------------------|-----------------|-------------|-----|
| MADE BY            | Y MRS. PETRUCCI |             |     |
| 2 <sup>ND</sup> BY | I               | MR. ROOSEVE | ELT |
| AYES               | 3               | NOES        | 0   |

## <u>CHANGE ORDER NO. 1 BIRD ISLAND WASTEWATER TREATMENT FACILITY</u> <u>SECONDARY SYSTEM REHABILITATION AND UPGRADES, CONTRACT D – DIFFUSED</u> <u>AERATION SYSTEM, CONTRACT NO. 82000049</u>

| CONTRACTOR:        |             | ORIGINAL CONTRACT COST | \$7,300,500.00        |
|--------------------|-------------|------------------------|-----------------------|
| STC Construction,  | Inc.        | PREVIOUS CHANGE ORDERS | N/A                   |
| 63 Zoar Valley Roa | ad          | THIS CHANGE ORDER      | <u>\$1,415,956.00</u> |
| Springville, New Y | 7 ork 14141 | TOTAL ADJUSTED COST    | \$8,716,456.00        |
|                    |             |                        |                       |
| VENDOR NO.         | 6041        | ACCOUNT NO.            | 02000534-490740       |
|                    |             |                        |                       |

WORK: Contract D – Diffused Aeration System: This contract includes the installation of new fine bubble and coarse bubble diffused aeration systems and associated stainless steel piping and valves.

## DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Escalated bid pricing in response to the extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices (See Appendix A).

#### REASON FOR CHANGE OR EXTRA WORK:

Item #1 Due to extenuating circumstances, the execution of the Construction Contracts experienced significant delays; from an anticipated Notice to Proceed (NTP) date of October 2021 to a NTP date of September 27, 2022. During that time, the domestic construction industry experienced extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices. These pressures are in part due to the lingering impacts of a global pandemic and the ongoing supply chain variability. As such, the cost and lead time to provide the materials required for implementation of the Project have increased significantly.

## COST OF CHANGE OR EXTRA WORK:

Item #1 \$1,415,956.00

THE TOTAL COST OF THE CHANGE OR EXTRA WORK:

\$1,415,956.00

- WHEREAS: On June 23, 2021, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with STC Construction, Inc. (STC) for Bird Island Treatment Facility Secondary System Rehabilitation and System Upgrades project as the responsible low bidder at a cost not to exceed \$7,300,500.00; and
- WHEREAS: On September 27, 2022, Notice to Proceed was issued for Contract No. 82000049 in accordance with the above Board approval; and
- WHEREAS: The Treatment Plant Administrator, Senior Instrumentation Technician and AECOM reviewed Change Order No. CR-D-01 to Contract No. 82000049 in the amount of \$1,415,956.00 as detailed above and recommend approval.

## CONTRACT SUPPLEMENT CONDITIONS:

- 11. The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>247</u> calendar days, resulting in a final completion date of <u>March</u> <u>31, 2027</u>.
- 12. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 13. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 14. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).
- 15. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves Change Order No. CR-D-01 to Contract No. 82000049 as written in the above Agenda Item, increasing the contract cost in the amount of \$1,415,956.00 making the adjusted contract cost \$8,716,456.00. Expenses from this contract will be paid from Account no. 02000534-490740.

| MOTION TO          | ) | APPRO      | VE   |
|--------------------|---|------------|------|
| MADE BY            |   | MR. ROOSE  | VELT |
| 2 <sup>ND</sup> BY |   | MRS. PETRU | CCI  |
| AYES               | 3 | NOES       | 0    |

## AUTHORIZATION TO ENTER INTO AN AGREEMENT WITH AECOM USA, INC., FOR CONSULTANT ENGINEERING SERVICES FOR SECONDARY SYSTEM REHABILITATION AND UPGRADES PHASE III

- WHEREAS: The Buffalo Sewer Authority (BSA) issued a request for proposals (RFP) on August 2, 2023, for professional engineering services to develop plans and specifications to assist the Buffalo Sewer Authority with the Secondary System Phase III Project; and
- WHEREAS: The RFP was issued to multiple firms including AECOM USA, Inc., Arcadis, GHD, Inc, and Jacobs; and
- WHEREAS: AECOM USA, Inc., and Arcadis, responded to the RFP by the specified deadline of 10:00 AM September 13, 2023; and
- WHEREAS: A consultant selection committee appointed by the General Manger reviewed and ranked the proposals received; and
- WHEREAS: Based upon the proposal review and interviews, the consultant selection committee recommends retaining AECOM USA, Inc., for the professional engineering services outlined in the RFP at an agreed upon cost not to exceed \$4,840,000.00.

## NOW THEREFORE

BE IT RESOLVED: That the Board of the Buffalo Sewer Authority hereby authorizes the General Manager to execute an agreement with AECOM USA, Inc., at a cost not to exceed \$4,840,000.00 to complete the professional services defined in the proposal dated September 13, 2023. The cost of this contract will be funded from account no. 02000576-432004.

| MOTION T           | 0        | APPRO         | VE           |
|--------------------|----------|---------------|--------------|
| MADE BY            |          | MRS. PETR     | UCCI         |
| 2 <sup>ND</sup> BY | М        | IR. ROOSEVI   | ELT          |
| AYES               | 3        | NOES          | 0            |
| В                  | oard Mee | ting of Noven | nber 1, 2023 |

## <u>CHANGE ORDER NO. 1 BIRD ISLAND WASTEWATER TREATMENT FACILITY</u> <u>SECONDARY SYSTEM REHABILITATION AND UPGRADES, CONTRACT E –</u> ELECTRICAL, CONTRACT NO. 82000053

| CONTRACTOR:   | ORIGINAL CONTRACT COST   | \$1,230,000.00                              |
|---|--|---|
| Frey Electric Construction, Inc.<br>100 Pearce Avenue<br>Tonawanda, New York 14150    | PREVIOUS CHANGE ORDERS<br>THIS CHANGE ORDER<br>TOTAL ADJUSTED COST             | N/A<br><u>\$90,000.00</u><br>\$1,320,000.00 |
| VENDOR NO. 1889   | ACCOUNT NO.  | 02000535-490740                             |
| WORK: Contract E – Electrical<br>upgrades and modification<br>with Contract Nos A – D | This contract consists of electrical<br>ons to accommodate the work associated |   |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Escalated bid pricing in response to the extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices (See Appendix A).

