City of Omaha
Combined Sewer Overflow
Annual Report
NPDES Permit No. NE0133680
October 1, 2022 through September 30, 2023

CSO!
Clean Solutions for Omaha

Report of Certification:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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."

Signature of Authorized Representative or Cognizant Officer	Date
Michael T. Arends, P.E.	Manager, WRRF Engineering and Remote Facilities
Print Name	Title

Executive Summary

The 2022-2023 CSO Annual Report summarizes information on activities, actions, and measures taken by the City of Omaha (City) and the Combined Sewer Overflow (CSO) Program Management Team (PMT) through the CSO Program to comply with the National Pollutant Discharge Elimination System (NPDES) Permit for the City (No. NE0133680 [hereafter CSO Permit]) issued by the Nebraska Department of Environment and Energy (NDEE)[1] and the Long Term Control Plan (LTCP). In addition, the report meets the requirements of paragraph 29 of (NDEE Case No. 270) Complaint and Compliance Order by Consent (Consent Order) dated October 8, 2007. The City applied for renewal of the CSO Permit in March 2020. In addition, an updated LTCP was submitted to NDEE on March 31, 2021, and approved on August 11, 2021. The items the City is required to report are as follows:

- Nine Minimum Controls (NMC)
- LTCP Documentation
- Compliance Schedule
- CSO Outfall Monitoring
- Instream Monitoring
- Other Information

Other information includes measures of success and other requested information that demonstrates the effective management of the wastewater collection and treatment systems in the combined sewer system (CSS) area.

A. Nine Minimum Controls

The CSO Permit defines NMC as "…operations and procedures that will reduce CSO and their effects in receiving water quality that do not require significant engineering studies or major construction and are consistent with the complete LTCP." The City continues to implement the NMC Plan[2] with the goal of reducing CSOs and improving water quality. Following is a brief review of each NMC and advancements or modifications completed by the City during the reporting year:

1. **Proper Operation and Maintenance (O&M):** The Sewer System O&M Manual (SSOMM) for the Sewer Maintenance Division (Brown and Caldwell 2006) is reviewed semiannually and has many parts. The current cover sheet of the O&M Manual is included in Attachment 1 and reflects the most current revision date of November 4, 2022.

   Sewer Maintenance Division continues to implement data collection and asset management procedural improvements targeted at reducing CSOs, sanitary sewer overflows, and impacts to public safety and the environment.
2. **Maximizing the Use of the Collection System for Storage:** As required, the City shall continue to implement the programs to maximize the use of the collection system for storage. CSO Program element updates include the following:

[1] Formerly the Nebraska Department of Environmental Quality

[2] NMC Plan is defined in Section II, Nine Minimum Controls, and consists of a series of submittals to the NDEE.

- Inspection of the collection system and removal of obstructions – Continued programs. Values provided in Table ES-1 are for the City's 2022 fiscal (calendar) year, related to the total collection system.

Table ES-1.2022 Fiscal Year Total Collection System Performance Measures

Complaints Handled (Corrective Inspections)	2,350 each (complaints backup, complaints other)
Corrective Repairs	699 each (inlets, manholes, and pipe repairs)
Sewer Line Cleaning	2,868,810 linear feet (preventative and reactive)
Sewer Line Televised	712,263 linear feet (in-house and contracted CCTV)
Inlets/Storm Structures Cleaned	790 tasks performed (MS4 and CSS inlets, outlets, BMPs)
Structures Evaluated (condition assessed)	8,125 each (manholes, siphon structures, diversions, CSOs)
Pipelines Evaluated (condition assessed)	1,496,054 feet (PACP reviewed in jurisdiction, SL-RAT tested)

BMPs = best management practices
PACP = Pipeline Assessment Certification Program
SL-RAT = Sewer Line Rapid Assessment Tool

- Maintenance, repair, and replacement of tide (river) and control gates – Continued program with documentation into the CMMS. No concerning issues reported.
- Installation and adjustment of regulators – Continued commitment of reviewing on a case-by-case basis until a systemwide approach is implemented under LTCP.
- Reduction and retardation of inflows and infiltration – Continued programs, including repairing pipes and manholes, enforcing city code for illicit connections, and service lateral defects.
- Real-time monitoring – As new facilities are constructed, permanent meters are installed and connected to the SCADA system for real-time monitoring at the Water Resource Recovery Facilities. In this reporting year, the Grover Street (CSO 114) permanent meter was installed and put in service. The Riverview (CSO 115) permanent meter was installed and connected to the communication network. The Saddle Creek RTB (CSO 205) facility includes several Papio interceptor level sensors, influent sewer level sensors, and influent and effluent flow meters which will be fully in service in the last quarter of 2023. The City continues to work on upgrades to its radio network. The City also maintains a network of permanent flow meters throughout the collection system, which has telemetry equipment and data can be observed via a website, as needed.

3. **Review and Modification of Pretreatment Programs:** There were no new significant industries that discharged into the combined sewer system during the year.

4. **Maximization of Flow to the Publicly Owned Treatment Works for Treatment:** This NMC has been addressed through the development of the LTCP and its updates. Section III.G of this report provides updates on this requirement.

5. **Prohibition of CSOs during Dry Weather:** As required, the City shall document overflows that occur during dry weather and respective corrective actions. These are listed as follows:

   - The City adhered to the immediate reporting policies for all discovered dry-weather overflows.

- There was one dry-weather overflow basement backup because of a water main break and did not reach waters of the State.
- There were three overflows that were contained and did not reach waters of the state; 2 were caused by debris, and one was caused by roots that collapsed the pipe.
- There were 9 dry-weather overflows that reached waters of the State, 7 directly through a permitted CSO discharge point and 2 by a waterway or nearby separate storm sewer. Causes included debris, mechanical malfunctions, a line defect and water main breaks. A long-term corrective action is assigned appropriately, unless deemed unavoidable.

6. **Control of Solid and Floatable Materials in CSOs:** Based on previous evaluations, the CSO points are not conducive to the implementation of additional floatable controls without significant modification. As part of the LTCP projects, additional floatable controls may be incorporated.

7. **Pollution Prevention:** As required, the City shall document any new pollution prevention methods here. Methods are as follows:

   - The management of this item is shared between several divisions in Public Works and other work groups within the City: Sewer Maintenance, EQCD, Capital Construction & Street Maintenance, Parking and Mobility, and Parks, Recreation, and Public Property Department.
   - The municipal separate storm sewer system (MS4) Annual Report (City of Omaha 2022) includes pollution prevention effort details, including inlet cleaning and grit removal.
   - Efforts continue with Papillion Creek Watershed Partnership and the nonprofit organization Keep Omaha Beautiful for stormwater pollution prevention and outreach.

8. **Public Notification:** As required, the City shall document any revisions or updates to public notification procedures and provide any public announcement in the Annual Report. This requirement is listed as follows:

   - The Sewer Maintenance Division inspects signs at the CSO outfalls twice per year for visibility and condition and replaces them as needed.
   - No public notifications in the form of media releases were issued during the reporting year.

9. **Monitoring to Characterize CSO Impacts and the Efficacy of CSO Controls:** As required, the City shall document any new CSOs discovered during routine inspections, and reports on other impacts of CSOs during the reporting year. The following was found:

   - There were no known beach closings or fish kills during the reporting year.
   - Routine inspection of CSO diversions and outfalls continued. No new CSO locations were discovered.

B. LTCP Documentation

Part V of the CSO NPDES Permit requires the City to document and submit reports showing compliance with the conditions and requirements of this section. A list of the required reporting elements under LTCP Documentation and a brief description of any items of significance for each element are included.

1. **Characterization and Modeling of the CSO System.** As required, the City shall continue to characterize, monitor, and model the CSS, listed as follows:

    - This year, modeling efforts were focused on updating the model with new project data and validating model results by comparing against recent flow monitoring data and calibrating, as needed.
    - Other characterization efforts of the CSS include water-quality monitoring of select outfalls (CSO 102 currently, with new monitoring constructed at the Saddle Creek RTB outfall), gathering of field data in project areas, and overflow occurrence monitoring at CSO points through the visual inspection of movement of a tethered device (this is referred to as the CSO Block program and discussed in Section III.A, Characterization and Modeling of the CSO System).
    - For the reporting year, there were 58 permanent flow monitoring sites, 25 temporary flow monitoring sites, and 14 CSO surveillance locations to support a variety of efforts. Additionally, the City gathered precipitation data using 12 permanent City-managed rain gauges and several U.S. Geological Survey (USGS) rain gauge sites.

2. **Public Participation Plan.** As required, the City continues to implement a public participation process and documents activities in the Annual Report. During the reporting year, the CSO! Program facilitated engagement with neighborhoods and the general public in-person and virtually. In addition to conveying timely and accurate project information, this resulted in continually building upon strong relationships and advancement toward community acceptance of the LTCP.

3. **Consideration of Sensitive Areas.** The City is not aware of any new sensitive areas during this reporting period.

4. **Evaluation of Alternatives.** In 2022-2023, the City and PMT evaluated the implementation of real time controls (RTCs) for Stormwater.

    The facilities evaluated included:

    - Fontenelle Park Lagoon – RTC evaluations were conducted, and further CSO benefit is limited. No RTCs are currently proposed or being implemented. There is potential for further evaluation of RTCs as part of a watershed-wide operational strategy.

    - Adams Park Detention Facility - RTC evaluations were conducted, and further CSO benefit is limited. No RTCs are currently proposed or being implemented. There is potential for further evaluation of RTCs as part of a watershed-wide operational strategy.

    - 20th and Pierce Underground Facility – RTCs were installed and are being operated. The City is currently pursuing an action item of incorporating the facility data into its SCADA system. A project is ongoing to assess the operation during storm events and modify controls as needed to optimize operations.

    - Vinton Underground Stormwater Facility – The facility was designed to incorporate RTCs. The action item for fulfilling the LTCP commitment is for the City to obtain and install a control valve and related infrastructure for active control of the facility to promote capture of CSO through infiltration and detention of stormwater.

- Hanscom West Green Infrastructure – Further evaluations are required to determine benefits and risks for pre-storm drawdown of Hanscom Park Lagoon. RTC infrastructure is not currently installed, but the passive drainage system is functional without any further investment required.

Additionally, in 2023, the City and PMT evaluated the CSO 110 – Pierce Street and CSO 111 – Hickory Street sewer separation projects. Through review of the work plan, it was decided that further evaluation is not necessary and that the Hickory and Pierce Sewer Separation Projects may no longer be needed. It is believed that the 6th & Leavenworth Grit Facility Improvements (OPW 53597), in combination with the Flood Mitigation sewer constructed in 2020 (OPW 52783), will address a significant portion of the remaining grit issues. The Pierce Street and Hickory Street sewer separation projects will be reconsidered after evaluation of the efficacy of the modifications at the 6th and Leavenworth Grit Facility are complete.

5. **Cost and Performance Considerations**. The City's current rate ordinance sets sewer use fees through 2028 and is based on a detailed rate model. As part of the development of the 2024 – 2028 rates, the City retained the services of a rate consultant to conduct a Wastewater Cost of Services (COS) Study. The study began in early 2021 and was completed in 2022. Based on the outcome of the study, City staff determined the appropriate stakeholder engagement and information required for the development of the rate structure to be approved by City Council. The work completed consisted of three parts:

   - Determine the revenue requirements to cover all costs associated with the collection and treatment of wastewater, including operations and maintenance of the system and required capital improvements.
   - Conduct a cost-of-service study that identifies the different drivers of the costs and allocates these costs back in an equitable manner to the different customers served.
   - Review the City's existing rate structure and make necessary changes to provide for the required overall funding and fair distribution of costs to the different customers served.

   The new rate ordinance was approved by the City Council in December of 2022. The new rates are effective 2024-2028. The rate increases range from 1.39% for Omaha residents, 3.42% for commercial and industrial customers and 4.36% for those residents living outside of the City.

6. **Operational Plan.** As required, the City reports updates to the Wet Weather Operational Plan. The 2021 Wet Weather Operational Plan reflects the current operations of the Missouri River Water Resource Recovery Facility (MRWRRF) along with the modifications to the Burt-Izard Lift Station Improvements pumping capacity. The City is reviewing the Wet Weather Operational Plan to include the Saddle Creek RTB, Riverview Lift Station Replacement Project, and the Monroe Street Lift Station Improvements projects. These projects are all anticipated to be in operation during the next reporting year. Modifications and updates to the 2021 Wet Weather Operational Plan will be submitted to the NDEE and noted in subsequent Annual Reports.

7. **Maximizing Treatment at the Existing Publicly Owned Treatment Facilities.** No evaluations were performed and no new approaches have been identified since the last Annual Report because the City is still in the process of implementation of projects in the LTCP that will maximize treatment of wet weather at the MRWRRF.

8. **Implementation Schedule.** As required, the City has included progress reports on implementation of the CSO projects included in Attachment 2.

9. **Post-construction Monitoring Program.** As required by the CSO Permit, instream monitoring data are provided in Section VI, Instream Monitoring Data, and Attachment 4.

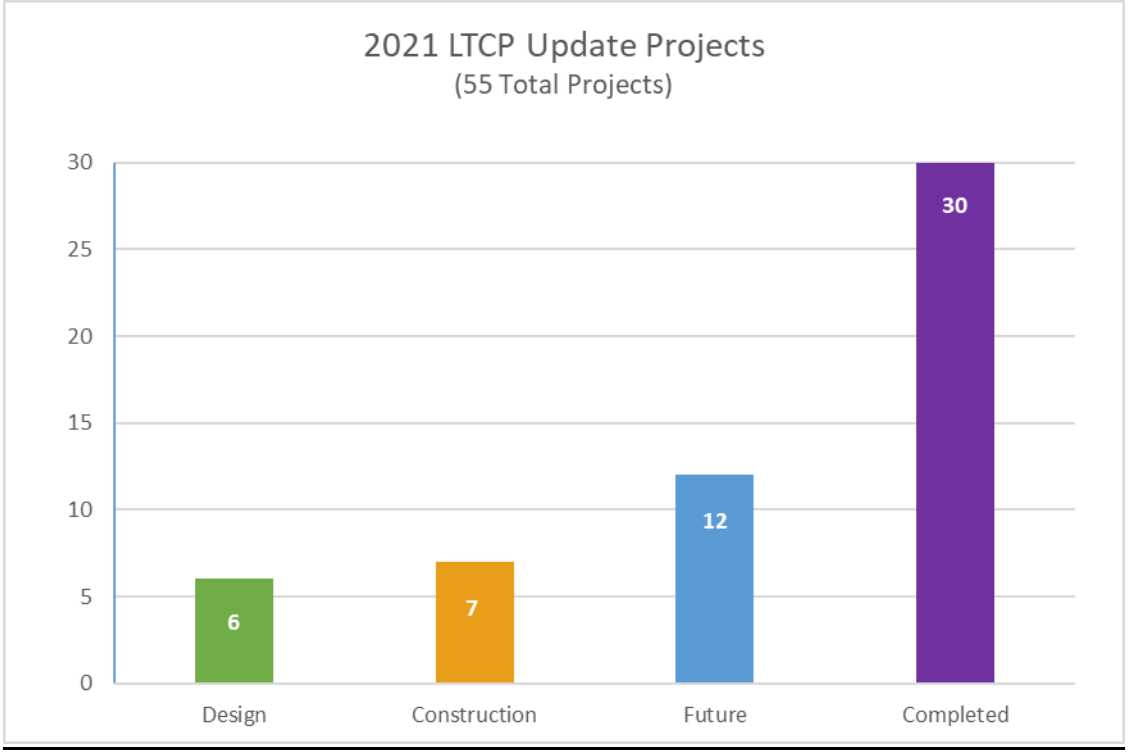
C. Compliance Schedule

As required, a summary of construction activities, actions, and other measures completed according to the Compliance Schedule for Implementation of CSO Control Projects set forth in Part V of the permit are included in this Annual Report. The 2021 LTCP Update provided, as needed, revised schedules for projects. While a new CSO Permit has not yet been issued that reflects the latest 2021 LTCP Update and the revised schedules, this section has been drafted to reflect the compliance status with the new schedule as follows:

- Annual Project Progress Reports (APPRs) are provided in Attachment 2 for projects with reportable activity.

Figure ES-1 shows the overall status of projects in the 2021 LTCP Update

Figure ES-1. 2021 LTCP Update Projects



As noted in Figure ES-1, there are 13 projects that are active or in design. Of these, seven are on schedule to meet the LTCP Milestone, three are likely to miss the LTCP Milestone, and three are system reliability projects that do not have an LTCP milestone. For the three active or in design projects that will not meet the milestone, (Forest Lawn Creek Inflow Removal and Outfall Storm Sewer, East Cole Creek Interceptor, and CSO 119 South Barrel Conversion and Sewer Separation), the City has requested modifications to the milestone dates, and the new dates

have been included in the draft permit. Although PCN 210 Sewer Separation did not meet the LTCP Milestone date, it was completed prior to the end of the 2022-2023 CSO Annual Reporting year and Figure ES-1 includes this as a completed project.

D. CSO Outfall Monitoring

As required, a summary of monitoring data from CSO Outfall 102 is included in this Annual Report. The Interim Requirements for CSO Outfall 102, as defined in Table 3, Part II of the CSO Permit, are in effect for this permit year. There were 26 total overflow events at CSO 102 from October 1, 2022, through September 30, 2023, with 13 of them occurring during the recreation season of May 1 to September 30. An event at CSO 102 is considered the total time between the start and stop of flows on consecutive days. Therefore, event parameters are reported as averages or totals over the days that event took place. Results from these events are reported on quarterly discharge monitoring reports (DMRs) submitted to NDEE. Table 5-1 summarizes the data for CSO 102. *E. coli* values slightly increased from the previous reporting year. The amount of flow treated through CSO 102 has decreased by over half and the duration has decreased by half of what it was in the Annual Report for 2021 to 2022. The lower flows and duration of overflows is a function of drought conditions and smaller storms which resulted in an increase in full capture, non-discharge events.

There was no discharge from the Saddle Creek Retention Treatment Basin during the Annual Report Year.

E. Instream Monitoring

- As required, a summary of instream monitoring data consistent with the Implementation Monitoring Plan objectives is included. The City and USGS monitoring locations are listed in Section VI, Instream Monitoring Data, and shown on Figure 6-1. The City's data are summarized in Table 6-2, and USGS data are summarized in Table 6-3 in Section VI, Instream Monitoring Data.
- The City decided to end the USGS monitoring since there are no changes in CSO Controls in the near future. The Post-Construction Monitoring Plan (PCMP) was modified to reflect this change and was approved by the NDEE in a letter dated May 19, 2023. In the period that the City has been monitoring, there were some significant CSO controls implemented in the Missouri River Watershed. This has included both sewer separation projects and implementation of major controls. Of note was the addition of treatment and disinfection of the CSO 102 bypass in 2019. The next major reduction in untreated flow to the Missouri River will not occur until the Northeast Omaha High Rate Treatment Basin starts treatment in 2034. Therefore, additional significant changes in Missouri River water quality are not anticipated for over 10 years.

F. Performance Report

As required, a performance report is included in this submittal to demonstrate that each CSO overflow occurrence was the result of wet weather, and to report the number of CSO discharges and whether controls are achieving design intent, as follows:

- The City continued its program to maintain cameras and level sensors to monitor the occurrence of CSO overflows at 11 locations (Table 7-2). The purpose of the technology

is to assist the City in verifying overflow events, verifying maintenance needs, and evaluating staffing efficiencies. The rainfall during the report year was 23.03 inches. When compared against the average annual rainfall of 31 inches, this was a below average rainfall year.

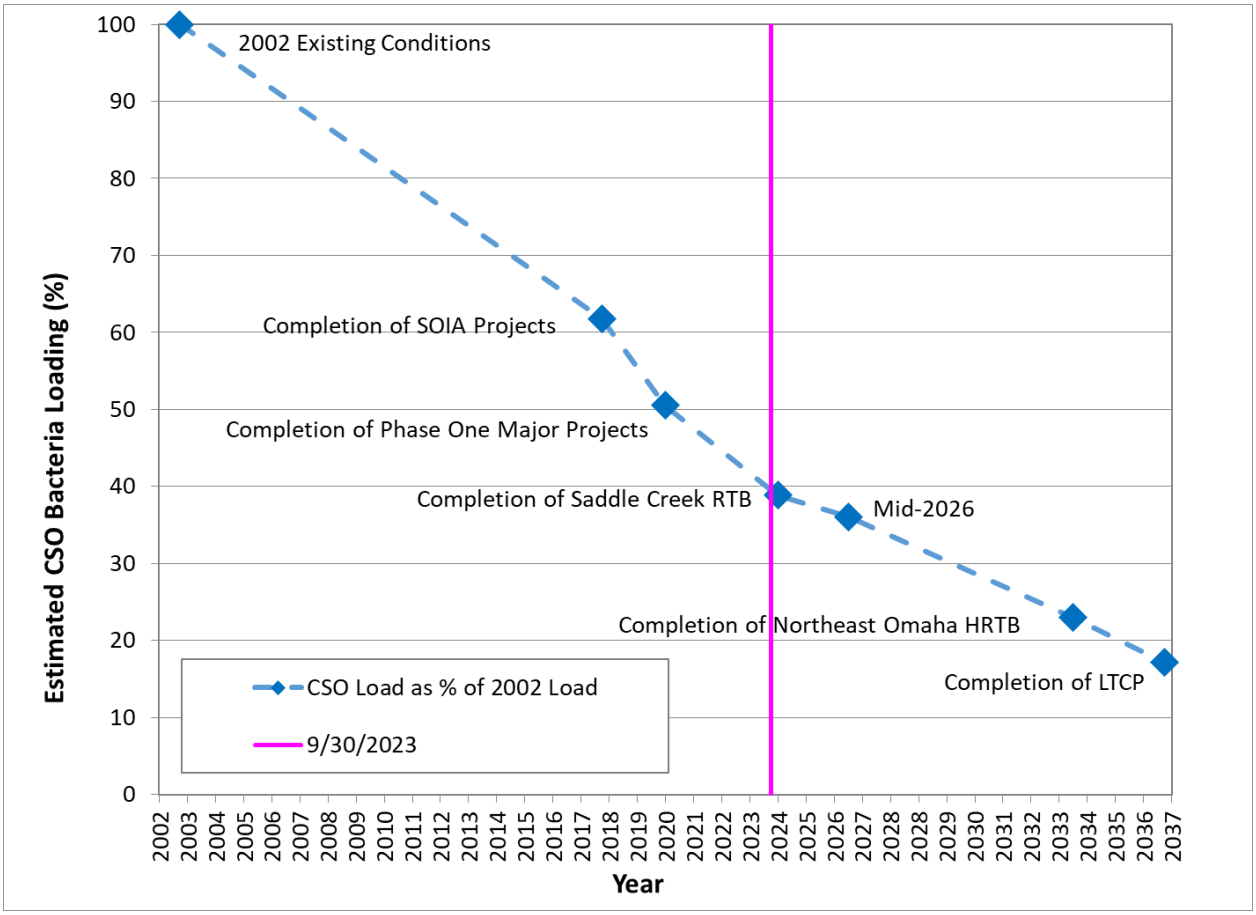
G. Other Information

The CSO Permit, Part 6F, requires an "Other Information" section of the Annual Report. Information in this section highlights factors relevant to the CSO Program not reported elsewhere. Following is a list and brief description for each item discussed in this year's report:

- Reduction in the Number of Overflow Events and CSO Outfalls: During this reporting year, CSO 208 had no overflow events. CSO 103 had 1 event due to a localized extreme rain event in the basin on 8/2/2023. As part of the City's ongoing asset management of existing facilities, it is anticipated that the Bridge Street Lift Station will be replaced within the next 5-10 years outside of the CSO Program. At that time, it is anticipated the CSO 103 diversion will be closed.
- CSO 203 occurrences are significantly reduced following a separation project, however, storm water is possibly back flowing to the diversion structure and is being investigated. CSO 203 diversion will be monitored for a few years to evaluate the extent of influence from inflow and infiltration (I&I) flows in the separated system and whether the CSO diversion can be permanently closed. CSO 210 has been separated and the sanitary flow will be monitored for a few years to evaluate whether the diversion can be closed without adverse impacts.
- Receiving Water Quality: Previously, significant reduction in *E. coli* load to the Missouri River occurred with the completion of the MRWRRF Improvements project and the chlorine contact basin at CSO 102. Figure ES-2 indicates an estimate of the reduction of *E. coli* loading from CSOs over time as a result of LTCP implementation.
- Material Management: Several projects commenced or continued construction in 2023 associated with the CSO Program. During the 2022 to 2023 reporting year, 554 tons of non-hazardous, contaminated waste material associated with the Blake Street Lift Station Project was transported to Pheasant Point landfill for disposal. Similarly, 122.32 tons of non-hazardous, contaminated waste material associated with the OPW 53753, Nicholas 3B Project was transported to Pheasant Point landfill for disposal. The City monitors and tracks contaminated waste materials and soils and uses this report to update the NDEE Waste Management Division.

CSO Program Transition: The City and Program Management Team made significant changes to the overall administration of the CSO Program this reporting year with the transition to management entirely by City of Omaha personnel in September 2023. This process included several workshops and meetings to transfer roles and responsibilities for administration, regulatory review, construction oversight, permitting compliance, budget and cost control, modeling, and LTCP Implementation tracking to City management. The transition process included finalization of protocols and program management documentation for the City's ongoing use. Consultant assistance will continue to be provided for project design and construction under City of Omaha oversight. Additionally, the City has begun the process to utilize eBuilder software for project management and will archive existing historical CSO Program Management files and working documents in the City's archiving software.

Figure ES-2. Modeled E. coli Reduction over LTCP Implementation



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Figures

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Acronyms and Abbreviations

°C	degree(s) Celsius
<	less than
<=	less than or equal to
%	percent
ASCE	American Society of Civil Engineers
APPR	Annual Project Progress Report
BOD	biochemical oxygen demand
BOD_5	5-day biochemical oxygen demand
BP	Big Papillion Creek
CC	Cole Creek
CCTV	closed-circuit television
cfs	cubic foot/feet per second
cfu	colony forming unit(s)
CIP	capital improvements plan
City	City of Omaha
CMMS	computerized maintenance management system
COS	cost of service
CSO	combined sewer overflow
CSO!	Clean Solutions for Omaha!
CSS	combined sewer system
DMR	discharge monitoring reports
DO	dissolved oxygen
E	east
EPA	U.S. Environmental Protection Agency
EQCD	City of Omaha Environmental Quality Control Division

Acronyms and Abbreviations

FOG	fats, oils, and grease
GIS	geographic information system
gpm	gallons per minute
ICM	InfoWorks Integrated Catchment Model software
ID	identification
I&I	inflow and infiltration
IMP	Implementation Monitoring Plan
LP	Little Papillion Creek
LTCP	Long Term Control Plan
LTCP Update	Long Term Control Plan Update
max	maximum
MG	million gallon(s)
mg/L	milligram(s) per liter
MGD	million gallon(s) per day
min	minimum
mL	milliliter(s)
mMHO/cm	millimho(s) per centimeter
MPN/100mL	most probable number per 100 milliliters
MRWRRF	Missouri River Water Resource Recovery Facility
MS4	municipal separate storm sewer system
N	north
N/A	not applicable
NDEE	Nebraska Department of Environment and Energy, formerly the Nebraska Department of Environmental Quality (NDEQ)
NLL	Next Level Learning
NMC	Nine Minimum Controls
NOAA	National Oceanic and Atmospheric Administration

Acronyms and Abbreviations

NPDES	National Pollutant Discharge Elimination System
NPP	Nebraska Pretreatment Program
NWEA	Nebraska Water Environment Association
O&M	operation and maintenance
OPW	Omaha Public Works
PACP	Pipeline Assessment Certification Program
PCMP	Post-Construction Management Plan
PCWRRF	Papillion Creek Water Resource Recovery Facility
PMT	Program Management Team
RTB	retention treatment basin
RTC	real-time control
S	south
SCADA	supervisory control and data acquisition
SCRTB	Saddle Creek Retention Treatment Basin
SIFM	South Interceptor Force Main
SL-RAT	Sewer Line Rapid Assessment Tool
SOIA	South Omaha Industrial Area
SP	South Papillion Creek
SSES	sanitary sewer evaluation survey
SSO	sanitary sewer overflow
SSOMM	Sewer System Operation and Maintenance Manual
TKN	total Kjeldahl nitrogen
TRC	total residual chlorine
TSS	total suspended solids
USGS	U.S. Geological Survey
WOER	Wastewater Overflow Emergency Response
WP	West Papillion Creek

WRRF	Water Resource Recovery Facility
WWOP	Wet Weather Operations Plan

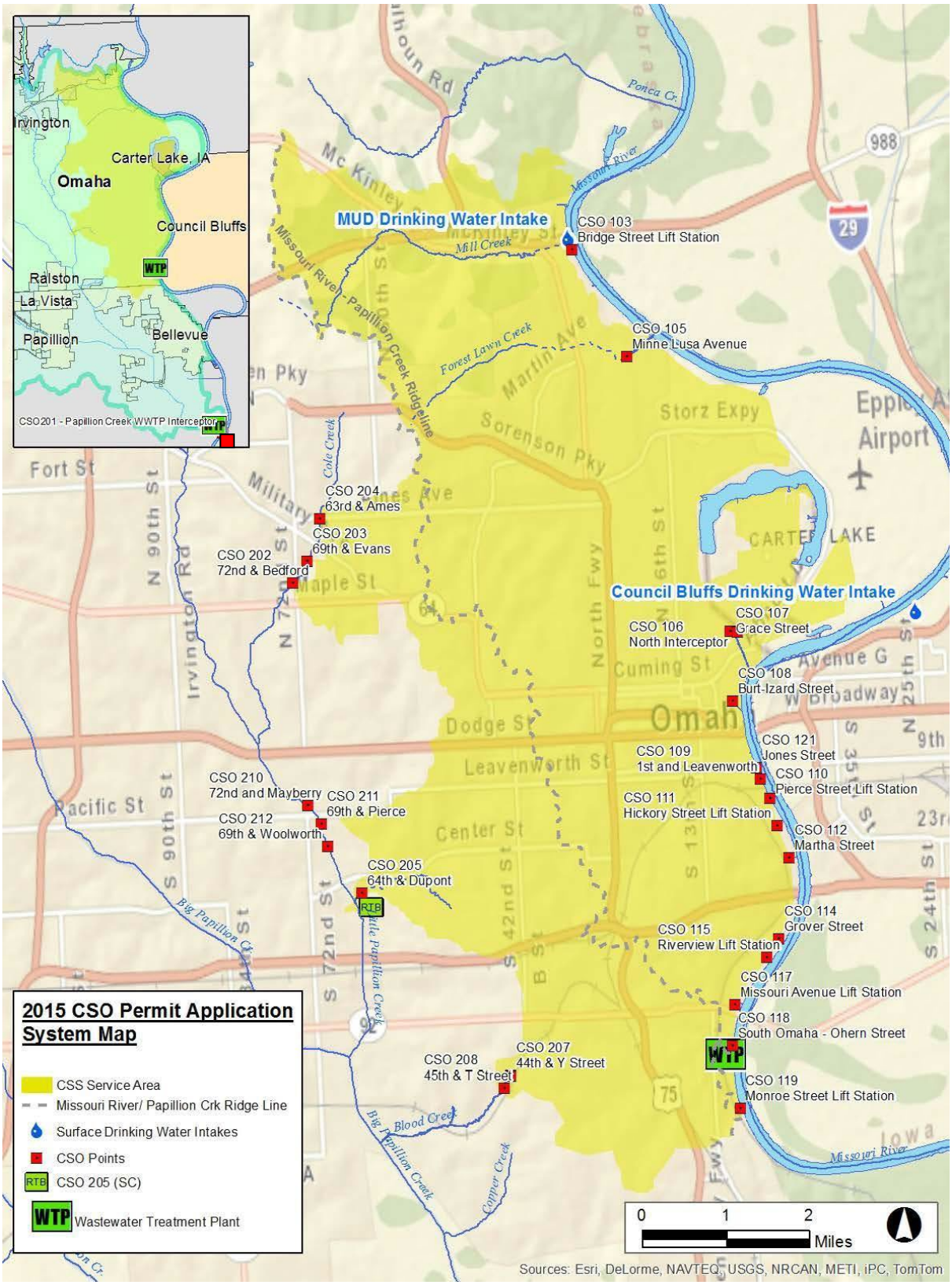
I. Introduction

A National Pollutant Discharge Elimination System (NPDES) Permit for City of Omaha (City) Combined Sewer Overflows (CSO) (No. NE0133680) issued by the Nebraska Department of Environment and Energy (NDEE) was reissued in 2015 and was effective from October 1, 2015, thru September 30, 2020. The 2015 permit has been administratively extended as of October 1, 2020 until a new permit is issued. In addition, the City submitted a Long Term Control Plan Update (LTCP Update) on March 31, 2021, which was approved by NDEE on August 11, 2021.

This Annual Report is for the period of October 1, 2022, through September 30, 2023, referred to as the reporting year, and is submitted in accordance with the CSO Permit and Consent Order. The report meets the requirements of the permit, which is to submit a report within 90 days following each yearly (October 1 through September 30) anniversary and the requirements of paragraph 29 of (NDEE Case No. 270) Complaint and Compliance Order by Consent (Consent Order) dated October 8, 2007. Throughout the report, the permit will be referred to as the CSO Permit. The data reported in this Annual Report reflects the activities associated with the Combined Sewer System (CSS) service area in the 2015 permit application as shown on Figure 1-1. The service area shown in other figures is taken from the 2021 LTCP Update and the 2021 CSO Permit application.

Information provided in this Annual Report reflects the 2021 LTCP Update schedule rather than that included in the 2015 CSO Permit.

Figure 1-1 Service Area for the Annual Report per the 2015 Permit Application



The CSO Permit contains the following language:

> *This permit specifically authorizes wet weather discharges from the City of Omaha's combined sewer system (CSS) through CSO outfalls according to the requirements, conditions, and limitations set forth in the permit. CSO outfalls are defined as designated overflow points in the combined sewer system (CSS) designed for the purpose of allowing the discharge of wet weather flows to receiving waters prior to receiving complete treatment in the City's Wastewater Treatment Plants.*

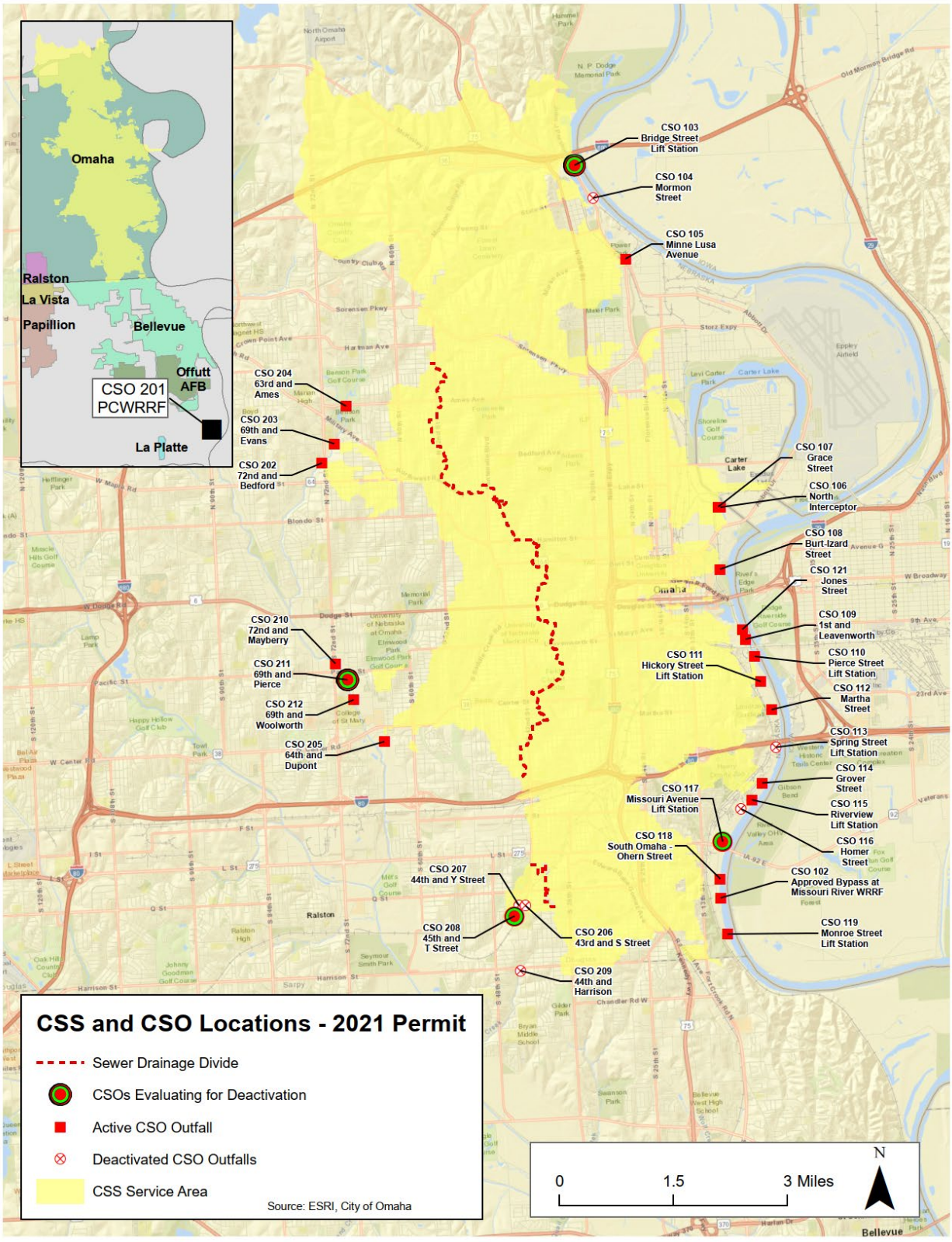
Under the CSO Permit Application, submitted in March 2020 and amended in March 2021, the City had 26 active permitted CSO outfalls; 16 of these were associated with the Missouri River Water Resource Recovery Facility (MRWRRF) collection system; the other 10 were associated with the Papillion Creek Water Resource Recovery Facility (PCWRRF) collection system. This application included the reduction of one CSO, formerly 207, which discharged at 44th and T Street. Figure 1-2 reflects the permitted CSOs as provided in the March 2021 CSO Permit Application amendment. CSO 102 at the MRWRRF undergoes treatment prior to discharge.[3] Since the submission of the CSO Permit Application in 2021, the City has closed an additional CSO point. On January 5, 2022, the City requested that CSO 117 be removed from the permit. This brings the number of CSOs to 24 and reduces the number of CSOs into the Missouri River to 15 and 9 CSOs discharging into the Papillion Creek.

This Annual Report includes actions, activities, and measures taken by the City with regard to the Nine Minimum Controls (NMC), the LTCP implementation and its compliance schedule, CSO outfall monitoring, in-stream monitoring, and the Performance Report for CSO controls and if controls are achieving their intent. The last section is reserved for other information on the CSO Program implementation not covered elsewhere in the report.

The City's Public Works Department, Environmental Services oversees the administration of the CSO Permit and ensures that the City complies with the permit requirements. The information provided in this report is a result of the cooperation among the Sewer Maintenance Division, Environmental Quality Control Division (EQCD), PCWRRF, MRWRRF, consultant engineers, and the Public Works Department and Program Management Team (PMT).

[3] The MRWRRF manages a wet weather bypass that is referred to as "CSO Outfall 102," that, under approved conditions, discharges combined wastewater that has received primary but not secondary treatment, followed by disinfection and dechlorination. Disinfection is provided during the recreation season, May 1 to September 30.

Figure 1-2. CSO Outfall Locations as of March 2021



II. Nine Minimum Controls

Permit Requirements
Part IV. Nine Minimum Controls (NMC) states: The City of Omaha shall submit documentation in the Annual Report (Part VIII) according to the conditions and requirements specified below. The NMCs are operations and procedures that will reduce combined sewer overflows and their effects on receiving water quality that do not require significant engineering studies or major construction and are consistent with the Long Term Control Plan. Reports, documentation, dry weather overflow events, and evaluations as required for each of the Nine Minimum Controls in Part IV of this permit.

In the 2002 to 2007 timeframe, the City and the state regulatory agency worked toward implementing NMCs per U.S. Environmental Protection Agency's (EPA) Guidance Document 832-B-95-003, *Combined Sewer Overflows - Guidance for Nine Minimum Controls* (1995), which states the following:

- "Minimum Controls are not temporary measures; they should be part of long-term efforts to control CSOs."

On October 1, 2002, the NDEE issued a CSO Permit to the City that contained the required submittals and reporting requirements that demonstrated the development and initial implementation of the NMCs. Summaries of the NMC objectives and required submittals are on record in the City's 2007 Combined Sewer Overflow Permit Annual Report NPDES Permit No. NE0133680. The collection of submittals and reports are on file at the Sewer Maintenance Division and referred to in this report as the "NMC Plan."

On October 1, 2007, the NDEE issued a CSO Permit to the City. Subsequent CSO Program-related permits were issued in 2010 and 2015 (as amended November 1, 2019, to include the NMC Element descriptions), which include the documentation and reporting requirements to assure the NMCs are met in accordance with the following:

- The initial NMC submittals that were a part of what EPA refers to as the Phase I Permit,[4] as documented in the 2007 CSO Annual Report; and modifications/updates to those initial submittals along with subsequent CSO Annual Reports
- EPA NMC Guidance
- EPA CSO Control Policy (April 19, 1994, at 59 Fed. Reg. 18688)

The City applied for a new CSO Permit during the 2020 reporting year, which is anticipated to be issued by NDEE after the current reporting year. The City has continued to implement the

[4] According to EPA Combined Sewer Overflows Guidance for Permit Writers, the Phase I permit requires the permittee to immediately implement the NMC and to document implementation of the NMC and develop the LTCP. The Phase I permit should also require the permittee to gather data to establish the baseline conditions against which CSO controls will be measured.

NMCs in accordance with the submittals on record with the NDEE and in accordance with EPA guidance and policy. Additional information for each of the NMC follows.

A. Proper Operation and Maintenance

Permit Requirement
Part IV. A: Proper operation and maintenance of the CSS and CSO outfalls consists of a program to ensure that O & M procedures are periodically reviewed, updated, and documented. A major emphasis of O & M activities shall be on the elimination of dry weather overflows. The City of Omaha shall include revisions and additions to the City of Omaha O & M procedures in the Annual Report submitted to the Department.

The City continues to periodically review and document operation and maintenance (O&M) procedures for the CSS. The Sewer System Operation and Maintenance Manual (SSOMM) (original publication by Brown and Caldwell 2006) is reviewed semi-annually or more frequently as needed and filed at the Sewer Maintenance Division. Attachment 1 of this Annual Report contains the most recent revision cover sheet of the SSOMM, revision date November 4, 2022.

B. Maximize Use of the Collection System for Storage

Permit Requirement
Part IV.B.: The City shall continue to implement their program to maximize the use of the collection system for storage. The City of Omaha shall, as appropriate, review the CSS to identify any locations where minor modifications can be made to increase in-system storage. These modifications shall be implemented as soon as practicably possible and documented in the Annual Report submitted to NDEE.

The City continues to implement NMC efforts as follows:

- Inspection of the collection system and removal of obstructions
- Maintenance, repair, and replacement of tide and control gates
- Installation and adjustment of regulators
- Reduction/retardation of inflows and infiltration
- Upgrade/adjustment of pumps
- Real time monitoring

The following demonstrates continued implementation of this NMC:

Inspection of the collection system and removal of obstructions – The Sewer Maintenance Division is the primary organization charged with the inspection and maintenance of the collection system. According to the NMC plan, this organization performs corrective repairs, corrective maintenance, preventive maintenance, inlet cleaning, televising, and CSO inspection. The values provided in Table 2-1 are for the City's 2022 fiscal (calendar) year, related to the

total collection system, and are performance measures accounted annually for the City's Finance Department. Inlet cleaning is not among this required metric, however, included here:

Table 2-1. 2022 Fiscal Year Total Collection System Performance Measures

Complaints Handled (Corrective Inspections)	2,350 each (complaints backup, complaints other)
Corrective Repairs	699 each (inlets, manholes, and pipe repairs)
Sewer Line Cleaning	2,868,810 linear feet (preventative and reactive)
Sewer Line Televised	712,263 linear feet (in-house and contracted CCTV)
Inlets/Storm Structures Cleaned	790 tasks performed (MS4 and CSS inlets, outlets, BMPs)
Structures Evaluated (condition assessed)	8,125 each (manholes, siphon structures, diversions, CSOs)
Pipelines Evaluated (condition assessed)	1,496,054 feet (PACP reviewed in jurisdiction, SL-RAT tested)

BMPs = best management practices
PACP = Pipeline Assessment Certification Program
SL-RAT = Sewer Line Rapid Assessment Tool

Maintenance, repair, and replacement of tide (river) and control gates – Gate inspections at key CSO facilities occur once every year, at a minimum, and are repaired or replaced as necessary. The City's Levee and Lift station O&M staff performed flap gate inspections May 1st and May 2nd, 2023, and found no concerning issues. The City continued to use the computerized maintenance management system (CMMS) IBM Maximo v7.6.1 software for the flood protection system, the treatment plants, and the collection system lift stations.

Installation and adjustment of regulators – On the premise that NMCs are "*operations and procedures that will reduce combined sewer overflows and their effects on receiving water quality that do not require significant engineering studies or major construction,"* the City committed to evaluate regulators on a case-by-case basis until a systemwide approach is instituted with the LTCP.

During the current reporting year, the City completed the installation of modifications to the existing facility at 20th and Pierce. The system was originally designed to detain approximately 1.3 million gallons of stormwater in perforated pipes with additional storage space in the surrounding rock layer, as well as allow infiltration to the soil; the remaining stormwater is then released back into the CSS after a storm event has passed. Operational modifications to this facility to maximize stormwater infiltration and detention area were completed to help reduce CSO overflow volumes at CSOs 109 and 121. The City upgraded the facility's operating logic and control systems including SCADA for communications with the MRWRRF and completed collecting data during rainfall events in the spring and summer of 2023 to adjust these systems as needed. A report on the evaluations of the upgrades is currently being compiled. Due to the changes in operating logic, the facility is engaged more often than originally designed, likely reducing CSO volumes and frequencies at CSOs 109 and 121.

Reduction and retardation of inflows and infiltration – The City continues to implement practices to reduce and retard inflows and infiltration, including tracking of wet weather-related system complaints, repairing pipes and manholes, enforcing city code for illicit connections, and service lateral defects.

Upgrade and adjustment of pumps – The Sewer Maintenance Division's Levee and Lift Station Group maintains the lift stations associated with the CSS area collection system.

Personnel are responsible for maintaining facilities as necessary so that the lift stations perform as designed. Work continued on three lift station projects that are being designed and constructed as part of the LTCP. These are discussed in more detail under the System Reliability Projects portion and in the LTCP Documentation section of this report as well as the APPRs in Attachment 2.

Real-time monitoring – The operators at the MRWRRF are responsible for monitoring the supervisory control and data acquisition (SCADA) system 24 hours per day. Most remote stations are on the SCADA system, and the remainder have auto dialers. The system includes gates that are controlled remotely to maximize flows into the MRWRRF. As new facilities are built, permanent meters are installed and connected to the SCADA system for real-time monitoring at the water resource recovery facilities. The City continues to work on upgrades to their radio network. The Saddle Creek Retention Treatment Basin (SCRTB) was added to the radio communication and SCADA system for local control and remote monitoring of the facility and local sewer level sensing and flow metering. Two additional collection system flow metering projects are ongoing which will send interceptor sewer capacity information to the SCRTB and SCADA system.

The Papillion Creek Interceptor flow meter just upstream of the PCWRRF is connected to the PCWRRF's SCADA system and transmits data to the Sewer Maintenance Division via telemetry. The City also maintains a network of permanent flow meters throughout the collection system, which has telemetry equipment and data can be observed via a website, as needed.

C. Review and Modification of Pretreatment Programs

Permit Requirement
Part IV.C.: Minimize the impacts of discharges into the CSS from nondomestic sources. As new significant industrial users are added to the CSS system, the City of Omaha shall determine what impact their dischargers would have on the quality and quantity of CSO discharges during wet weather events. A summary of new significant industrial users and measures taken by the City to address any discharges during wet weather shall be documented in the Annual Report.

The Environmental Quality Control Division (EQCD) is charged with the tracking of significant industrial users. The categorical industries with Nebraska Pretreatment Program (NPP) permitted discharges, either through voluntary agreements or through the NPP permit, are requested by the City, whenever possible, to restrict or prohibit discharges during wet weather events. The categorical industries in this program are listed in Table 2-2. There were no new significant industrial users into the combined sewer system in the Annual Report year.

The information is documented in the City's semiannual reports to the state for the Pretreatment Program.

Table 2-2. Categorical Industries with NPP Permits Addressing Wet Weather Discharges

Name	Address	Facility Located in CSS?
ABS Corp.	7031 N 16th Street	Yes
Eaton Omaha Power Center	3900 Dahlman Avenue	Yes
G&G Mfg.	4432 McKinley Street	Yes
Highland Dairy Foods Company	2901 Cuming Street	Yes
Hormel Foods – (dba Papillion Foods)	10808 S 132nd Street	No
Industrial Plating	1149 Florence Blvd.	Yes
JN-International Medical Corp. (Deactivated 3/13/2023)	2720 N 84th Street	No
Koleys	2951 Harney Street	Yes
LBT, Inc.	11502 "I" Street	No
Lozier Corp.	6316 John J Pershing Drive	Yes
Lozier Corp.	4224 N 22nd Street	Yes
Merck Animal Health	21401 West Center Road	No
OTR Wheel Engineering (Formerly Silverstone Inc.)	2815 Taylor Street	Yes
Radio Engineering Industries, Inc.	6534 "L" Street	No
Skylark Meats LLC	4430 S 110th Street	No
Smithfield Packaged Meats	5015 S 33rd Street	Yes
Syngenta Crop Protection, Inc.	4111 Gibson Road	Yes

D. Maximization of Flow to the Publicly Owned Treatment Works for Treatment

Permit Requirement
Part IV. D.: Maximization of flow to the POTWs involves simple modifications to the CSS and treatment plant to enable as much wet weather flow as possible to reach the treatment plant. The City of Omaha shall, as appropriate, evaluate and implement simple modifications to the CSS and procedures at the treatment plants to maximize flow to the POTWs. Any modifications shall be documented in the Annual Report.

This NMC has been addressed through the development of the LTCP and its updates. Section III.G of this report provides updates on this requirement.

E. Prohibition of CSOs during Dry Weather

Permit Requirement
Part IV.E.: Dry weather overflows from the City of Omaha combined sewer system are prohibited. The City of Omaha shall document all dry weather overflows and the measures taken to correct the cause of the overflow in the Annual Report. Substantial dry weather overflows shall be reported to the NDEE as soon as possible. (See Part IX)

The City continues to work to comply with meeting the control of prohibition of dry-weather overflows. The City exercises procedures for response documentation, and reporting of dry-weather overflows to prevent subsequent events where possible. Table 2-3 includes summaries of the dry-weather overflows discovered during the reporting year that did not reach a water of the State. Table 2-4 lists the locations where discharges did reach waters of the State as defined in the following:

> *Waters of the State means all waters within the jurisdiction of this State including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the State (Title 123, Ch. 1, NDEE).*

Additional information for each event was submitted to NDEE, in accordance with reporting requirements in the CSO Permit. The Wastewater Overflow Emergency Response (WOER) Plan outlines the notification procedure, which includes in general an immediate phone call, an initial paper form/memo, and final letter with root causes and long-term corrective actions. The summary is as follows:

- There was one dry-weather overflow basement backup that was contained and did not reach waters of the State. It resulted from a water main break in the area (Table 2-3).
- There were three overflows that were contained and did not reach waters of the state; 2 were caused by debris, and one caused by roots that collapsed the pipe (Table 2-3).
- There were 9 dry-weather overflows that reached waters of the State, 7 directly through a permitted CSO discharge point and 2 near a grass drainageway leading to the Missouri River. Causes included debris, mechanical malfunctions, a line defect, and water main breaks (Table 2-4).

Water main breaks continue to be one of the leading causes of dry weather overflows and is outside of the city's control. The Protocol continues to include the inspection of sewer systems for mud and debris as part of the goal of reducing maintenance issues and eliminating dry-weather overflows.

Table 2-3. Contained Dry-Weather Overflows

Discovery Date *(Date letter sent to NDEE)*	**Location of Overflow**	**Cause**	**Mitigation Steps**	**Long-term Corrective Action**
10/4/2022	4367 Laurel Ave	Water Main Break	Repaired	Unavoidable (None)
11/21/2022	5107 Bauman Ave	Roots	Vacuumed	Repair/Replace
1/10/2023	4747 S 30th St	Debris	Jet Line	To EQCD for FOG
3/22/2023	3613 S 18th St	Debris	Jet Line	Preventative Maintenance

Table 2-4. Dry-weather Overflows that Reached Waters of the State

Discovery Date *(Date letter sent to NDEE)*	**Location of Overflow**	**Duration**	**Estimated Quantity**	**Cause**	**Mitigation Steps**	**Long-term Corrective Action**
10/7/2022	3910 Gibson Rd -CSO 115	Unknown	Unknown	Water Main Break	Repaired	Unavoidable (None)
11/6/2022	6607 S 17th St - CSO 119	Unknown	10 gpm	Debris	Jet Line	Preventative Maintenance
11/6/2022	105 Dorcas St - CSO 112	Unknown	< 5 gpm	Debris	Repaired	Preventative Maintenance
2/6/2023	367 Pierce St - CSO 110	Unknown	< 5 gpm	Water Main Break	Repaired	Unavoidable (None)
2/8/2023	367 Pierce St - CSO 110	Unknown	< 5 gpm	Debris	Jet Line	Preventative Maintenance
4/9/2023	2950 Sleepy Hollow Lane	Unknown	5 gpm	Mechanical Malfunction	Repaired	Force Main project in development
4/19/2023	599 Marcy St - CSO 109	11 mins	57,000 gallons	Mechanical Malfunction	Repaired	To Engineering
6/20/2023	2600 S 64th St - CSO205	Unknown	120 gpm	Water Main Break	Notified Other Entity	Unavoidable (None)
8/31/2023	2975 Sleepy Hollow Ln	Unknown	< 5 gpm	Line Defect	Repaired	Force Main project in development

gpm = gallon(s) per minute

F. Control of Solid and Floatable Materials in CSOs

Permit Requirement
Part IV.F states: The control of solid and floatable materials in CSOs is intended to reduce visible floatables and solids using relatively simple measures. The City of Omaha shall, as appropriate, reassess and implement site-specific processes to control solids and floatables in CSOs using relatively simple measures. If reassessment is appropriate, the conclusions and implementation of control measures shall be documented in the Annual Report.

Based on previous evaluations, the CSO points are not conducive to the implementation of additional floatables controls without significant modification. As part of the LTCP projects additional floatables controls may be incorporated. The following are updates to existing controls:

- The floatables screen in the Grace Street ditch CSO channel, downstream of CSO 106 North Interceptor and CSO 107 Grace Street (near the access road off North 6th Street from Abbott Drive), was damaged by the March 2019 Missouri River flooding. Construction began on OPW 53755 in June of 2023 and it is estimated to take one year to complete with an anticipated completion in June 2024.
- The City also continued work constructing improvements to the 6th and Leavenworth Grit Facility. The purpose of this project is to rehabilitate this existing grit facility as part of the Flood Mitigation Sewer system that conveys flow to the 4th and Leavenworth lift station. This is not a CSO Program project, however improved functionality of this facility allows more wet weather flow to reach the Leavenworth Lift Station through the dry weather flow pipe and with less solids content. Construction notice to proceed was issued March 29, 2023. Construction progress is ongoing with anticipated completion in November 2024.
- Grit removal facilities in the collection system continued to be maintained by Sewer Maintenance Division staff (either the Levee and Lift Station Group or O&M Group). As new stormwater facilities are built, grit and floatables controls are incorporated into these designs. These stormwater facilities are either part of the separate stormwater system (municipal separate storm sewer system [MS4]) or are part of the CSS as the stormwater recombines downstream.

G. Pollution Prevention

Permit Requirement
Part IV. G: Pollution prevention is intended to keep contaminants from entering the CSS and accordingly the receiving waters by way of the CSOs. The City of Omaha shall document any new pollution prevention measures enacted by the City in the Annual Report.

Pollution prevention efforts are shared between several divisions and workgroups within the City. Sewer Maintenance Division performs inlet cleaning, stormwater structure maintenance,

and system grit removal. EQCD manages solid waste collection, recycling, and the Stormwater Program, which includes inspection, contracted maintenance, education, and outreach. Capital Construction and Street Maintenance Division (CCSM) performs the street sweeping, open channel maintenance, and right-of-way litter removal. Parking and Mobility Division manages sweeping and litter control on city-owned surface parking and parking garages. Parks, Recreation, and Public Property Department cooperate to minimize impacts to the receiving streams and conveyance systems.

Records for pollution prevention and good housekeeping practices in the City are compiled in an annual report as required by the City's MS4 Permit (NPDES Permit NE0133698). This includes a summary of storm sewer maintenance, stormwater best management practice structure maintenance, and street sweeping efforts from January 1 to December 31, 2022. The 2022 MS4 Annual report was submitted by the City to NDEE on March 29, 2023. Additional proactive and reactive work orders for cleaning of storm inlets on the combined sewer system outside of MS4 areas are logged in the City's CMMS. These work records, along with grit pit and screen cleaning, are maintained by the Sewer Maintenance Division. The EQCD continues its outreach through the Papillion Creek Watershed Partnership and through a contract with Keep Omaha Beautiful to implement a stormwater pollution prevention and public education program that also provides benefits to the CSO Program. No additional pollution prevention measures have been implemented during this reporting year.

H. Public Notification

Permit Requirement
Part IV. H. states: Public notification is intended to inform the public of location of CSO outfalls, occurrences of CSOs, plus health and environmental effects of CSOs. The City of Omaha shall document any revision or updates to public notification procedures in the Annual Report plus any public announcements related to CSO discharges.

Locations of CSO outfalls have been identified for the public through specific signage posted near the outfalls, and along marina locations and public trails that parallel receiving streams. Per standard procedure, signs at the CSO outfalls are inspected twice per year for visibility and condition. General education on CSO environmental effects is shared through the ongoing public outreach on the CSO Program. An additional summary is provided in Section III.B, Public Participation. No significant concerns were released in the form of a public notification during the reporting year.

Procedure responsibilities continue to be carried out by the Sewer Maintenance Division staff. CSO outfall sign inspections were completed in this reporting year in fall 2022 (between October 10, 2022 to November 9, 2022) and spring 2023 (April 4, 2023 to April 10, 2023). As of the last inspection date of April 10, 2023, 42 of the 44 active outfall signs were in place. The "104 Mormon St: sign was removed as this location only contributes stormwater. The "205 64th & Dupont" and "503 64th & Dupont (Keystone Info) signs are being replaced with (2) new signs at the newly constructed Saddle Creek RTB.

For occurrences of dry-weather overflows, overflows that continue after the effects of wet weather have subsided, or any other instance of a non-permitted overflow or bypass, the City

follows reporting requirements outlined in the City's *Standard Operating Procedure for Reporting and Public Notification of Wastewater Bypass, Unpermitted Combined Sewer Overflow & Sanitary Sewer Overflow.* This standard operating procedure is reviewed semiannually. Public Works Assistant Director, Environmental Services, or delegee determines "significant" qualification in conjunction with NDEE, on a case-by-case basis under any of these guidelines: duration greater than 24 hours, quantity greater than 100,000 gallons, and nature of pollutants and location. No other policies or procedures for public notification have been revised or updated.

I. Monitoring to Characterize CSO Impacts and the Efficacy of CSO Controls

Permit Requirement
Part IV. I. states: Monitoring to Characterize CSO impacts involves inspections and other simple methods to determine the occurrence and apparent impact of CSOs. The City of Omaha shall document any additional CSOs discovered by the City during routine inspections in the Annual Report. Characterization of the CSS system and the impact of the CSO discharges shall be regulated according to the requirements in the LTCP.

Information on efforts made during the implementation of the LTCP to characterize the CSS system can be found in Section III.A of the report, Characterization and Modeling of the CSO System. No additional CSO outfalls were identified during this reporting year. Monitoring of all CSO outfalls performed during the reporting year is reported in Section VII, Performance Report.

Monitoring of CSO Impacts

During the implementation of this NMC, under requirements of a preceding Permit, a report to record beach closings, wash-up of floatables, fish kills, hazards to navigation, and basement flooding caused by CSO events was established. The following is provided to meet this requirement:

- In the period of October 1, 2022, to September 30, 2023, there were no known beach closings or fish kills.

The City monitors and tracks any occurrence of basement backup or manhole overflows in the CSS. Dry-weather occurrences are reported in Section II.E, Prohibition of CSOs during Dry Weather.

Events that adversely affected the CSS during the reporting period are listed in Table 2-5.

Table 2-5. Storm Events

Date	Duration (Hours)	Total Rainfall (Inches)	Recurrence Interval (NOAA)
2/14/2023	11	0.98	1 year
Peak Hour Intensity 0.16 inches per hour			
4/14/2023	18	1.84	2 year
Peak Hour Intensity of 1.06 inches per hour			
4/19/2023	11	1.74	1 year
Peak Hour Intensity of 1.10 inches per hour			
6/11/2023	10	0.78	1 year
Peak Hour Intensity of 0.33 inches per hour			
7/1/2023	16	1.6	1 year
Peak hour intensity of 0.44 inches per hour			
7/7/2023	7	0.8	1 year
Peak Hour Intensity of 0.60 inches per hour			
7/31/2023	15	1.46	1 year
Peak Hour Intensity of 0.85 inches per hour			
8/2/2023	6	2.34	2 year
Peak Hour Intensity of 1.29 inches per hour (radar estimated 2”/hr in CSO 103 basin)			
8/9/2023	1	0.91	1 year
Peak Hour Intensity of 0.91 inches per hour			

NOAA = National Oceanic and Atmospheric Administration

All wet-weather basement backups and manhole overflows are evaluated for actual causes or conditions that led to the backup or overflow. OPW Environmental Services engineering group staff recommend properties for back-water valves if CSS capacity is determined to be the cause. Sewer system evaluation surveys are referred if chronic occurrences and regions of the service area are affected by wet weather. In some cases, minor repairs to reduce inflow and infiltration (I&I) sources are completed near-term. The City uses all assessment information to determine if a capital project may be required or if modifications to O&M procedures are needed.

III. Long Term Control Plan Documentation

The City submitted a LTCP Update (2021 LTCP Update) to the NDEE on March 31, 2021. This update was approved by the NDEE on August 11, 2021, with no modifications required. The City submitted a permit renewal application in 2020 with an update in 2021 for a new CSO Permit. A new permit is yet to be issued. In meetings with NDEE, the City and EPA, the City noted that for the purposes of this Annual Report, it would be assumed that the new permit with the revised LTCP dates were effective for the whole report year.

Through the Permit and Consent Order, the City is required to submit documentation and reports applicable to the LTCP in its Annual Report according to the conditions and requirements specified in each document. The following nine sub-sections in this Annual Report address those requirements in the 2021 LTCP Update and are presented in the same order that is outlined in Part VIII of the 2015 Permit.

A. Characterization and Modeling of the CSO System

Permit Requirements
Part V. A states: "The City of Omaha shall continue to characterize, monitor, and model the CSS as set forth in the LTCP. A narrative summary of changes to the characterization, monitoring, and modeling of the CSS as construction projects are implemented shall be included in the Annual Report.

As stated in the CSO Permit, protocols for characterization, monitoring, and modeling of the CSS are included in Section 2 of the 2009 LTCP, Baseline Conditions/Study Basins Descriptions. This section of the LTCP addressed the response of the CSS to various precipitation events; identified the number, location, frequency, and characteristics of CSOs; and identified water-quality impacts that resulted from CSOs. The 2021 LTCP Update provided updated information on these items.

The CSO system characterization continues to be updated as LTCP projects are designed and implemented. Design consultants are asked to review existing system data and to gather additional information to form the basis of their designs. The data and designs are then included in the City's hydraulic computer model to ensure the level of control specified in the LTCP is ultimately achieved.

While the CSS is almost completely mapped in the City's geographic information system (GIS), the City is continuously doing upkeep on the attributes of the assets. In particular, the Urban Core developments with infill development and Streetcar planning have engaged sewer system surveys and evaluations verifying pipe sizes, depths, and connectivity.

The following is a summary of the City's activity during this report period:

Characterization Efforts

The CSS characterization for this reporting year can be broken down into three areas as follows:

1. **Documentation and recording of additional collection system information:** As part of the study phase for sewer separation projects, field data are obtained on the condition of the CSS, such as smoke testing, CCTV of sewer lines, dye testing, and condition and manhole evaluation and lamping. In addition, the City conducts its own sanitary sewer evaluation surveys (SSES), either with City staff or through managed field services contracts. Survey findings are incorporated back into the City GIS, which results in updated sewer mapping. Improvements to the collection system that result from the completion of CSO and other projects are then uploaded back into the City's GIS. For this report year, there have been nearly 1,800 combined sewer lines and 4900 manholes updated.

2. **CSO Block Program:** The City maintains a block program, also commonly referred to as CSO device checks. Under this program a "block" or some type of device is placed on a weir or overflow pipe, tethered, and visually inspected for movement to indicate if there is an overflow. Section VII, Performance Report, discusses the results of this program. As LTCP projects are completed, CSO points that remain open will have permanent metering installed, and eventually the CSO block program will be phased out.

3. **Flow monitoring:** Temporary and permanent flow monitoring continue in both the CSS and sanitary collection system to support long-term planning and individual projects. Rainfall monitoring is included in this effort. Monitoring efforts are discussed in the following sections.

Monitoring Efforts

The City has been performing flow and level monitoring of its CSS, specifically related to the characterization of the system, since 2004. The City continued to expand its fleet of metering equipment, continued City-wide flow monitoring of the Papillion Creek Interceptors, and conducted temporary flow monitoring in multiple locations. For the reporting year, 58 permanent flow monitoring sites, 25 temporary flow monitoring sites, and 14 CSO surveillance locations (with camera and level sensor) supported a variety of studies. Flow monitoring for excessive inflow and capacity for lift station upgrades continued to be a focus this year.

Additionally, the City gathered precipitation data at 13 rain monitoring locations, using 12 permanent City-managed rain gauges and one temporary gauge owned by another entity. The City is also a partner with the Papio Watershed Partnership and this provides the City access to 26 other rain gauges across the region. Sewer Maintenance Division coordinates with vendors, consultants, and other City divisions to plan the flow and rain monitoring program.

City and consultant rain gauges are listed in Table 3-1. Permanent and temporary flow monitoring locations are listed in Tables 3-2 and 3-3, respectively. Temporary monitoring locations mean that a meter was put in for a short period of time (3 to 5 months) and sometimes longer. Table 3-4 lists the locations where CSO surveillance cameras and level sensors were installed during the reporting year. These cameras are further described in Section VIII. Figure 3-1 provides a location map for the flow monitors and rain gauges used in 2023, including locations of gauges within the Papio-Missouri River Natural Resources District alert rain gauge system (managed by U.S. Geological Survey [USGS]), which is used to supplement the City's rain gauge network.

Table 3-1. City and Consultant Rain Gauges

Facility ID	Meter Address	Location	Longevity	Sewer System
OMA-RG01	6111 S. 99th Street	Johnny Goodman Golf Course, Hole 7	Active - Permanent	Sanitary
OMA-RG02	7 Hanscom Park Drive	Hanscom Park Tennis Facility	Active - Permanent	Combined
OMA-RG03	3190 N 50th Ave	Monroe Middle School	Active - Permanent	Combined
OMA-RG04	6183 N 49th St	Wakonda Elementary School	Active - Permanent	Combined
OMA-RG05	813 N 155th Ave	Grace-Abbott Elementary School	Active - Permanent	Sanitary
OMA-RG06	17322 S St	Russell Middle School	Active - Permanent	Sanitary
OMA-RG07	7184 John J Pershing Drive	Minne Lusa Grit Station	Active - Permanent	Combined
OMA-RG08	5411 S 43rd St	John Roth & Sons Inc.	Active - Permanent	Combined
OMA-RG09	1983 Pierce St	20th and Pierce Detention Basin	Active - Permanent	Combined
OMA-RG10	19523 Old Lincoln Hwy	Decommissioned Elkhorn WWTP	Active - Permanent	Sanitary
OMA-RG11	124 N 20th Street	Central High School	Active - Permanent (Relocated from LFS Building 03/08/2023)	Combined
OMA-RG11	156 S 24th Street	Lutheran Family Services (LFS) Building	Removed - Permanent (Relocated to Central HS 03/08/2023)	Combined
OMA-RG12	1110 S. 67th Street	UNO PKI Maintenance Building	Active - Permanent	Sanitary
Trekk2023RG1	6196 Military Ave	6152 Military Ave	Removed - Temporary (Removed 09/01/2023)	Combined

ID = identification

Table 3-2. Permanent Flow Monitoring Sites

Manhole	Location	Pipe Size (inches)	Longevity	Monitored Location and/or Monitoring Purpose
0225352	6900 Ames Avenue	30	Active - Permanent	CC Interceptor-E/CSS
0225354	6900 Ames Avenue North	12	Active - Permanent	CC Interceptor-E/CSS
0225354	6900 Ames Avenue Southwest	24	Active - Permanent	CC Interceptor-E/CSS
0240007	7610 Dodge Street	30	Active - Permanent	Cole Creek (east)
0246042	7601 Corby Circle	24	Active - Permanent	Cole Creek Interceptor - East
0246069	2808 N 75th Street	18	Active - Permanent	Cole Creek Interceptor - West
0265099	8019 Cass St	42	Active - Permanent	Sanitary
0265114	7777 Cass Street	24	Active - Permanent	Cole Creek (west)
0293022	1501 N 85th Street	36	Active - Permanent	LP Interceptor
0296023	2520 Keystone Drive	36	Active - Permanent	LP Interceptor
0302016	8754 Browne Street	30	Active - Permanent	LP Interceptor
0304022	6012 Wenninghoff Road	30	Active - Permanent	Little Papio
0305016	6254 N 89th Circle	24	Active - Permanent	Thomas Creek (tributary to Little Papio)
0390004	10875 West Dodge Road	21	Active - Permanent	BP Interceptor
0420002	2222 Papillion Parkway	24	Active - Permanent	Big Papio (east)
0426046	4714 N. 120th Street	24	Active - Permanent	BP Interceptor-E
0452002	12440 West Maple Road	36	Active - Permanent	BP Interceptor
0479011	12655 126th Ave & Kansas Ave	30	Active - Permanent	Standing Bear (tributary to Big Papio)

Manhole	Location	Pipe Size (inches)	Longevity	Monitored Location and/or Monitoring Purpose
0524658	CSO 114 - Grover Diversion Outfall (3700 Gibson Road)	48	Active - Permanent	CSO Surveillance
0556124	20th & Pierce Stormwater Detention Facility	72	Active - Permanent	20th & Pierce Stormwater Detention Facility
0556152	20th & Pierce Stormwater Detention Facility	48	Active - Permanent	20th & Pierce Stormwater Detention Facility
0556156	20th & Pierce Stormwater Detention Facility	72	Active - Permanent	20th & Pierce Stormwater Detention Facility
0556160	20th & Pierce Stormwater Detention Facility	48	Active - Permanent	20th & Pierce Stormwater Detention Facility
0556160	20th & Pierce Stormwater Detention Facility	72	Active - Permanent	20th & Pierce Stormwater Detention Facility
0556165	20th & Pierce Stormwater Detention Facility	54	Active - Permanent	20th & Pierce Stormwater Detention Facility
0699028	0699028 - 6303 L Street	66	Active - Permanent	LP Interceptor/CSS
0720004	6303 Q Street	90	Active - Permanent	Big Papio Interceptor (east)
0726052	828 Rose Blumkin Drive	60	Active - Permanent	LP Interceptor/CSS
0737008	7319 N Plaza	72	Active - Permanent	BP Interceptor
0786041	9503 Walnut Street	36	Active - Permanent	BP Interceptor
0786049	9503 Walnut Street	54	Active - Permanent	BP Interceptor
0839020	0839020 - 10800 Leavenworth St	54	Active - Permanent	BP Interceptor
0941005	4131 S 143rd Circle	48	Active - Permanent	WP Interceptor-W
0942004	4526 S 140th Street	30	Active - Permanent	WP Interceptor-E
0975053	2727 S. 156th Street	24	Active - Permanent	West Papio (east)
0978002	3992 S. 153rd Circle	30	Active - Permanent	Zorinsky Interceptor
0993095	2637 S 158th Plaza	36	Active - Permanent	WP Interceptor

Manhole	Location	Pipe Size (inches)	Longevity	Monitored Location and/or Monitoring Purpose
1141001	16229 Harney Street	18	Active - Permanent	WP Interceptor-E
1141017	323 S 166th Street	30	Active - Permanent	WP Interceptor-W
1144001	656 N 168th Street	27	Active - Permanent	North Branch West Papio
1188007	17007 Burt Street	36	Active - Permanent	WP Interceptor-W
1190015	17241 Seward Street	24	Active - Permanent	West Papio (east)
1311004	19111 West Center Rd	30	Active - Permanent	WP-10 and several nearby SMAs
4001001	15705 Harlan Lewis Rd (PC WRRF)	108	Active - Permanent	Papio Interceptor/CSS
4016001	S 13th Street and Capehart Road	120	Active - Permanent	Papio Interceptor/CSS
4026001	25th & Hwy 370	96	Active - Permanent	Papio Interceptor/CSS
4051002	4051002 - 118th & Harry Andersen	60	Active - Permanent	WP Interceptor
4052005	4052005 - 110th & Olive	18	Active - Permanent	Hell Creek Interceptor
4052015	4052015 - 109th & Harry Andersen	72	Active - Permanent	WP Interceptor
4052029	1107 E 1st Street - Papillion	78	Active - Permanent	WP Interceptor
4052051	11435 S 36th Street	78	Active - Permanent	WP Interceptor
4052060	10808 Olive Street	30	Active - Permanent	Hell Creek Interceptor
4062002	8970 S 48th Street	90	Active - Permanent	Papio Interceptor/CSS
4079029	12001 Cary Circle	30	Active - Permanent	SP Interceptor-N
0517512	415 Leavenworth Street	120	Active - Permanent	MRWRRF Flow at diversion to Leavenworth LS

Manhole	Location	Pipe Size (inches)	Longevity	Monitored Location and/or Monitoring Purpose
0517514	Leavenworth Interceptor	54	Active - Permanent	MRWRRF Flow to Leavenworth LS from the North Gravity Sewer
0515351G	0515351G - SIFM	48	Active - Permanent	MRWRRF Flow in SIFM from Burt-Izard LS
0297005	3020 Keystone Drive	24	Removed - Permanent (Relocated 02/05/2023)	LP Interceptor

Notes: BP = Big Papillion Creek, CC = Cole Creek, CSS = combined sewer system, E = east, GI = green infrastructure, LP = Little Papillion Creek, LS = lift station, N = north, S = south, SCRTB = Saddle Creek Retention Treatment Basin, SIFM = South Interceptor Force Main,
SP = South Papillion Creek, W = west, WP = West Papillion Creek.

Table 3-3. Temporary Monitoring Sites

Manhole	Location	Pipe Size (Inches)	Longevity	Monitored Location and/or Monitoring Purpose
0063067	CSO 103 Diversion - 9308 N 28th Avenue	48	Active - Temporary	CSO Monitoring
0223024	CSO 203 69th & Evans Sanitary	12	Active - Temporary	CC Interceptor-E/CSS
0223026	CSO 203 69th & Evans Diversion/Storm	66	Active - Temporary	CSO Surveillance
0247076	7229 Bedford Ave	15	Active - Temporary	Cole Creek Interceptor - East
0960080	150th and H	12	Active - Temporary	SSES local collector
1038004	9111 N 138th Street	18	Active - Temporary	BP Interceptor
4088131	17215 S Creek Circle (Sarpy County)	24	Active - Temporary	Sarpy County
4088200	8001 S 120th St	42	Active - Temporary	SP Interceptor-S
4088252	17215 S Creek Circle (Sarpy County)	30	Active - Temporary	Sarpy County
0015022	5899 N. 9th Street	15	Removed - Temporary (Removed 10/30/2022)	SSES lift station replacement

Manhole	Location	Pipe Size (Inches)	Longevity	Monitored Location and/or Monitoring Purpose
0550029	5801 S 13th St	36	Removed - Temporary (Removed 08/01/2023)	SSES MRWRRF Upgrade
0536037	1521 Marcy St	120	Removed - Temporary (Removed 08/14/2023)	20th & Pierce Stormwater Detention Facility
0556041	19th & Pierce St	72	Removed - Temporary (Removed 08/14/2023)	20th & Pierce Stormwater Detention Facility
0556147	1206 S. 20th St	60	Removed - Temporary (Removed 08/14/2023)	20th & Pierce Stormwater Detention Facility
0556162	1223 S 20th St	48	Removed - Temporary (Removed 08/14/2023)	20th & Pierce Stormwater Detention Facility
0556165	1206 S. 20th St	54	Removed - Temporary (Removed 08/14/2023)	20th & Pierce Stormwater Detention Facility
0556165	1206 S. 20th St	54	Removed - Temporary (Removed 08/14/2023)	20th & Pierce Stormwater Detention Facility
1131010	16725 H Circle	8	Removed - Temporary (Removed 08/16/2023)	SSES lift station replacement
1175003	4220 S. 168th Street	18	Removed - Temporary (Removed 08/22/2023)	SSES lift station replacement
0197036	3152 N 61st St	27	Removed - Temporary (Removed 09/01/2023)	OPW 54374 61st / Radial CSO project
0197036	3152 N 61st St	27	Removed - Temporary (Removed 09/01/2023)	OPW 54374 61st / Radial CSO project
0197038	61st & Spencer	30	Removed - Temporary (Removed 09/01/2023)	OPW 54374 61st / Radial CSO project
0198046	6237 Evans St	36	Removed - Temporary (Removed 09/01/2023)	OPW 54374 61st / Radial CSO project
0198057	6245 Pratt St	54	Removed - Temporary (Removed 09/01/2023)	OPW 54374 61st / Radial CSO project
0198057	6245 Pratt St	54	Removed - Temporary (Removed 09/01/2023)	OPW 54374 61st / Radial CSO project

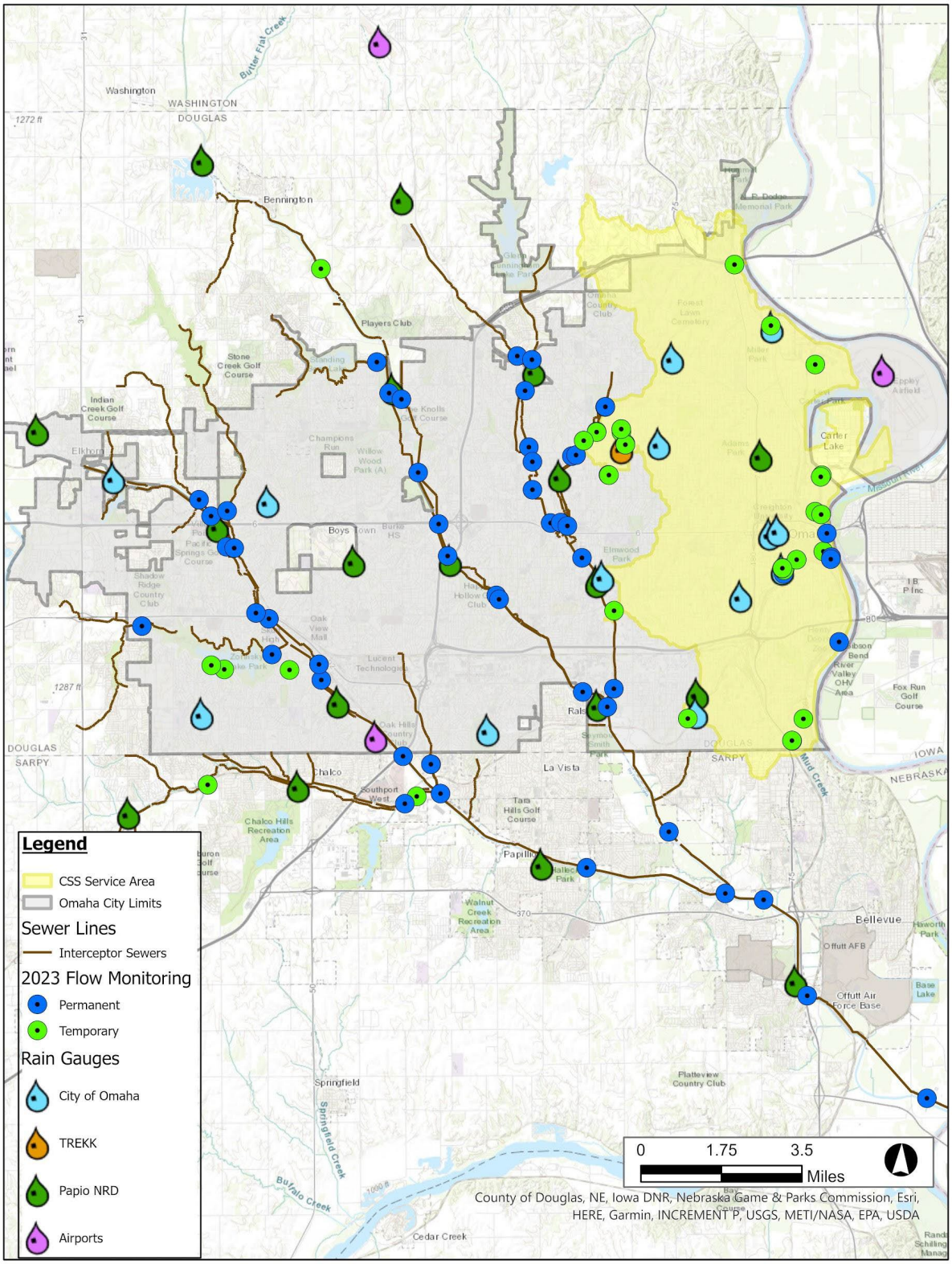
Notes: BP = Big Papillion Creek, CSO = combined sewer overflow, CSS = combined sewer system, I/I = inflow and infiltration, LP = Little Papillion Creek, S = south, SSES = sewer system evaluation survey, stn = station.