#### **REASON FOR CHANGE OR EXTRA WORK:**

Item #1 Due to extenuating circumstances, the execution of the Construction Contracts experienced significant delays; from an anticipated Notice to Proceed (NTP) date of October 2021 to a NTP date of September 27, 2022. During that time, the domestic construction industry experienced extraordinary inflationary pressures across all raw materials, as well as escalations in the transportation market due to vast staffing shortages and rising crude oil prices. These pressures are in part due to the lingering impacts of a global pandemic and the ongoing supply chain variability. As such, the cost and lead time to provide the materials required for implementation of the Project have increased significantly.

#### COST OF CHANGE OR EXTRA WORK:

Item #1 \$90,000.00

## THE TOTAL COST OF THE CHANGE OR EXTRA WORK:

\$90,000.00

WHEREAS: On June 23, 2021, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with Frey Electrical Construction, Inc. (Frey) for Bird Island Treatment Facility Secondary System Rehabilitation and System Upgrades project as the responsible low bidder at a cost not to exceed \$1,230,000.00; and

- WHEREAS: On September 27, 2022, Notice to Proceed was issued for Contract No. 82000053 in accordance with the above Board approval; and
- WHEREAS: The Treatment Plant Administrator, Senior Instrumentation Technician and AECOM reviewed Change Order No. CR-E-01 to Contract No. 82000053 in the amount of \$90,000.00 as detailed above and recommend approval.

## CONTRACT SUPPLEMENT CONDITIONS:

- 16. The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>247</u> calendar days, resulting in a final completion date of <u>March</u> <u>31, 2027</u>.
- 17. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 18. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 19. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).
- 20. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves Change Order No. CR-E-01 to Contract No. 82000053 as written in the above Agenda Item, increasing the contract cost in the amount of \$90,000.00 making the adjusted contract cost \$1,320,000.00. Expenses from this contract will be paid from Account no. 02000535-490740.

| MOTION 7           | ГО | APPROV      | Έ    |
|--------------------|----|-------------|------|
| MADE BY            |    | MRS. PETRU  | JCCI |
| 2 <sup>ND</sup> BY | Μ  | IR. ROOSEVE | LT   |
| AYES               | 3  | NOES        | 0    |

## <u>CHANGE ORDER NO. 3 CONTINUATION TO NEXT PHASE OF ENGINEERING SERIVIES</u> <u>CONTRACT NO. 820000041 SCAJAQUADA CREEK & BLACK ROCK SMART SEWER</u> PROJECT

| CONTRACTOR:              | ORIGINAL CONTRACT COST       | \$824,600.00          |
|--------------------------|------------------------------|-----------------------|
| Greeley and Hansen       | PREVIOUS CHANGE ORDER        | \$407,900.00          |
| 111 Broadway Suite 2101  | THIS CHANGE ORDER (INCREASE) | <u>\$1,096,300.00</u> |
| New York, New York 10006 | ADJUSTED CONTRACT COST       | \$2,328,800.00        |
| VENDOR NO. 16154         | ACCOUNT NO.                  | 02000546-432004       |

PROJECT: Scajaquada Creek & Black Rock Canal Smart Sewer Project

## DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Continuation into the next phase of engineering services: Construction Administration and Construction Inspection Services

#### REASON FOR CHANGE OR EXTRA WORK:

Item #1 Bidding of this project has been completed and at this time administration and inspection of the construction contract is required. Work to date by Greeley and Hansen on this contract has been satisfactory and it has been determined that they are best qualified to continue to provide engineering services through this construction phase.

## COST OF CHANGE OR EXTRA WORK:

Item #1 \$1,096,300.00

## THE TOTAL COST OF THE CHANGE OR EXTRA WORK \$1,096,300.00

The total INCREASE to the contract as a result of this Change Order is

- \$1,096,300.00
- WHEREAS: In Item No. 13, on November 22, 2021, the Board of the Buffalo Sewer Authority prequalified five (5) engineering firms for submission of proposals for the engineering services for future real time control projects; and
- WHEREAS: In Item No. 15, on March 9, 2022, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into an agreement with Greeley and Hansen; one of those five engineering firms which were pre-qualified on November 22, 2021, in the amount of \$824,600.00 to perform design and bid services for the Scajaquada Creek & Black Rock Canal Smart Sewer Project; and

| WHEREAS: | In Item No. 18, on October 19, 2022, the Board of the Buffalo Sewer Authority authorized a change order in the amount of \$228,800.00 for additional survey, inclusion of several additional monitoring sites, and utility coordination; and |
|----------|--|
| WHEREAS: | In Item No. 17, on December 14, 2022, the Board of the Buffalo Sewer Authority authorized a change order in the amount of \$179,1800.00 for redesign of the Gates Circle site and additional subsurface investigation; and                   |
| WHEREAS: | The Principal Sanitary Engineer has reviewed a request for a Change Order No. 3 to Contract No. 82000041 in the amount of \$1,096,300.00 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. 3 to Contract No. 82000041 as written in the above Agenda Item, increasing the contract cost in the amount of \$1,096,300.00, making the adjusted contract cost \$2,328,800.00. Expenses from this contract will be funded from account no. 02000546-432004.

| TO APPROVE    |        |   |
|---------------|--------|---|
| MR. ROOSEVELT |        |   |
| MRS. PETRUCCI |        |   |
| 3             | NOES   | 0   |
|               | N<br>3 | APPROV<br>MR. ROOSEV<br>MRS. PETRUC<br>3 NOES |

## <u>CHANGE ORDER NO. 1– CONTRACT RENEWAL AND MODIFICATIONS CONTRACT NO.</u> 82000026 WET WEATHER OPERATIONAL OPTIMIZATION AND REAL TIME CONTROL <u>COORDINATION SYSTEM IMPLEMENTATION</u>

| CONSULTANT:                 | ORIGINAL CONTRACT COST | \$4,293,633.00      |
|-----------------------------|------------------------|---------------------|
| EmNet/Xylem/Xylem Vue, Inc. | PREVIOUS CHANGE ORDERS | \$0.00              |
| 121 S. Niles Ave Ste 22     | THIS CHANGE ORDER      | <u>\$475,000.00</u> |
| South Bend, IN 46617        | ADJUSTED CONTRACT COST | \$4,768,633.00      |
| VENDOR NO. 15497            | ACCOUNT NO. 82000026   | 02000514-432004     |

# Wet Weather Operational Optimization and Real Time Control Coordination SystemPROJECT:Implementation

## DESCRIPTION OF CHANGE OR EXTRA WORK:

- Item #1 Sensor Network and Data Acquisition
- Item #2 Globally Coordinated Control Strategy
- Item #3 Optimization of Long-Term Control Plan

#### **REASON FOR CHANGE OR EXTRA WORK:**

- Item #1 Transition of sensor network and integration for added accessibility, as well as extension of sensor support through October 2024.
- Item #2 Integrating facility operations and incorporating additional data to create a more resilient climate responsive system that will both operate the Real Time Control network, but also inform the activities of facility operators.
- Item #3 Provide additional support as Buffalo Sewer Authority reevaluates Long-Term Control Plan water quality objectives to achieve equity and environmental justice.