Table 3-4. CSO Surveillance Locations

Manhole	Location	Pipe Size (Inches)	Longevity	Monitored Location and/or Monitoring Purpose
0037034	CSO 105 - 7198 John J Pershing Dr	175	Active - Temporary	Monitor weir and flap gates

3004003	CSO 106 - 1506 Abbott Dr	84	Active - Temporary	Monitor screen and weir
3004039	CSO 107 - Grace Street	87	Active - Temporary	Monitor overflow
3001001	CSO 108 - 625 Riverfront Dr	120	Active - Temporary	Monitor outfall prior to screen
0002100	CSO 108 - Mike Fahey Diversion Structure - 455 N. 10th St	144	Active - Temporary	Monitor weir wall
0517510	CSO 109 - 606 Leavenworth St	120	Active - Temporary	Monitor northeast side at weir
0551020	CSO 119 - Monroe South Barrel (17th & Monroe)	24	Active - Temporary	Monitor weir wall
0551021	CSO 119 - Monroe South Barrel (17th & Monroe)	8	Active - Temporary	Monitor weir wall
0516013	CSO 121 - 655 Jones St	100	Active - Temporary	Monitor weir
0247075	CSO 202 - 72nd & Bedford	54	Active - Temporary	Monitor weir
0692079F	CSO 205 - 2520 S 64th Ave	120	Active - Temporary	Monitor weir
0195023	CSO 210 - 6606 Blondo St	60	Active - Temporary	Monitor weir wall
0645025	CSO 208 - 5622 S 45th St	12	Removed - Temporary (Removed 05/08/2023)	Monitor overflow pipe
0195023	CSO 210 - 66th & Blondo	12	Removed - Temporary (Removed 06/19/2023)	Monitor weir

Figure 3-1. Flow and Rain Monitoring Locations



Bulk Flow Monitoring: In addition to the collection system flow monitoring locations, the City of Omaha Environmental Quality Control Division maintains several bulk monitoring flow meters for use in billing for wholesale customers in the wastewater service area. Those sites provide additional flow information used in model calibration and are listed in Table 3-5 below.

Table 3-5. Bulk Flow Monitoring Locations

Bulk Flow Monitoring Site	Purpose of Flow Monitoring	LAT	LONG
Bellevue 2	Measure effluent from Bellevue area	41.1374	-95.93155
Bellevue 25th St	Measure effluent from Bellevue area	41.146789	-95.9474
Gilmore	Measure effluent from Bellevue area	41.190953	-95.948
Hwy 370 & 25th St	Measure effluent from Bellevue area	41.138192	-95.945895
Boys Town	Measure effluent from Boys Town Area	41.249162	-96.124018
Carter Lake	Measure effluent from Carter Lake area	41.280797	-95.917984
Gretna 1	Measure effluent from Gretna area	41.170043	-96.216396
Gretna 2	Measure effluent from Gretna area	41.171883	-96.211999
Offutt	Measure effluent from Offutt area	41.111483	-95.924266
Ralston 72nd & Main	Measure effluent from Ralston area	41.199201	-96.023211
Ralston 84th & Park Dr.	Measure flow from Omaha area into Ralston	41.198493	-96.043783
Ralston Siphon	Measure effluent from Ralston area	41.211213	-96.030151
Tiburon	Measure effluent from Sarpy County - Tiburon S&ID area	41.164917	-96.18765

Modeling Efforts

The City uses and upgrades the Autodesk InfoWorks Integrated Catchment Model (ICM) computer model (InfoWorks model) of the combined, sanitary, and storm sewer systems during the ongoing implementation phase of the CSO Program. Updates occur as additional information in the system is identified and as the system is modified as CSO controls are implemented. This reporting year, modeling efforts were focused on updating the model with new project data and validating model results by comparing against recent flow monitoring data and calibrating, as needed.

During the reporting year, the model files were updated for all three time horizons, for each watershed, Papio and Missouri. Each time horizon is intended to represent the physical sewer system configuration in place at or planned for that time:

- 2002, which coincided with the issuance of the City's first CSO Permit and is used as the Existing Conditions (baseline) for the CSO Program. Field conditions were discovered as existing in 2002 but were not known to include in the original baseline, therefore this version was updated.
- 2023, represents the current system configuration.
- 2037, is the year by which the LTCP implementation aims to be completed.

An additional modeling effort was completed on the separate sanitary system in the Papio Watershed. This is relevant in that there are areas that overlap with the model configuration prepared for the CSO Program. Future efforts will be comparing results from each model and determining any value-added enhancements to the CSO versions. This year was also an active effort to refine the details of the combined sewer system modeling in the Urban Core section of the City undergoing development and density changes. These new details will also be reviewed for additional value to the models for the CSO Program.

B. Public Participation

Permit Requirements
Part V.B. of the permit states, "The City of Omaha shall continue to employ a public participation process throughout implementation of the LTCP and document public participation activities in the Annual Report.

During the reporting year, the CSO Program facilitated engagement with neighborhoods and the general public both in person and virtually. In addition to conveying timely and accurate project information, these efforts further strengthened relationships and supported community acceptance of the LTCP. Going forward, the City of Omaha staff will be taking the lead on outreach efforts.

The following subsections provide a summary of this effort.

Informing Stakeholders

The CSO Program used email, phone calls, a virtual presentation, and in-person meetings to inform neighbors about upcoming projects in their area. CSO Program representatives attended neighborhood alliance meetings both in person and virtually, along with the South Omaha Task Force meetings. The CSO Program also created on-demand, narrated presentations and short videos to keep neighbors and businesses informed about projects as they proceed through design and construction. The following is a list of public meetings held this reporting year:

- November 21, 2022 - East Cole Creek Interceptor Rehabilitation Project: Conceptual Design (Virtual Only)

- February 21, 2023 - Forest Lawn Creek Inflow Removal and Outfall Storm Sewer Project: Pre-Construction Meeting
- March 9, 2023 - Nicholas Phase 3B: Public Meeting
- March 30, 2023 - OPW 53820 CSO 204 Phase 4a, 57th and Pratt Street: 30% Design Public Meeting

Reaching Youth

a) World O! Water

On September 9, 2023, the CSO Program once again participated in the annual World O! Water event. This all-ages event organized by the City of Omaha and several community partners, with a focus on youth, highlights the important role water plays in our lives and community.

For the second year in a row, post pandemic, World O! Water was an in-person event, after being virtual events in 2020 and 2021. The engaging CSO cornhole game was used for the second time this year. Participants took their chance of tossing a rubber frog into CSO-branded boards labeled “Spring Lake Park” and “Fontenelle Lagoon”— two of the Program’s signature green infrastructure projects (Figure 3-2). When the participants successfully landed their frog into the lake/lagoon, they earned a 5-minute CSO shower timer. Event feedback indicates that the children enjoyed and remembered this game as one of their favorite event highlights.

The event was a success. Approximately 71 shower timers, 16 coloring books, and 50 water bottles were distributed.

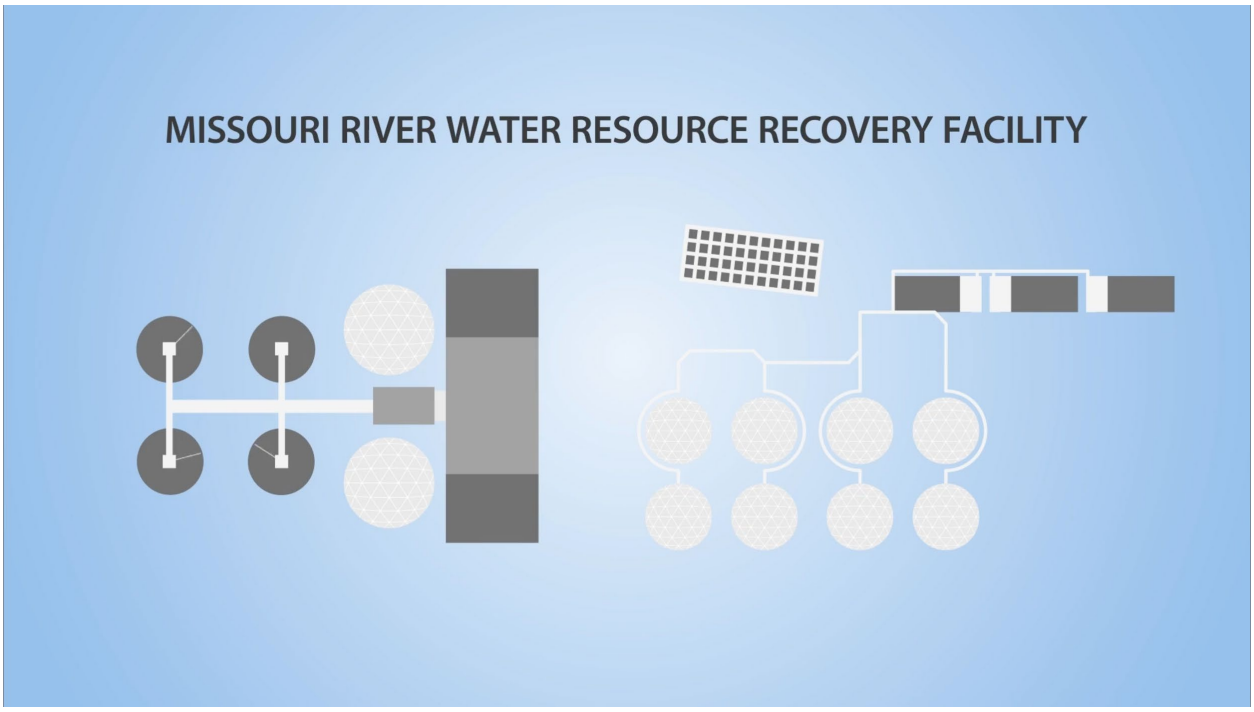
Members of the scouting community that attended the event received the Clean Water Action worksheet and patches. For greater inclusivity, a second version and a corresponding sticker version of the patch were available for non-scouts. The worksheets contain varying levels of age-based CSO activities.

Figure 3-2. Youth testing out the CSO Corn Hole/Frog Toss Activity

b) Animation Videos

The final video in a 4-part series was completed and released to the public during this reporting period. This final animated video provides an overview of the combined sewer system, why overflows occur, and the measures that have been implemented to minimize overflows at the MRWRRF, PCWRRF, and new Saddle Creek RTB. The animation allows viewers to easily follow the path of the wastewater through the treatment process.

Figure 3-3. Image capture of new animated educational video



CSO! Website Analytics

During the reporting year, the CSO! website, www.OmahaCSO.com, received almost 12,000 views from over 5000 users. Analytics show that viewers were from the Omaha metro area and even Des Moines, Iowa. Among the most viewed pages were the "About the Program" and the project detail page for the Saddle Creek Retention Treatment Basin. The full analytics are shown in Figure 3-4.

Figure 3-4. CSO! Website Analytics

Information Line Update

The Information line received 13 phone calls during this reporting period (Figure 3-5). Topics ranged from questions on bills, general information on the program, and green infrastructure to specific CSO project schedules. During this reporting period, from October 2022 to September 2023, the phone was answered live during business hours, and the goal was to return all messages within one business day. Going forward, the Hotline now has a pre-recorded message that directs the caller to call Public Works (402-444-5220) for general information and directs them to call Sewer Maintenance (402-444-5332) for street flooding and sewer back-ups. These calls will be included in the normal customer protocols for the applicable call center, and will not be separately logged.

Figure 3-5. Phone infographic.

LTCP E-Newsletter Updates

A few times each year, an LTCP e-newsletter is sent via email notifying a stakeholder list of 700+ users about program updates (Figure 3-6). Each email includes a link to the CSO Program Quarterly Report, which provides Program highlights, project spotlights, Program goals and budget details, project overviews and details, and a Program overview. During this reporting period, five emails were sent that averaged a 43.56% open rate and a 13.54% click-through rate. Both of these rates were higher than the previous year. The September 1, 2023 issue marked the final publication of the CSO Quarterly Report issued by the CSO Program Management Team.

The links below are web versions of the LTCP E-Newsletters that were emailed to stakeholders throughout the reporting period:

Oct 7, 2022 - Q3 2022 Update: https://cso.createsend1.com/t/r-e-tyuthhhd-l-h/

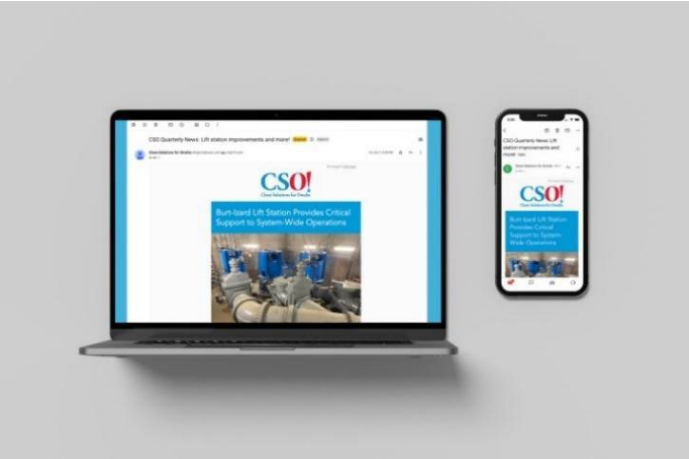
Feb 26, 2023 - Q4 2022 Update: https://cso.createsend1.com/t/r-e-tjhtlryd-l-d/

Mar 31, 2023 - Q1 2023 Update: https://cso.createsend1.com/t/r-e-ttlyxht-l-d/

Jun 15, 2023 - Q2 2023 Update: https://cso.createsend1.com/t/r-e-tttiutht-l-x/

Sept 1, 2023 - Q3 2023 Update: https://cso.createsend1.com/t/r-e-tthudrlt-l-h/

Figure 3-6. E-news preview



C. Consideration of Sensitive Areas

Permit Requirements
Part V. C. states: "The City of Omaha shall include any changes to the status of previously identified sensitive areas in the Annual Report."

Sensitive areas include waters with threatened or endangered species and their designated critical habitat, waters with primary contact recreation, public drinking water intakes, and any other areas identified by state or federal agencies. The City is not aware of any new sensitive areas being identified in the reporting year.

D. Evaluation of Alternatives

Permit Requirements
Part V. D. states: "Any changes or revisions to the controls set forth in the LTCP and a final projects list in the LTCP shall be submitted by March 31, 2021, to the NDEE for review and approval according to the Part IX (F) revisions to the Long Term Control Plan.

In 2022-2023, the City and PMT evaluated the implementation of real time controls for Stormwater.

The facilities evaluated included:

- Fontenelle Park Lagoon – RTC evaluations were conducted, and further CSO benefit is limited. No RTCs are currently proposed or being implemented. There is potential for further evaluation of RTCs as part of a watershed-wide operational strategy.

- Adams Park Detention Facility - RTC evaluations were conducted, and further CSO benefit is limited. No RTCs are currently proposed or being implemented. There is potential for further evaluation of RTCs as part of a watershed-wide operational strategy.

- 20th and Pierce Underground Facility – RTCs were installed and are being operated. The City is currently pursuing an action item of incorporating the facility data into its SCADA system. A project is ongoing to assess the operation during storm events and modify controls as needed to optimize operations.

- Vinton Underground Stormwater Facility – The facility was designed to incorporate RTCs. The action item for fulfilling the LTCP commitment is for the City to obtain and install a control valve and related infrastructure for active control of the facility to promote capture of CSO through infiltration and detention of stormwater.

- Hanscom West Green Infrastructure – Further evaluations are required to determine benefits and risks for pre-storm drawdown of Hanscom Park Lagoon. RTC infrastructure is not currently installed, but the passive drainage system is functional without any further investment required.

As part of the Optimization effort, and described in the 2021 SCO LTCP Update, the City and PMT evaluated the CSO 110, Pierce Street and CSO 111, Hickory Street sewer separation projects. Through review of workplans and their projected impacts on CSO volume capture, it was determined that significant improvements may not be achieved. When considering improvements in the service area already underway, it was decided that further evaluation is not necessary and that the Hickory and Pierce Sewer Separation Projects may no longer be needed. It is believed that the 6th & Leavenworth Grit Facility Improvements (OPW 53597), in combination with the Flood Mitigation sewer constructed in 2020 (OPW 52783), will address a significant portion of the remaining grit issues. The Pierce Street and Hickory Street sewer separation projects will be reconsidered after evaluation of the efficacy of the modifications at the 6th and Leavenworth Grit Facility are complete.

During the current reporting year, the existing facility at 20th and Pierce was evaluated for performance improvements using real time controls. The facility was designed to detain approximately 1.3 million gallons of stormwater in perforated pipes with additional storage space in the surrounding rock layer, as well as allow infiltration to the soil; the remaining stormwater is then released back into the CSS after a storm event has passed. Operational modifications to this facility to maximize stormwater infiltration and detention are nearly complete to help reduce CSO overflow volumes at CSOs 109 and 121. The City upgraded the facility's operating logic and control systems including SCADA for communications with the MRWRRF and completed collecting data during rainfall events in the spring and summer of 2023 to adjust these systems as needed. A report on the evaluations of the upgrades is currently being compiled. Due to the changes in operating logic, the facility is engaged more often than originally designed, likely reducing CSO volumes and frequencies at CSOs 109 and 121.

E. Cost and Performance Considerations

Permit Requirements
Part V.E. states: An evaluation of the benefit cost ratios for CSO control levels and financial capability analysis is included in Section 3 Control Alternative Evaluation and Section 6 Financial Capability Evaluation of the LTCP (see also Update to LTCP 2014). The City of Omaha shall submit a financial report to the NDEE by March 31, 2021; that sets forth a strategy to obtain sufficient revenue to fund the CSO program through at least the year 2024 that includes funding for the specific projects in the Implementation Schedule, Section 7 of the LTCP (see also Update to LTCP 2014).

Included in Section IV is information on the following:

- The current status of the CSO Program's overall expenditures to date, and estimates for the future, and cost saving measures that have been implemented to keep the overall costs as low as possible
- Program financing, including information on the use of loans and grants
- Program affordability and ratepayer assistance

The City establishes sewer rates periodically, either on four- or five-year intervals. The City's current rate ordinance sets sewer use fees through 2028 and is based on a detailed rate model. As part of the development of the 2024 – 2028 rates, the City retained the services of a rate consultant to conduct a Wastewater Cost of Services (COS) Study. The study began in early 2021 and was completed in 2022. Based on the outcome of the study, City staff determined the appropriate stakeholder engagement and information required for the development of the rate structure to be approved by City Council. The work completed consisted of three parts:

- Determine the revenue requirements to cover all costs associated with the collection and treatment of wastewater, including operations and maintenance of the system and required capital improvements.
- Conduct a cost-of-service study that identifies the different drivers of the costs and allocates these costs back in an equitable manner to the different customers served.
- Review the City's existing rate structure and make necessary changes to provide for the required overall funding and fair distribution of costs to the different customers served.

The new rate ordinance was approved by the City Council in December of 2022. The new rates are effective 2024-2028. The rate increases range from 1.39% for Omaha residents, 3.42% for commercial and industrial customers and 4.36% for those residents living outside of the City.

Omaha provides ratepayer assistance through the Low-Income Heat and Energy Assistance Program (LIHEAP) through the State of Nebraska as part of the CSO program. This program has given out $21.14 million from May 2011 through June 2023.

In summary, based on the current sewer rate ordinance, the City continues to meet funding requirements needed to run the CSO program while implementing cost saving measures to help the customer base.

F. Operational Plan

Permit Requirements
Part V.F states, “The City of Omaha submitted a preliminary wet weather operational strategy plan that provides an overview of the collective operation of the combined sewer overflow controls to be implemented by the City in Section 8 Monitoring Program and CSO Wet Weather Operations Plan of the LTCP. The City of Omaha shall update the wet weather operational strategy plan as major CSO projects are constructed and are operationally complete. Significant updates to the wet weather operational strategy plan shall be included in the Annual Report.

The 2021 LTCP Update included an update to the Wet Weather Operations Plan (WWOP) that was originally provided to NDEE on November 13, 2015. The 2021 WWOP reflects the current operation of the MRWRRF along with the modifications to the Burt-Izard Lift Station pumping capacity. The City is reviewing the Wet Weather Operational Plan to include the Saddle Creek RTB, Riverview Lift Station Replacement Project, and the Monroe Street Lift Station Improvements projects. These projects are all anticipated to be in operation during the next reporting year. Modifications to the 2021 Wet Weather Operational Plan submitted to the NDEE and will be noted in future Annual Reports.

Operational data from the MRWRRF CSO 102 discharge is included in Section V, CSO Outfall 102 and 205 Monitoring Data.

G. Maximizing Treatment at the Existing Publicly Owned Treatment Works

Permit Requirements
Part V. G states: “The City of Omaha shall continue to evaluate opportunities to maximize treatment at the WRRFs as part of the adaptive management strategy for implementation of the LTCP. A summary of any new approaches identified to maximize treatment of combined wastewater to the WRRFs shall be included in the Annual Report.”

No specific evaluations were performed and no new approaches have been identified since the last Annual Report because the City is still in the process of implementation of projects in the LTCP that will maximize treatment of wet weather at the MRWRRF.

There are several projects included in the 2021 LTCP Update that are necessary to ensure delivery of up to 150 million gallons per day (MGD) wet weather flows to the MRWRRF for treatment, including the following projects, which are discussed in more detail in Section H. Implementation Schedule of this report under the “System Reliability Projects.” These projects are as follows:

- Burt Izard Lift Station: This project was completed in 2022 and increased Burt Izard Lift Station pumping capacity to 50 MGD.
- Riverview Lift Station Replacement Project and the Blake Street Lift Station Project: Once construction is complete, it will enable the City to pump increased wet weather flows of up to 7 MGD from 3.5 MGD and take some older lift stations out of service. Operational completion was achieved on November 14, 2023.
- Monroe Street Lift Station Improvements Project: Modifications will enable the City to increase pumping of wet weather flows from 40 MGD to 65 MGD to the MRWRRF. This project is currently under construction with anticipated completion in Spring of 2024.

H. Implementation Schedule

Permit Requirements
Part. V. H. states: The construction and sewer separation projects that will be designed, constructed, or operationally complete during the current permit term are included in Part VI Compliance schedule for Implementation of CSO Control Projects of this permit which is the enforceable mechanism for the implementation of these controls. The City of Omaha shall include progress reports on implementation of the CSO construction and sewer separation projects set forth in the compliance in the annual Report.

A new schedule was provided in the 2021 LTCP Update in Section 6. The schedule changes were agreed to by the NDEE and are reflected in the draft NPDES CSO permit (NE0133680) published for Public Notice on November 10, 2023. The 2021 LTCP Update includes LTCP Milestone dates for each individual project that are the completion date of construction. Section IV, Compliance Schedule, provides a status update on LTCP implementation. As has been communicated and agreed to by NDEE, this Annual Report will list LTCP-scheduled projects in order of completion date. This section also includes system reliability projects. Attachment 2 contains an Annual Project Progress Report (APPR) for each of the active projects that includes their project delivery schedule and describes major activities accomplished over the past year.

System Reliability Projects

The 2021 LTCP Update identifies four projects which include Burt-Izard Lift Station Improvements, Riverview Lift Station Replacement Project, Blake St Lift Station Improvements, and Monroe Street Lift Station Improvements as “system reliability projects" to address current and future system support. The implementation schedule is “as necessary and when funding is available.” The status of the active projects is listed in the following text. The Burt-Izard Lift Station Improvement Project was completed in April 2022. The MRWRRF Transfer Lift Pump Replacement Project, which is not a LTCP project, is also included. The status of these projects are as follows:

Riverview Lift Station Replacement Project: This project includes the Grover Diversion Structure, a 42-inch sewer along Gibson Road that will convey flows from the Grover Sewer to the Riverview Sewer, the Riverview Diversion Structure, and a 7-MGD lift station.

The Riverview Lift Station Replacement Project construction contract was awarded to the contractor on November 19, 2019. Construction Notice to Proceed was issued on March 2, 2020. The project was originally anticipated to be complete in September 2022. However, because of supplier delays and pump startup issues, the project was delayed. The project was operationally complete and put into service on November 14, 2023.

Blake Street Lift Station Project: The Blake Street Lift Station improvements consist of a gravity sewer extending south from the Spring Street Lift Station to a new 1-MGD lift station near Blake Street and Hascall Street. A force main extends south from the new lift station to Grover Street, where the flows will be discharged into the existing Grover Street sewer for subsequent conveyance to the new Riverview Lift Station. Construction of the project was delayed as the result of property issues but was initiated and nearly completed in the 2022-2023 reporting year. The project was operationally complete and put into service on December 7, 2023.

Monroe Street Lift Station Improvements: The project includes improvements to the existing lift station to replace/rehabilitate pumps, screens, valves, electrical systems, and instrumentation and controls to provide operational flexibility to maximize the conveyance of wet weather flows of up to 65 MGD to the MRWRRF. The construction of the project started on January 3, 2022, with construction extending for a duration of 26 months, resulting in expected project completion in April 2024.

MRWRRF Transfer Lift Station: This project is not a LTCP project. It includes replacement of the pumps installed under MRWRRF Schedule A. Although the current pumps can deliver the 64 MGD as designed, replacement is needed for long-term reliability due to problems that have been encountered with them. Notice to Proceed was issued on March 16, 2020, and construction completion was anticipated for March 2022. However, the schedule was impacted by various delays. The project resolved the issues with supply chain and delivery and installation of key control elements during this reporting year and the project was finalized in September 2023.

I. Post-Construction Compliance Monitoring Program

Permit Requirements
Part V. I. states: “An outline of a post-construction compliance monitoring program is included in Section 8 of the LTCP Monitoring Program and CSO Wet Weather Operations Plan plus a draft document Water Quality Monitoring for the Implementation Monitoring Plan (IMP) was included with CSO NPDES permit application received March 29, 2010. 1. In-stream monitoring data shall be conducted that is consistent with the Implementation Monitoring Plan. The data for this monitoring shall be included in the Annual Report. 2. Verification of sewer separation projects will be used to confirm that the desired level of separation was achieved. The City of Omaha may use various approaches to verify sewer separation including visual verification, water quality monitoring, or flow monitoring. The results of studies performed that support the deactivation of a CSO outfall shall be included in the Annual Report.”

An outline of a Post-Construction Compliance Monitoring Program is included in Section 8 of the 2009 LTCP Monitoring Program and CSO Wet Weather Operations Plan; in addition, a draft document *Water Quality Monitoring for the Implementation Monitoring Plan (IMP)* was included with the CSO Permit application submitted to NDEE on March 29, 2010. The 2021 LTCP Update included an updated Post-Construction Monitoring Plan.

In this reporting year, the City submitted a request for Modifications to the Post Construction Monitoring Plan removing the USGS monitoring from the PCMP. This request was approved by the NDEE on May 19, 2023. Over the last 10+ years since the City has been monitoring, there were some significant CSO controls implemented in the Missouri River Watershed. This has included both sewer separation projects and implementation of major controls. Of note was the addition of treatment and disinfection of the CSO 102 Bypass in 2019. The next major reduction in untreated flow to the Missouri River will not occur until the Northeast Omaha Retention Treatment System starts treatment in 2034. Therefore, additional significant changes in water quality are not anticipated for over 10 years. The water quality parameter of concern is E. coli. According to the USGS data, plots of Missouri River flow vs. E. coli levels vary significantly, and no trends are apparent. It is unlikely that collection of more data will show something different. There are too many variables that can impact the water quality of the Missouri River to specifically identify the impact from the implementation of the LTCP in spite of significant reductions in loading resulting from CSO projects.

As required by the CSO Permit, instream monitoring data are provided in Section VI, Instream Monitoring Data, and Attachment 4 of this report. For this Annual Report period, CSOs 103 and 208 were monitored for post-construction deactivation. The City continued to monitor these outfalls for the occurrence of overflows and during this reporting year, surveillance cameras and level sensors were also used. CSO 103 will continue to be monitored until the Bridge Street lift station upgrade project is completed which will then allow the CSO to be deactivated. Pipeline investigation and limited manhole investigation was performed in the drainage area for CSO 208 and a study of existing flow meter data was conducted during the reporting period for CSO 208. The study is currently under review and final recommendations have not been finalized; however, the preliminary recommendations include further SSES work to be completed in the basin.

IV. Compliance Schedule

Permit Requirements
Part VI. States: Upon issuance of this permit, the City of Omaha shall implement the compliance schedule below for construction projects set forth in the Long Term Control Plan (LTCP). This schedule may be modified in accordance with NDEE Title 119 and written notice from the NDEE. The City of Omaha shall include a yearly summary of construction activities, actions, and other measures applicable to this compliance schedule in the Annual Report (Part VII).

The City, through quarterly progress meetings and correspondence, has communicated potential issues or changes to the project or overall schedules to NDEE. In addition, the 2021 LTCP Update provided, as needed, revised schedules for projects. While a new CSO Permit has not yet been issued that reflects the latest 2021 LTCP Update and the revised schedules, this section has been drafted to reflect the compliance status with the new schedule.

A. Implementation Requirements

The requirements for implementation are set forth in the CSO Permit and the Consent Order. Details about each are presented in this section and the requirements are achieved though the summary tables and figures in this section and through the APPRs in Attachment 2. As stated in the CSO Permit, the following definitions apply to compliance schedule dates. The italicized wording has been added to provide additional clarification to what is stated in the Permit:

- **Bid Year –** The year when the bidding process for a specific project is started. This will be noted in the tables as the "bidding" date and corresponds to the day the project was advertised for bid.
- **Begin Final Design –** The date when a Notice to Proceed is issued to a design consultant, or in the case of a design completed by City staff, the date when work is started. *In some projects, an amendment to the original contract for preliminary design will serve as the date the final design began.*
- **Commence Construction –** The date the Notice to Proceed is issued to the construction contractor.
- **Complete Construction –** The date when a sewer separation project is substantially complete or when substantial completion is issued to the construction contractor.
- **Operationally Complete –** The date when a Facility project is substantially complete, is ready for its intended use, and has been made ready to operate by the City.

Consent Order Directives

In addition to the CSO Permit requirements, the Consent Order has a specific requirement to submit an Annual Report that contains an overall status of LTCP implementation and project specific information. The Consent Order, in Paragraph 29, states that the Annual Report shall contain the following:

a. *A statement identifying each component project timeframe in the period preceding the initial, or thereafter, the most recent previous report, calling for commencement, completion, implementation, or some other action to be taken, and whether and to what extent such action was taken by the City within the respective component project timeframe.*

b. *A general description of the work performed pursuant to the LTCP and component project timeframe schedule for the period covered by the report and whether it conformed to the LTCP and timeframe schedule.*

c. *A statement of any future planned or expected deviations from the LTCP and component project timeframe schedule and the reasons for such deviations."*

Requirements for showing the LTCP compliance status are also met through the summary tables and figures in this section. The Consent Order requirement for component projects is achieved through the submittal of the APPRs in Attachment 2.

B. Projects Completed during the 2023 Reporting Year

Table 4-1 provides a summary of projects completed during this reporting year and lists the OPW Number, Project Name, project status during the reporting year, 2021 LTCP Milestone Compliance (date project achieved the milestone), and, where appropriate, notes that include the project details.

Table 4-1. Projects Completed during the 2023 Reporting Year

OPW Number	Project Name	Status	2021 LTCP Milestone Compliance	Notes
53059	Cole Creek CSO 203 Sewer Separation Project (CSO)	Complete	12/31/2023 ACHIEVED	Substantial Completion on 5/4/2023
53320	Papillion Creek North (PCN) 210 Sewer Separation Project	Complete	12/31/2023 ACHIEVED	Substantial Completion on 9/6/2023

C. Current Projects

Table 4-2 provides an implementation summary of current projects during the 2023 reporting year. The table lists the OPW Number, Project Name, project status during the reporting year (Preliminary Design, Final Design, Under Construction, or Complete), LTCP Milestone date, Compliance Status (if it is on schedule or will not meet the LTCP Milestone date) and, where appropriate, notes brief project details. A more detailed progress report is included in Attachment 2 - APPRs.

Table 4-2. Active Projects

OPW Number	Project Name	Status	2021 LTCP Milestone	Compliance Status	Notes
52049	Saddle Creek Retention Treatment Basin	Under Construction	12/31/2023	On Schedule	Initiation of Operation on 12/20/2023
52470	Forest Lawn Creek Inflow Removal and Outfall Storm Sewer	Under Construction	12/31/2024	Will not meet milestone	Requested modification of milestone date to 12/31/2026
51685	CSO 212 – 64th Avenue and William Street	Under Construction	6/30/2025	On Schedule	
53753	Nicholas Street Sewer Extension – Phase 3B	Under Construction	6/30/2025	On Schedule	
53149	CSO 119 South Barrel Conversion and Sewer Separation	Preliminary Design	6/30/2026	Will not meet milestone	Requested modification of milestone date to 12/31/2028
54293	East Cole Creek Interceptor Rehabilitation	Preliminary Design	6/30/2026	Will not meet milestone	Requested modification of milestone date to 6/30/27
53869	CSO 202, Phase 2 – 70th Avenue and Spencer Street	Final Design	12/31/2026	On Schedule	Requested modification of milestone date to 6/30/27
54374	61st and Radial Storm Sewer	Preliminary Design	12/31/2028	On Schedule	
53820	CSO 204 Phase 4a – 57th Street and Pratt Street	Preliminary Design	6/30/2030	On Schedule	
TBD	CSO 204 Phase 4b – 56th Street and Bedford Avenue	Preliminary Design	6/30/2032	On Schedule	This is combined with 4a at this time
52402	Riverview Lift Station Replacement	Under Construction	N/A	N/A	System Reliability Project – Initiation of Operation on 11/14/2023
53082	Monroe Street Lift Station Improvements	Under Construction	N/A	NA	System Reliability Project - Anticipated completion date is April 2024
53270	Blake St Lift Station	Under Construction	NA	NA	System Reliability Project – Initiation of Operation on 12/7/2023

OPW = Omaha Public Works

D. Future Projects

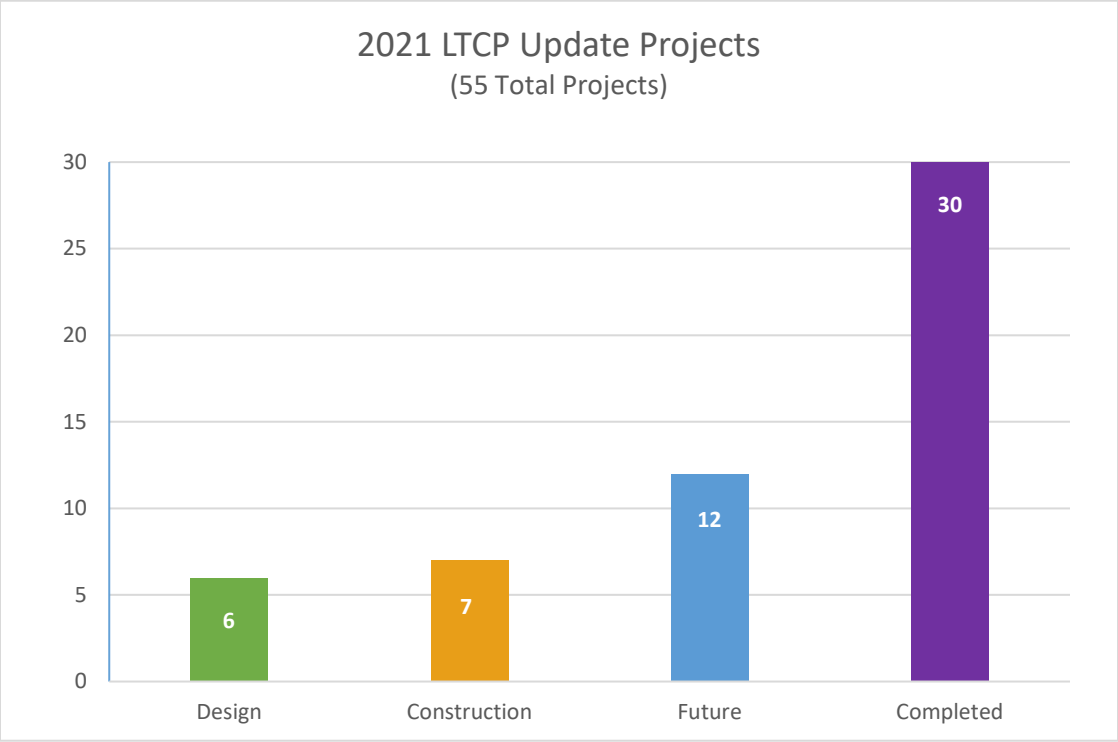
Table 4-3 provides a summary of future projects. The table lists the Project Name, LTCP milestone dates from the 2021 LTCP Update and the year when preliminary design is anticipated to start and where appropriate, notes that include the project details.

Table 4-3. Future Projects

Project Name	Start Preliminary Design	2021 LTCP Milestone	Notes
Minne Lusa Relief Sewer Diversion Modifications	2023	6/30/2028	An RFP was issued November 29, 2023; Requested modification of milestone date to 12/31/2028
Grace St and North Interceptor DWF Diversion Rehabilitation	2024	12/31/2028	Preliminary Design consultant selected
CSO 105 Outfall Active Control	2024	6/30/2029	An RFP was issued November 29, 2023; This project is still on schedule for the LTCP Milestone
North Downtown Conveyance Sewer - 11th and Izard to 6th and Abbott	2024	6/30/2030	Preliminary Design consultant selected
11th and Izard Grit and Screening Facility	2024	6/30/2033	Preliminary Design consultant selected
11th and Izard Active Control	2024	6/30/2033	Preliminary Design consultant selected
Northeast Omaha RTB - 6th Street and Abbott Drive	2024	6/30/2034	Preliminary Design consultant selected
Jones Street to Leavenworth Diversion	2029	12/31/2035	May be re-evaluated following completion of 6th and Leavenworth Grit Facility Improvements reliability project
21st and Cuming Active Control	2029	6/30/2037	
Hickory Street Sewer Separation	2030	6/30/2037	May be re-evaluated following completion of 6th and Leavenworth Grit Facility Improvements reliability project
Pierce Street Sewer Separation	2030	6/30/2037	May be re-evaluated following completion of 6th and Leavenworth Grit Facility Improvements reliability project
Leavenworth Basin Storage Tank (CSO 109)	2030	6/30/2037	

Figure 4-1 shows the overall status of projects in the 2021 LTCP Update.