#### COST OF CHANGE OR EXTRA WORK:

- Item #1 \$325,200.00
- Item #2 \$138,800.00
- Item #3 \$11,000.00

## THE TOTAL COST OF THE CHANGE OR EXTRA WORK:

\$475,000.00

| WHEREAS:                         | In Item No. 19, on May 27, 2020, the Board of the Buffalo Sewer Authority<br>awarded a three (3) year term agreement with optional three (3) one (1) year<br>renewals thereafter for Wet Weather Operational Optimization and Real Time<br>Control Coordination System Implementations to EmNet, LLC; and                    |                    |               |
|----------------------------------|--|--------------------|---------------|
| WHEREAS:                         | The original three (3) year term period is now expiring and EmNet, LLC and certain contract conditions require adjustment to reflect the acquisition of EmNet, LLC by Xylem, Inc. and to reflect technological advances; and   |                    |               |
| WHEREAS:                         | Upon request from the Principal Sanitary Engineer, Xylem, Inc. has submitted<br>a change order proposal to incorporate these changes and to extend this<br>contract for the first of three (3) one (1) year renewals; and  |                    |               |
| WHEREAS:                         | The Principal Sanitary Engineer and staff have reviewed this Change Order No. 1 request to Contract No. 82000026 in the amount of \$475,000.00 as detailed above and recommend its approval.   |                    |               |
| NOW THEREFORE<br>BE IT RESOLVED: | That the Board of the Buffalo Sewer Authority hereby approves Change Order No. 1 to Contract No. 82000026 as written in the above Agenda Item, increasing the contract cost in the amount of \$475,000.00, making the adjusted contract cost \$4,768,633.00. These funds shall be drawn from account number 02000514-432004. |                    |               |
|                                  |  | MOTION TO          | APPROVE       |
|                                  |  | MADE BY            | MRS. PETRUCCI |
|                                  |  | 2 <sup>ND</sup> BY | MR. ROOSEVELT |

AYES

Board Meeting of November 1, 2023

0

3 NOES

#### CHANGE ORDER NO. 5 - CONTRACT NO. 81900014 SMITH AT EAGLE RTC PROJECT

| CONSULTAN<br>Arcadis<br>50 Fountain Pl<br>Buffalo, NY 1 | VT:<br>laza, Suite 600<br>4202 | ORIGINAL CONTRACT COST<br>PREVIOUS CHANGE ORDERS<br>THIS CHANGE ORDER<br>ADJUSTED CONTRACT COST | \$188,527.00<br>\$147,210.00<br><u>\$22,500.00</u><br>\$358,237.00 |
|---|--------------------------------|---|--|
| VENDOR NO   | . 1652                         | ACCOUNT NO.   | 02000488-432004  |
| WORK:   | Smith at Eagle Inline          | e Storage Real Time Control Project   |  |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Additional construction administration work.

#### **REASON FOR CHANGE OR EXTRA WORK:**

Item #1 The consultant provided site coordination, submittal reviews, change issue evaluation, progress payment processing and other tasks for the requested changes as part of the installation of Tideflex backwater valves to address basement flooding concerns along the Smith St. Drain.

#### COST OF CHANGE OR EXTRA WORK:

Item #1 \$22,500.00

### THE TOTAL COST OF THE CHANGE OR EXTRA WORK: \$22,500.00

- WHEREAS: In Item No. 21, on July 26, 2017, the Board of the Buffalo Sewer Authority prequalified five (5) engineering firms for submission of proposals for the engineering services for future real time control projects; and
- WHEREAS: In Item No. 30, on March 6, 2019, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into an agreement with Arcadis; one of those five engineering firms which were pre-qualified on July 26, 2017, in the amount of \$188,527.00 to perform design and bid services for the Smith at Eagle Real Time Control Project with expenses to be charged to account no. 02000488-432004; and
- WHEREAS: On March 29, 2019, Contract No. 81900014 was executed between the Buffalo Sewer Authority and Arcadis pursuant to the aforementioned Item No. 30 of the March 6, 2019 Board Meeting; and

| WHERAS:         | In Item No. 17, on October 28, 2020, the Board of the Buffalo Sewer Authority authorized a change order in the amount of \$82,710.00 to perform construction administration services and complete funding applications for the Smith at Eagle Real Time Control Project; and   |
|-----------------|--|
| WHEREAS:        | In Item No. 18, on October 20, 2021, the Board of the Buffalo Sewer Authority authorized a change order in the amount of \$15,510.00 to perform additional construction administration and redesign services for the Smith at Eagle Real Time Control Project; and   |
| WHEREAS:        | In Item No. 33, on April 6, 2022, the Board of the Buffalo Sewer Authority authorized a change order in the amount of \$32,490.00 to perform additional Engineering services and subcontracting Inspection services for the Smith at Eagle Real Time Control Project; and  |
| WHEREAS:        | In Item No. 29, on March 1, 2023, the Board of the Buffalo Sewer Authority authorized a change order in the amount of \$16,500.00 to perform additional Engineering services and subcontracting Inspection services for the Smith at Eagle Real Time Control Project; and  |
| WHEREAS:        | The Principal Sanitary Engineer and staff have reviewed a request for a<br>Change Order No. 5 to Contract No. 81900014 (Proposal for Additional<br>Engineering Services Smith- Eagle RTC Construction Administration) for<br>\$22,500.00 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. 4 to Contract No. 81900014 as written in the above Agenda Item, increasing the contract cost in the amount of \$22,500.00, making the adjusted contract cost \$358,237.00. Expenses from this contract will be funded from account no. 02000488-432004. |

| MOTION TO                         | C                      | APPROVE       |  |  |
|-----------------------------------|------------------------|---------------|--|--|
| MADE BY                           |                        | MR. ROOSEVELT |  |  |
| 2 <sup>ND</sup> BY                | Ν                      | MRS. PETRUCCI |  |  |
| AYES                              | <u>3</u> NOES <u>0</u> |               |  |  |
| Board Meeting of November 1, 2023 |                        |               |  |  |

## CHANGE ORDER NO. 1 DESIGN SERVICES THROUGH BIDDING CONTRACT NO. 820000043 JEFFERSON AVE RTC SMART SEWER SYSTEM

| CONTRACTOR:               | ORIGINAL CONTRACT COST       | \$277,425.00    |
|---------------------------|------------------------------|-----------------|
| Hazen and Sawyer          | PREVIOUS CHANGE ORDER        | N/A             |
| 111 Broadway Suite 2101   | THIS CHANGE ORDER (INCREASE) | \$3,259,080.00  |
| New York, New York 10006  | ADJUSTED CONTRACT COST       | \$3,536,505.00  |
| VENDOR NO. 15818          | ACCOUNT NO.                  | 02000542-432004 |
| PROJECT: Jefferson Ave RT | CC Smart Sewer System        |                 |