Figure 4-1. Project Status for 2021 LTCP Update



As noted in Figure 4-1, there are 13 projects that are active or in design. Of these, seven are on schedule to meet the LTCP Milestone, three are likely to miss the LTCP Milestone, and three are system reliability projects that do not have an LTCP milestone. For the three active or in design projects that will not meet the milestone, (Forest Lawn Creek Inflow Removal and Outfall Storm Sewer, East Cole Creek Interceptor, and CSO 119 South Barrel Conversion and Sewer Separation), the City has requested modifications to the milestone dates, and the new dates have been included in the draft permit. Although PCN 210 Sewer Separation did not meet the LTCP Milestone date, it was completed prior to the end of the 2022-2023 CSO Annual Reporting year and Figure 4-1 includes this as a completed project.

E. CSO Program Costs

The City uses various tools to track the costs of the LTCP projects because controlling costs ensures the program is as affordable as possible for the ratepayers while maintaining the LTCP compliance schedule. The estimated cost of the program has been escalated using the Capital Improvements Plan (CIP) tool developed by the CSO Program. The cost of the Program was not escalated to a single future year but rather each project was escalated to the year(s) they are expected to be delivered in. The City and PMT conducted an effort to re-baseline (in June of 2023) present and future program costs due to the significant influence of COVID 19 and supply chain issues that resulted in increased construction related expenditures. The current estimated cost of the Program with contingencies is $2.125 billion through 2037. Rates are in place for 2019 to 2023. As noted previously, a new rate ordinance was approved in December of 2022 for years 2024 through 2028.

Through July of 2023, the City has paid $925 million to implement the LTCP and has encumbered another $107 million for a total of $1.03 billion, or approximately one-half of the total estimated cost of the Program.

Adjustments in schedules and costs of the individual projects within the Program are included as part of the APPRs in Attachment 2.

V. CSO Outfall 102 and 205 Monitoring Data

Permit Requirements
Part VIII. D. states, "A summary of monitoring data from Outfall CSO 102 and Outfall CSO 205."

A. Missouri River Resource Recovery Facility – Outfall 102

The disinfection/dechlorination system was put into operation starting with the recreation season in 2020. The Interim Requirements for CSO Outfall 102, as defined in Table 3, Part II of the current Permit, were in effect for this permit year. The current permit states that requirements are in effect until January 1, 2023, after which effluent limits for *E. coli* and total residual chlorine limits will be in effect. On January 10, 2022, the City requested the date be changed to 2025. The conditions for approved bypass of combined sewer complied with these requirements.

There were 26 total overflow events at CSO 102 from October 1, 2022, through September 30, 2023, with 13 of them occurring during the recreation season of May 1 to September 30. An event at CSO 102 is considered the total time between the start and stop of flows on consecutive days. Therefore, event parameters are reported as averages or totals over the days that event took place. Results from these events are reported on quarterly discharge monitoring reports (DMRs) submitted to NDEE. Table 5-1 summarizes the data for CSO 102. *E. coli* values slightly increased from the previous reporting year. The amount of flow treated through CSO 102 has decreased by over half and the duration has decreased by half of what it was in the Annual Report for 2021 to 2022. The lower flows and duration of overflows is a function of drought conditions and smaller storms which resulted in an increase in full capture, non-discharge events.

The values reported in Table 5-1 are defined as follows:

- Flow rate: average flow rate of each event at the CSO 102 outfall in the reporting year
- Total flow: total volume of all events in the reporting year
- Duration of discharge: total of all events in the reporting year
- Total suspended solids (TSS) ~~and biochemical oxygen demand~~: average concentration of each event in the reporting year
- Biochemical oxygen demand (BOD): average concentration for all events in the reporting year
- Total Residual Chlorine (TRC): Allowable values calculated for each event based on Missouri River flow, MRWRRF effluent flow, and MRWRRF effluent TRC
- *E. coli*: geometric mean of all the events in the reporting year where *E. coli* monitoring is required
- pH: maximum and minimum values of all of the events in the reporting year
- Dieldrin and polychlorinated biphenyls: all reported event values were less than 0.001 milligram per liter (mg/L), which is the analysis detection limit

Table 5-1. CSO 102 Monitoring[a]

Parameter	Value		Units
Flow Rate	4.02		MGD
Total Flow	104.45		MG
Duration of Discharge	97.9		hours
TSS	266		mg/L
Biochemical Oxygen Demand	191		mg/L
TRC	0.003		mg/L
E. coli	17		Colonies/100 mL
pH 00400	Min = 6.50	Max = 7.71	Standard Units

[a] Effluent limits do not apply to CSO 102 at this time.

Notes:

max = maximum
MG = million gallons
mg/L = milligram(s) per liter
min = minimum
mL = milliliter(s)

B. Saddle Creek Retention Treatment Basin (SCRTB) – Outfall 205

The current Permit, Part III specifies interim requirements for the monitoring of CSO Outfall 205. This requirement was originally drafted in the permit to be effective on October 1, 2020. A permit modification effective June 2016 changed this date to January 1, 2024. Section IV, as part of this report, lists all flow monitoring sites. Section IV also details the status of the SCRTB Project, which did reach Initiation of Operation on December 20, 2023. The project is anticipated to reach final completion in the Spring of 2024. The LTCP Program compliance schedule, and Section VII, as part of this report, details CSO occurrences during wet weather.

VI. Instream Monitoring Data

Permit Requirements
Part VIII. F. states: A summary of in-stream monitoring data consistent with the Implementation Monitoring Plan objectives to include monitoring station identification, stream identification, the list of parameters along with the monitoring results.

The Draft Implementation Monitoring Plan (IMP) was originally submitted with the 2009 LTCP and was resubmitted in 2010 with the CSO Permit Application. It is important to note that although instream monitoring was included as part of the March 2010 Draft IMP, it also states the following in the plan:

> *Although not legally required by state or federal regulations, the City has included in-stream water quality monitoring as part of the water-quality monitoring plan. An in-stream water-quality monitoring network within portions of the Papillion Creek, its tributaries, and the Missouri River will provide water quality data that benefits both the CSO Program and the Stormwater Program.*

Sections VI.A and VI.B of this report contain a summary of in-stream monitoring data. Figure 6-1 is a map showing the locations of the City and USGS instream monitoring sites.

The IMP was replaced in the 2021 LTCP Update by a new Post-Construction Monitoring Plan. The new Plan includes the same water quality monitoring as the IMP.

A. City Instream Monitoring

The City's instream monitoring for this reporting year was performed by the City's Sewer Maintenance Division.

The City collected samples from instream monitoring sites CC-1, CC-2, LPC-3, BPC-3, PC-1, LPC-1, and BPC-4, which were analyzed through Midwest Laboratories, Inc. in accordance with the PCMP. The City has previously contracted with USGS for sampling at sites MR-1, MR-CB, MR-4, and MR-5, which is covered later in Section 6.B. Table 6-1 contains descriptions of each monitoring site the City administers. The frequency of sampling is as follows:

> *… The in-stream monitoring will be performed during the spring (March 1 to May 31), summer (June 1 to August 31) and fall (September 1 to November 30) seasons. The frequency of monitoring will be twice per season, one of which will be during wet weather.*

Table 6-2 summarizes the results for the wet weather and dry-weather sampling for the fall season of 2022 and the first two seasons (spring and summer) of the 2023 reporting year. The fall season of 2022 is included in this year's report because these data were primarily collected during the 2022 reporting year. The Missouri River sites were also sampled by USGS through December 31, 2022 as described in more detail in the next subsection, VI.B. The City's 2023 fall (September 1 to November 30) sampling results are not included in this year's report because these samples were collected after the end of the reporting year. The 2023 fall sampling results

will be included in next year's report. In general, water quality parameters worsen during wet weather compared to the dry-weather samples. For example, values for dissolved oxygen, total coliform, *E. coli*, biochemical oxygen demand (BOD), and total suspended solids (TSS) are all worse during wet weather. However, the source of the increased levels could be the result of stormwater runoff and not solely CSOs. A year-over-year review would provide a better understanding of the impacts on the streams.

Table 6-1. 2023 City Instream Monitoring Site Descriptions

Monitoring Station Identification	Stream	Location Description
PC-1	Papillion Creek	Downstream of the confluence with Big Papillion Creek
BPC-4	Big Papillion Creek	Upstream of the confluence with Little Papillion Creek
BPC-3	Big Papillion Creek	Downstream of the confluence with Little Papillion Creek
LPC-3	Little Papillion Creek	Upstream of the confluence with Cole Creek
LPC-1	Little Papillion Creek	Downstream of CSO discharges and upstream of confluence with Big Papillion Creek
CC-2	Cole Creek	Upstream of CSO discharge points
CC-1	Cole Creek	Downstream of CSO discharge points

Figure 6-1. Instream Water-Quality Monitoring Locations

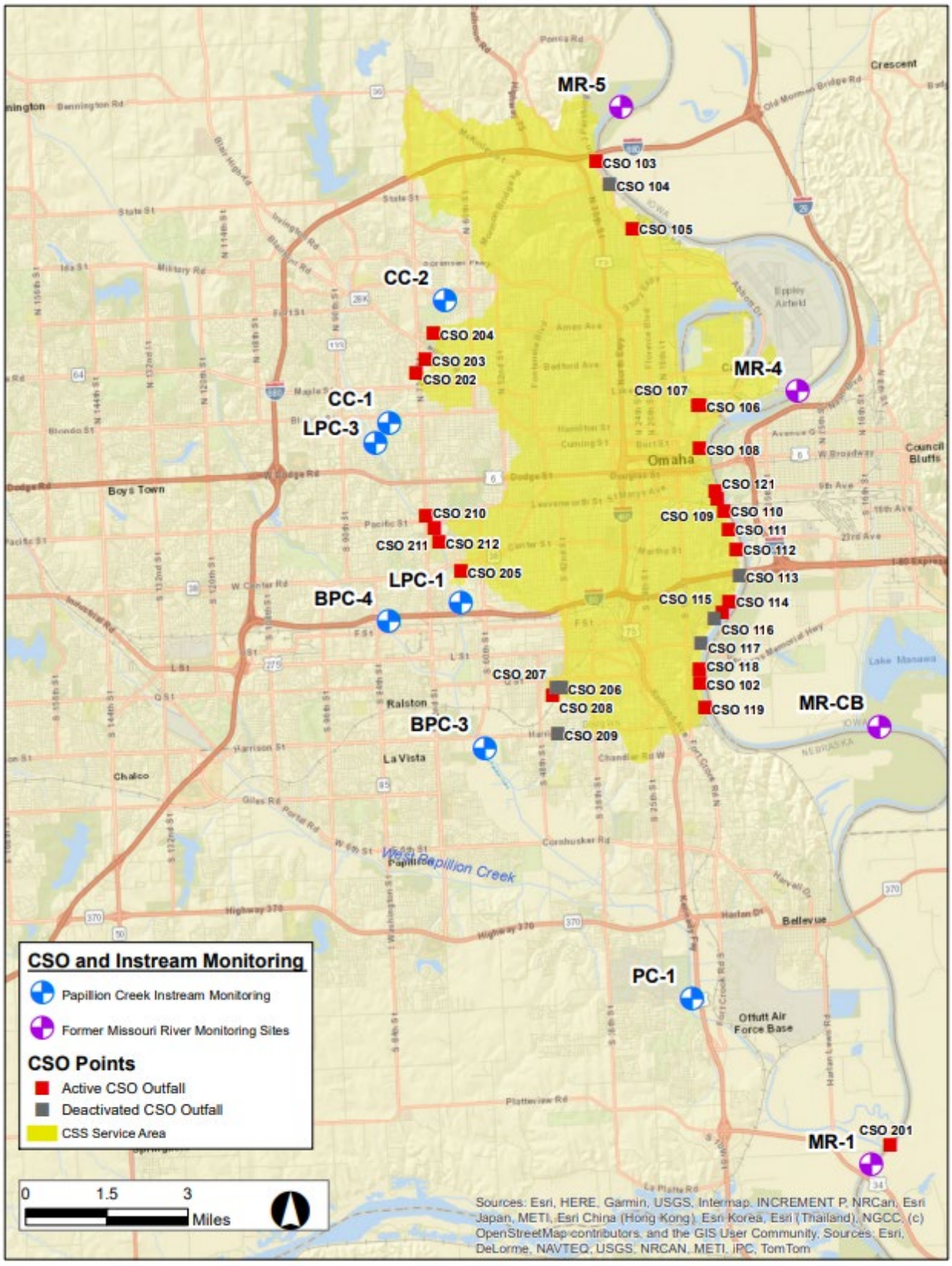


Table 6-2. 2023 City Instream Monitoring Results

2022 FALL - DRY - SEPTEMBER 1ST TO NOVEMBER 30TH							
PARAMETER/SITE[a]	CC - 2	LPC - 3	CC - 1	BPC - 3	LPC-1	BPC-4	PC-1
DATE	11/29/2022	11/29/2022	11/29/2022	11/29/2022	11/29/2022	11/29/2022	11/29/2022
TIME	10:05	11:00	10:45	12:25	12:00	11:40	13:00
FIELD TEMP, C°	4.0	1.6	1.7	2.2	3.6	3.6	3.4
FIELD CONDUCTIVITY (mMHO/cm)	1280	905	1080	787	976	721	840
FIELD pH	7.80	8.75	8.42	8.63	8.43	8.51	8.73
FIELD DO (%)	*	*	*	*	*	*	*
FIELD DO (mg/L)	*	*	*	*	*	*	*
BOD (mg/L)	3	2	3	2	2	2	<
TSS (mg/L)	8	10	10	12	10	18	11
Total Coliforms (MPN/100ml)	24200.0	8664.0	15530.0	19860.0	8664	17330.0	17330.0
E. coli (cfu/100ml)	6488.0	272.3	866.4	1046.0	272.3	1203.0	1120.0
Solids or Foam Present?	NO	NO	YES	NO	NO	NO	NO

*Note: Field DO sampling device malfunctioned due to probe dried out

2022 FALL - WET - SEPTEMBER 1ST TO NOVEMBER 30TH							
PARAMETER/SITE[a]	CC - 2	LPC - 3	CC - 1	BPC - 3	LPC-1	BPC-4	PC-1
DATE	11/4/2022	11/4/2022	11/4/2022	11/4/2022	11/4/2022	11/4/2022	11/4/2022
TIME	8:35	9:30	9:10	10:55	10:30	10:00	11:30
FIELD TEMP, C°	7.3	7.2	7.1	7.9	7.1	8.5	7.3
FIELD CONDUCTIVITY (mMHO/cm)	1380	810	1056	668	718	808	698
FIELD pH	7.90	8.15	7.99	8.32	8.38	8.36	7.90
FIELD DO (%)	14%	21%	13%	27%	24%	26%	31%
FIELD DO (mg/L)	1.68	2.51	1.55	3.23	2.85	2.99	3.77
BOD (mg/L)[b]	>27.2	>26.8	>26.8	>27.05	22	14	16
TSS (mg/L)	33	66	26	176	77	134	108
Total Coliforms (MPN/100ml)	1120000.0	547500.0	91100.0	1046000.0	648800.0	488400.0	242000.0
E. coli (cfu/100ml)	110600.0	83000.0	4352.0	103900.0	91000.0	68300.0	2282.0
Solids or Foam Present?	YES	YES	YES	YES	YES	YES	YES

2023 SPRING - DRY - MARCH 1ST TO MAY 31ST							
PARAMETER/SITE[a]	CC - 2	LPC - 3	CC - 1	BPC - 3	LPC-1	BPC-4	PC-1
DATE	4/7/2023	4/7/2023	4/7/2023	4/7/2023	4/7/2023	4/7/2023	4/7/2023
TIME	10:25	11:15	11:00	13:10	12:20	11:50	13:55
FIELD TEMP, C°	10.2	10.2	10.1	14.2	11.2	11.2	12.7
FIELD CONDUCTIVITY (mMHO/cm)	1840	816	1780	911	1042	822	878
FIELD pH	7.76	8.89	8.06	8.72	7.84	8.63	8.77
FIELD DO (%)	77%	94%	101%	115%	105%	98%	107%
FIELD DO (mg/L)	8.67	10.51	11.41	11.83	11.47	10.72	11.34
BOD (mg/L)	4.9	2.8	2.9	3.9	3.1	2.6	3.1
TSS (mg/L)	36	12	21	21	7	32	15
Total Coliforms (MPN/100ml)	4106.0	770.1	261.3	1414.0	1203.0	1300.0	290.9
E. coli (cfu/100ml)	113.7	69.7	26.5	42.8	816.4	365.4	3.1
Solids or Foam Present?	YES	NO	NO	NO	NO	NO	NO

2023 SPRING - WET - MARCH 1ST TO MAY 31 (NOTE: SAMPLING CONDUCTED 06/29/23)							
PARAMETER/SITE[a]	CC - 2	LPC - 3	CC - 1	BPC - 3	LPC-1	BPC-4	PC-1
DATE	6/29/2023	6/29/2023	6/29/2023	6/29/2023	6/29/2023	6/29/2023	6/29/2023
TIME	9:00	10:00	9:40	11:30	11:00	10:35	12:00
FIELD TEMP, C°	21.5	22.4	21.5	23.9	23.2	22.5	24.6
FIELD CONDUCTIVITY (mMHO/cm)	502	606	500	527	525	534	667
FIELD pH	8.06	8.15	7.92	7.74	7.75	7.92	7.58
FIELD DO (%)	66%	73%	48%	55%	43%	67%	18%
FIELD DO (mg/L)	5.84	6.28	4.21	4.67	3.63	5.77	1.53
BOD (mg/L)	7.6	8.7	28.1	18.9	23.5	16.1	20.2
TSS (mg/L)	244	660	1300	709	700	651	604
Total Coliforms (MPN/100ml)[b]	>2419600	>2419600	>2419600	>2419600	>2419600	>2419600	>2419600
E. coli (cfu/100ml)[b]	17330.0	435200.0	110600.0	98700.0	1414000.0	71200.0	>2419600
Solids or Foam Present?	YES	YES	YES	YES	YES	YES	YES

2023 SUMMER - DRY - JUNE 1ST TO AUGUST 31ST							
PARAMETER/SITE[a]	CC - 2	LPC - 3	CC - 1	BPC - 3	LPC-1	BPC-4	PC-1
DATE	8/17/2023	8/17/2023	8/17/2023	8/17/2023	8/17/2023	8/17/2023	8/17/2023
TIME	8:45	9:55	9:25	11:20	10:50	10:25	11:55
FIELD TEMP, C°	20.4	22.4	21.4	22.7	22.1	21.9	23.9
FIELD CONDUCTIVITY (mMHO/cm)	1064	916	634	945	1003	887	883
FIELD pH	7.80	8.53	8.02	8.62	8.28	8.36	7.56
FIELD DO (%)	67%	71%	79%	90%	80%	70%	83%
FIELD DO (mg/L)	6.04	6.13	6.95	7.71	6.93	6.14	6.96
BOD (mg/L)	1.5	1.9	<	2.8	2.5	2.1	3.4
TSS (mg/L)	5	23	11	14	14	28	27
Total Coliforms (MPN/100ml)	39900.0	19860.0	42000.0	17330.0	15600.0	19860.0	17330.0
E. coli (cfu/100ml)	2282.0	689.0	836.0	203.0	1467.0	279.0	213.0
Solids or Foam Present?	NO	NO	NO	NO	NO	NO	NO

2023 SUMMER - WET - JUNE 1ST TO AUGUST 31ST							
PARAMETER/SITE[a]	CC - 2	LPC - 3	CC - 1	BPC - 3	LPC-1	BPC-4	PC-1
DATE	7/12/2023	7/12/2023	7/12/2023	7/12/2023	7/12/2023	7/12/2023	7/12/2023
TIME	8:30	9:25	9:10	10:50	10:30	9:50	11:20
FIELD TEMP, C°	20.5	20.6	20.7	21.7	21.4	21.4	22.7
FIELD CONDUCTIVITY (mMHO/cm)	238	260	151	224	209	220	316
FIELD pH	7.95	7.80	7.91	7.58	7.83	7.97	7.68
FIELD DO (%)	88%	73%	78%	71%	69%	70%	69%
FIELD DO (mg/L)	7.90	6.51	6.94	6.21	6.08	6.20	5.95
BOD (mg/L)	4.4	6.8	6.9	6.5	7.4	7.3	6.8
TSS (mg/L)	170	428	803	746	708	576	1160
Total Coliforms (MPN/100ml)[b]	1986000.0	1300000.0	1046000.0	1553000.0	1733000.0	686700.0	>241960
E. coli (cfu/100ml)	15530.0	42800.0	19860.0	24200.0	43700.0	17330.0	24200.0
Solids or Foam Present?	YES	YES	YES	YES	YES	YES	YES

[a]Monitoring sites defined in Table 6-1.
[b]Lab dilution mix not high enough to accurately report parameter value.
Notes:
< = parameter value is less than the detection limit.
°C = degree(s) Celsius
BOD = biochemical oxygen demand
cfu = colony forming units
DO = dissolved oxygen
mMHO/cm = millimho per centimeter
MPN/100 mL = most probable number per 100 milliliters

B. U.S. Geological Survey Sampling and Analysis

In July 2012, the City requested the USGS Nebraska Water Science Center to implement a Missouri River water-quality monitoring program at selected points near the Omaha metropolitan area. A letter dated May 8, 2023 requested modification of the Post Construction Monitoring Plan removing the USGS Missouri River monitoring from the plan as noted below. The modification was approved on May 19, 2023.

This program was consistent with the Draft IMP and the approved PCMP. The scope for the USGS work included the following key components:

1. Provide continuous stage and discharge records for the Missouri River at locations important to the pursuit of understanding the water quality in the river. Continuous stage discharge is provided by the USGS for the Omaha area at the I-480 Bridge gauging station. Data from location at the I-480 Bridge can be found at the following link: http://waterdata.usgs.gov/nwis/uv?site_no=06610000

2. Provide monthly discrete water-quality sampling of selected compounds at locations important to the pursuit of understanding of water quality in the river. The four discrete sampling locations are as follows:

    - MR-5 USGS Site Number: 412126095565201
      Missouri River at NP Dodge Park (above the City)
    - MR-4 USGS Site Number: 411636095535401
      Missouri River at Freedom Park (below the Airport)
    - MR-CB USGS Site Number: 06610505
      Missouri River near Council Bluffs, IA (below MRWRRF and above the confluence with Papillion Creek, North/East side of the river)
    - MR-1 USGS Site Number: 410333095530101
      Missouri River near La Platte (downstream of the PCWRRF and below the confluence with Papillion Creek but above the Platte River)

These locations can be seen on Figure 6-1.

Field parameters monitored at these locations include stream discharge, pH, temperature, DO, specific conductance, turbidity, *E. coli* and total coliforms, TSS, total phosphorus, 5-day biochemical oxygen demand (BOD_5), total Kjeldahl nitrogen (TKN), nitrogen, nitrate, ammonia nitrogen, and floating debris.

The USGS indicates when they report whether there were wet weather conditions in Omaha or upstream during the sampling event. Apart from *E. coli* and total coliforms, samples are a composite of the cross section of the stream. E. coli samples are a single grab sample taken from the weighted center of the river. Discrete sampling data were collected during the reporting year by USGS staff and analyzed through Midwest Laboratories, Inc. and USGS Labs. Samples were collected from a boat and are based on depth-integrated sampling procedures used by the USGS to obtain samples that represent a composite of the cross section of the Missouri River at the sampling location.

Except for site MR-4, USGS provided continuous monitoring of selected water-quality parameters at locations important to the pursuit of understanding the water quality in the river. USGS obtained continuous data for the Missouri River at the following sites for pH, temperature, DO, specific conductance, and turbidity. These data were provided to the City directly and published on the USGS website for the sampling site as follows:

Data for MR-5 can be found at:

http://waterdata.usgs.gov/ne/nwis/uv/?site_no=412126095565201

Data for MR-4 can be found at:

https://nwis.waterdata.usgs.gov/ne/nwis/inventory/?site_no=411636095535401&agency_cd=USGS

Data for MR-CB can be found at:

http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06610505

Data for MR-1 can be found at:

http://waterdata.usgs.gov/ne/nwis/uv/?site_no=410333095530101

The City decided to end the USGS monitoring since there are no changes in CSO Controls in the near future. The PCMP was modified to reflect this change and was approved by the NDEE in a letter dated May 19, 2023. In the period that the City has been monitoring, there were some significant CSO controls implemented in the Missouri River Watershed. This has included both sewer separation projects and implementation of major controls. Of note was the addition of treatment and disinfection of the CSO 102 bypass in 2019. The next major reduction in untreated flow to the Missouri River will not occur until the Northeast Omaha High Rate Treatment System starts treatment in 2034. Therefore, additional significant changes in water quality are not anticipated for over 10 years.

Table 6-3 provides a range of results for the parameters listed at each of the monitoring sites for the period of October 1 through December 31, 2022. These results show the general increase in discharge, TSS, total coliform, and *E. coli* as the gauge locations move downstream. In addition, it shows that *E. coli* levels can have a wide range of values, specifically as the sites move downstream. It should be noted that this limited data set is from a time period outside of recreation season for the Missouri River and no disinfection is required outside of recreation season. Attachment 4 provides a summary of past monitoring and recent provisional results through December 31, 2022.

Table 6-3. USGS Monitoring Parameter Results (Limited from October to December 2022)

Parameter	Monitoring Site (Upstream to Downstream)							
	MR-5		MR-4		MR-CB		MR-1	
	NP Dodge		Freedom Park		Council Bluffs		LaPlatte	
	Max	Min	Max	Min	Max	Min	Max	Min
Discharge (cfs)	33400	15600	33700	15600	34900	15600	33700	15600
Temperature (°C)	9.8	1.2	10.3	1.6	10.4	1.2	11	2.3
Dissolved Oxygen (mg/L)	12.7	10.3	12.7	10.3	12.8	10.3	12.5	10.2
BOD5 (mg/L)	3	<2.0	<2.0	<2.0	5	<2.0	2	<2.0
pH	8.4	8	8.4	8	8.4	8.1	8.4	8.2
TSS (mg/L)	33	<15	37	21	43	21	31	21
E. coli (MPN/100 mL)	770	88	730	150	1300	330	24000	460
Total Coliform (MPN/100 mL)	1300	580	>2400	610	2400	>2400	>24000	>2400

Notes:

Data presented are provisional unless otherwise noted.
cfs = cubic feet per second
N/A = Data not available for reporting year

VII. Performance Report

Permit Requirements
Part VIII, Section E. states: Report the number of times each CSO outfall has an overflow and an evaluation as to whether the controls are achieving their design intent. Provide documentation in the Annual Report that demonstrates that each CSO overflow occurrence was the result of a wet weather event. Once in the term of the permit, provide the percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis that is eliminated or captured for treatment.

These items are discussed in the following sections.

A. CSO Occurrence Inspection

The City monitored all 24 permitted CSO points in the system in the reporting year. Sewer Maintenance Division performs CSO occurrence inspection at 20 CSO points and maintains records for 23 of the points. The 24th point, which is CSO 102, is monitored separately by the MRWRRF staff, as these flows receive primary treatment and disinfection. PCWRRF staff are responsible for recording the number of occurrences for overflows at CSO 201 and provide the information to Sewer Maintenance Division for filing. CSO 109 and CSO 205 are monitored by level sensors and under a quality assurance protocol and are also reported to Sewer Maintenance for filing.

For the 20 CSO points for which inspections are conducted, the City's standard procedure continued this year to visually inspect the designated CSO structures and tracking devices after rain or snow-melt events and record the inspection in the bypass tracking database. City personnel are dispatched within 24 hours of wet weather occurrences, including weekends and holidays, to meet current permit requirements. The inspections are performed and documented by the Sewer Maintenance Division. Routine maintenance checks at the lift stations and control gates also allow for a check of potential dry-weather CSO occurrences. Table 7-1 shows the counts of wet weather overflows for 23 CSO points. A more detailed tabular report on the wet weather confirmed CSOs can be found in the CSO Inspection Report in Attachment 3. For information on CSO 102, which receives primary treatment and disinfection, refer to Section V.

Table 7-1. Wet Weather CSO Occurrences for Reporting Year

CSO Outfall	Receiving Water	CSO Frequency (count)
103	Missouri River	1
105	Missouri River	39
106	Missouri River	32
107	Missouri River	26
108	Missouri River	35
109	Missouri River	42
110	Missouri River	32
111	Missouri River	14
112	Missouri River	31
114	Missouri River	14
115	Missouri River	44
118	Missouri River	35
119	Missouri River	55
121	Missouri River	27
201	Papillion Creek/Missouri River Confluence	0
202	Cole Creek	29
203	Cole Creek	8
204	Cole Creek	47
205	Little Papillion Creek	39
208	Blood Creek to Little Papillion Creek	0
210	Little Papillion Creek	30
211	Little Papillion Creek	5
212	Little Papillion Creek	30

The following is additional context for the accounting in Table 7-1:

- CSO 201 did not have any overflows during the reporting period.
- No overflows occurred at CSO 208 and 1 occurred at CSO 103 during the reporting year. Sewer separation is complete for these basins, and they are in a post-construction monitoring phase. The overflow at 103 is attributed to a 2”/hour rain event (10 year frequency) that occurred in the basin on August 2nd, 2023. It is anticipated that future upgrades to the Bridge Street Lift Station (outside of the CSO Program) will facilitate the closure of CSO 103.
- CSO 119 has five diversion structures to monitor for overflow: MHs 0551001, 0551020, 0551021, 0571049, and 0551030. The City is continuing to check these manholes to

verify overflows at CSO 119. The City will be installing a new flow meter in a new manhole that was constructed within the last year on the North Barrel just upstream of the North Barrel diversion structure as part of the Monroe Street Lift Station upgrade project.

- Dry-weather overflows are reported in Nine Minimum Controls (Section II) of this Annual Report.

The City continued its program with cameras and level sensors to monitor the occurrence of CSO overflows at 11 locations (Table 7-2). The purpose of the technology is to assist the City in verifying overflow events, verifying maintenance needs, providing alerts to staff of flow depths and potential overflow events, and evaluating staffing efficiencies.

Table 7-2. CSO Surveillance Locations

CSO ID	Approximate Location	Manhole ID	Notes
CSO 105	N. of John J. Pershing and Read St.	0037363	Monitor weir and flap gates
CSO 106	N. of Riverfront and Abbott	3004003	Monitor screen and weir
CSO 107	Grace St.	3004039	Monitor overflow
CSO 108	N. of Riverfront and Cass	3001001	Monitor southwest screen; camera only, no level sensor
CSO 108	10th and Mike Fahey	0002276	Monitor weir at diversion
CSO 109	5th and Marcy	0517512	Monitor northeast side at weir
CSO 121	7th and Jones St.	0516013	Monitor weir
CSO 202	72nd and Bedford	0247075	Monitor overflow
CSO 205	64th and Dupont	0692079F	Monitor weir
CSO 208	45th and T St.	0645025	Monitor overflow pipe
CSO 210	66th and Blondo	0195023	Monitor weir wall, dry-weather overflows

City staff continue to physically check the CSO tracking devices at these locations along with using the level sensors and cameras from the surveillance effort. Throughout the year, comparisons were made in the findings between the City's device check program and the technology.

B. Evaluation of Completed Controls

The CSO Permit requires annual reporting as to whether the controls are achieving their design intent. The City monitors the effectiveness of completed CSO controls as identified in the LTCP.

CSO 203 - was substantially completed on May 4, 2023. Per the *2021 Post Construction Monitoring Plan*, flow meters were installed after sewer separation was complete. The flow meters were installed on August 30, 2023. The meters will be used to assess the effectiveness

of the sewer separation. Due to maximizing wet-weather flow to the interceptors, modeling suggests there is a risk of backflow from the contribution of wet-weather flow from CSO 204 and CSO 202 to the Cole Creek interceptors. Therefore, CSO 203 will remain open and monitored as the other Cole Creek basin projects are underway. The City will better understand the influences of the system with this continuous monitoring.

CSO 208 – As reported in previous years, the sewer separation for the drainage basin to CSO 207 and CSO 208 was officially completed on April 30, 2019. CSO 207 was reconfigured in the project and is no longer a combined sewer overflow point. CSO 208 remains open as a 12" standpipe in a manhole, approximately 3.3 feet above the flow line of a 15-inch sanitary system. There were no overflows in the reporting period between October 1, 2022, and September 30, 2023. The significant rain events for the report year were in the ranges of the 1 or 2 year recurrence intervals.

Mapping and field review confirmed an existing storm sewer connection to the sanitary sewer downstream of this CSO diversion that has existed since 1934, according to record drawings. Past flow monitoring shows that this one storm connection can cause a wet weather CSO. The risk of the single connection is being considered and might result in a future separation project separate from the LTCP.

Flow monitoring in 2020 and 2021 show effects of backwater and higher peak wet weather flows than that of design-level conservatism. No new monitoring was performed in the reporting year. A small scoping project was executed in the report year to look at existing data more holistically against other parts of the system to determine the risk prioritization of this drainage basin. The City will consider the recommendations in the report, expected 4th quarter of 2023, to determine the next monitoring scope of work. Closure of the CSO diversion will be planned after the City gains a high level of confidence that there will be no repercussions to people or property.

CSO 103 Bridge Street Lift Station – The 36th Street and McKinley sewer separation project was completed in November 2014. Post-construction flow monitoring found that the basin is high for infiltration. CSO overflows, wet weather basement backups, and system manhole overflows are recorded and monitored in the City's maintenance management system and GIS. There has been only one wet-weather-related basement backup from 2014 to the present and it was in September of 2014 and was attributed to a 5-year rain event and vented manhole covers. The CSO basin experienced an isolated 10-year rain event this year with no reported basement backups.

The City performed a manhole lamping project in 2021 in the sub-basin specifically to study the extent of degraded conditions in small-diameter concrete sewers that contribute grit and debris to the system. The aforementioned wet-weather incident in 2014, related to manhole ID 0064009, did show lamping of the service lateral needing maintenance actions. Further study of the gravity system will be prioritized based on risk within the whole collection system asset management program. At this time, this area's risk is medium and does not meet the threshold for a full-system sewer evaluation study, generally set by the top 10% aggregate risk by the sewer management area. Lift station asset management has developed new risk criteria and prioritization within the reporting year. This station is in the top 15% for necessary risk mitigation or replacement. Currently, risks related to debris issues and potential dry-weather overflows are being mitigated with maintenance and inspection protocols. The deactivation and closing of the CSO outfall are planned to be aligned with future lift station upgrades. This CSO continues to be

monitored with 1 recorded overflow in 2023 due to an isolated intense rainfall; however, none occurred in 2020, 2021, or 2022.

C. Wet Weather CSO Occurrences

The CSO Permit requires Annual Report documentation that each CSO overflow occurrence was the result of a wet weather event. If there is a CSO discharge that occurred during dry weather, it will be reported in Section II.E, Prohibition of CSOs during Dry Weather.

Attachment 3 is a compiled record of all CSO occurrences that were the result of wet weather events during the reporting period. The report identifies the CSO outfall inspected, the inspection date and time, the person who completed the inspection, the reason for the overflow, whether an overflow occurred, and whether it was still occurring during the inspection. Comments and the rainfall amount and date of precipitation are noted. The standard procedure states the following:

> *The City reviews available rain data during the year and compares data to inspection results of the inspections, including checking against Eppley Airport rain data as a starting reference point. On dates when only trace amounts are recorded by Eppley Airport, the available rain gauges in the CSS area are compared and corrections are made to the tracking database to more accurately represent rainfall totals.*

The rainfall during the report year at the Eppley Airport rain gauge was 23.03 inches. When compared with the long-term average annual rainfall of 31 inches at Eppley Airport, this would appear to be significantly low compared to an average year. Rainfall in the first half of 2023 continued the drought trend from 2022 with March, May, and June observed rainfalls contributing to a 7-inch combined deficit compared to normal rainfalls for those months. The CSO locations in the Papillion Creek Watershed reflect a wet weather CSO frequency as high as 40 overflows, while the CSO locations along the Missouri River show a high frequency of 55 overflows. In the report period there were 57 rain events recorded at 0.1 inches or greater. The comparison of data meets the quality assurance standards set by the City in this program.

D. Percent by Volume Captured

The CSO Permit requires that once during each permit term, the City should provide the percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis that has been eliminated or captured for treatment. This requirement was met and reported in the 2019 Annual Report. The analysis used the representative year rainfall (to evaluate average conditions) with an Info Works model simulation of the sewer system as of the end of 2019. This requirement will be met in a future annual report as required by the new permit.

VIII. Other Information

Permit Requirements
Part VII.F states: Other information that may be included in the Annual Report to include "measures of success" such as reduction in the number of overflow events, reduction in the number of CSO outfalls, or other indicators or improvements of receiving water quality

This year's report includes information about the reduction in overflows and CSO outfalls, receiving water quality, and the City's new Inflow and Infiltration Reduction Program. At the NDEE Waste Management Division's request, a section regarding project specific materials management has also been included. This section of the report will also highlight other effective measures enacted by the City and the CSO Program to ensure success.

A. Reduction in the Number of Overflow Events

As LTCP projects are implemented, the number of overflow events will be reduced. The rate of reduction in the number of overflow events will vary based on the following factors:

- The type of control being established for a given CSO point through the implementation of the LTCP
- The time when the control of a CSO point will be fully implemented as a part of the LTCP

The unpredictability and varied nature of wet weather impacts the magnitude, volume, and duration of the overflows at a given CSO point. CSOs 208, and 211 have shown a clear reduction in overflow events because of the completed sewer separation projects. CSO 208 recorded zero overflows this year. The rain for this reporting period is normal trending toward below average annual rainfall, and there were very few high intensity storms. CSO 211 still has a few inlets to remove from the system; this will be completed with the CSO 212 Sewer Separation Project. The single overflow at 103 is attributed to a 2"/hour rain event (10-year frequency) that occurred in the basin on August 2nd, 2023. It is anticipated that future upgrades to the Bridge Street Lift Station (outside of the CSO Program) will facilitate the closure of CSO 103. The CSOs and basins will continue to be monitored. Monitoring the overflow occurrences as discussed in Section VII, Performance Report, will help the City evaluate the progress of, and understand the success of, the LTCP projects as they are being implemented. As more projects come online, a system will be developed in cooperation with NDEE to report the compliance monitoring associated with the CSO Program.

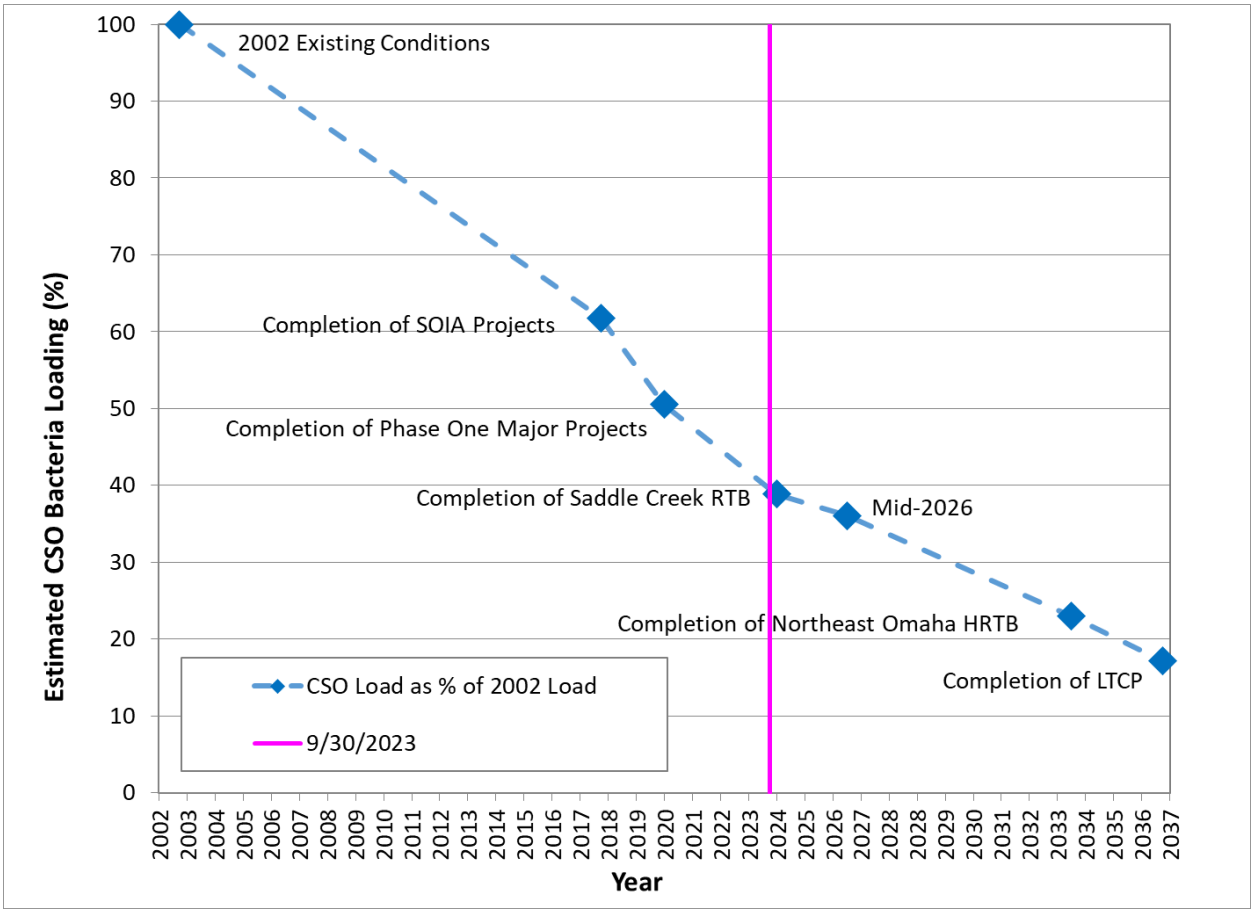
B. Reduction in the Number of CSO Outfalls

Prior to the LTCP, the City worked to eliminate CSOs 116 and 206. During LTCP implementation, the City has worked to further eliminate the occurrence of CSOs at several permitted outfalls. Five additional CSOs have been eliminated: CSO 104, CSO 113, CSO 117, CSO 207, and CSO 209. The City still maintains 24 active permitted CSO points. Sewer separation projects in the basins of CSOs 202, 203, 210, 211, and 212 are currently underway, with the goal of deactivating the outfalls after a period of post-construction monitoring.

C. Receiving Water Quality

Figure 8-1 shows the expected reduction in *E. coli* from CSOs resulting from the implementation of the LTCP, which was revised to reflect the 2021 LTCP Update. The *E. coli* load to the Missouri River was reduced significantly with the implementation of the South Omaha Industrial Area (SOIA) Lift Station, Force Main, and Gravity Sewer, as well as the MRWRRF improvements. Another major reduction will occur with the completion of the Saddle Creek RTB project which will begin wet weather treatment in the next reporting year. This project became operationally complete with the Initiation of Operation on December 20, 2023.

Figure 8-1. Modeled E. coli Reduction over LTCP Implementation



D. Material Management

During the 2022 to 2023 reporting year, 554.21 tons of non-hazardous, contaminated waste material associated with the Blake Street Lift Station Project was transported to Pheasant Point landfill for disposal. Similarly, 122.32 tons of non-hazardous, contaminated waste material associated with the OPW 53753, Nicholas 3B Project was transported to Pheasant Point landfill for disposal. The City monitors and tracks contaminated waste materials and soils and uses this report to update the NDEE Waste Management Division.

As part of the design process, additional environmental and geotechnical investigations occurred on a variety of projects. Cuttings were disposed of in accordance with applicable rules and regulations.

To provide the contractor with the necessary guidance and protocols to manage and dispose of soil and groundwater generated during the implementation of the LTCP, the City collaborated in the 2012 to 2013 timeframe with NDEE to develop an NDEE-approved Program related Materials Management Plan for Soil and Groundwater referenced in the Project Manual of the Construction Documents. This document was revised and approved by NDEE on November 25, 2021.

E. Inflow and Infiltration Reduction Program

The 2021 LTCP Update proposed that the City would develop a program targeted at I/I reduction. This program is intended to provide a framework for reducing I/I if such wet weather influence prevents the closure and deactivation of a CSO. City staff have also been assessing wet weather influence within the sanitary sewer system, and the I/I Reduction Program goal is to prioritize the entire combined and sanitary sewer system respective to level of service risks.

The City developed its *Task 6.12 – Inflow Reduction Standard Practices Guidance Document* (2020), which identified technologies for rehabilitation of pipes, manholes, and laterals; lists types of sewer system investigations and the City's established procedures for conducting them; describes considerations for technology selection; and provides a framework for developing an Inflow Reduction Plan. The guidance was applied to a pilot area with separate sanitary sewers upstream of a combined sewer area currently under design for sewer separation. Field investigations and flow monitoring were conducted. While some defects were identified and some wet weather influence was observed, it was determined that the pilot area did not warrant rehabilitation to reduce I/I. The pilot area evaluation is described in *Evaluation of Inflow/Infiltration Reduction for SMA LP-12.9* (2022).

The City is currently reviewing its priorities and level of service goals, along with risks in the system related to capacity, condition, location, and other factors. An Inflow and Infiltration Reduction strategy is anticipated to fold into a system-wide asset management plan. The guidance document prepared as part of the CSO Program will be used as a foundational element for the I/I reduction Program. The City's strategy includes an initial desktop assessment and sewershed ranking based on existing condition information and wet weather issues. Once a high risk is identified as a potential priority, the standard practices assessment will be performed, including the collection of additional field investigation and flow monitoring data. Assessment findings will then be compared with similar information for other areas of the sewer system being considered for I/I reduction, and the City will determine whether to proceed with a project for the area based on its priority. Any work performed under the Inflow and Infiltration Reduction Program in the combined sewer area will be described in the City's CSO Annual Report.

F. CSO Program Transition

The City and Program Management Team made significant changes to the overall administration of the CSO Program this reporting year with the transition to management entirely by City of Omaha personnel in September 2023. This process included several workshops and meetings to transfer roles and responsibilities for administration, regulatory review, construction oversight, permitting compliance, budget and cost control, modeling, and

Other Information

LTCP Implementation tracking to City management. The transition process included finalization of protocols and program management documentation for the City's ongoing use. Consultant assistance will continue to be provided for project design and construction under City of Omaha oversight. Additionally, the City has begun the process to utilize eBuilder software for project management and will archive existing historical CSO Program Management files and working documents in the City's archiving software

IX. Works Cited

Brown and Caldwell. 2006. *Sewer System Operation and Maintenance Manual for Sewer Maintenance Division.* Updated January 2018.

Burns and McDonnell. 2020. *Wastewater Overflow Emergency Response Plan*. Rev 0.5. October 15.

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City of Omaha (City). 2022. *City of Omaha NPDES Permit for the Municipal Separate Storm Sewer System (MS4) NE0133698 2022 Annual Report*. Environmental Quality Control Division. March 29.

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U.S. Environmental Protection Agency (EPA). 1995. *Combined Sewer Overflows - Guidance for Nine Minimum Controls*. Guidance Document 832-B-95-003. May.

U.S. Environmental Protection Agency (EPA). 1995. *Combined Sewer Overflows - Guidance for Permit Writers*. Guidance Document 832-B-95-008. September.

Attachment 1 – City of Omaha Sewer System Operation and Maintenance Manual Cover Sheet (Current)

SEWER SYSTEM
OPERATION AND MAINTENANCE MANUAL

FOR

SEWER MAINTENANCE DIVISION CITY OF OMAHA, NEBRASKA

PREPARED BY
OLSSON ASSOCIATES

AND

BROWN AND CALDWELL

AUGUST 2006

Rev 1 12-22-2020
Rev 2 11-04-2022

OA PROJECT NO. 2006-0044

2120 South 72nd Street, Suite 1400 • Omaha, Nebraska • (402) 341-1116 • Fax (402) 341-5895

Attachment 2 – LTCP Annual Project Progress Reports (APPRs)

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2022 THROUGH SEPTEMBER 30, 2023

Cole Creek CSO 203 Sewer Separation Project (CSO)

OPW 53059

Project Description, as stated in the 2021 LTCP:

The CSO 203 project (OPW 53059) is a sewer separation project located in the Cole Creek Basin that will provide sewer separation through the construction of both sanitary and storm sewers. The project is anticipated to start construction in 2021, with completion anticipated in 2023. Monitoring will occur after the completion of the project to determine when the outfall can be deactivated.

2021 LTCP Schedule: Complete Construction of this project by December 31, 2023

Compliance Report

Table 1 shows the project delivery schedule (Target Dates) developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which will be included in the next permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	07/04/2018	03/20/2017
Began Final Design	02/12/2019	02/12/2019
Advertise	09/09/2020	09/09/2020
Bid Opening	10/21/2020	10/21/2020
Begin Construction	06/01/2021	06/14/2021
Substantial Completion	**12/31/2023**	05/04/2023

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

The project has met the 2021 LTCP Milestone date of 12/31/2023. Substantial completion was achieved 05/04/2023, and the Title 123 Wastewater Works Construction Completion Card was returned in August of 2023.

Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period:

- A certificate of substantial completion was issued 05/04/2023.

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2022 THROUGH SEPTEMBER 30, 2023

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities anticipated for the next Annual Report period (2023–2024):

Costs

2021 LTCP Budgeted Construction Costs (February 2021)[1]**:** $7,801,666 with contingency (under construction).

Construction Cost at Substantial Completion: $7,415,623 is the construction contracted cost.

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

Other Items of Interest

There are no other items to report.

[1] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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Papillion Creek North (PCN) 210 Sewer Separation

OPW 53320

Project Description as stated in the 2021 LTCP Update:

The purpose of the Papillion Creek North (PCN) 210 Sewer Separation Project (OPW 53320) is to allow the City to eliminate the CSO 210 diversion located at the intersection of 66th Street and Blondo Street. The project is to begin construction in 2021 with completion in 2022. Currently, the sewers upstream to the north and east of CSO 210 are combined sewers. A separate sanitary sewer extends downstream to the south of Blondo Street on North 66th Street. However, during the project study, a couple of inlets were found to be still draining to this system—a remnant of the earlier sewer separation program—and will be removed during the separation of this area.

The intent of the project is to separate the sanitary sewer flow and convey it to the existing sanitary sewer at North 66th Street and Blondo Street, using the existing small pipe network and new pipes. The existing larger pipe network, along with new pipes, will be used to convey the stormwater flow to 66th and Blondo Street, allowing the stormwater flow to continue downstream to Little Papillion Creek at 72nd and Mayberry, in what is now the combined sewer outfall.

Following completion of the project, the City will develop and implement a flow monitoring program to determine the hydraulic performance of the separate sanitary sewer near and downstream of North 66th Street and Blondo Street. If through additional flow monitoring the City can confirm that the risk of surcharging that could cause basement flooding does not exist, the new 12-inch interconnecting, or diversion, pipe can be filled and abandoned. The abandonment of the overflow diversion will be performed under the CSO Diversion Program, which has been added to the LTCP and is described in Sections 3 and 5 of the LTCP.

2021 LTCP Schedule: Complete construction of the project by December 31, 2022[1]

Compliance Report

Table 1 shows the project delivery schedule (Target Dates) developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which is included in the permit.

[1] On March 31, 2022, the City requested that this date be changed to December 31, 2023. The draft CSO Permit includes the revised date.

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Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or Anticipated Date[b]
Began Preliminary Design	06/27/2018	06/27/2018
Began Final Design	08/28/2019	09/06/2019
Advertise	10/13/2020	10/14/2020
Bid Opening	11/17/2020	11/18/2021
Begin Construction	06/28/2021	06/28/2021
Substantial Completion	**12/31/2022**	*09/06/2023*

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

Based on the information presented, the project will not be able to meet the 2021 LTCP Milestone date of December 31, 2022. A change to the permit has been requested to modify the date to December 31, 2023. It is believed that this date will be met.

Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period.

- NDEE was informed via a letter dated December 5, 2023 that substantial completion was achieved on September 6, 2023.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2023-2024).

- A post-construction monitoring plan for PCN 210 is actively being developed.

Costs

2021 LTCP Budgeted Construction Cost (February 2021)[2]**:** $7,658,376, with contingency (under construction).

Current Estimated Construction Cost: $10,092.4661 is the current estimate for final completion of the project by the CM.

Changes from the LTCP

- See requested modifications to the 2021 LTCP in letter dated March 31, 2022.

Other Items of Interest

No other items.

[2] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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Saddle Creek Retention Treatment Basin

OPW 52049

Project Description as stated in the 2021 LTCP:

The Saddle Creek RTB is the final project in the Saddle Creek Basin. The current project is a 160-MGD RTB with modifications so that it can disinfect flows up to 320 MGD. This involved designing the headworks and disinfection system to handle 320 MGD, with a 3.3-MG basin. In this hybrid concept, the maximum treatment rate that is assumed to provide treatment equivalent to primary treatment is 160 MGD. Flow rates greater than 160 MGD, up to 320 MGD, may be allowed to enter the facility for short periods of time for disinfection to benefit water quality. However, wet weather volume capture is calculated based on the 160-MGD treatment rate.

2021 LTCP Milestone: Complete Construction (Operational Complete) of this project by December 31, 2023.

Compliance Report

Table 1 shows the Project Delivery Schedule developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which will be included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	04/07/2011	04/07/2011
Began Final Design	08/03/2013	08/03/2013
Restarted Final Design	06/29/2017	06/29/2017
Bidding	08/05/2015	08/05/2015
Re-Bidding	010/10/2018	10/10/2018
Began Construction	04/30/2019	04/30/2019
Operationally Complete	**12/31/2023**	***12/20/2023***

[a] 2021 LTCP Milestone Date is in bold.

[b] Anticipated dates are italicized.

Based on the information presented, the project will meet the 2021 LTCP Milestone date.

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Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period:

- Completed construction and testing of the Chemical Feed Systems, Odor Control, and Headworks.
- Completed construction of the Operation Building including office space.
- Completed the bioretention basin, final grading, site fencing, and other minor site improvements.
- Startup of the new grit facilities
- Began and completed demolition of the old grit building north of the CSO 205 channel

The Saddle Creek RTB achieved contractual substantial completion on September 5, 2023, and is anticipated to achieve final completion in the Spring of 2024 due to additional work elements to refine the operation of the facility and allow for completion of final site restoration. The facility achieved Initiation of Operation on December 20, 2023 and is operationally complete as of that date in compliance with the LTCP milestone.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities anticipated for the next Annual Report period (2023–2024):

Work over the next several months includes:

Startup of the facility and completion of demolition of the old grit building north of the CSO 205 channel. Completion of various remaining non-operational punch list items not completed prior Operational Completion date of December 20, 2023 due to long lead time or seasonal requirements, such as for completion of landscaping work, in order to achieve Final Completion in Spring 2024.

Costs

2021 LTCP Update Budgeted Construction Cost (February 2021)[1]: $100,718,227 with contingency.

Current Estimated Construction Cost: $94,444,209 (current contract value through pending Change Order No. 6 as of October 22, 2023).

Changes from the LTCP

Based on the 2021 LTCP Update there are no changes.

[1] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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Other Items of Interest

Below are pictures of the status of Construction of the Saddle Creek RTB.

Aerial View of Saddle Creek RTB from North – July 2023

Aerial View of Saddle Creek RTB from South – July 2023

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Forest Lawn Creek Inflow Removal and Outfall Storm Sewer

OPW 52470

Project Description as stated in the 2021 LTCP:

This project is located in the northerly portion of the Minne Lusa Basin and provides separation to an area bounded on the north by State Street, on the east by Pershing Drive and Omaha Public Power District's Power Park, on the south by Ernst Street, and on the west by North 36th Street. The conceptual plan for this project includes construction of both sanitary and storm sewers to allow for conversion of the existing combined sewer to either storm or sanitary sewer, as appropriate. Existing creek flows are eliminated from the combined system.

This project will result in reduced flows in the downstream combined sewer system, which reduces the size of downstream controls at CSO 105.

2021 LTCP Milestone: Complete Construction of this project by December 31, 2024[1]

Compliance Report

Table 1 shows the Project Delivery Schedule (Target Dates) developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which are included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	09/01/2015	6/12/2014
Began Final Design	01/11/2021	12/22/2020
Re-Advertise	10/27/2021	02/02/2022
Bid Opening	12/10/2021	04/20/2022
Begin Construction	06/01/2022	02/27/2023
Substantial Completion	**12/31/2024**	*07/11/2025*

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

Based on the information presented, the project will not be able to meet the 2021 LTCP Milestone date. A permit amendment will be requested to modify the date.

[1] A letter was set on March 31, 2022 requesting a date change for this project to December 31, 2026.

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Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period: (2022-2023)

- Construction began in February of 2023.
- Completed the 96" tunnel of fiberglass reinforced jacking pipe from Florence Blvd to 29th and Weber. Constructed JB#4b and JB #3. Pilot tube microtunneling across 30th Street at 30th and Hanover, and 30th Street and Weber, Installation of sanitary sewer and pavement restoration at 29th Street from Weber to Potter. Pavement restoration on Weber from 29th Street to East side of 30th Street, 29th Street from Weber to Potter, Weber Street West of 30th Street. Storm sewer and pavement restoration on 30th Street from Forest Lawn to Craig Avenue. Sanitary sewer and pavement restoration west of 30th Street along access drive to strip mall up to 33rd Street.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities anticipated for the next Annual Report period (2023-2024):

- 2023.Remove UPRR tracks, open cut excavation and construction of the precast 10X7 RCB across the UPRR track segment from Outfall structure to JB#1. Construct precast 10X7 RCB fromJB#2 to JB#3. Add on modification to outfall structure. Construct JB#1 and JB#2 and JB#3. Reinstall UPRR tracks.
- Construct storm sewer, pavement restoration on 30th Street from Weber to Ernst. West of 30th Street from Hanover to Craig and Forrest Lawn to the West of 30thStreet. Minne Lusa and Wyoming. Florence Blvd and Minne Lusa, Florence Blvd. at 24th Street; 33rd Street from Forest Lawn to King Ave.
- Construct sanitary sewer, storm sewer, and pavement restoration on Forest Lawn from 33rd to 36th Street., 34th and North Ridge Drive; North Ridge Drive South of Sheffield; Remove and replace pavement on Wyoming from Florence Blvd to Weber.

Costs

2021 LTCP Update Budgeted Construction Costs (February 2021)[2]**:** $27,500,000 with contingency (anticipated construction years: 2022–2024).

Current Estimated Construction Cost: $35,771,374 is the construction contracted cost

Changes from the LTCP

The 2021 LTCP Update included a completion date of 12/31/2024. The City requested a modification of this date to 12/31/2026 which has been approved and included in the new CSO NPDES Permit.

Other Items of Interest

There are no other items to report.

[2] Escalated Cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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CSO 212 – 64th Avenue and William Street

OPW 51685

Project Description as stated in the 2021 LTCP:

As described in the 2014 LTCP, the CSO 212 Sewer Separation Project includes construction of a storm sewer to provide sewer separation to the 41-acre area. The goal of the project is to provide adequate separation for the deactivation of the CSO 211 and 212 outfalls. This project has been awarded to a construction contractor and is anticipated to be complete in 2025.

2021 LTCP Milestone: Complete construction of this project by June 30, 2025

Compliance Report

Table 1 shows the project delivery schedule (Target Dates) developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which is included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	03/01/2021	04/23/2021
Began Final Design	08/15/2021	11/30/2021
Advertise	09/15/2022	*06/14/2023*
Bid Opening	10/15/2022	*07/19/2023*
Begin Construction	06/01/2023	*03/15/2024*
Substantial Completion	**06/30/2025**	*10/31/2024*

[a] 2021 Milestone Date is in bold.
[b] Anticipated dates are italicized.

Based on the information presented and the contractor's construction schedule, the project is on track to the 2021 LTCP Milestone dates.

Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have taken place prior to and during this reporting period.

- The project team finalized the project design.
- The project was advertised in Summer of 2023 and awarded in Fall of 2023.

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Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities anticipated for the next Annual Report period (2023–2024).

- A public meeting will be held in the first quarter of 2024 prior to construction start.

Costs

2021 LTCP Update Budgeted Construction Costs (February 2021)[1]**:** $6,930,000 with contingency (anticipated construction years: 2023–2024)

Current Estimated Construction Cost: $3,769,144 based on the contract price. This includes the cost of sewer rehabilitation.

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

Other Items of Interest

The contract price was lower than the budgeted construction costs. Budgeted construction costs reflected high construction costs seen in the past few years. During bid evaluation, the contractor noted that their price reflected prices starting to drop, and their own desire to submit a bid that was competitive.

[1]Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021

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Nicholas Street Sewer Extension – Phase 3B

OPW 53753

Project Description as stated in the 2021 LTCP Update:

Nicholas Street Sewer Extension – Phase 3 is being completed in two construction phases: Phase 3A (OPW 52721) and Phase 3B (OPW 53753). The Nicholas Street Sewer Extension – Phase 3A project provides sewer separation for the area bounded on the north by Clark Street, on the south by Charles Street, on the east by 16th Street, and on the west by 18th Street. The sewer separation conveys stormwater to the large diameter storm sewers constructed downstream as part of the Nicholas Street Phase 1 and Phase 2 projects. The project began construction on March 30, 2020, and was completed on September 4, 2020.

The Nicholas Street Sewer Extension – Phase 3B project is bounded on the north by Pinkney Street, on the south by Charles Street, on the east by 16th Street, and on the west by Florence Boulevard. This project will remove stormwater from the combined sewer system and convey the stormwater to the downstream storm sewers located at 16th and Charles Street. As part of an evaluation for the Nicholas Street Sewer Extension – Phase 3 project, a more efficient sewer separation design was developed that accomplished the goals of the Nicholas Street Sewer Extension – Phase 3 project and the 18th & Seward project at a reduced overall cost. The separate 18th & Seward project is being removed from the list of projects in this 2021 LTCP Update because it is now redundant. The Nicholas Street Sewer Extension – Phase 3B project was bid in spring 2021; construction is expected to begin in fall 2021 and be complete in 2025**.**

2021 LTCP Milestone: Complete Construction of this project by June 30, 2025

Compliance Report

Table 1 shows the Project Delivery Schedule developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which is included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	04/04/2016	07/01/2016
Began Final Design	11/18/2019	02/13/2018
Advertise	02/17/2021	02/10/2021
Bid Opening	03/17/2021	03/17/2021
Begin Construction	09/01/2021	07/06/2021
Substantial Completion	**06/30/2025**	*11/05/2024*

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

Based on the information presented, the project is on track to the 2021 LTCP Milestone dates.

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Project Activities for Current Period

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period: (2022-2023)

- Construction began in July of 2021.
- Approximately 55% of construction has been completed by the end of September 2023.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2023-2024).

- Construction of the Nicholas Street Sewer Extension – Phase 3B will continue throughout the next reporting period.
- It is estimated that substantial completion will be reached by November of 2024.

Costs

2021 LTCP Update Budgeted Construction Costs (February 2021)[1]**:** The LTCP cost for Nicholas Phase 3B is $23,341,340 with contingency. Anticipated years of construction: 2021–2024.

Current Estimated Construction Cost: The current estimated contract value for Nicholas Phase 3B is $22,156,955

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

[1] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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CSO 119 South Barrel Conversion and Sewer Separation

OPW 53149

***Note:** Project **will not meet** the 2021 LTCP Milestone dates. Amendment needed to modify the Substantial Completion date to 12/31/2028.*

Project Description as stated in the 2021 LTCP Update:

As outlined in Section 2.2.2.18 CSO 119 – Monroe Street Lift Station of the 2021 LTCP Update, under the subtitle "CSO 119 South Barrel Conversion & Sewer Separation (Formerly South Barrel 5A & 5B Conversion) (Under Design)", the objective of this project is to convert the South Barrel into a storm sewer, with the exception of large storm events exceeding the representative year storm sizes. The project will entail the essential sewer separation, closure of hydraulic windows and diversion structures, and the construction of a controlled overflow structure between the North and South Barrels. This controlled overflow structure will function as a relief mechanism for the North Barrel and monitor overflows during significant storm events.

The project is currently under a newly contracted consultant for the final design and construction is expected to be completed in 2028.

2021 LTCP Schedule: Complete construction of this project by June 30, 2026[1]

Compliance Report

Table 1 shows the Project Delivery Schedule developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which will be included in the next permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	02/15/2021	03/15/2021
Began Final Design	10/26/2021	05/30/2024
Advertise	01/11/2023	*07/16/2025*
Bid Opening	02/15/2023	*08/27/2025*
Begin Construction	08/01/2023	*02/10/2026*
Substantial Completion	**06/30/2026**	***12/31/2028***

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

[1] On March 31, 2022, the City requested that this date be changed to December 31, 2027. The draft CSO Permit includes the revised date.

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Based on the information presented, the project will not be able to meet the 2021 LTCP Milestone date because of schedule delays, the initial contract was terminated in June 2022. The City reissued a Request for Proposal in December 2022 to select a new consultant to finalize the design.

Under the terminated contract, the City had requested an amendment to extend the 2021 LTCP Milestone date to December 31, 2027, which was proposed on March 31, 2022. However, with the selection of a new consultant, a permit amendment will be necessary to further modify the LTCP Milestone date to December 31, 2028

Project Activities for the Current Period

- Evaluation of existing preliminary design deliverables
- Additional field data collection
- Begin Final Design

Anticipated Project Activity for Next Period

- Final Design

Costs

2021 LTCP Budgeted Construction Costs: (February 2021)[2]**:** $13,049,740 with contingency (anticipated construction 2023–2025).

Current Estimated Construction Cost: A revised estimate will be provided by the new consultant.

Changes from the LTCP

No changes.

Other Items of Interest

There are no items to report at this time.

[2] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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East Cole Creek Interceptor Rehabilitation

OPW 54293

***Note:** Project **will not meet** the 2021 LTCP Milestone dates. Amendment needed to modify the Substantial Completion date to 06/30/2027*

Project Description as stated in the 2021 LTCP:

As outlined in Section 3.5.1 of the 2021 LTCP Update, third paragraph under CSO 204 – 63rd and Ames the primary objective of the OPW 54293 East Cole Creek Interceptor Rehabilitation Project is to improve the hydraulic capacity of the interceptor to reduce peak hydraulic grade lines (HGLs) caused by deteriorating conditions due to root intrusion and deteriorating pipe conditions. It is expected that reducing the peak HGLs will allow for the future deactivation of CSOs 202 and 203. In addition to rehabilitation of the East Cole creek Interceptor from Miami Street to Cass Street, the siphon and gravity sewer that connect the East and West Cole Creek Interceptors at Bedford Avenue to be reviewed and modified as necessary to improve hydraulics of the interceptor system.

2021 LTCP Milestone:

Complete construction of this project by June 30, 2026

Compliance Report

Table 1 shows the project delivery schedule (Target Dates) developed for the project in the 2021 LTCP Update, as noted in the plan. They also show the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which is included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date for East Cole Creek Interceptor Rehabilitation

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	1/3/2022	9/26/2022
Began Final Design	01/2/2023	*05/31/2024*
Advertise	09/27/2023	*12/01/2025*
Bid Opening	11/8/2023	*01/15/2026*
Begin Construction	04/01/2024	*04/30/2026*
Substantial Completion	**6/30/2026**	***6/30/2027***

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

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Based on the information presented, the project will not be able to meet the 2021 LTCP Milestone date. A permit amendment will be requested to modify the Substantial Completion date of 06/30/2026 to **06/30/2027**.

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Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have taken place prior to and during this reporting period.

- Virtual Public Meeting in November 2022.
- Perform field work including CCTV studies of the interceptor and the siphon, along with cleaning.
- Develop conceptual design with submission anticipated in April 2024.

Anticipated Project Activity for Next Period

- Begin preparing the final design rehabilitation plans in May 2024.
- Perform Stream Improvements evaluation.

Costs

2021 LTCP Update Budgeted Construction Costs (February 2021)[1]**:** $5,736,997with contingency (anticipated construction years: 2024–2025

Current Estimated Construction Cost: The Project Team has not yet developed an OPCC.

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

Other Items of Interest

There are no other items to report.

[1] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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CSO 202 Phase 2 – 70th Avenue and Spencer Street

OPW 53869

Project Description as stated in the 2021 LTCP:

The CSO 202 Phase 2 (OPW 53869) project includes separation of the majority of the CSO 202 area. This project is currently under design with construction anticipated to start in 2023 and be completed in 2027. Monitoring will occur after the completion of the project to determine when the outfall can be deactivated.

2021 LTCP Schedule: Complete Construction of this project by December 31, 2026

Compliance Report

Table 1 shows the project delivery schedule (Target Dates) developed for the 2021 LTCP Update, as noted in the plan. It also shows the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which is included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	01/08/2019	03/20/2017
Began Final Design	08/24/2020	08/24/2020
Advertise	07/03/2023	*11/08/2023*
Bid Opening	08/14/2023	*12/15/2023*
Begin Construction	03/01/2024	*03/01/2024*
Substantial Completion	**12/31/2026**	*12/31/2026*

[a] 2021 LTPC Milestone Date is in bold.
[b] Anticipated dates are italicized.

Based on the information presented, the project is on track to the 2021 LTCP Milestone dates.

Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period:

- Finalized design and submitted to NDEE.
- Project will be advertised/bid in November 2023, with construction likely starting in early 2024.

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Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2023-2024).

Costs

2021 LTCP Budgeted Construction Costs (February 2021)[1]**:** $16,645,631 with contingency (anticipated construction years 2024–2026).

Current Estimated Construction Cost : $17,570,000 in 2024–2026 dollars (source: 90% design opinion of probable construction costs [OPCC])

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

Other Items of Interest

There are no other items to report.

[1] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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61st and Radial Storm Sewer Project

OPW 54374

Note: *Project will not meet the 2021 LTCP Milestone dates. Amendment needed to modify the Substantial Completion date to 12/31/2029.*

2021 LTCP Project Description:

In accordance with section 3.5.1 of the 2021 LTCP Update, under CSO 204 – 63rd and Ames, the 61st and Radial Storm Sewer project has been included in the LTCP as a replacement for the canceled CSO 204 Phase 2 project. This change was due to the high construction cost estimates and an assessment of the risks associated with the construction of deep sewers, as well as challenges in acquiring easements in a confined residential area. A conceptual design, which was completed in July 2023, recommended the construction of new storm sewer along Pratt Street and N. 61st Street, extending from Northwest Radial Highway to Pratt Street. This project aims to separate approximately 101 acres of stormwater runoff from the combined sewer system. The City is currently reviewing all evaluated alternatives and the recommendations. The Preliminary design is anticipated to start in November 2023.

2021 LTCP Milestone:

Complete construction of this project by December 31, 2028

Compliance Report

Table 1 shows the project delivery schedule (Target Dates) developed for the project in the 2021 LTCP Update, as noted in the plan. They also show the 2021 LTCP Milestone Date as the anticipated project compliance schedule date, which is included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	06/27/2022	01/24/2023
Began Final Design	10/27/2023	*05/25/2024*
Advertise	10/21/2024	*05/20/2025*
Bid Opening	11/18/2024	*06/17/2025*
Begin Construction	08/01/2025	*03/28/2026*
Substantial Completion	**12/31/2028**	***08/27/2029***

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

Based on the information presented, the project will not be able to meet the 2021 LTCP Milestone date. A permit amendment will be requested to modify the Substantial Completion date of 12/31/2028 to 12/31/2029.

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Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have taken place prior to and during this reporting period.

- Conceptual design for the evaluation of selection of the best alternative.

Anticipated Project Activity for Next Period

- The following is a brief synopsis of project activities for the next Annual Report period (2023-2024).
- Preliminary and Final Design

Costs

2021 LTCP Update Budgeted Construction Costs (February 2021)[1]**:** $16,800,000 with contingency (anticipated construction years: 2022–2028)

Design Estimated Construction Cost: $17,609,000 with contingency (anticipated construction years: 2023–2029)

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

Other Items of Interest

There are no other items to report.

[1] Escalated cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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CSO 204 Phase 4 – 57th Street and Pratt Street

OPW 53820

Note: ***Project is on schedule to meet the 2021 LTCP Milestone dates.***

Project Description as stated in the 2021 LTCP:

CSO 204 Phase 4 Sewer Separation includes the extension of a separate sanitary and storm sewer to complete the separation in the system and other sanitary and storm sewer improvements. This project is expected to include removal of the Taylor CSO Diversion located west of the intersection of North 60th Street and Taylor Street, which is one of two combined sewer overflow diversions in the CSO 204 area. This project will be constructed in **two phases** because of the amount of sewer separation needed (CSO 204 Phase 4a – 57th Street and Pratt Street and CSO 204 Phase 4b – 56th Street and Bedford Avenue). The preliminary design completed in March 2023 and final Design started in October 2023. It is anticipated that the first phase of construction (CSO 204 Phase 4a) will be completed in 2030 and the second (204 Phase 4b) in 2032.

2021 LTCP Milestone:

CSO 204 Phase 4a – 57th Street and Pratt Street: Complete construction of this project by June 30, 2030

CSO 204 Phase 4b – 56th Street and Bedford Avenue: Complete construction of this project by December 31, 2032

Compliance Report

Table 1 and Table 2 show the project delivery schedule (Target Dates) developed for the two CSO 204 Phase 4 projects in the 2021 LTCP Update, as noted in the plan. They also show the 2021 LTCP Milestone Dates as the anticipated project compliance schedule dates, which are included in the permit.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date for CSO 204 Phase 4a – 57th Street and Pratt Street

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	06/01/2021	04/20/2021
Began Final Design	03/01/2023	10/02/2023
Advertise	10/15/2025	*09/01/2025*
Bid Opening	11/19/2025	*10/01/2025*
Begin Construction	9/01/2026	*06/01/2026*
Substantial Completion	**6/30/2030**	***03/30/2029***

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

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Table 2. Project Delivery Schedule and 2021 LTCP Milestone Date for CSO 204 Phase 4b – 56th Street and Bedford Avenue

Activity	Target Date or 2021 LTCP Milestone Date[a]	Actual or *Anticipated* Date[b]
Began Preliminary Design	06/01/2021	04/20/2021
Began Final Design	03/01/2023	10/02/2023
Advertise	10/18/2028	*09/01/2028*
Bid Opening	11/18/2028	*10/01/2028*
Begin Construction	6/01/2029	*03/01/2029*
Substantial Completion	**12/31/2032**	***06/31/2032***

[a] 2021 LTCP Milestone Date is in bold.
[b] Anticipated dates are italicized.

Based on the provided design schedule, the **project is on track to meet the 2021 LTCP Milestone dates.**

Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have taken place prior to and during this reporting period.

- Completed preliminary 30% design
- Additional field data collection
- Begin Final Design

Anticipated Project Activity for Next Period

- Final Design

Costs

Design Estimate: CSO 204 Phase 4a – $19,200,000 without contingency (anticipated construction years: 2026–2029); CSO 204 Phase 4b – $29,890,000 without contingency (anticipated construction years: 2029–2032) based on the 30% design opinion of probable construction cost.

Current LTCP Estimated Construction Cost: $45,900,000 with contingency; CSO 204 Phase 4a (anticipated construction years: 2026–2029), $22,100,000 with contingency; CSO 204 Phase 4b (anticipated construction years: 2029–2031), $23,800,000 with contingency. Based on the 10% opinion of probable construction cost.

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

Other Items of Interest

There are no other items to report.

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Riverview Lift Station Replacement
OPW No. 52402

Project Description as stated in the 2021 LTCP:

The Riverview Lift Station Replacement (OPW 52402) project includes the construction of a 42-inch combined sewer (referred to as the Gibson Road Sewer), two new diversion structures (the Grover Street diversion and Riverview Park diversion), and the new Riverview Lift Station. The Gibson Road Sewer will convey the Martha Street, Spring Street, and Grover Street sub-basins' flows from the new Grover Street diversion structure to the new Riverview diversion structure. The new Riverview diversion structure then conveys those flows in addition to the Riverview Park sub-basin flow to the new Riverview Lift Station.

Both the new Grover and Riverview diversion structures contain stoplog weirs that facilitate adjustment of the diversion elevation. The Grover diversion is constructed on the existing Grover Street combined sewer. The Riverview diversion is constructed on the existing Riverview Park combined sewer. Flow exceeding the lift station capacity will be diverted to CSOs 114 and 115 during storm events; CSO 114 is connected to the Grover diversion and CSO 115 is connected to the Riverview diversion. The old Riverview Lift Station will be removed from service after the new lift station is completed.

The Riverview Lift Station Replacement project began construction on March 20, 2020 and is expected to be completed in 2023. The Riverview Lift Station project is a system reliability project and therefore has no milestone date other than to be completed by the end of the LTCP on September 30, 2037.

2021 LTCP Milestone:

Complete Construction of this project by September 30, 2037.

Compliance Report

The 2009 LTCP, 2014 and 2021 LTCP includes "System Reliability Projects". The implementation schedule for these projects is "as necessary and when funding is available." The Riverview Lift Station is one of these projects, thus there is no milestone date for this project other than to be completed by the end of the LTCP on September 30, 2037.

There are no current permit dates in the 2015 permit, nor will there be dates for these projects in the future CSO permit. Table 1 shows the project delivery schedule (Target Dates) for this project.

Table 1. Project Delivery Schedule

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Activity	Actual **or 2021 LTCP Milestone Date**[a]
Begin Construction	3/20/2020
Operationally Complete	*11/14/2023*
Substantial Completion	*12/15/2023*
LTCP Milestone	**9/30/2037**

[a] 2021 LTCP Milestone Date is in bold
[b] Anticipated dates are italicized.

Based on the information presented, the project is on track to meet the 2021 LTCP Milestone dates.

Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have taken place prior to and during this reporting period.

Project activities for the reporting period included resolution of issues associated with delayed VFD delivery, level instrument installation, gate actuator installation, and punch list items. The VFDs were installed which allowed pump performance testing. Pump vibration issues required correction through a series of options which resulted in the installation of additional supports on each pump. The pumps successfully passed vibration testing and the facility is undergoing operational performance testing in December 2023

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2023-2024).

All exterior and interior work associated with the project is finished. The only outstanding items for the project to reach substantial completion are punch list repairs and successful facility start-up. The facility began a 30-day post operational performance test on November 14, 2023 and is operationally completed as of that date.

Costs

2021 LTCP Update Budgeted Construction Costs (March 2021)[1]**:** $27,500,000 with contingency.

Current Estimated Construction Cost: $25,528,786 with contingency

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

[1] Escalated Cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

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Other Items of Interest

Aerial View of the Riverview Lift Station Project

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Monroe Street Lift Station Improvements

OPW No. 53082

Project Description as stated in the 2021 LTCP:

The Monroe Street Lift Station (OPW 53082) project includes the replacement of pumping equipment, updates to the facility to meet current code requirements, modifications to improve grit removal, and improvements at the diversion structure. The lift station was previously designed to receive the industrial flows from SOIA. These industrial flows have since been rerouted, and the lift station currently operates at a maximum wet weather flow of 40 MGD. This project will upgrade the pumping capacity to 65 MGD to the MRWRRF. The Monroe Street Lift Station is a system reliability project.