## DESCRIPTION OF CHANGE OR EXTRA WORK:

- Item #1 Scajaquada Tunnel and Subsurface Investigations and Assessments
- Item #2 Design Phase Services
- Item #3 Bid Phase Services

## REASON FOR CHANGE OR EXTRA WORK:

- Item #1 As design has advanced on this project the tie into the Scajaquada Tunnel and its current condition have arisen as a concern for both this project and future ones throughout the Scajaquada Creek and Black Rock Canal basins, it is therefore required at this time to inspect the tunnel to inform the design of this project and several future projects together with conducting additional subsurface investigations.
- Item #2 The engineer was originally contracted for preliminary design services only, this item will bring the design to bid.
- Item #3 This item covers engineering review of bids and other relating bid phased services

## COST OF CHANGE OR EXTRA WORK:

- Item #1 \$1,390,880.00
- Item #2 \$1,802,800.00
- Item #3 \$65,400.00

| THE TOTAL | COST OF THE | CHANGE OR EXTRA W | /ORK | \$3,259,080.00 |
|-----------|-------------|-------------------|------|----------------|
|           |             |                   |      |                |

The total INCREASE to the contract as a result of this Change Order is \$3,259,080.00

- WHEREAS: In Item No. 13, on November 22, 2021, the Board of the Buffalo Sewer Authority prequalified five (5) engineering firms for submission of proposals for the engineering services for future real time control projects; and
- WHEREAS: In Item No. 18, on May 4, 2022, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into an agreement with Greeley and Hansen; one of those five engineering firms which were pre-qualified on November 22, 2021, in the amount of \$277,425.00 to perform preliminary design services for the Jefferson Avenue Real Time Control (RTC) Smart Sewer Project; and
- WHEREAS: The Principal Sanitary Engineer and staff have reviewed a request for a Change Order No. 1 to Contract No. 82000043 in the amount of \$3,259,080.00 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. 82000043 as written in the above Agenda Item, increasing the contract cost in the amount of \$3,259,080.00, making the adjusted contract cost \$3,536,505.00. The cost of this contract will be funded from Account no. 02000542-432004.

| MOTION TO          | O APPROVE     |      |   |
|--------------------|---------------|------|---|
| MADE BY            | MRS. PETRUCCI |      |   |
| 2 <sup>ND</sup> BY | MR. ROOSEVELT |      |   |
| AYES               | 3             | NOES | 0 |

## CHANGE ORDER NO. 3– ADDITIONAL CONSTRUCTION OBSERVATION SERVICES CONTRACT NO. 81900016 BROADWAY AT OAK REAL TIME CONTROL STRUCTURE ENGINEERING SERVICES

| CONSULTANT:             | ORIGINAL CONTRACT COST      | \$154,400.00      |
|-------------------------|-----------------------------|-------------------|
| CHA Companies           | PREVIOUS CHANGE ORDERS      | \$339,534.00      |
| 2200 Main Place Tower   | THIS CHANGE ORDER           | <u>\$4,536.00</u> |
| Buffalo, New York 14202 | ADJUSTED CONTRACT COST      | \$498,470.00      |
| VENDOR NO. 13108        | ACCOUNT NO. 81900016        | 02000509-432004   |
| PROJECT: Broadway/Oak   | Real Time Control Structure |                   |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Additional construction observation services.

#### **REASON FOR CHANGE OR EXTRA WORK:**

Item #1 Construction of the Broadway at Oak Real Time Control Project encountered delays due to unknown conditions requiring additional construction observation time beyond what was originally budgeted.

#### COST OF CHANGE OR EXTRA WORK:

Item #1 \$4,536.00

THE TOTAL COST OF THE CHANGE OR EXTRA WORK: \$4,536.00

| WHEREAS: | In Item No. 21, on July 26, 2017, the Board of the Buffalo Sewer Authority prequalified five (5) engineering firms for submission of proposals for the engineering services for future real time control projects; and  |
|----------|---|
| WHEREAS: | In Item No. 31, on March 6, 2019, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into an agreement with CHA; one of those five engineering firms which were pre-qualified on July 26, 2017, in the amount of \$154,400.00 to perform design and bid services for the Broadway at Oak Real Time Control Project; and |
| WHEREAS: | In Item No. 19, on October 20, 2021, the Board of the Buffalo Sewer Authority approved a change order in the amount of \$203,454.00 to perform construction administration, construction observation, and post-construction monitoring services for the Broadway at Oak Real Time Control Project; and  |

WHEREAS: In Item No. 19, on October 20, 2021, the Board of the Buffalo Sewer Authority approved a change order in the amount of \$203,454.00 to perform construction administration, construction observation, and post-construction monitoring services for the Broadway at Oak Real Time Control Project; and WHEREAS: In Item No. 10, on July 20, 2022, the Board of the Buffalo Sewer Authority approved a change order in the amount of \$136,080.00 to perform construction observation services for the Broadway at Oak Real Time Control Project; and WHEREAS: The Principal Sanitary Engineer and staff have reviewed a request for a Change Order No. 3 to Contract No. 81900016 in the amount of \$4,536.00 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. 3 to Contract No. 81900016 as written in the above Agenda Item, increasing the contract cost in the amount of \$4,536.00, making the adjusted contract cost \$493,934.00. These funds shall be drawn from account no. 02000509-432004.

| MOTION T           | 0 | APPROVE       |   |  |
|--------------------|---|---------------|---|--|
| MADE BY            |   | MRS. PETRUCCI |   |  |
| 2 <sup>ND</sup> BY | Μ | MR. ROOSEVELT |   |  |
| AYES               | 3 | NOES          | 0 |  |

Board Meeting of November 1, 2023

## <u>AUTHORIZATION TO ENTER INTO AN AGREEMENT WITH GREELEY AND HANSEN, A</u> <u>TYLIN COMPANY FOR CAPITAL PROJECTS PROGRAM MANAGEMENT SERVICES</u>

- WHEREAS: The Buffalo Sewer Authority issued a request for proposals (RFP) for the purposes of securing the services of a consulting firm to provide Capital Projects Program Management Services for an initial five (5) year guaranteed period with up to five (5) additional one-year extensions; and
- WHEREAS: Four (4) firms responded to this RFP; and
- WHEREAS: A consultant selection committee appointed by the General Manager reviewed the submitted proposals and interviewed each team and ranked the firms on the basis of both their interviews and proposals; and
- WHEREAS: The RFP provided a contract value not to exceed \$6,000,000.00 (six million dollars) with future year's contract values to be negotiated between the Authority and the Consultant on the basis of work anticipated and the wage and feed structures provided in the Consultant's cost proposal; and
- WHEREAS: The General Manager, Executive Secretary, Principal Sanitary Engineer and staff recommend contracting with Greeley and Hansen, a TYLin Company for these services as detailed in their proposal of August 18, 2023, at a cost not to exceed \$6,000,000.00 for the first year with subsequent year's contract amounts to be approved for the first four years and up to five additional one-year contract extensions to be approved by the Board of the Buffalo Sewer Authority in the future.