Compliance Report

The 2009 LTCP, 2014 and 2021 LTCP includes "System Reliability Projects". The implementation schedule for these projects is "as necessary and when funding is available." The Monroe Street Lift Station Improvements Project is one of these, thus there is no milestone date for this project other than to be complete by the end of the LTCP on September 30, 2037.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Actual Date **or 2021 LTCP Milestone Date**[a]
Begin Construction	1/3/2022
Substantial Completion	2/2/2024
2021 LTCP Milestone Date	**9/30/2037**

[a] 2021 LTCP Milestone Date is in bold
[b] Anticipated dates are italicized.

Based on the information presented, the project is on track for the 2021 LTCP Milestone date.

Project Activities for the Current Period

The project is progressing to substantial completion in the next several months. Over the past year, activities include:

- Bypass pumping system installed and in operation
- Grit facility modifications installed including clam shell grit removal system
- Screens and screening conveyor installed
- Influent piping was partially replaced and liner installed from Diversion Structure to head box on 42-inch pipe
- Pumps and engines were installed and performance testing began
- Electrical, ventilation, and control systems installed

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Anticipated Project Activity for Next Period

This project is anticipated to be operationally complete In the Spring of 2024. The performance testing of pumps is ongoing. Outstanding items include: gate and actuator installation at the diversion structure, engine and generator installation, additional paving around the facility, and replacing the effluent valves in the valve vault.

Costs

2021 LTCP Update Budgeted Construction Costs (March 2021**):** $25,300,077 with contingency. Construction spanned 2022-2024.

Current Estimated Construction Cost: Current Contract $27,104,344

These costs are based of the bid and change orders accrued over the course of the project.

Changes from the LTCP

Additional project improvements included lining and partial replacement of pipes from Diversion Structure to head box.

Other Items of Interest

Below are pictures of the progress on the Monroe Street Lift Station Improvements Project:

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Aerial View of Monroe Street Lift Station Improvements Project (January 2023) showing bypass pumping, site preparation, and start of construction activities.

Aerial View of the Monroe Street Lift Station Improvements (July 2023) showing completed electrical building, covered grit loadout, clam shell structure, and completed ventilation and structure improvements.

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Blake Street Lift Station Project
OPW No. 53270

Project Description as stated in the 2021 LTCP:

The Blake Street Lift Station project (OPW 53270) replaces the Martha Street to Riverview Phase 2 project, which planned to use a gravity sewer to convey the flow from the Martha Street Phase 1 sewer to the Grover Street Sewer and eventually to the new Riverview Lift Station. A portion of this gravity sewer would have needed to be tunneled under multiple railroad tracks during construction. This approach was found to add significant cost and risk to the project. After further evaluation, it was determined that construction of the Blake Street Lift Station would be more cost-effective.

The Blake Street Lift Station project will convey flows from the Martha Street Phase 1 Sewer Separation project to the Blake Street Lift Station by gravity, where the flow will then be pumped to the Grover Street Sewer. This flow will then be conveyed by gravity to the new Riverview Lift Station. The Blake Street Lift Station will have a peak wet weather capacity of 1.15 MGD, which is based on the 10-year design storm. The proposed lift station will include two pumps with the option to add a third pump in the future should the City want to increase the capacity.

Compliance Report

The 2009 LTCP, 2014 and 2021 LTCP includes “System Reliability Projects”. The implementation schedule for these projects is “as necessary and when funding is available.” The Blake Street Lift Station project is one of these, thus there is no milestone date for this project other than to be complete by the end of the LTCP on September 30, 2037.

Table 1. Project Delivery Schedule and 2021 LTCP Milestone Date

Activity	Actual Date **or 2021 LTCP Milestone Date**[a]
Begin Construction	10/10/2022
Operationally Complete	***12/7/2023***
Substantial Completion	*1/7/2024*
LTCP Milestone	**9/30/2037**

[a] 2021 LTCP Milestone Date is in bold
[b] Anticipated dates are italicized.

Based on the information presented, the project is on track to meet the 2021 LTCP Milestone dates.

Project Activities for the Current Period

The following is a brief synopsis of project activities and progress that have taken place prior to and during this reporting period.

The Blake Street Lift Station Project began construction in October 2022. The project included construction of gravity sewer, wetwell, pumps, controls, and electrical improvements.

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Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2023-2024.

The project is nearly complete. The only outstanding items for the project to reach substantial completion are the installation and testing of the standby generator, punch-list repairs, and successful facility start-up. The facility began its 30-day post operational performance test on December 7, 2023 and is operationally complete as of that date.

Costs

2021 LTCP Update Budgeted Construction Costs (March 2021)[1]**:** $3,402,439 with contingency.

Current Estimated Construction Cost: $4,137,404 with contingency.

Changes from the LTCP

Based on the 2021 LTCP there are no changes.

Other Items of Interest

[1] Escalated Cost to the anticipated year(s) of construction at a rate of 3.1%/year starting in 2021.

Attachment 3 – CSO Inspection Report

CSO Inspection Report

CSO Number 103 **Total Wet Weather Overflows:** 1

CSO Name Bridge Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
8/3/2023	9:35	Mata, Terence	Rain	Yes	No	8/2/2023		2.34

CSO Inspection Report

CSO Number 105 **Total Wet Weather Overflows:** 39

CSO Name Minne Lusa Avenue

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	10:15	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
10/25/2022	11:10	Birdsall, Christopher	Rain	Yes	No	10/24/2022		0.2
11/6/2022	7:30	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	12:25	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	10:30	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
2/15/2023	10:30	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	10:00	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	7:30	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
3/17/2023	10:10	Birdsall, Christopher	Rain	Yes	No	3/16/2023		0.24
4/10/2023	9:00	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	7:35	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/16/2023	7:30	Birdsall, Christopher	Rain	Yes	No	4/15/2023		0.13
4/19/2023	10:45	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	11:00	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/12/2023	11:00	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	11:05	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	8:40	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/25/2023	6:05	Adams, Robert	Rain	Yes	No	6/24/2023		0.06
6/30/2023	7:45	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event, Waterspout confirmed	0.79
7/2/2023	6:25	Adams, Robert	Rain	Yes	No	7/1/2023	Waterspout confirmed	1.6
7/5/2023	9:00	Adams, Robert	Rain	Yes	No	7/5/2023	2 day rain event confirmed by Waterspout	0.08
7/8/2023	7:15	Birdsall, Christopher	Rain	Yes	No	7/7/2023	Waterspout confirmed	0.8
7/12/2023	10:40	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58

CSO Inspection Report

CSO Number 105 **Total Wet Weather Overflows:** 39

CSO Name Minne Lusa Avenue

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/15/2023	9:10	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	15:00	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event Confirmed by Waterspout	0.44
7/22/2023	7:50	Birdsall, Christopher	Rain	Yes	No	7/22/2023	Waterspout confirmed.	0.13
7/24/2023	10:00	Birdsall, Christopher	Rain	Yes	No	7/24/2023	Waterspout confirmed.	0.33
7/31/2023	9:35	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event. Waterspout confirmed.	1.46
8/3/2023	7:05	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	11:05	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/6/2023	6:00	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/7/2023	7:30	Adams, Robert	Rain	Yes	No	8/6/2023	Waterspout confirmed	0.13
8/9/2023	10:30	Adams, Robert	Rain	Yes	No	8/9/2023	waterspout confirmed	0.91
8/14/2023	7:15	Adams, Robert	Rain	Yes	No	8/13/2023	alert received	0.27
8/27/2023	6:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/5/2023	7:50	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/11/2023	10:30	Adams, Robert	Rain	Yes	Yes	9/10/2023		0.45
9/17/2023	6:00	Birdsall, Christopher	Rain	Yes	No	9/16/2023		0.2
9/22/2023	14:40	Birdsall, Christopher	Rain	Yes	No	9/22/2023	waterspout confirmed.	0.15

CSO Inspection Report

CSO Number 106 **Total Wet Weather Overflows:** 32

CSO Name North Interceptor

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	10:35	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/6/2022	7:50	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	12:00	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	10:50	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
2/15/2023	10:10	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	10:15	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	7:55	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
4/15/2023	7:50	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	11:20	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	11:15	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
6/2/2023	11:20	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/11/2023	11:15	Adams, Robert	Rain	Yes	No	6/11/2023	2 day rain event	0.09
6/30/2023	9:50	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	8:00	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/5/2023	9:10	Adams, Robert	Rain	Yes	No	7/5/2023	2 day rain event confirmed by Waterspout	0.08
7/8/2023	7:10	Birdsall, Christopher	Rain	Yes	No	7/7/2023	Waterspout confirmed	0.8
7/12/2023	14:30	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	8:50	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	13:45	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/18/2023	14:40	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	9:55	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/24/2023	9:50	Birdsall, Christopher	Rain	Yes	No	7/24/2023	Waterspout confirmed.	0.33
7/31/2023	12:15	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46

CSO Inspection Report

CSO Number 106 **Total Wet Weather Overflows:** 32

CSO Name North Interceptor

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
8/3/2023	7:00	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	13:00	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/6/2023	6:00	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/7/2023	7:30	Adams, Robert	Rain	Yes	No	8/6/2023		0.13
8/9/2023	8:00	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/14/2023	11:35	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	6:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/5/2023	7:40	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/11/2023	11:15	Adams, Robert	Rain	Yes	No	9/10/2023		0.45

CSO Inspection Report

CSO Number 107 **Total Wet Weather Overflows:** 26

CSO Name Grace Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	10:30	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/6/2022	7:45	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	11:55	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	10:45	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
2/15/2023	8:35	Birdsall, Christopher	Rain	Yes	No	2/14/2023	Verified by Waterspout.	0.98
2/27/2023	8:20	Birdsall, Christopher	Rain	Yes	No	2/26/2023	Verified by Waterspout.	0.33
3/10/2023	10:55	Mata, Terence	Rain	Yes		3/9/2023	Verified by Waterspout.	0.15
3/12/2023	6:05	Birdsall, Christopher	Rain	Yes	No	3/11/2023	Verified by Waterspout.	0.26
3/17/2023	10:25	Birdsall, Christopher	Rain	Yes	No	3/16/2023	Verified by Waterspout.	0.24
4/15/2023	6:20	Birdsall, Christopher	Rain	Yes	No	4/14/2023	Verified by Waterspout.	1.09
4/19/2023	7:35	Birdsall, Christopher	Rain	Yes	No	4/19/2023	Verified by Waterspout.	0.21
4/20/2023	8:20	Mata, Terence	Rain	Yes	No	4/20/2023	Verified by Waterspout.	1.74
6/2/2023	11:15	Birdsall, Christopher	Rain	Yes	No	6/1/2023	Verified by Waterspout.	0.89
6/30/2023	7:40	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event, Waterspout confirmed	0.79
7/2/2023	6:25	Adams, Robert	Rain	Yes	No	7/1/2023	Verified by Waterspout.	1.6
7/8/2023	7:05	Birdsall, Christopher	Rain	Yes	No	7/7/2023	Verified by Waterspout.	0.8
7/12/2023	10:55	Woods, Patrick	Rain	Yes	No	7/12/2023	Verified by Waterspout.	0.58
7/17/2023	8:30	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event. Confirmed by Waterspout	0.44
7/22/2023	7:55	Birdsall, Christopher	Rain	Yes	No	7/22/2023	Verified by Waterspout.	0.13
7/31/2023	9:30	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event. Waterspout confirmed.	1.46
8/3/2023	7:05	Mata, Terence	Rain	Yes	No	8/2/2023	Confirmed through Waterspout	2.34
8/6/2023	6:00	Mata, Terence	Rain	Yes	No	8/5/2023	Confirmed through Waterspout.	0.34
8/7/2023	7:45	Adams, Robert	Rain	Yes	No	8/6/2023	Alert received	0.13

CSO Inspection Report

CSO Number 107 **Total Wet Weather Overflows:** 26

CSO Name Grace Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
8/9/2023	8:00	Adams, Robert	Rain	Yes	No	8/9/2023	Site 107 back in working order.	0.91
9/5/2023	7:45	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/11/2023	11:10	Adams, Robert	Rain	Yes	No	9/10/2023		0.45

CSO Inspection Report

CSO Number 108 **Total Wet Weather Overflows:** 35

CSO Name Burt Izard Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	10:55	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/6/2022	8:00	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	11:40	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
12/30/2022	9:40	Birdsall, Christopher	Snow Melt	Yes	No	12/13/2022	Snow melt	0.61
1/4/2023	11:10	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
2/15/2023	10:05	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	10:30	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	8:15	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
4/10/2023	9:25	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	8:05	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	11:40	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	11:35	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/12/2023	10:30	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	11:30	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	9:25	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/8/2023	10:15	Birdsall, Christopher	Rain	Yes	No	6/7/2023		0.25
6/11/2023	8:45	Adams, Robert	Rain	Yes	No	6/11/2023	2 day rain event	0.09
6/30/2023	10:10	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	6:00	Adams, Robert	Rain	Yes	No	7/1/2023	SCADA email received	1.6
7/8/2023	10:20	Birdsall, Christopher	Rain	Yes	No	7/7/2023	Waterspout confirmed	0.8
7/12/2023	11:05	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	8:45	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	8:45	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event. Confirmed by Waterspout	0.44

CSO Inspection Report

CSO Number 108 **Total Wet Weather Overflows:** 35

CSO Name Burt Izard Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/18/2023	14:45	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	10:05	Birdsall, Christopher	Rain	Yes	No	7/22/2023	Waterspout confirmed.	0.13
7/31/2023	12:25	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event. Scada email received.	1.46
8/3/2023	7:00	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	11:00	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/6/2023	6:00	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/9/2023	8:00	Adams, Robert	Rain	Yes	No	8/9/2023	Waterspout confirmed	0.91
8/14/2023	11:45	Adams, Robert	Rain	Yes	No	8/13/2023	waterspout confirmed	0.27
8/27/2023	6:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/5/2023	7:35	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/11/2023	13:49	Adams, Robert	Rain	Yes	No	9/10/2023		0.45
9/20/2023	7:40	Mata, Terence	Rain	Yes	No	9/20/2023		0.3

CSO Inspection Report

CSO Number 109 **Total Wet Weather Overflows:** 42

CSO Name 1st and Leavenworth Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	8:00	Birdsall, Christopher	Rain	Yes	No	10/11/2022	Scada Email Received, Waterspout confirmed	0.34
10/25/2022	9:25	Birdsall, Christopher	Rain	Yes	No	10/24/2022	No Scada Email	0.2
11/6/2022	6:00	Birdsall, Christopher	Rain	Yes	No	11/4/2022	Waterspout confirmed	0.47
12/14/2022	10:00	Birdsall, Christopher	Rain	Yes	No	12/13/2022	No Scada Email, Two day event from 12/12/2022	0.61
1/4/2023	9:00	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Waterspout confirmed, Two day rain event. SCADA email received.	0.35
1/19/2023	7:00	Mata, Terence	Rain	Yes	No	1/18/2023	Waterspout and Scada confirmed	0.52
2/15/2023	8:30	Birdsall, Christopher	Rain	Yes	No	2/14/2023	Waterspout confirmed	0.98
2/19/2023	6:00	Birdsall, Christopher	Snow Melt	Yes	No	2/14/2023	No Scada Email	0.98
2/20/2023	7:00	Adams, Robert	Snow Melt	Yes	No	2/14/2023	Waterspout confirmed	0.98
2/27/2023	8:25	Birdsall, Christopher	Rain	Yes	No	2/26/2023	Scada Email Received	0.33
3/12/2023	6:00	Birdsall, Christopher	Rain	Yes	No	3/11/2023	Scada email received	0.26
3/17/2023	8:00	Birdsall, Christopher	Rain	Yes	No	3/16/2023	Alert email received, no Scada received	0.24
4/15/2023	6:15	Birdsall, Christopher	Rain	Yes	No	4/14/2023	Scada Email Received	1.09
4/16/2023	6:20	Birdsall, Christopher	Rain	Yes	No	4/15/2023	Scada email received.	0.13
4/19/2023	7:30	Birdsall, Christopher	Rain	Yes	No	4/19/2023	Scada email received	0.21
4/20/2023	8:15	Mata, Terence	Rain	Yes	No	4/20/2023	SCADA emailed received.	1.74
5/8/2023	7:25	Birdsall, Christopher	Rain	Yes	No	5/7/2023	Scada email received	0.09
5/12/2023	7:00	Adams, Robert	Rain	Yes	No	5/11/2023	SCADA email received	0.11
6/2/2023	7:00	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	7:05	Mata, Terence	Rain	Yes	No	6/2/2023	SCADA email received.	0.15
6/5/2023	8:35	Mata, Terence	Rain	Yes	No	6/4/2023	Waterspout confirmed.	0.2
6/8/2023	7:05	Birdsall, Christopher	Rain	Yes	No	6/7/2023	Scada email received.	0.25
6/11/2023	8:45	Adams, Robert	Rain	Yes	No	6/11/2023	SCADA email received 2 day rain event	0.09

CSO Inspection Report

CSO Number 109 **Total Wet Weather Overflows:** 42

CSO Name 1st and Leavenworth Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
6/30/2023	7:20	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event, Scada email received	0.79
7/2/2023	6:00	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	7:00	Birdsall, Christopher	Rain	Yes	No	7/7/2023	Scada email recieved.	0.8
7/12/2023	11:15	Woods, Patrick	Rain	Yes	No	7/12/2023	SCADA email	0.58
7/15/2023	7:00	Woods, Patrick	Rain	Yes	No	7/14/2023	SCADA email	0.35
7/17/2023	8:45	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event. SCADA email received	0.44
7/18/2023	14:55	Woods, Patrick	Rain	Yes	No	7/18/2023	SCADA email	0.19
7/22/2023	7:45	Birdsall, Christopher	Rain	Yes	No	7/22/2023	Scada email recieved.	0.13
7/24/2023	7:20	Birdsall, Christopher	Rain	Yes	No	7/24/2023	Scada email received.	0.33
7/31/2023	9:25	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event. Scada email received.	1.46
8/3/2023	7:10	Mata, Terence	Rain	Yes	No	8/2/2023	SCADA received	2.34
8/4/2023	10:55	Wickham, Grant	Rain	Yes	No	8/4/2023	scada received	0.22
8/6/2023	6:00	Mata, Terence	Rain	Yes	No	8/5/2023	SCADA received.	0.34
8/9/2023	8:00	Adams, Robert	Rain	Yes	No	8/9/2023	SCADA email received	0.91
8/14/2023	7:15	Adams, Robert	Rain	Yes	No	8/13/2023	SCADA email received	0.27
8/27/2023	6:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023 SCADA email received	0.18
9/5/2023	7:30	Mata, Terence	Rain	Yes	No	9/5/2023	SCADA received.	0.21
9/11/2023	7:30	Adams, Robert	Rain	Yes	No	9/10/2023	SCADA email received	0.45
9/20/2023	7:35	Mata, Terence	Rain	Yes	No	9/20/2023	SCADA received.	0.3

CSO Inspection Report

CSO Number 110 **Total Wet Weather Overflows:** 32

CSO Name Pierce Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	11:05	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/6/2022	8:15	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	11:15	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	11:25	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	11:50	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
2/15/2023	9:30	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/19/2023	7:15	Birdsall, Christopher	Snow Melt	Yes	No	2/14/2023		0.98
2/27/2023	10:45	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
4/10/2023	9:40	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	8:15	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	12:10	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	11:45	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/12/2023	10:15	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	11:50	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	9:35	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/5/2023	11:10	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/30/2023	10:20	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	7:40	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	10:10	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	11:20	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/17/2023	14:05	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/22/2023	10:18	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/29/2023	8:30	Adams, Robert	Rain	Yes	No	7/28/2023		0.13

CSO Inspection Report

CSO Number 110 **Total Wet Weather Overflows:** 32

CSO Name Pierce Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/31/2023	12:35	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	10:20	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	13:35	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/6/2023	8:15	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/9/2023	10:50	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/14/2023	12:00	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	10:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/11/2023	11:40	Adams, Robert	Rain	Yes	No	9/10/2023		0.45
9/20/2023	9:40	Mata, Terence	Rain	Yes	No	9/20/2023		0.3

CSO Inspection Report

CSO Number 111 **Total Wet Weather Overflows:** 14

CSO Name Hickory Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	12:10	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
12/14/2022	11:10	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
2/15/2023	9:25	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
4/15/2023	9:30	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/20/2023	12:55	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
6/2/2023	11:55	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/5/2023	11:45	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/30/2023	10:30	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	7:35	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	10:05	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	11:35	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/31/2023	12:45	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	10:30	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/9/2023	10:55	Adams, Robert	Rain	Yes	No	8/9/2023		0.91

CSO Inspection Report

CSO Number 112 **Total Wet Weather Overflows:** 31

CSO Name Martha Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	11:10	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/6/2022	8:25	Birdsall, Christopher	Rain	Yes	Yes	11/4/2022	Mechanical failure of pumps that has been an ongoing issue with it	0.47
12/14/2022	11:05	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	11:35	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	11:20	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
2/15/2023	9:20	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	10:50	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	8:45	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
3/17/2023	12:40	Birdsall, Christopher	Rain	Yes	No	3/16/2023		0.24
4/10/2023	9:50	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	9:25	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	12:50	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	11:50	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
6/2/2023	12:00	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	9:45	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/5/2023	11:40	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/30/2023	10:35	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	7:30	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	10:00	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	11:30	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	8:25	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	14:15	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/22/2023	10:28	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13

CSO Inspection Report

CSO Number 112 **Total Wet Weather Overflows:** 31

CSO Name Martha Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/31/2023	12:50	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	10:35	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	13:45	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/9/2023	11:00	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/14/2023	12:10	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	10:15	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/11/2023	11:55	Adams, Robert	Rain	Yes	No	9/10/2023		0.45
9/20/2023	9:45	Mata, Terence	Rain	Yes	No	9/20/2023		0.3

CSO Inspection Report

CSO Number 114 **Total Wet Weather Overflows:** 14

CSO Name Grover Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	12:05	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
12/14/2022	11:00	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
3/12/2023	8:40	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
4/15/2023	9:20	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/20/2023	12:45	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
6/2/2023	12:05	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/30/2023	10:40	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	7:25	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	9:55	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	11:40	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/24/2023	8:55	Birdsall, Christopher	Rain	Yes	No	7/24/2023		0.33
7/31/2023	12:55	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	10:40	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/9/2023	11:05	Adams, Robert	Rain	Yes	No	8/9/2023		0.91

CSO Inspection Report

CSO Number 115 **Total Wet Weather Overflows:** 44

CSO Name Riverview Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	12:00	Birdsall, Christopher	Rain	Yes	No	10/11/2022	Trash on device	0.34
10/25/2022	13:00	Birdsall, Christopher	Rain	Yes	No	10/24/2022		0.2
11/6/2022	8:55	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	10:55	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
12/30/2022	9:00	Birdsall, Christopher	Snow Melt	Yes	No	12/13/2022	Snow Melt	0.61
1/4/2023	11:45	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	10:55	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
2/15/2023	9:10	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/20/2023	10:30	Adams, Robert	Snow Melt	Yes	No	2/14/2023		0.98
2/27/2023	11:25	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	8:35	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
3/17/2023	12:45	Birdsall, Christopher	Rain	Yes	No	3/16/2023		0.24
4/10/2023	10:25	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	9:15	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/16/2023	8:30	Birdsall, Christopher	Rain	Yes	No	4/15/2023		0.13
4/19/2023	12:40	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	12:40	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/8/2023	7:30	Birdsall, Christopher	Rain	Yes	No	5/7/2023	Scada email received	0.09
5/12/2023	9:50	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	12:10	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	9:55	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/5/2023	11:30	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/11/2023	12:05	Adams, Robert	Rain	Yes	No	6/11/2023	2 day rain event	0.09

CSO Inspection Report

CSO Number 115 **Total Wet Weather Overflows:** 44

CSO Name Riverview Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
6/16/2023	13:10	Birdsall, Christopher	Rain	Yes	No	6/16/2023		0.2
6/25/2023	7:05	Adams, Robert	Rain	Yes	No	6/24/2023		0.06
6/30/2023	10:45	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	7:20	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/5/2023	13:00	Adams, Robert	Rain	Yes	No	7/5/2023	2 day rain event	0.08
7/8/2023	9:50	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	11:45	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	8:15	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	14:20	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/18/2023	15:20	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	10:34	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/24/2023	8:50	Birdsall, Christopher	Rain	Yes	No	7/24/2023		0.33
8/3/2023	10:45	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	13:55	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/6/2023	8:35	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/7/2023	10:40	Adams, Robert	Rain	Yes	No	8/6/2023		0.13
8/9/2023	8:00	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/12/2023	9:50	Mata, Terence	Rain	Yes	No	8/11/2023		0.4
8/14/2023	12:20	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	10:25	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/11/2023	12:15	Adams, Robert	Rain	Yes	No	9/10/2023		0.45

CSO Inspection Report

CSO Number 118 **Total Wet Weather Overflows:** 35

CSO Name South Omaha (Ohern Street)

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	11:50	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
10/25/2022	13:05	Birdsall, Christopher	Rain	Yes	No	10/24/2022		0.2
11/6/2022	9:05	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	10:50	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	11:50	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/27/2023	11:00	Birdsall, Christopher	Snow Melt	Yes	No	1/18/2023		0.52
2/15/2023	9:05	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	11:15	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	9:00	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
4/15/2023	8:30	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	12:30	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	12:35	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/12/2023	9:40	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	12:30	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	10:10	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/5/2023	12:55	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/8/2023	11:10	Birdsall, Christopher	Rain	Yes	No	6/7/2023		0.25
6/11/2023	12:15	Adams, Robert	Rain	Yes	No	6/11/2023	2 day rain event	0.09
6/16/2023	13:30	Birdsall, Christopher	Rain	Yes	No	6/16/2023		0.2
6/30/2023	10:50	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	7:10	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	7:40	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	11:55	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58

CSO Inspection Report

CSO Number 118 **Total Wet Weather Overflows:** 35

CSO Name South Omaha (Ohern Street)

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/15/2023	8:10	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	14:30	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/18/2023	15:25	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	10:51	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/31/2023	13:10	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	11:10	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/6/2023	8:45	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/9/2023	11:20	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/12/2023	9:55	Mata, Terence	Rain	Yes	No	8/11/2023		0.4
8/14/2023	12:25	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	10:55	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/11/2023	12:30	Adams, Robert	Rain	Yes	No	9/10/2023		0.45

CSO Inspection Report

CSO Number 119 **Total Wet Weather Overflows:** 55

CSO Name Monroe Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	12:25	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
10/25/2022	13:10	Birdsall, Christopher	Rain	Yes	No	10/24/2022		0.2
11/6/2022	9:20	Birdsall, Christopher	Rain	Yes	Yes	11/4/2022	Debris build up from rain on 11/4/2022 cleaned by jet crew one hour after finding.	0.47
11/27/2022	12:15	Adams, Robert	Rain	Yes	Yes	11/26/2022	Spatial rain event. Debris blocking outgoing sanitary. Overflow less than 24 hours.	0.08
12/9/2022	9:15	Birdsall, Christopher	Rain	Yes	No	12/8/2022		0.09
12/14/2022	10:40	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
12/30/2022	8:45	Birdsall, Christopher	Snow Melt	Yes	No	12/13/2022		0.61
1/4/2023	12:00	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	10:20	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
1/27/2023	10:45	Birdsall, Christopher	Snow Melt	Yes	No	1/18/2023		0.52
2/10/2023	11:50	Adams, Robert	Snow Melt	Yes	No	1/28/2023		0.07
2/15/2023	8:55	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/19/2023	6:30	Birdsall, Christopher	Snow Melt	Yes	No	2/14/2023		0.98
2/27/2023	11:55	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/10/2023	12:30	Mata, Terence	Rain	Yes	No	3/9/2023		0.15
3/12/2023	9:15	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
4/10/2023	10:55	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	9:50	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	13:20	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	13:15	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/5/2023	12:25	Birdsall, Christopher	Rain	Yes	No	5/5/2023		0.1
5/8/2023	13:25	Birdsall, Christopher	Rain	Yes	No	5/7/2023		0.09

CSO Inspection Report

CSO Number 119 **Total Wet Weather Overflows:** 55

CSO Name Monroe Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
5/12/2023	9:30	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	12:40	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	10:25	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/5/2023	13:55	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/8/2023	11:20	Birdsall, Christopher	Rain	Yes	No	6/7/2023		0.25
6/11/2023	12:30	Adams, Robert	Rain	Yes	No	6/11/2023	2 day rain event	0.09
6/16/2023	13:50	Birdsall, Christopher	Rain	Yes	No	6/16/2023		0.2
6/25/2023	6:50	Adams, Robert	Rain	Yes	No	6/24/2023		0.06
6/30/2023	11:00	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	6:55	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/5/2023	13:15	Adams, Robert	Rain	Yes	No	7/5/2023	2 day rain event	0.08
7/8/2023	7:35	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	12:10	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	8:00	Woods, Patrick	Rain	Yes	Yes	7/14/2023		0.35
7/17/2023	14:45	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/18/2023	15:30	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	11:07	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/24/2023	8:45	Birdsall, Christopher	Rain	Yes	No	7/24/2023		0.33
7/28/2023	13:20	Birdsall, Christopher	Rain	Yes	No	7/27/2023	Spatial Rain event. Confirmed with RG-8 Rainfall total .06	0
7/29/2023	7:50	Adams, Robert	Rain	Yes	No	7/28/2023		0.13
7/31/2023	13:25	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	7:10	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/6/2023	9:00	Mata, Terence	Rain	Yes	No	8/5/2023		0.34

CSO Inspection Report

CSO Number 119 **Total Wet Weather Overflows:** 55

CSO Name Monroe Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
8/7/2023	11:00	Adams, Robert	Rain	Yes	No	8/6/2023		0.13
8/9/2023	8:30	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/12/2023	10:10	Mata, Terence	Rain	Yes	No	8/11/2023		0.4
8/14/2023	7:15	Adams, Robert	Rain	Yes	No	8/13/2023	alert received	0.27
8/27/2023	6:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/5/2023	12:25	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/11/2023	12:45	Adams, Robert	Rain	Yes	No	9/10/2023		0.45
9/17/2023	6:00	Birdsall, Christopher	Rain	Yes	No	9/16/2023		0.2
9/20/2023	7:35	Mata, Terence	Rain	Yes	No	9/20/2023		0.3
9/22/2023	13:20	Birdsall, Christopher	Rain	Yes	No	9/22/2023	Waterspout confirmed.	0.15

CSO Inspection Report

CSO Number 121 **Total Wet Weather Overflows:** 27

CSO Name Jones Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	11:00	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/6/2022	8:10	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	11:20	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Device Missing needed replaced. Two day event from 12/12/2022	0.61
1/4/2023	11:20	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	12:00	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
2/15/2023	9:35	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	10:35	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
4/15/2023	8:10	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	12:05	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	11:40	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
6/2/2023	11:40	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/5/2023	11:05	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/30/2023	10:15	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	7:45	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	10:15	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	11:10	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/17/2023	14:00	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/22/2023	10:13	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/31/2023	12:30	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	7:00	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	13:25	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/6/2023	6:00	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/9/2023	8:00	Adams, Robert	Rain	Yes	No	8/9/2023		0.91

CSO Inspection Report

CSO Number 121 **Total Wet Weather Overflows:** 27

CSO Name Jones Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
8/14/2023	11:55	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	9:50	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/11/2023	11:35	Adams, Robert	Rain	Yes	No	9/10/2023		0.45
9/20/2023	9:35	Mata, Terence	Rain	Yes	No	9/20/2023		0.3

CSO Inspection Report

CSO Number 202 **Total Wet Weather Overflows:** 29

CSO Name 72nd & Bedford

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	9:35	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/27/2022	10:00	Adams, Robert	Rain	Yes	No	11/26/2022	Spatial rain event	0.08
12/14/2022	13:35	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	9:55	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	13:10	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
2/15/2023	11:20	Birdsall, Christopher	Rain	Yes	No	2/14/2023	5" grit	0.98
3/12/2023	7:05	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
4/15/2023	7:05	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/16/2023	7:05	Birdsall, Christopher	Rain	Yes	No	4/15/2023		0.13
4/19/2023	10:15	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	10:05	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
6/2/2023	10:20	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	8:10	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/8/2023	8:45	Birdsall, Christopher	Rain	Yes	No	6/7/2023		0.25
6/30/2023	9:00	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	8:50	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	10:55	Birdsall, Christopher	Rain	Yes	No	7/7/2023	Waterspout confirmed	0.8
7/12/2023	10:04	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	9:55	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	13:00	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/18/2023	14:00	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	9:12	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/31/2023	10:35	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46

CSO Inspection Report

CSO Number 202 **Total Wet Weather Overflows:** 29

CSO Name 72nd & Bedford

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
8/3/2023	7:05	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/6/2023	6:00	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/7/2023	7:30	Adams, Robert	Rain	Yes	No	8/6/2023		0.13
8/9/2023	9:40	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/14/2023	7:25	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
9/11/2023	9:30	Adams, Robert	Rain	Yes	No	9/10/2023		0.45

CSO Inspection Report

CSO Number 203 **Total Wet Weather Overflows:** 8

CSO Name 69th & Evans

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	9:40	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
10/25/2022	10:35	Birdsall, Christopher	Rain	Yes	No	10/24/2022		0.2
4/15/2023	7:10	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
5/12/2023	11:25	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
7/12/2023	10:15	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/31/2023	10:40	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	8:50	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/9/2023	9:45	Adams, Robert	Rain	Yes	No	8/9/2023	Device backwashed into flow line	0.91

CSO Inspection Report

CSO Number 204 **Total Wet Weather Overflows:** 47

CSO Name 63rd & Ames

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	9:50	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
10/25/2022	10:55	Birdsall, Christopher	Rain	Yes	No	10/24/2022		0.2
11/6/2022	7:10	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	13:20	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
12/30/2022	10:40	Birdsall, Christopher	Snow Melt	Yes	No	12/13/2022	Snow Melt	0.61
1/4/2023	10:10	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	13:05	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
1/27/2023	13:05	Birdsall, Christopher	Snow Melt	Yes	No	1/18/2023		0.52
2/15/2023	11:00	Birdsall, Christopher	Rain	Yes	Yes	2/14/2023	Gates were closed called levee crew to troubleshoot why gate closed, levee crew meet us out there gate was powered down turn it back on. After it was on bypass was no longer happening.	0.98
2/27/2023	9:35	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	7:15	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
3/17/2023	9:55	Birdsall, Christopher	Rain	Yes	No	3/16/2023		0.24
3/27/2023	12:20	Mata, Terence	Snow Melt	Yes	No	3/26/2023		0.12
4/10/2023	8:45	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	7:20	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/16/2023	7:20	Birdsall, Christopher	Rain	Yes	No	4/15/2023		0.13
4/19/2023	10:25	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	10:20	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/12/2023	11:15	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	10:40	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	8:25	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/5/2023	10:00	Mata, Terence	Rain	Yes	No	6/4/2023		0.2

CSO Inspection Report

CSO Number 204 **Total Wet Weather Overflows:** 47

CSO Name 63rd & Ames

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
6/8/2023	9:10	Birdsall, Christopher	Rain	Yes	No	6/7/2023		0.25
6/11/2023	10:25	Adams, Robert	Rain	Yes	No	6/11/2023	2 day rain event	0.09
6/30/2023	9:25	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	8:35	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/5/2023	11:50	Adams, Robert	Rain	Yes	No	7/5/2023	2 day rain event	0.08
7/8/2023	10:40	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	10:25	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	9:45	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	13:15	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/18/2023	14:15	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	9:23	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/24/2023	10:30	Birdsall, Christopher	Rain	Yes	No	7/24/2023		0.33
7/29/2023	9:30	Adams, Robert	Rain	Yes	No	7/28/2023		0.13
7/31/2023	10:50	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	9:10	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	12:35	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/6/2023	7:20	Mata, Terence	Rain	Yes	No	8/5/2023		0.34
8/7/2023	9:25	Adams, Robert	Rain	Yes	No	8/6/2023		0.13
8/9/2023	9:55	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/14/2023	10:05	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	8:40	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/5/2023	10:20	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/11/2023	9:50	Adams, Robert	Rain	Yes	No	9/10/2023		0.45

CSO Inspection Report

CSO Number 204 **Total Wet Weather Overflows:** 47

CSO Name 63rd & Ames

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
9/17/2023	7:15	Birdsall, Christopher	Rain	Yes	No	9/16/2023		0.2
9/22/2023	14:20	Birdsall, Christopher	Rain	Yes	No	9/22/2023		0.15

CSO Inspection Report

CSO Number 205 **Total Wet Weather Overflows:** 39

CSO Name 64th & Dupont

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	8:40	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
10/25/2022	10:00	Birdsall, Christopher	Rain	Yes	No	10/24/2022	Waterspout confirmed	0.2
11/6/2022	6:15	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
12/14/2022	14:10	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/4/2023	9:20	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event.	0.35
1/19/2023	13:45	Mata, Terence	Rain	Yes	No	1/18/2023		0.52
2/15/2023	12:25	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	8:35	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	6:30	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
3/17/2023	9:10	Birdsall, Christopher	Rain	Yes	No	3/16/2023		0.24
4/10/2023	7:55	Adams, Robert	Rain	Yes	No	4/10/2023		0.15
4/15/2023	6:30	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/16/2023	6:35	Birdsall, Christopher	Rain	Yes	No	4/15/2023		0.13
4/19/2023	9:40	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	9:30	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
5/12/2023	11:55	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	9:40	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/3/2023	7:30	Mata, Terence	Rain	Yes	No	6/2/2023		0.15
6/5/2023	9:05	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/8/2023	8:10	Birdsall, Christopher	Rain	Yes	No	6/7/2023		0.25
6/11/2023	9:20	Adams, Robert	Rain	Yes	No	6/11/2023	2 day rain event	0.09
6/16/2023	9:30	Birdsall, Christopher	Rain	Yes	No	6/16/2023		0.2
6/30/2023	8:30	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79

CSO Inspection Report

CSO Number 205 **Total Wet Weather Overflows:** 39

CSO Name 64th & Dupont

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/2/2023	9:15	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	11:20	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	9:32	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	10:25	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	8:40	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/22/2023	8:42	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13
7/29/2023	7:00	Adams, Robert	Rain	Yes	No	7/28/2023		0.13
7/31/2023	10:00	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	7:00	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	10:55	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/9/2023	8:30	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/14/2023	7:25	Adams, Robert	Rain	Yes	No	8/13/2023		0.27
8/27/2023	6:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/5/2023	7:25	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/11/2023	9:15	Adams, Robert	Rain	Yes	No	9/10/2023		0.45
9/22/2023	13:45	Birdsall, Christopher	Rain	Yes	No	9/22/2023	waterspout confirmed.	0.15

CSO Inspection Report

CSO Number 210 **Total Wet Weather Overflows:** 30

CSO Name 72nd and Mayberry

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	9:30	Birdsall, Christopher	Rain	Yes	No	10/11/2022	4" grit	0.34
11/6/2022	6:45	Birdsall, Christopher	Rain	Yes	No	11/4/2022	4" Grit	0.47
12/14/2022	13:45	Birdsall, Christopher	Rain	Yes	No	12/13/2022	0" grit, Two day event from 12/12/2022	0.61
1/4/2023	9:50	Birdsall, Christopher	Rain	Yes	No	1/2/2023	Two day rain event. No measureable Grit	0.35
2/15/2023	11:30	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/27/2023	9:10	Birdsall, Christopher	Rain	Yes	No	2/26/2023	13" Grit	0.33
4/10/2023	8:25	Adams, Robert	Rain	Yes	No	4/10/2023	less than 2" grit	0.15
4/15/2023	7:00	Birdsall, Christopher	Rain	Yes	No	4/14/2023	3" grit	1.09
4/19/2023	10:10	Birdsall, Christopher	Rain	Yes	No	4/19/2023	4" Grit	0.21
4/20/2023	10:00	Mata, Terence	Rain	Yes	No	4/20/2023	6" Grit observed	1.74
5/12/2023	11:35	Adams, Robert	Rain	Yes	No	5/11/2023		0.11
6/2/2023	10:00	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/8/2023	8:30	Birdsall, Christopher	Rain	Yes	No	6/7/2023	13" grit	0.25
6/30/2023	8:55	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event, Grit level unobtainable with construction.	0.79
7/2/2023	6:05	Adams, Robert	Rain	Yes	No	7/1/2023	Cannot check device due to construction	1.6
7/5/2023	11:25	Adams, Robert	Rain	Yes	No	7/5/2023	2 day rain event <10" grit	0.08
7/8/2023	11:00	Birdsall, Christopher	Rain	Yes	No	7/7/2023	6" Grit	0.8
7/12/2023	8:06	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/15/2023	10:05	Woods, Patrick	Rain	Yes	No	7/14/2023		0.35
7/17/2023	12:55	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event 4" grit	0.44
7/18/2023	13:55	Woods, Patrick	Rain	Yes	No	7/18/2023		0.19
7/22/2023	9:08	Birdsall, Christopher	Rain	Yes	No	7/22/2023	8" Grit	0.13
7/29/2023	9:50	Adams, Robert	Rain	Yes	No	7/28/2023	4" grit	0.13