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby authorizes the General Manager to execute agreements with Greeley and Hansen, TYLin to complete Capital Projects Program Management Services. The cost of this contract will be funded for this initial first year at not to exceed amount of \$6,000,000.00 from account no. 02000577-432004.

| MOTION 7           | TO REMOVE FROM TABLE |                 |              |  |
|--------------------|----------------------|-----------------|--------------|--|
| MADE BY            | Y MRS. PETRUCCI      |                 |              |  |
| 2 <sup>ND</sup> BY | MR. ROOSEVELT        |                 |              |  |
| AYES               | 3                    | NOES            | 0            |  |
| ]                  | Board M              | eeting of Decen | nber 6, 2023 |  |
| MOTION 7           | ГО                   | APPRO           | VE           |  |
| MADE BY            |                      | MRS. PETR       | UCCI         |  |
| 2 <sup>ND</sup> BY |                      | MR. ROOSEV      | ELT          |  |
| AYES               | 3                    | NOES            | 0            |  |
| ]                  | Board M              | eeting of Decen | nber 6, 2023 |  |

## <u>REPORT ON BIDS RECEIVED - SCAJAQUADA CREEK AND BLACK ROCK CANAL</u> <u>SMART SEWER PROJECT</u>

| WHEREAS: | Formal bids were advertised and solicited for the Scajaquada Creek and Black<br>Rock Canal Smart Sewer Project. Bids were received and opened by the<br>Buffalo Sewer Authority on Thursday, July 6, 2023, at 10:00 AM; and   |
|----------|---|
| WHEREAS: | Mark Cerrone, Inc. submitted the sole bid in the amount of \$5,987,000.00; and  |
| WHEREAS: | This bid was within the \$3,500,000.00-\$6,500,000.00 Engineer's Estimate range; and  |
| WHEREAS: | The proposals were received and the contract will be awarded on the basis of<br>unit bid and lump sum prices. The bid does not reflect the true amount of the<br>contract; and  |
| WHEREAS: | This project is subject to time sensitive deadlines under the United States<br>Environmental Protection Agency's Amended Administrative Order CWA-<br>02-2014-3033; 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 Buffalo Sewer Authority's Consulting Engineer, Greeley and Hansen has<br>reviewed the bid and accompanying grant and financing compliance<br>documentation and recommends awarding of the contract to Mark Cerrone,<br>Inc. at a cost not to exceed \$5,987,000.00; and                 |
| WHEREAS: | The Principal Sanitary Engineer and staff have reviewed the bid and compliance documentation and the Consulting Engineer's recommendation and and concur with award of a contract at a cost not to exceed \$5,987,000.00 to Mark Cerrone, Inc. by the Board of the Buffalo Sewer Authority. |

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby authorizes the General Manager to enter into and execute a contract with Mark Cerrone, Inc. at a cost not to exceed \$5,987,000.00 for the Scajaquada Creek and Black Rock Canal Smart Sewer Project. Expenses for this contract shall be charged to Account no. 02000550-490740.

| MOTION TO          | TO APPROVE    |           |      |  |
|--------------------|---------------|-----------|------|--|
| MADE BY            |               | MR. ROOSE | VELT |  |
| 2 <sup>ND</sup> BY | MRS. PETRUCCI |           |      |  |
| AYES               | 3             | NOES      | 0    |  |
|                    |               |           |      |  |

## AUTHORIZATION TO ENTER INTO A PROFESSIONAL ENGINEERING SERVICES AGREEMENT FOR SMART SEWER PROJECTS AT FOUR LOCATIONS

WHEREAS: The Buffalo Sewer Authority (BSA) has negotiated with the United States Environmental Protection Agency, the United States Department of Justice and the New York State Department of Environmental Conservation to address sewer system improvements to comply with the Federal Clean Water Act through the Combined Sewer Overflow Long-Term Control Plan (LTCP) which was approved by the agencies on March 18, 2014; and WHEREAS: As part of the approved LTCP, the BSA committed to the installation of up to sixteen Real Time Control (RTC) projects; and WHEREAS: The Board of the Buffalo Sewer Authority has prequalified five (5) engineering firms to allow for the submission of proposals for future real time control (smart sewer) projects under Item No. 13 of the November 22, 2021 Board Meeting; and WHEREAS: Upon request, one of the five (5) prequalified firms, Greeley-Hansen has submitted a letter proposal to complete applicable tasks for the design phase and construction bidding services for the Smart Sewer/ Real Time Control (RTC) Project for the Breckenridge St. CSO Control Project a in the amount of \$838,300.00; and WHEREAS: The Principal Sanitary Engineer finds the proposal acceptable and recommends retaining Greeley-Hansen for professional engineering services associated with the Breckenridge St. CSO Control Project. NOW THEREFORE **BE IT RESOLVED:** That the Board of the Buffalo Sewer Authority hereby authorizes the General Manager to execute an agreement with Greeley-Hansen, at a cost not-to-exceed \$838,300.00 to complete the professional engineering services defined in the letter proposal dated October 18, 2023. The cost of this contract will be funded from account no. 02000578-432004.

| MOTION TO          | CO APPROVE    |             |     |  |
|--------------------|---------------|-------------|-----|--|
| MADE BY            | MR. ROOSEVELT |             |     |  |
| 2 <sup>ND</sup> BY | ]             | MRS. PETRUC | CCI |  |
| AYES               | 3             | NOES        | 0   |  |

Board Meeting of December 6, 2023

## AUTHORIZATION FOR BETTERMENT AS PART OF THE NIAGARA STREET RECONSTRUCTION PHASE 4B PIN 5762.90

WHEREAS: Formal bids were advertised and solicited by the City of Buffalo Department of Public Works, Parks, and Streets (DPW) for Niagara Street Reconstruction Phase 4B PIN 5762.90. The following bids were received and opened by DPW on March 31, 2023, at 11:00 AM:

| Contractor           | Base Bid       | Alternate 1 | Base Bid +     |
|----------------------|----------------|-------------|----------------|
|                      |                |             | Alternate 1    |
| EdBauer Construction | \$4,533,024.70 | \$98,690.00 | \$4,631,714.70 |
| Mark Cerrone, Inc.   | \$4,991,043.50 | \$89,436.00 | \$5,080,479.50 |
| ; and                | ·              |             |                |