CSO Inspection Report

CSO Number 210 **Total Wet Weather Overflows:** 30

CSO Name 72nd and Mayberry

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/31/2023	10:30	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event. 6" Grit	1.46
8/3/2023	8:40	Mata, Terence	Rain	Yes	No	8/2/2023	5" of grit observed	2.34
8/7/2023	8:55	Adams, Robert	Rain	Yes	No	8/6/2023	5' grit	0.13
8/9/2023	9:30	Adams, Robert	Rain	Yes	No	8/9/2023	5' grit	0.91
8/14/2023	9:15	Adams, Robert	Rain	Yes	No	8/13/2023	6" grit	0.27
8/27/2023	8:00	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023 6" grit	0.18
9/5/2023	9:40	Mata, Terence	Rain	Yes	No	9/5/2023	Device pulled due to Rolloff starting their work.	0.21

CSO Inspection Report

CSO Number 211 **Total Wet Weather Overflows:** 5

CSO Name 69th & Pierce

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
11/6/2022	6:30	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
1/26/2023	13:15	Birdsall, Christopher	Snow Melt	Yes	No	1/2/2023	Device was reset. Overflow was caused by Snow Melt. Additional checks initiated 1/27/2023.	0.35
4/15/2023	6:40	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
8/3/2023	8:15	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
9/5/2023	9:15	Mata, Terence	Rain	Yes	No	9/5/2023		0.21

CSO Inspection Report

CSO Number 212 **Total Wet Weather Overflows:** 30

CSO Name 69th & Woolworth

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/12/2022	8:45	Birdsall, Christopher	Rain	Yes	No	10/11/2022		0.34
11/6/2022	6:25	Birdsall, Christopher	Rain	Yes	No	11/4/2022		0.47
11/27/2022	9:25	Adams, Robert	Rain	Yes	No	11/26/2022	Spacial rain event.	0.08
12/9/2022	9:40	Birdsall, Christopher	Rain	Yes	No	12/8/2022		0.09
12/14/2022	14:00	Birdsall, Christopher	Rain	Yes	No	12/13/2022	Two day event from 12/12/2022	0.61
1/27/2023	13:40	Birdsall, Christopher	Snow Melt	Yes	No	1/18/2023		0.52
2/15/2023	12:20	Birdsall, Christopher	Rain	Yes	No	2/14/2023		0.98
2/19/2023	9:10	Birdsall, Christopher	Snow Melt	Yes	No	2/14/2023		0.98
2/27/2023	8:45	Birdsall, Christopher	Rain	Yes	No	2/26/2023		0.33
3/12/2023	6:35	Birdsall, Christopher	Rain	Yes	No	3/11/2023		0.26
4/15/2023	6:35	Birdsall, Christopher	Rain	Yes	No	4/14/2023		1.09
4/19/2023	9:50	Birdsall, Christopher	Rain	Yes	No	4/19/2023		0.21
4/20/2023	9:35	Mata, Terence	Rain	Yes	No	4/20/2023		1.74
6/2/2023	9:45	Birdsall, Christopher	Rain	Yes	No	6/1/2023		0.89
6/5/2023	9:20	Mata, Terence	Rain	Yes	No	6/4/2023		0.2
6/8/2023	8:15	Birdsall, Christopher	Rain	Yes	No	6/7/2023		0.25
6/16/2023	9:35	Birdsall, Christopher	Rain	Yes	No	6/16/2023		0.2
6/30/2023	8:35	Birdsall, Christopher	Rain	Yes	No	6/29/2023	2 day rain event	0.79
7/2/2023	9:05	Adams, Robert	Rain	Yes	No	7/1/2023		1.6
7/8/2023	11:15	Birdsall, Christopher	Rain	Yes	No	7/7/2023		0.8
7/12/2023	9:38	Woods, Patrick	Rain	Yes	No	7/12/2023		0.58
7/17/2023	12:30	Adams, Robert	Rain	Yes	No	7/17/2023	2 day rain event	0.44
7/22/2023	8:48	Birdsall, Christopher	Rain	Yes	No	7/22/2023		0.13

CSO Inspection Report

CSO Number 212 **Total Wet Weather Overflows:** 30

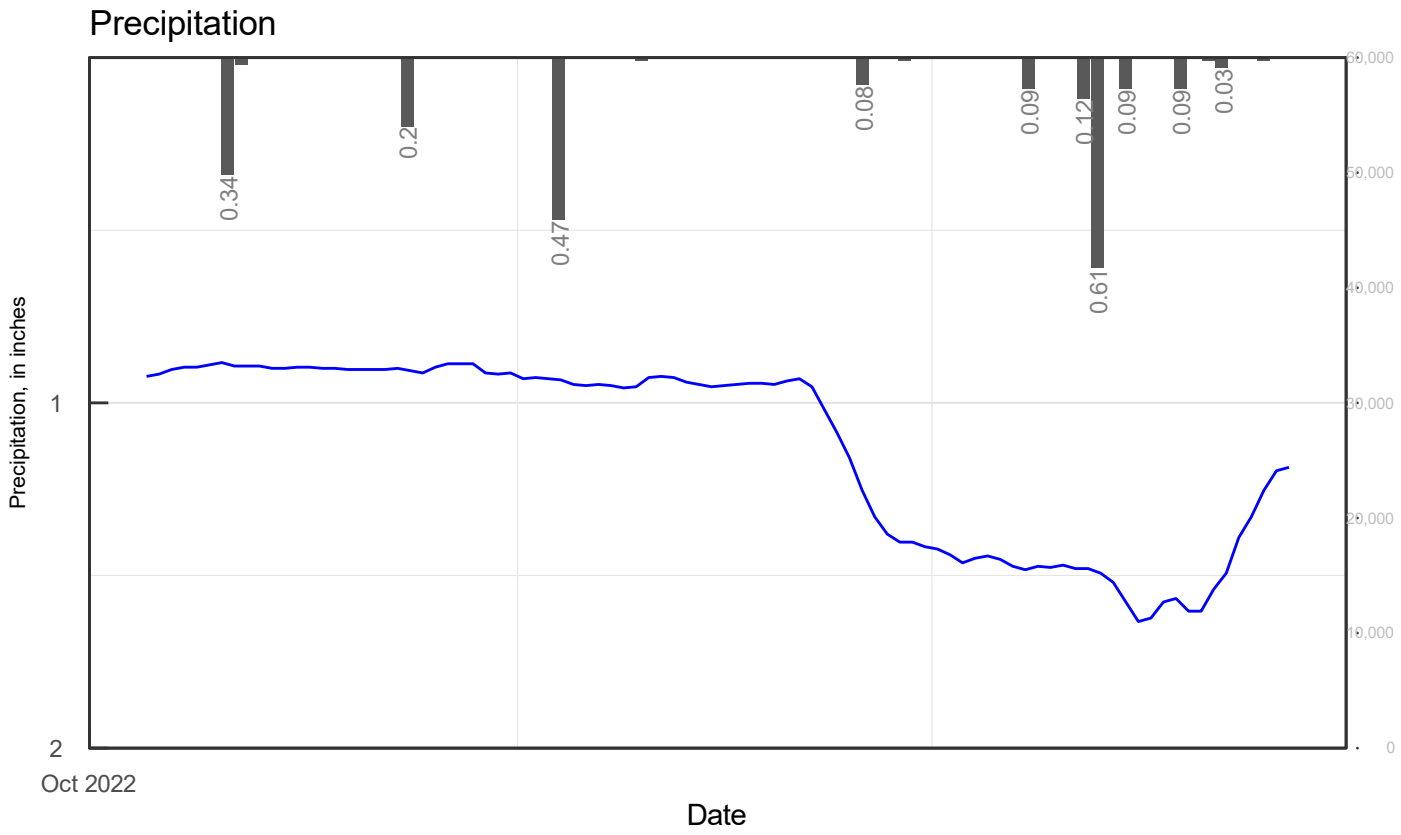
CSO Name 69th & Woolworth

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/31/2023	10:10	Birdsall, Christopher	Rain	Yes	No	7/31/2023	2 day rain event.	1.46
8/3/2023	8:10	Mata, Terence	Rain	Yes	No	8/2/2023		2.34
8/4/2023	11:50	Wickham, Grant	Rain	Yes	No	8/4/2023		0.22
8/9/2023	9:15	Adams, Robert	Rain	Yes	No	8/9/2023		0.91
8/27/2023	7:40	Adams, Robert	Rain	Yes	No	8/25/2023	2 day rain event, 8/25/23-8/26/2023	0.18
9/5/2023	9:10	Mata, Terence	Rain	Yes	No	9/5/2023		0.21
9/22/2023	13:50	Birdsall, Christopher	Rain	Yes	No	9/22/2023		0.15

Attachment 4 – USGS Missouri River Monitoring Data

Table 1. Recent precipitation in Omaha exceeding 0.1 inch

Date	Precipitation, inches
10/11/2022	0.34
10/24/2022	0.20
11/04/2022	0.47
12/12/2022	0.12
12/13/2022	0.61



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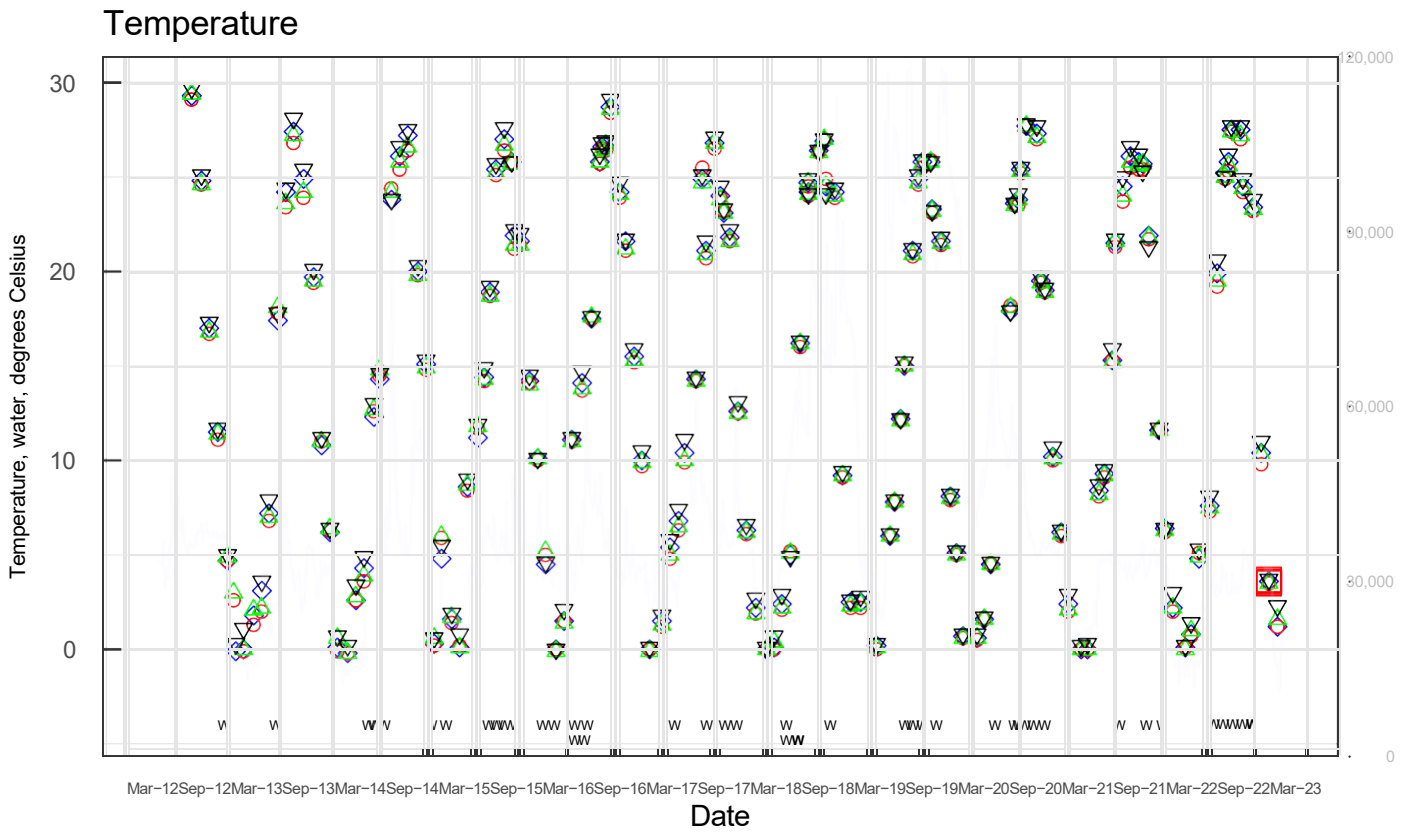

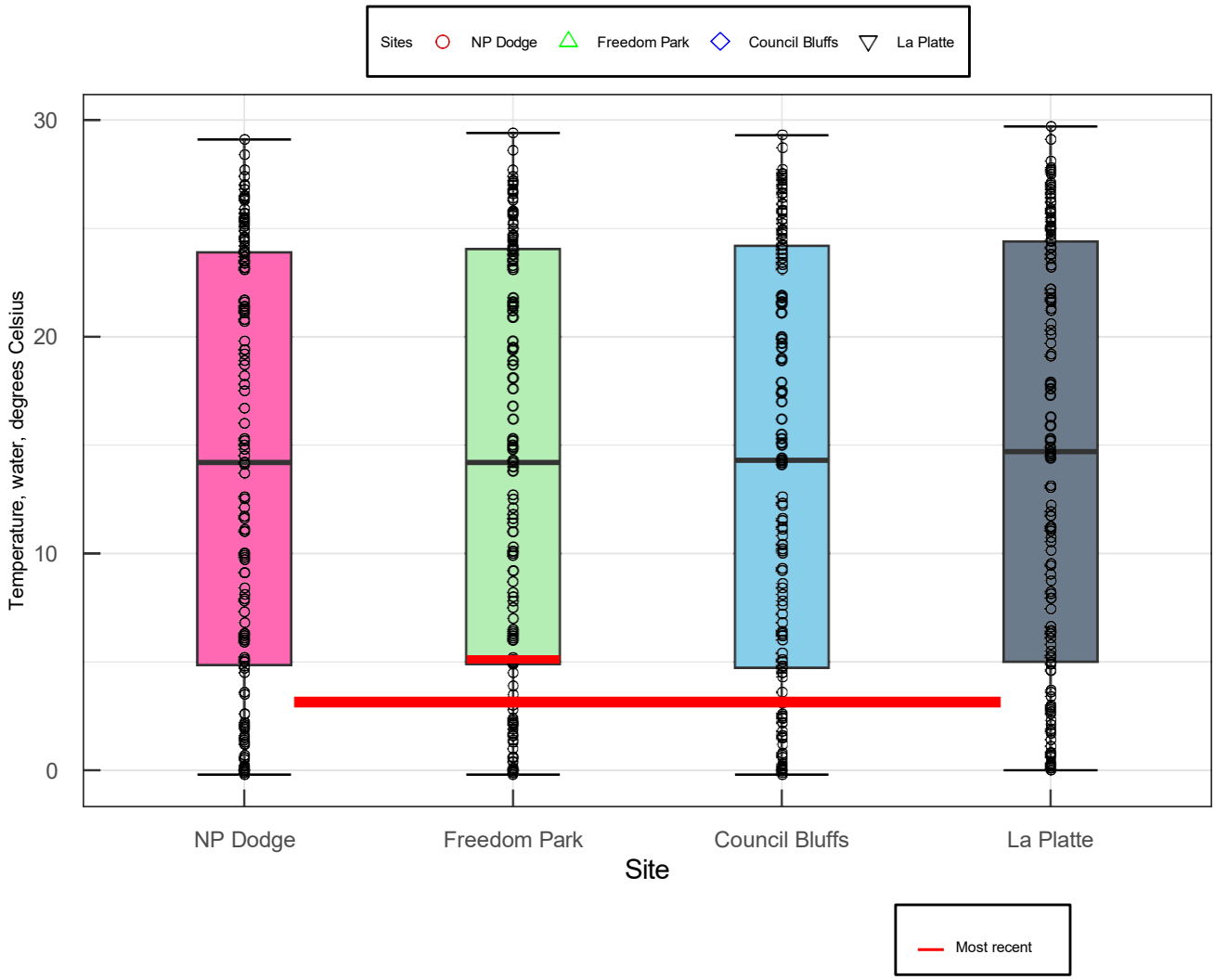

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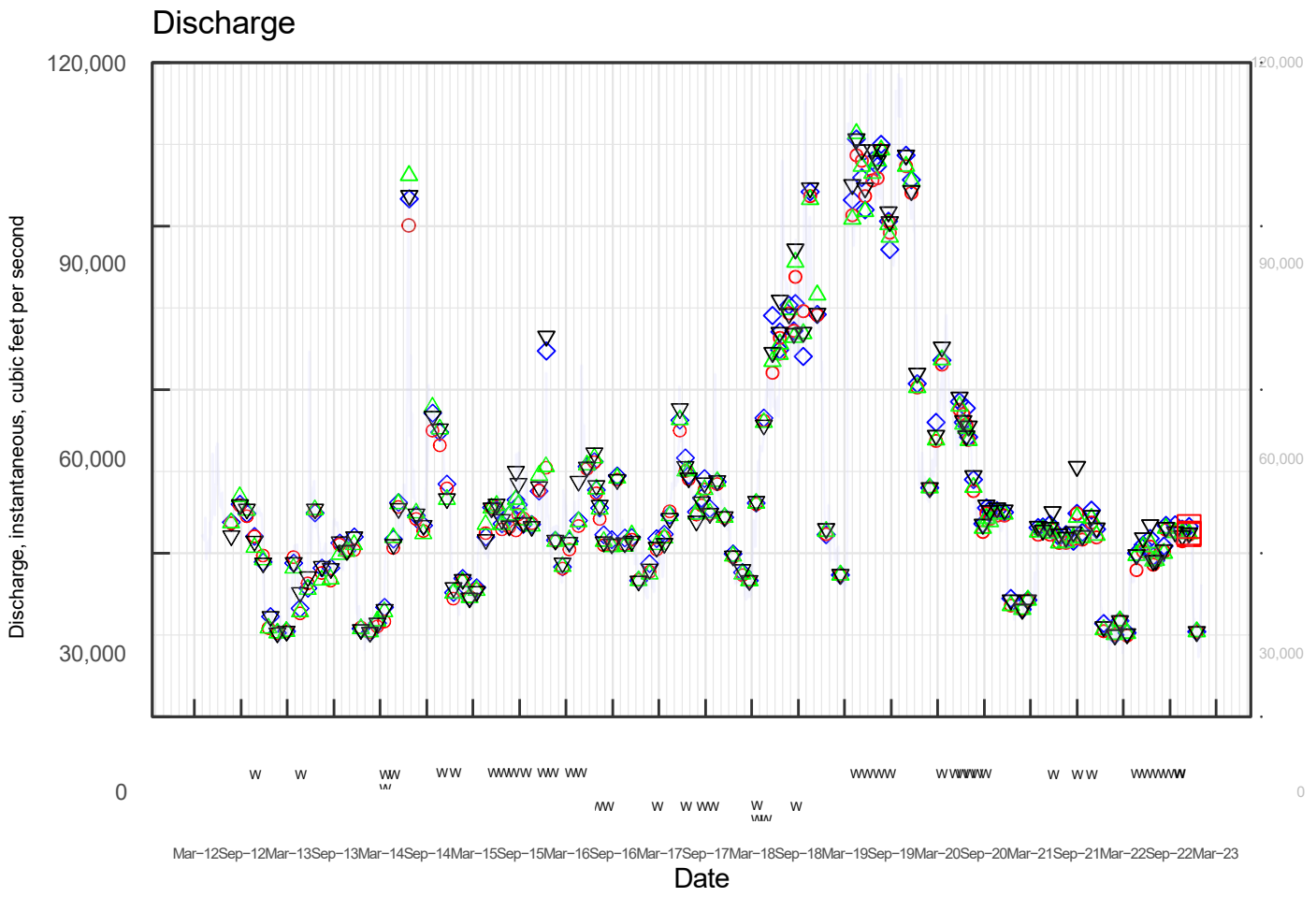

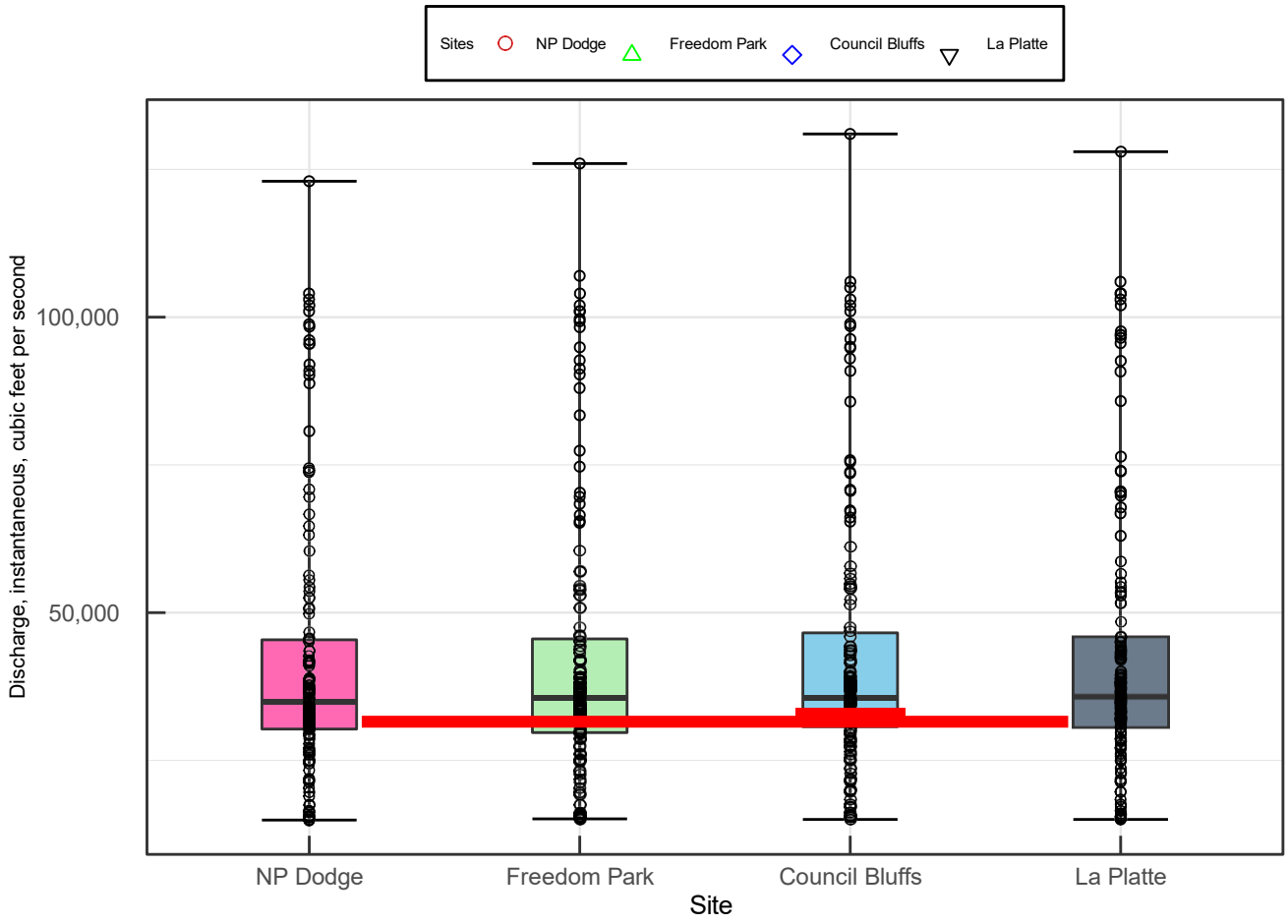

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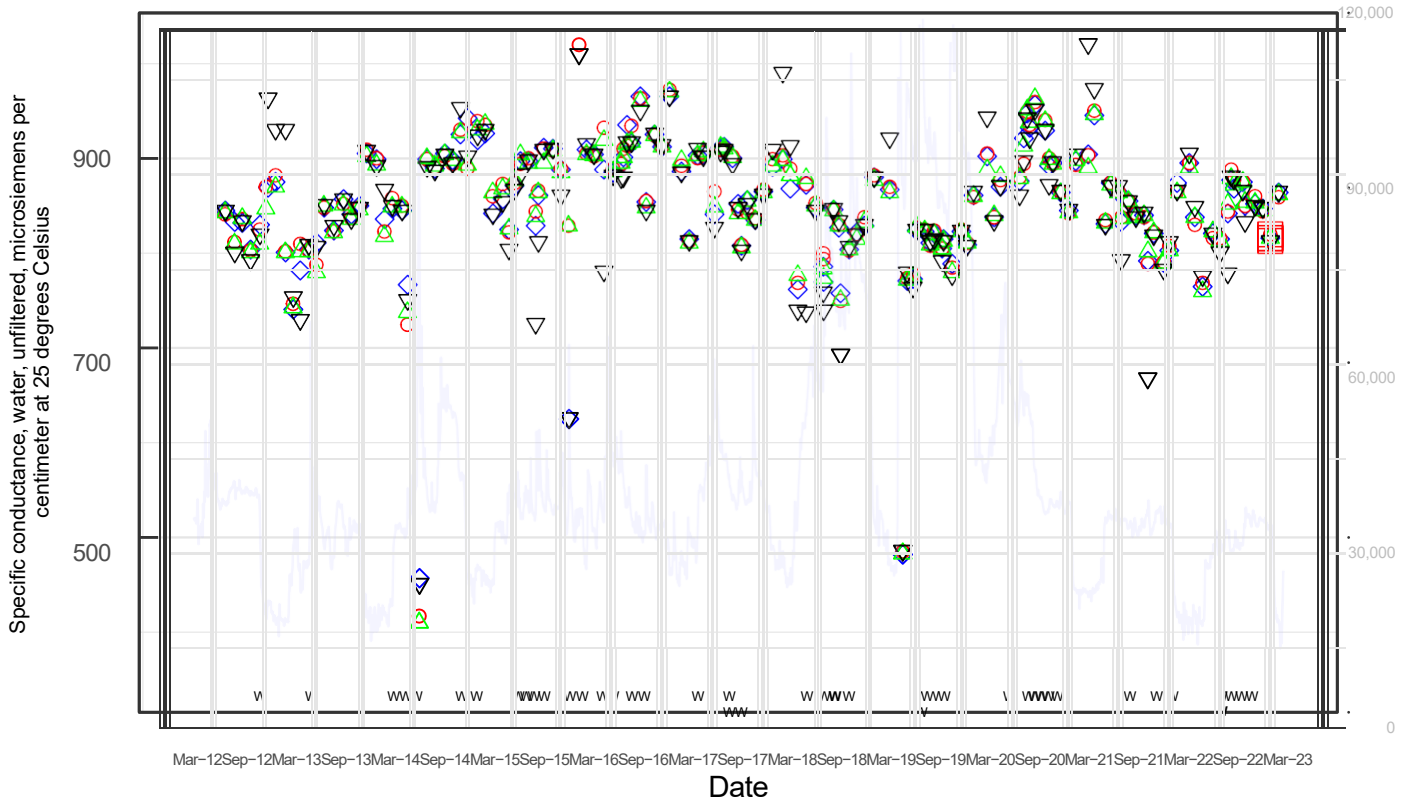

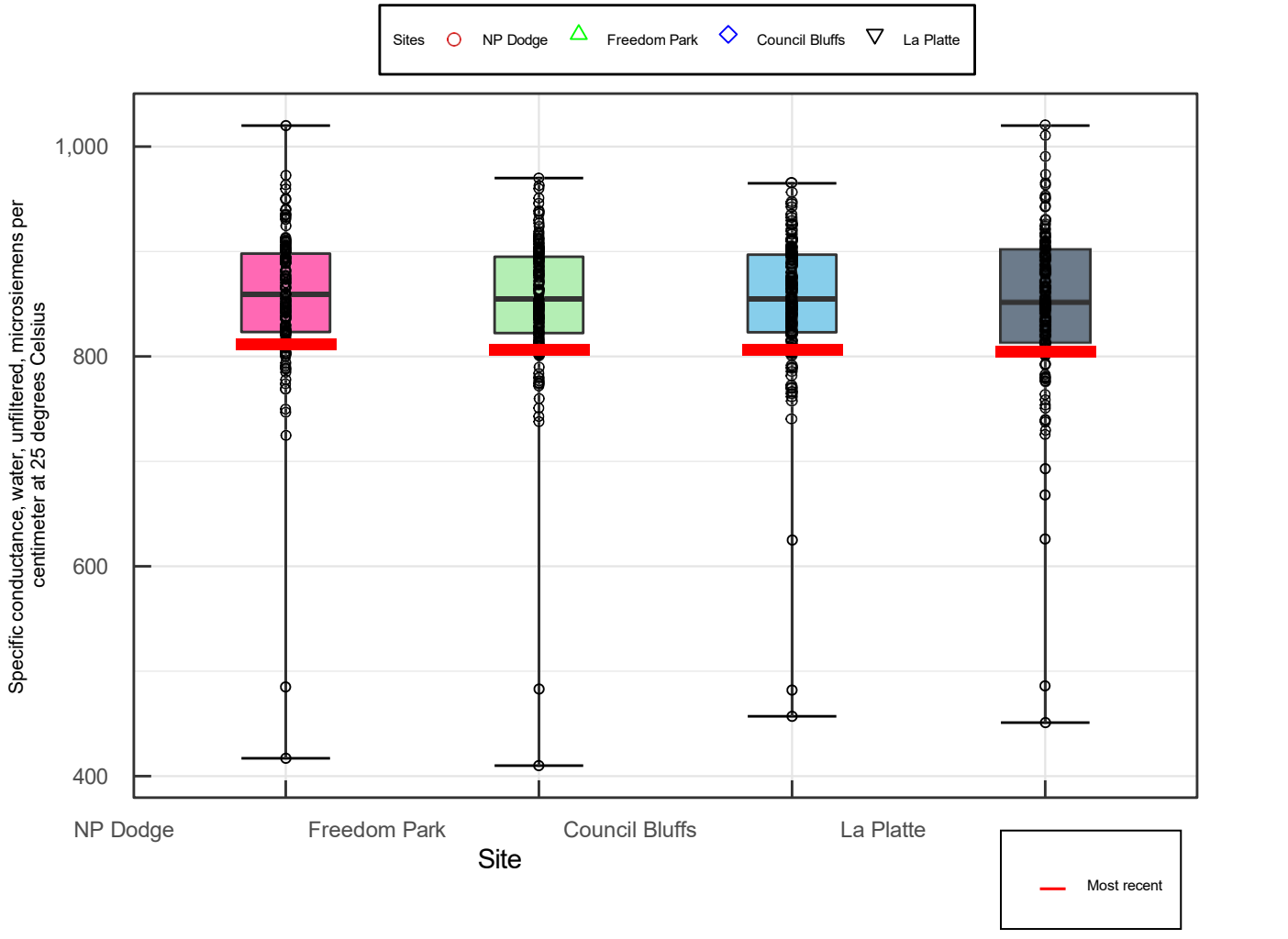

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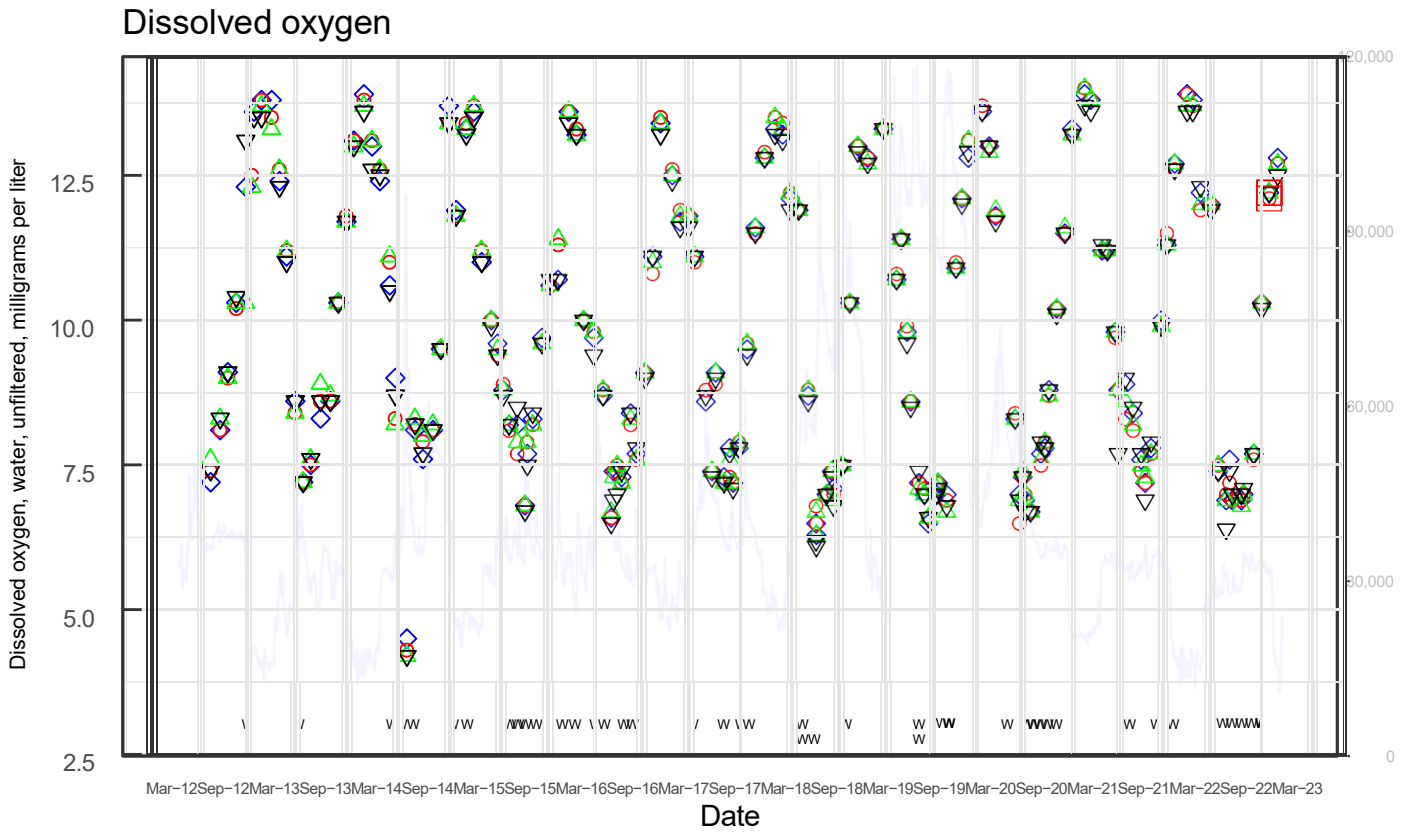