WHEREAS: At their May 2, 2023, Regular Meeting under Agenda Item 23-655, the Common Council of the City of Buffalo at the recommendation of DPW awarded a contract to EdBauer Construction for Niagara Street Reconstruction Phase 4B PIN 5762.90 in the amount of \$4,631,714.70 for Base Bid + Alternate 1; and

WHEREAS: The portion of the Base Bid + Alternate 1 that is attributed to the rehabilitation and enhancement of Buffalo Sewer Authority's infrastructure are as follows:

|                      | Base Bid       | Alternate 1  | Base   | Bid     | +   |
|----------------------|----------------|--------------|--------|---------|-----|
|                      |                |              | Altern | ate 1   |     |
| Green Infrastructure | \$898,045.50   | \$108,536.00 | \$1,0  | 06,581  | .50 |
| Gray Infrastructure  | \$326,982.78   | N/A          | \$3    | 326,982 | .78 |
| Total                | \$1,225,028.28 | \$108,536.00 | \$1,3  | 33,564  | .28 |

WHEREAS: The New York State Environmental Facilities Corporation (EFC) provides funding through the Green Innovation Grant Program (GIGP) for projects that demonstrate direct environmental benefits and improve water quality in New York State; and

WHEREAS: The Board of the Buffalo Sewer Authority authorized a 10% match for a \$1,100,000.00 GIGP grant for the Niagara Phase 4B Project under Item #14 of the September 29, 2021, Board Meeting; and

WHEREAS: The Principal Sanitary Engineer and staff recommend awarding a Betterment Contract to EdBauer Construction at a total cost not to exceed \$1,333,564.28; and

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves the awarding of the Betterment Contract for the Niagara Street Reconstruction Phase 4B PIN 5762.90 to EdBauer for a not to exceed amount of \$1,333,564.28. The cost of this contract will be funded from Account no. 02000540-490740 and utilize GIGP grant funding.

| MOTION T           | O APPROVE |                  |              |  |  |
|--------------------|-----------|------------------|--------------|--|--|
| MADE BY            |           | MR. ROOSEVELT    |              |  |  |
| 2 <sup>ND</sup> BY |           | MRS. PETRUG      | CCI          |  |  |
| AYES               | 3         | NOES             | 0            |  |  |
|                    | Boa       | rd Meeting of Ju | uly 26, 2023 |  |  |

## <u>AUTHORIZATION TO ENTER INTO AN AGREEMENT WITH GREELEY AND HANSEN, A</u> <u>TY-LIN COMPANY FOR CAPITAL PROJECTS PROGRAM MANAGEMENT SERVICES</u>

- WHEREAS: The Buffalo Sewer Authority issued a request for proposals (RFP) for the purposes of securing the services of a consulting firm to provide Capital Projects Program Management Services for an initial five (5) year guaranteed period with up to five (5) additional one-year extensions; and
- WHEREAS: Four (4) firms responded to this RFP; and
- WHEREAS: A consultant selection committee appointed by the General Manager reviewed the submitted proposals and interviewed each team and ranked the firms on the basis of both their interviews and proposals; and
- WHEREAS: The RFP provided a contract value not to exceed \$6,000,000.00 (six million dollars) with future year's contract values to be negotiated between the Authority and the Consultant on the basis of work anticipated and the wage structures provided in the Consultant's cost proposal; and
- WHEREAS: The Principal Sanitary Engineer and staff recommend contracting with Greeley and Hansen, a TY-Lin Company for these services as detailed in their proposal of August 18, 2023, at a cost not to exceed \$6,000,000.00 for the first year with subsequent year's contract amounts to be approved for the first four years and up to five additional one-year contract extensions to be approved by the Board of the Buffalo Sewer Authority.

## NOW THEREFORE

BE IT RESOLVED: That the Board of the Buffalo Sewer Authority hereby authorizes the General Manager to execute agreements with Greeley and Hansen, TY-Lin to complete Capital Projects Program Management Services. The cost of this contract will be funded for this initial first year at not to exceed amount of \$6,000,000.00 from account no. 02000577-432004.

| MOTION TO          | TO TABLED |             |      |  |
|--------------------|-----------|-------------|------|--|
| MADE BY            |           | MRS. PETRU  | UCCI |  |
| 2 <sup>ND</sup> BY | Ν         | IR. ROOSEVI | ELT  |  |
| AYES               | 3         | NOES        | 0    |  |

Board Meeting of November 1, 2023

## AUTHORIZATION TO ENTER INTO AN AGREEMENT WITH WATTS ARCHITECTURE AND ENGINEERING, FOR GREEN INFRASTRUCTURE PROFESSIONAL ENGINEERING **SERVICES**

WHEREAS: The Buffalo Sewer Authority issued a request for qualifications (RFQ) for the purposes of prequalifying various firms for delivery of green infrastructure capital improvement projects and approved these entities as Board Item #31 on September 30, 2020; and WHEREAS: There is a need to secure the services of an engineering firm to design and manage the replacement of sewer and watermains and the installation of porous pavement for two (2) sites in the Fillmore District; and WHEREAS: Six (6) firms that were pre-qualified under Board Item #31 of the September 30, 2020, Board Meeting were solicited for proposals for the design and management of this project; and A total of three (3) firms responded to a request for proposals; and WHEREAS: A consultant selection committee appointed by the Principal Sanitary Engineer WHEREAS: reviewed and ranked the proposals received; and WHEREAS: The Principal Sanitary Engineer and staff recommend contracting with Watts Architecture and Engineering (Watts) for these services as detailed in their proposal of June 23, 2023, at a cost not to exceed \$635,379.00. NOW THEREFORE **BE IT RESOLVED:** That the Board of the Buffalo Sewer Authority hereby authorizes the General Manager to execute agreements with Watts to complete the project located in the

Fillmore District. The cost of this contract will be funded at not to exceed amount of \$635.379.00 from Account no. 02000572-432004.

| MOTION TO          | TO <u>APPROVE</u> |            |      |  |
|--------------------|-------------------|------------|------|--|
| MADE BY            |                   | MRS. PETRU | JCCI |  |
| 2 <sup>ND</sup> BY | MR. ROOSEVELT     |            |      |  |
| AYES               | 3                 | NOES       | 0    |  |

## AUTHORIZATION TO ENTER INTO AN AGREEMENT WITH AKRF, INC., FOR GREEN INFRASTRUCTURE PROFESSIONAL ENGINEERING SERVICES

- WHEREAS: The Buffalo Sewer Authority issued a request for qualifications (RFQ) for the purposes of prequalifying various firms for delivery of green infrastructure capital improvement projects and approved these entities as Board Item #31 on September 30, 2020; and
- WHEREAS: There is a need to secure the services of an engineering firm to design and manage the replacement of sewer and watermains and the installation of porous pavement for two (2) sites in the Lovejoy District; and
- WHEREAS: Six (6) firms that were pre-qualified under Board Item #31 of the September 30, 2020, Board Meeting were solicited for proposals for the design and management of this project; and
- WHEREAS: A total of three (3) firms responded to a request for proposals; and
- WHEREAS: A consultant selection committee appointed by the Principal Sanitary Engineer reviewed and ranked the proposals received; and
- WHEREAS: The Principal Sanitary Engineer and staff recommend contracting with AKRF, Inc. (AKRF) for these services as detailed in their proposal of June 23, 2023, at a cost not to exceed \$635,894.00.

## NOW THEREFORE

BE IT RESOLVED: That the Board of the Buffalo Sewer Authority hereby authorizes the General Manager to execute agreements with AKRF to complete the project located in the Lovejoy District. The cost of this contract will be funded at not to exceed amount of \$635,894.00 from Account no. 02000573-432004.

| MOTION TO          |   | APPROVE       |     |  |  |
|--------------------|---|---------------|-----|--|--|
| MADE BY            |   | MR. ROOSEVELT |     |  |  |
| 2 <sup>ND</sup> BY | Ν | MRS. PETRU    | CCI |  |  |
| AYES               | 3 | NOES          | 0   |  |  |
|                    |   |               |     |  |  |

## CHANGE ORDER NO. 4 - CONTRACT NO. 82000039

| CONTRACTOR       | R:                       | ORIGINAL CO     | DNTRACT COST    | \$3,378,000.00      |
|------------------|--------------------------|-----------------|-----------------|---------------------|
| STC Construction | on, Inc.                 | PREVIOUS CH     | HANGE ORDERS    | \$877,900.45        |
| 63 Zoar Valley   | Road                     | THIS CHANG      | E ORDER         | <u>-\$31,550.49</u> |
| Springville, NY  | 14141                    | ADJUSTED C      | ONTRACT COST    | \$4,224,349.96      |
| VENDOR#          | 6041                     | ACCOUNT#        | 02000499-490740 |                     |
| WORK:            | Broadway at Oak Real Tin | me Control Proj | ect             |                     |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

Item #1 Final Adjustment

#### **REASON FOR CHANGE OR EXTRA WORK:**

Item #1 Adjustment of contract amount for actual quantities used.

#### COST OF CHANGE OR EXTRA WORK:

Item #1 \$31,550.49

THE TOTAL COST OF THE CHANGE OR EXTRA WORK: (\$31,550.49)

The Total DECREASE to the Contract as a result of this Change Order is \$31,550.49

- WHEREAS: On October 20, 2021, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with STC Construction, Inc., for the Broadway at Oak Real Time Control project at a cost not to exceed \$3,378,000.00; and
- WHEREAS: On June 22, 2022, the Board of the Buffalo Sewer Authority authorized a \$177,287.80 Change Order No. 1 to this contract for removal and storage of slag material; and
- WHEREAS: On July 20, 2022, the Board of the Buffalo Sewer Authority authorized a Change Order No. 2 to this contract for the extension of time for removal and disposal of slag material; and
- WHEREAS: On October 19, 2022, the Board of the Buffalo Sewer Authority authorized a \$700,612.65 Change Order No. 3 to this contract for disposal of slag material, winter shutdown, and deviations between record drawings and field conditions, and
- WHEREAS: The Principal Sanitary Engineer and staff and CHA have reviewed Change Order No. 4 to Contract No. 82000039 as detailed above and recommend approval.
## CONTRACT SUPPLEMENT CONDITIONS:

- 1. The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>89</u> calendar days to set a new final completion date of September 28, 2023.
- 2. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 3. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 4. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).
- 5. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

# NOW THEREFORE

BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves Change Order No. 4 to Contract No. 82000039 as written in the above Agenda Item, decreasing the contract cost in the amount of \$31,550.49 making the adjusted contract cost \$4,224,349.96.

| MOTION TO          |               | APPROVE       |   |  |
|--------------------|---------------|---------------|---|--|
| MADE BY            |               | MRS. PETRUCCI |   |  |
| 2 <sup>ND</sup> BY | MR. ROOSEVELT |               |   |  |
| AYES               | 3             | NOES          | 0 |  |
|                    |               |               |   |  |

Board Meeting of September 28, 2023

## ITEM NO.29

## CHANGE ORDER NO. 5 - CONTRACT NO. 82000017

| CONTRACTO      | DR:                                      | ORIGINA  | L CONTRACT COST | \$2,262,000.00      |
|----------------|--|----------|-----------------|---------------------|
| NOVA Site Co   | ompanies                                 | PREVIOU  | S CHANGE ORDERS | \$317,130.81        |
| 6 Lena Court   |  | THIS CHA | ANGE ORDER      | <u>\$452,607.28</u> |
| West Seneca, I | New York 14224                           | ADJUSTE  | D CONTRACT COST | \$3,031,738.09      |
| VENDOR#        | 9596                                     | ACCOUNT# | 02000507-490740 |                     |
| WORK:          | Smith at Eagle Real Time Control Project |          |                 |                     |

## DESCRIPTION OF CHANGE OR EXTRA WORK:

- Item #1 Contractor shall furnish and install a new Tideflex Series 37G inline check valves & 2 precast concrete doghouse manhole and install owner furnished Tideflex Checkmate inline check valves.
- Item #2 Contractor shall modify, remove, and reset existing plug valves at the Smith Street RTC with new actuators.
- Item #3 Contractor will extend the existing 10" sewer main in Great Arrow by 123 ft and install a new cleanout at the end.

## REASON FOR CHANGE OR EXTRA WORK:

- Item #1 Different check valves and additional manholes are needed to address concerns relating to basement backups and street flooding during seiche events.
- Item #2 Repair and replacement of system actuator along with related required work to facilitate removal and replacement.
- Item #3 A sewer connection was uncovered during water main repair work in Great Arrow. An existing sewer main needs to be extended to properly service a lateral from a residential property.

## COST OF CHANGE OR EXTRA WORK:

| Item #1 | \$92,320.70  |
|---------|--------------|
| Item #2 | \$262,086.58 |
| Item #3 | \$98,200.00  |

THE TOTAL COST OF THE CHANGE OR EXTRA WORK: \$452,607.28

The Total INCREASE to the Contract as a result of this Change Order is \$452,607.28

- WHEREAS: This project was awarded a Water Quality Improvement Program grant by the New York State Department of Environmental Conservation with a minimum local match of 25% for Construction; and
- WHEREAS: In Item No. 20, on April 1, 2020 the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with Nova Site Company, LLC for the Smith St. at Eagle St. Real Time Control Project at a cost not to exceed \$2,262,000.00; and
- WHEREAS: Change Order No. 1 to Contract No. 82000017 was approved by the Board on October 20, 2021 with no increase in cost but an increase in the construction schedule of 233 days; and
- WHEREAS: Change Order No. 2 to Contract No. 82000017 was approved by the Board on June 22, 2022 in the amount of \$235,406.63 for additional work and materials; and
- WHEREAS: Change Order No. 3 to Contract No. 82000017 was approved by the Board on September 28, 2022 in the amount of \$0.00 for retention reduction from 5% to 1%; and
- WHEREAS: Change Order No. 4 to Contract No. 82000017 was approved by the Board on May 24, 2023 in the amount of \$81,724.18 for check valve installation and modifications.
- WHEREAS: The Principal Sanitary Engineer and staff have reviewed a request for a Change Order No. 5 to Contract No. 82000017 as detailed above and recommend its approval.

## CONTRACT SUPPLEMENT CONDITIONS:

- 1. The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>233</u> calendar days to set a new final completion date.
- 2. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 3. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 4. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).

5. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

NOW THEREFORE BE IT RESOLVED: That the Board of the Buffalo Sewer Authority hereby approves Change Order No. 5 to Contract No. 82000017 as written in the above Agenda Item, increasing the contract cost in the amount of \$452,607.28 making the adjusted contract cost \$3,031,738.09.

| MOTION TO          |               | APPROVE       |   |  |
|--------------------|---------------|---------------|---|--|
| MADE BY            |               | MR. ROOSEVELT |   |  |
| 2 <sup>ND</sup> BY | MRS. PETRUCCI |               |   |  |
| AYES               | 3             | NOES          | 0 |  |
|                    |               |               |   |  |

Board Meeting of September 28, 2023

#### ITEM NO. 30

## CHANGE ORDER NO. 2- CONTRACT NO. 82000042

| CONTRACTOR       | :                       | ORIGINAL CO  | NTRACT COST     | \$4,512,455.00      |
|------------------|-------------------------|--------------|-----------------|---------------------|
| Kandey Compan    | y, Inc.                 | PREVIOUS CH  | ANGE ORDERS     | \$482,585.83        |
| 19 Ransier Drive |                         | THIS CHANGE  | ORDER           | <u>\$438,329.21</u> |
| West Seneca, NY  | 7 14224                 | ADJUSTED CO  | NTRACT COST     | \$5,433,370.04      |
| VENDOR#          | 4603                    | ACCOUNT#     | 02000497-490740 |                     |
| WORK:            | Mill Race Real Time Con | trol Project |                 |                     |

#### DESCRIPTION OF CHANGE OR EXTRA WORK:

- Item #1 Bulkhead stabilization
- Item #2 Additional delay costs
- Item #3 Hamburg Drain Roof Repair

#### **REASON FOR CHANGE OR EXTRA WORK:**

- Item #1 Additional bulkhead effort to isolate construction area from the Buffalo River and the combined sewer system. Unspecified bedrock conditions necessitated additional concrete and underwater construction to replace and fortify bulkhead to enable site safety.
- Item #2 Additional costs not included in the original change order to this contract were identified due to supply and labor cost increases during period that site access delays were experienced.
- Item #3 Use of industrial divers to identify and repair Hamburg Drain.

## COST OF CHANGE OR EXTRA WORK:

| Item #1 | \$359,667.29 |
|---------|--------------|
| Item #2 | \$63,661.92  |
| Item #3 | \$15,000.00  |

| THE TOTAL COST OF THE CHANGE OR EXTRA WORK | \$438,329.21 |
|--|--------------|
|  |              |

The Total INCREASE to the Contract as a result of this Change Order is \$438,329.21

WHEREAS: This project was awarded a Water Quality Improvement Program grant by the New York State Department of Environmental Conservation with a minimum local match of 25% for Construction; and

- WHEREAS: On November 22, 2021, the Board of the Buffalo Sewer Authority authorized the General Manager to enter into and execute a contract with Kandey Construction, Inc., for the Mill Race Real Time Control project at a cost not to exceed \$4,512,455.00; and
- WHEREAS: On October 19, 2022, the Board of the Buffalo Sewer Authority authorized a \$482,585.83 Change Order No. 1 to this contract for costs associated with easement delays and inflationary forces, Carroll Street sewer interconnection, and flowmeter redesign; and
- WHEREAS: The Principal Sanitary Engineer and staff and GHD have reviewed Change Order No. 2 to Contract No. 82000042 as detailed above and recommend approval.

## CONTRACT SUPPLEMENT CONDITIONS:

- 1. The contract completion date established in the original contract or as modified by previous contract supplements is hereby changed by <u>60</u> calendar days to set a new final completion date of May 24, 2024.
- 2. Any additional work to be performed under this contract supplement shall be carried out in compliance with the specifications included in the preceding description of changes involved with the supplemental contract drawings designated <u>none</u> and under the provisions of the original contract, including compliance with applicable equipment specifications, general specifications, and project specifications for the same type of work.
- 3. This contract supplement unless otherwise provided herein does not relieve the Contractor from strict compliance with the guarantee provisions of the original contract, particularly those pertaining to performance and operation of equipment.
- 4. The Contractor expressly agrees that he will place under coverage of his performance and payment bonds and Contractor's Insurance all work covered by this contract supplement. The Contractor will furnish to the Owner evidence of increased coverage of his performance and payment bonds for the accrued value of all contract supplements that exceeds the original contract price by twenty percent (20%).
- 5. The costs established under this contract supplement are acknowledged as including any and all costs associated with the work described herein and including any and all costs associated with any and all work performed or to be performed by the Contractor that may be affected in any manner by the work described herein.

## NOW THEREFORE BE IT RESOLVED:

That the Board of the Buffalo Sewer Authority hereby approves Change Order No. 2 to Contract No. 82000042 as written in the above Agenda Item, increasing the contract cost in the amount of \$438,329.21 making the adjusted contract cost \$5,433,370.04.

| MOTION TO          | O APPROVE     |               |   |  |
|--------------------|---------------|---------------|---|--|
| MADE BY            |               | MR. ROOSEVELT |   |  |
| 2 <sup>ND</sup> BY | MRS. PETRUCCI |               |   |  |
| AYES               | 3             | NOES          | 0 |  |
|                    |               |               |   |  |

Board Meeting of September 28, 2023