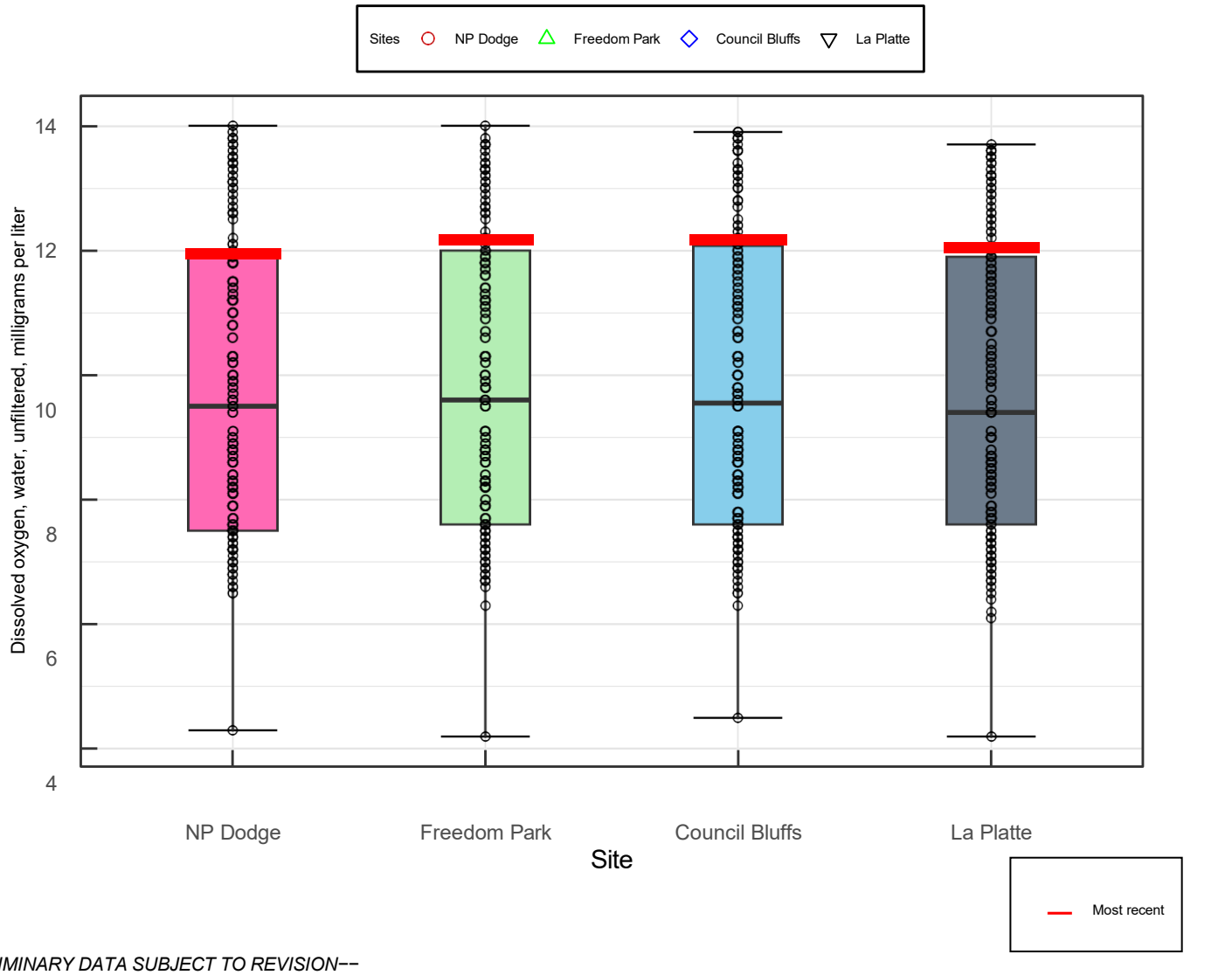

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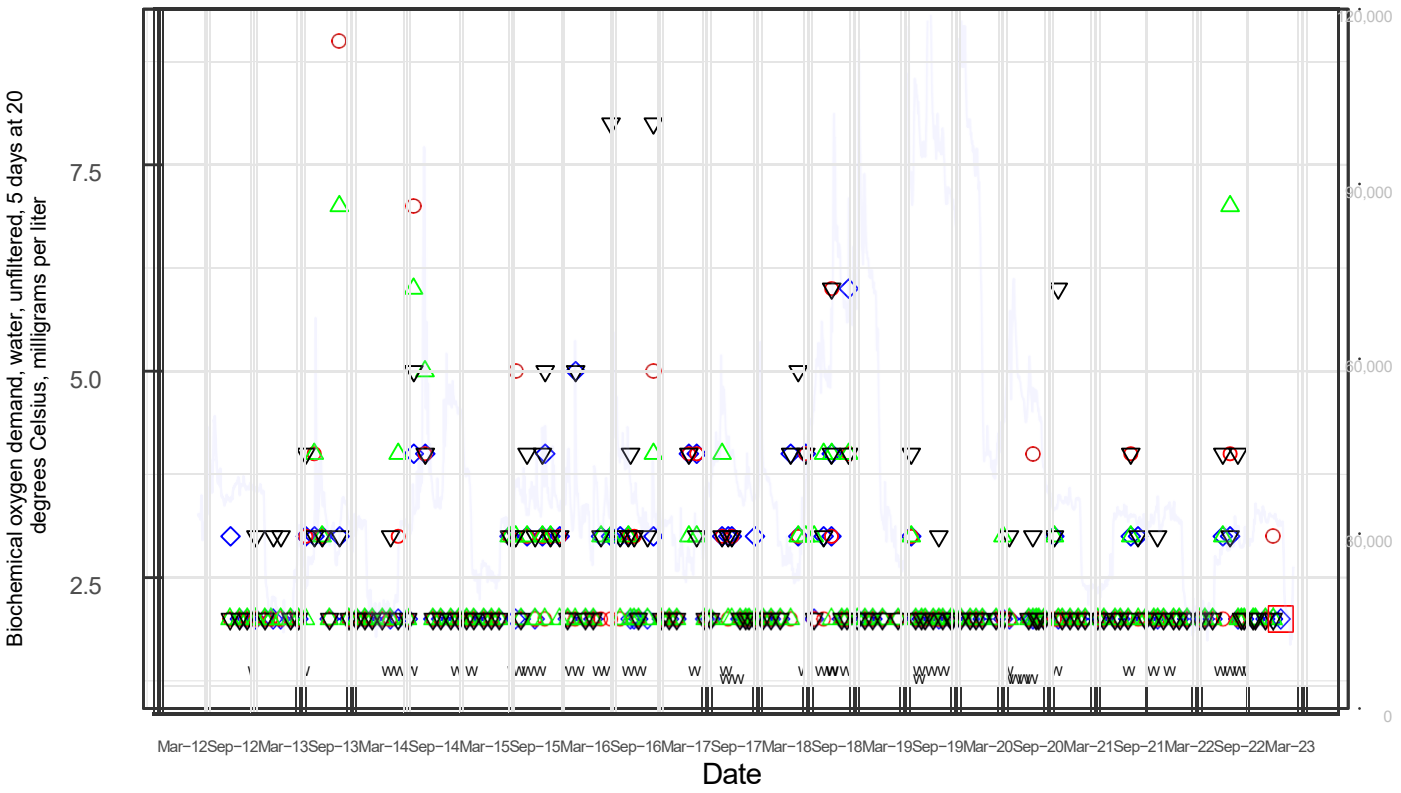
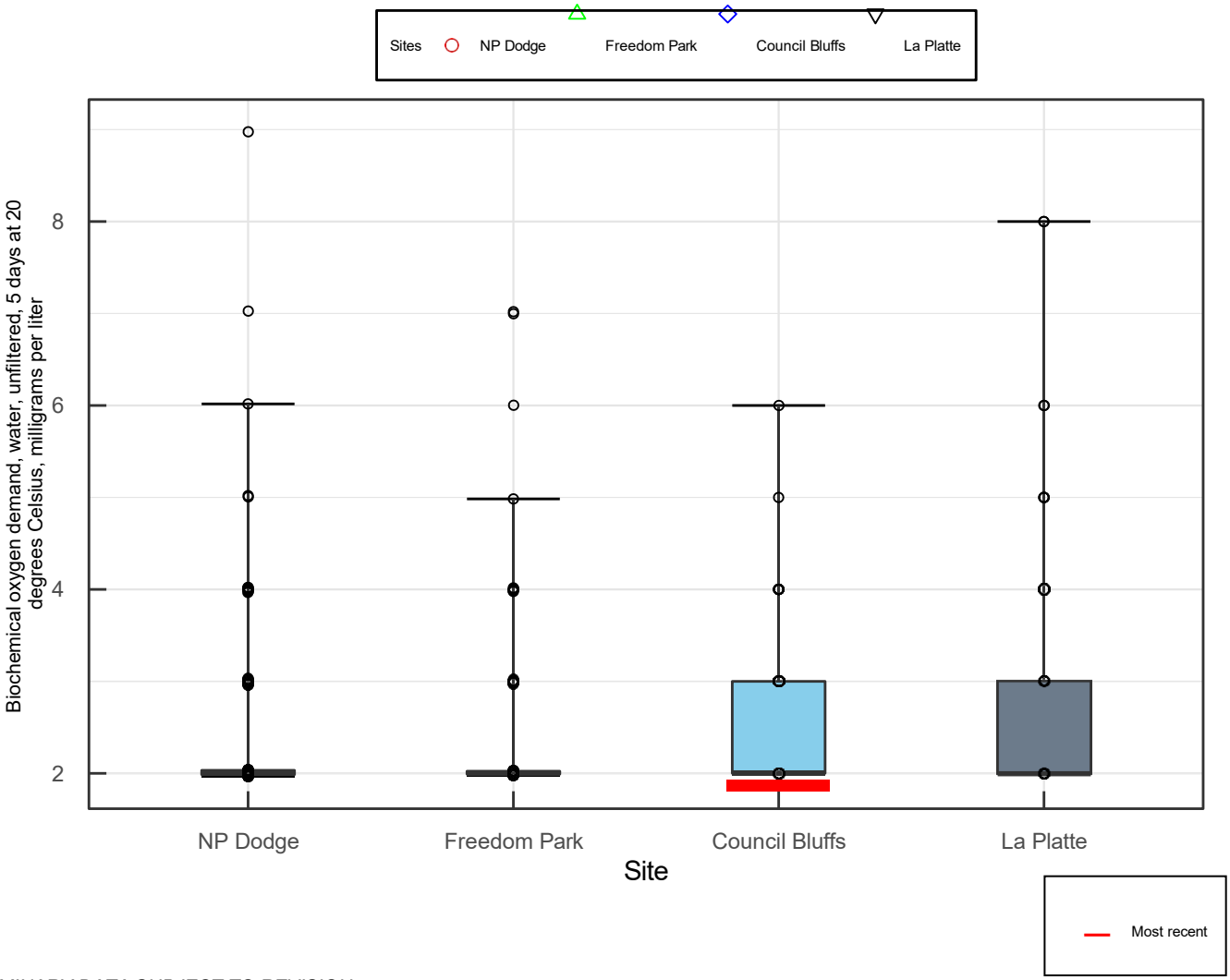
Biochemical oxygen demand





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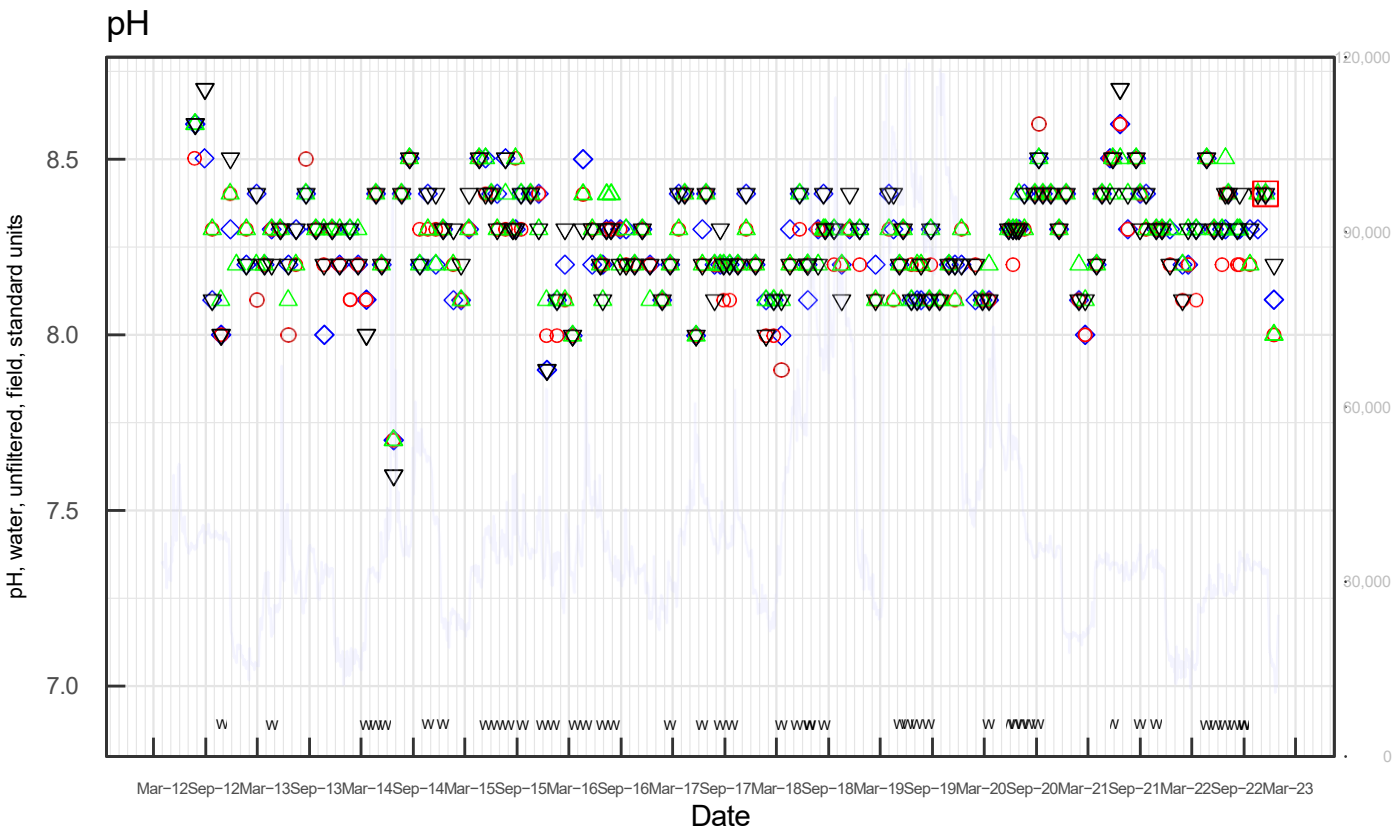

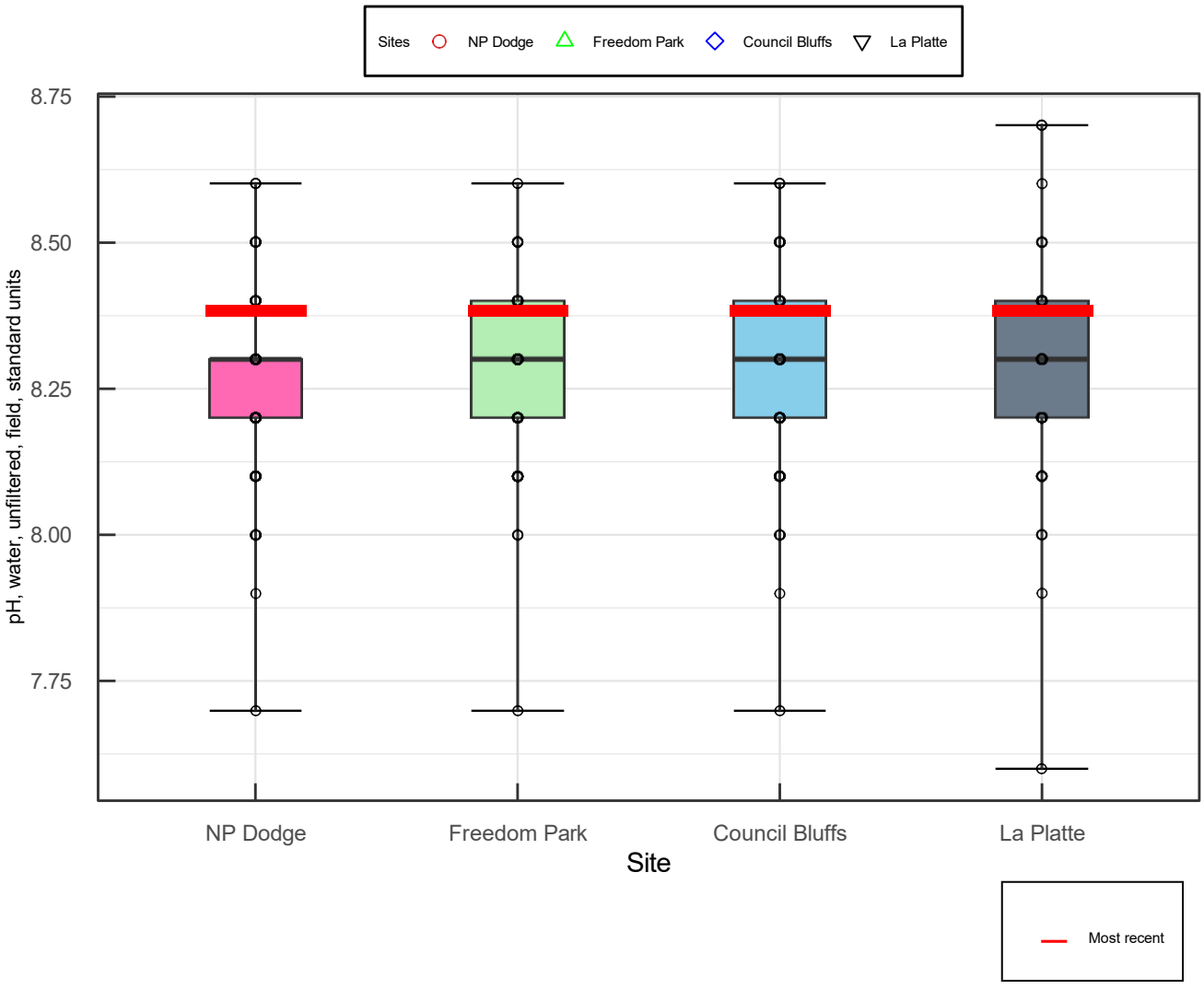

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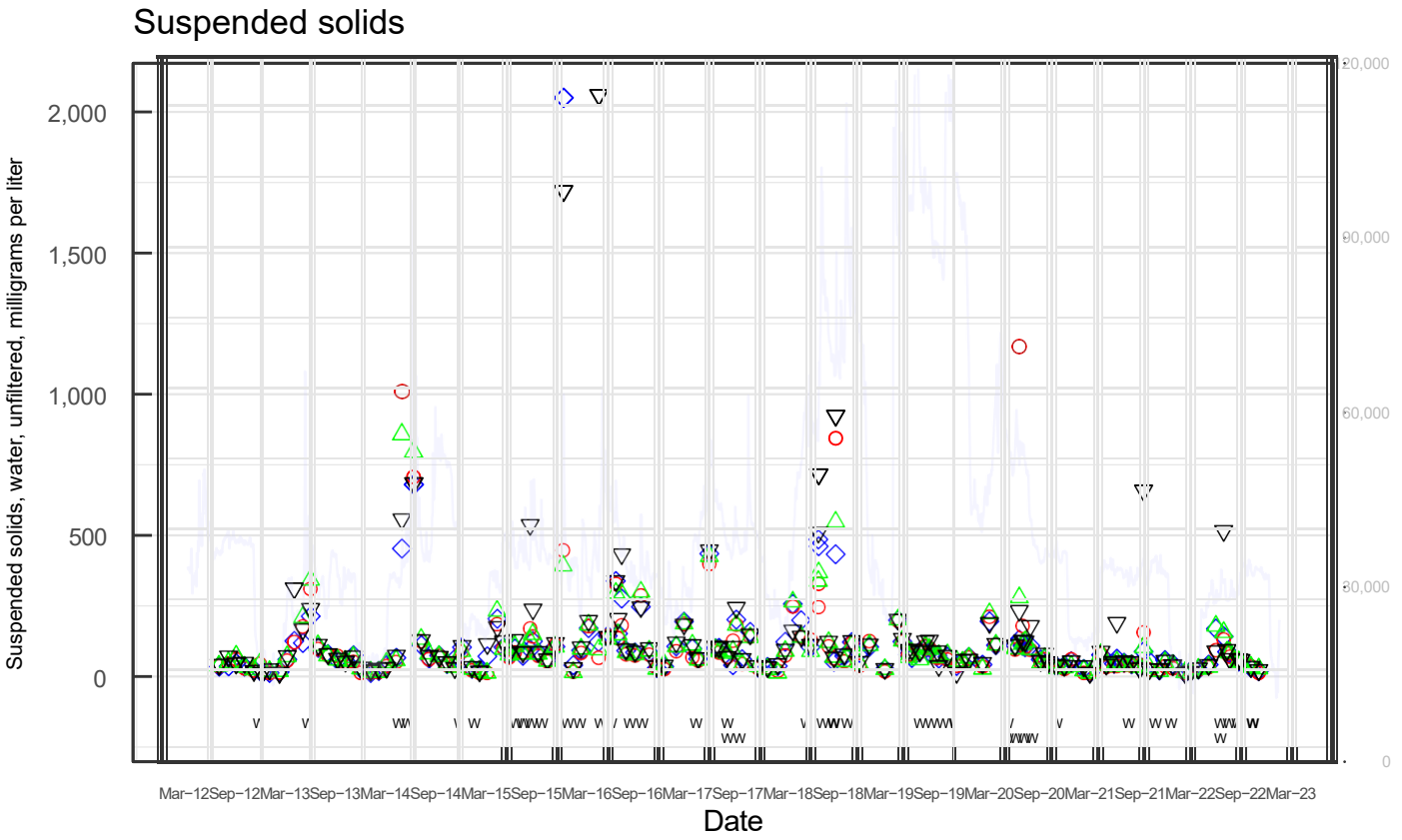

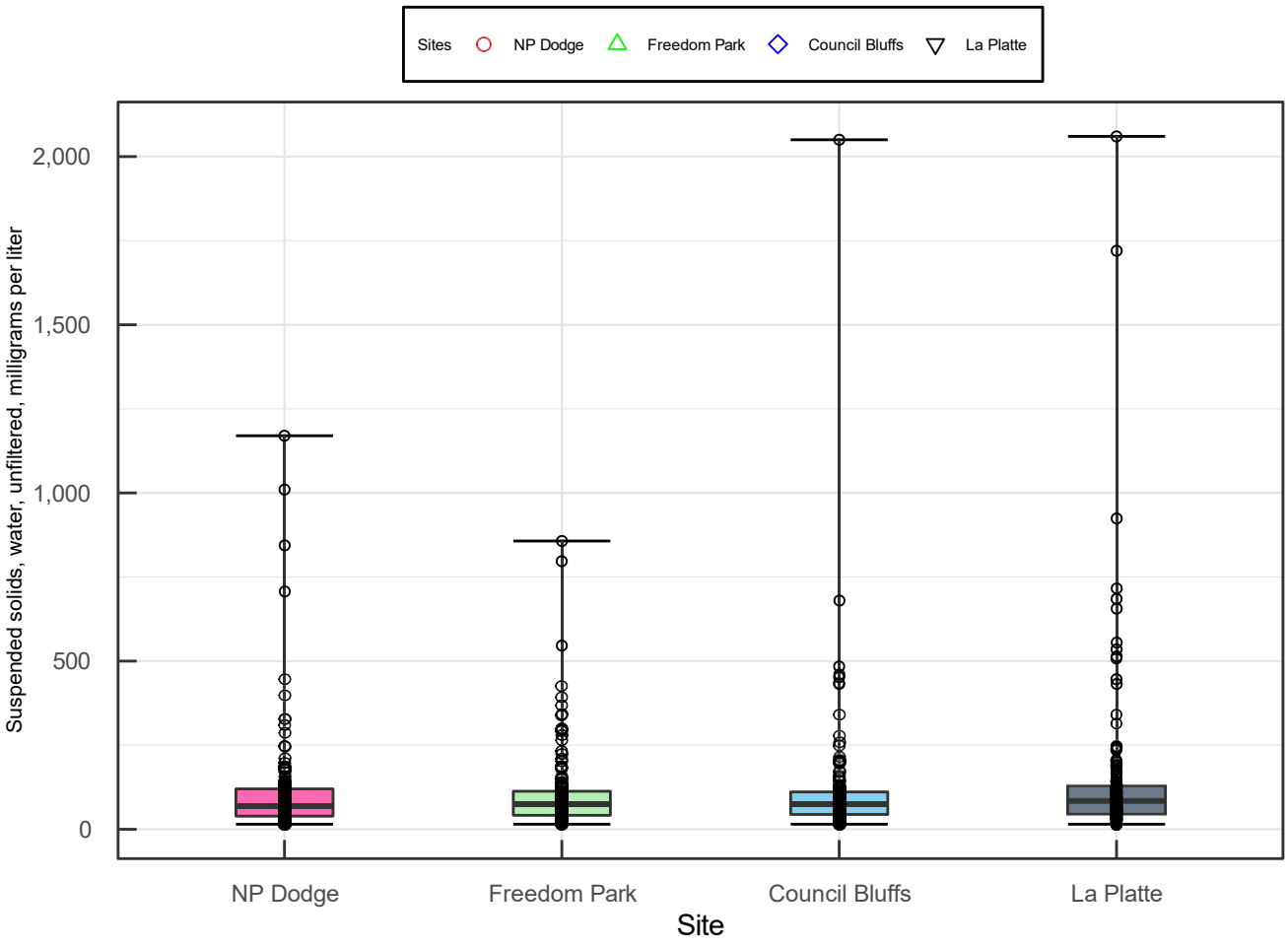

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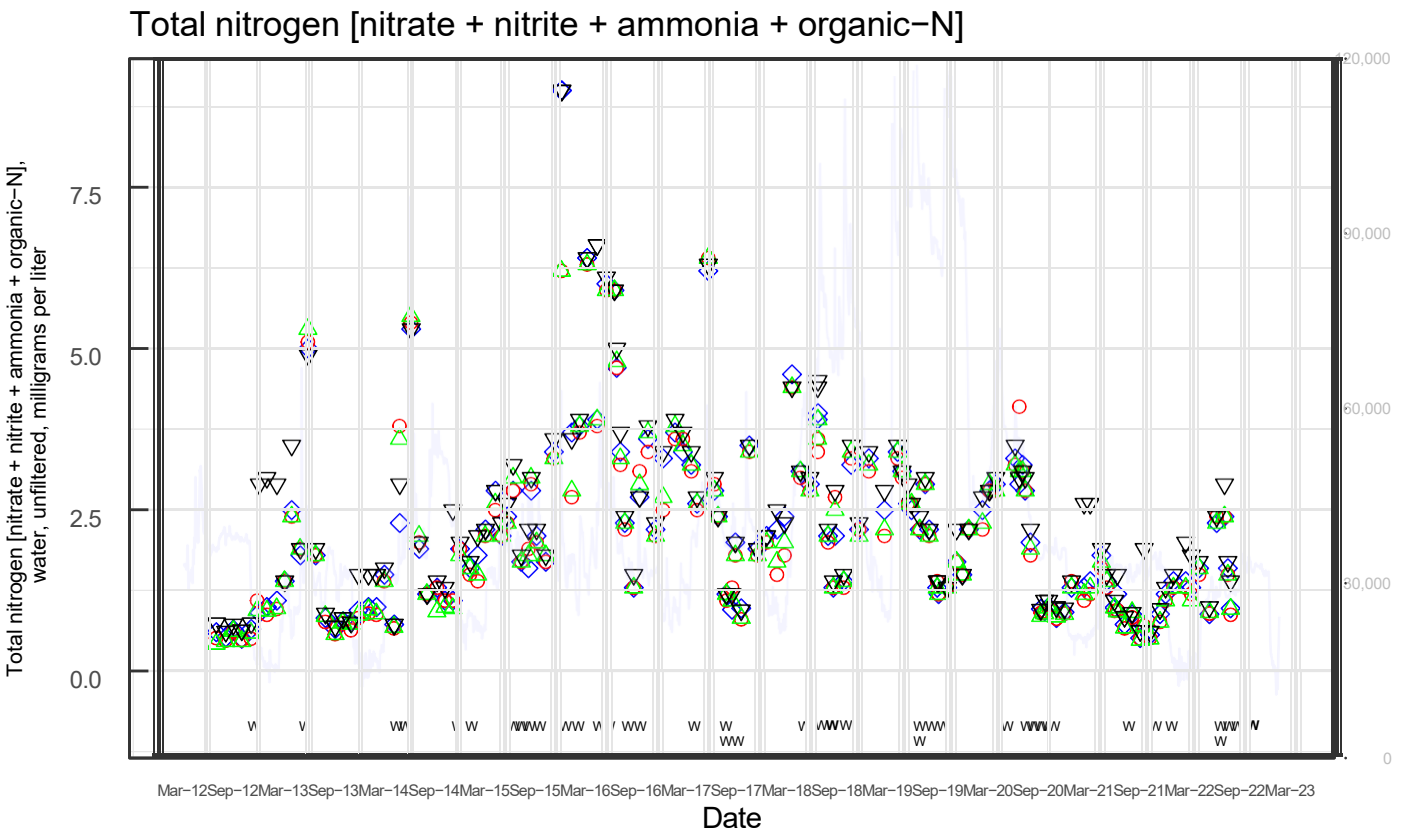

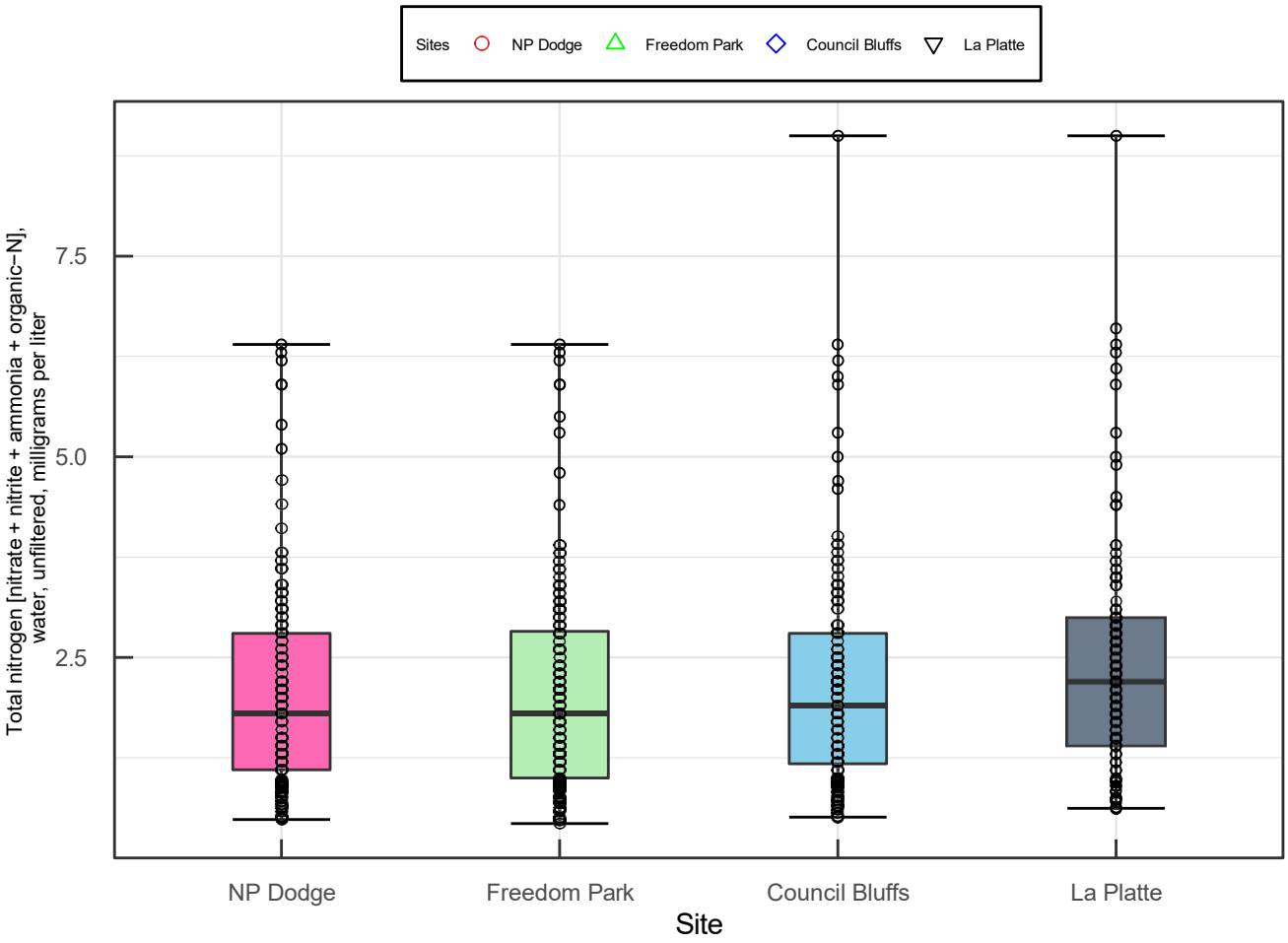

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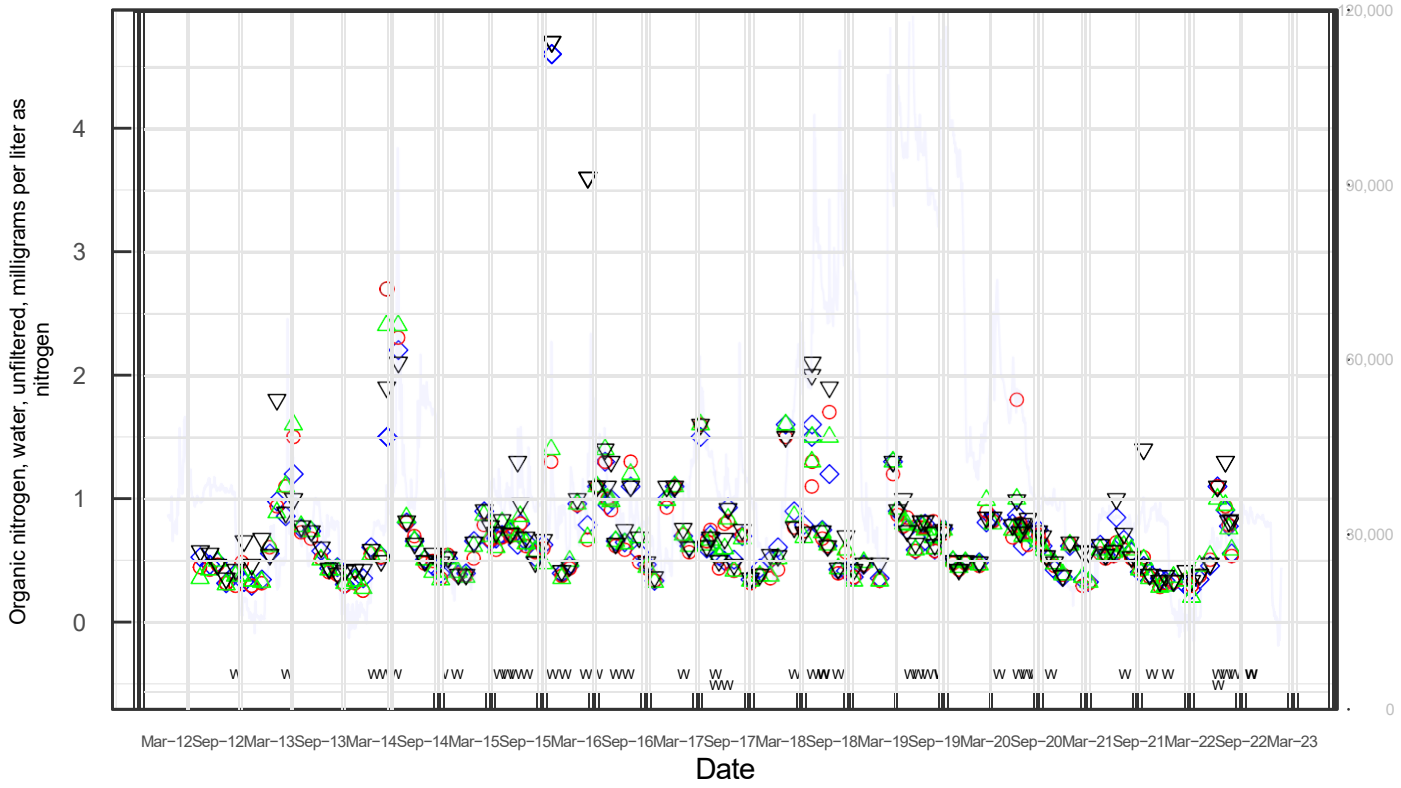
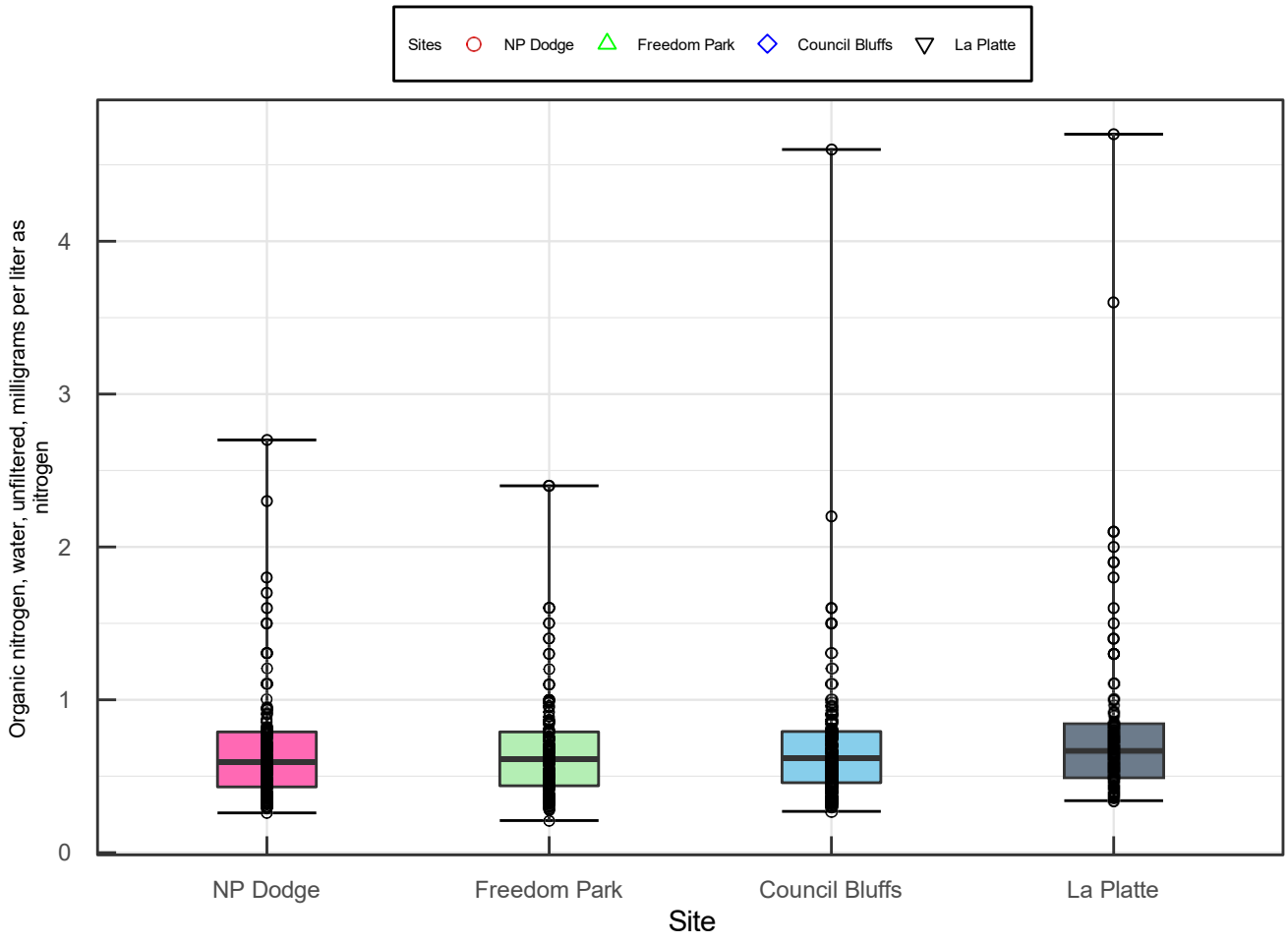
Organic nitrogen





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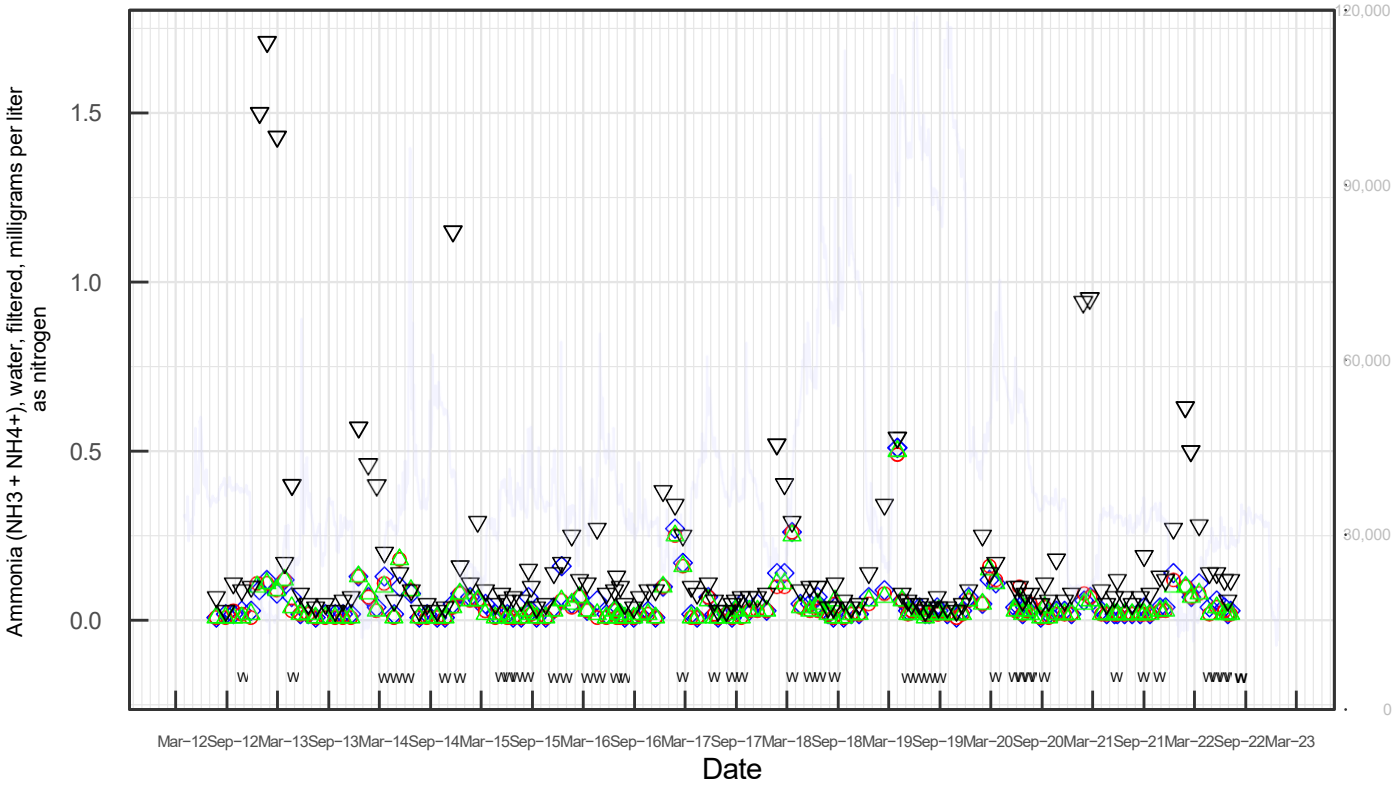
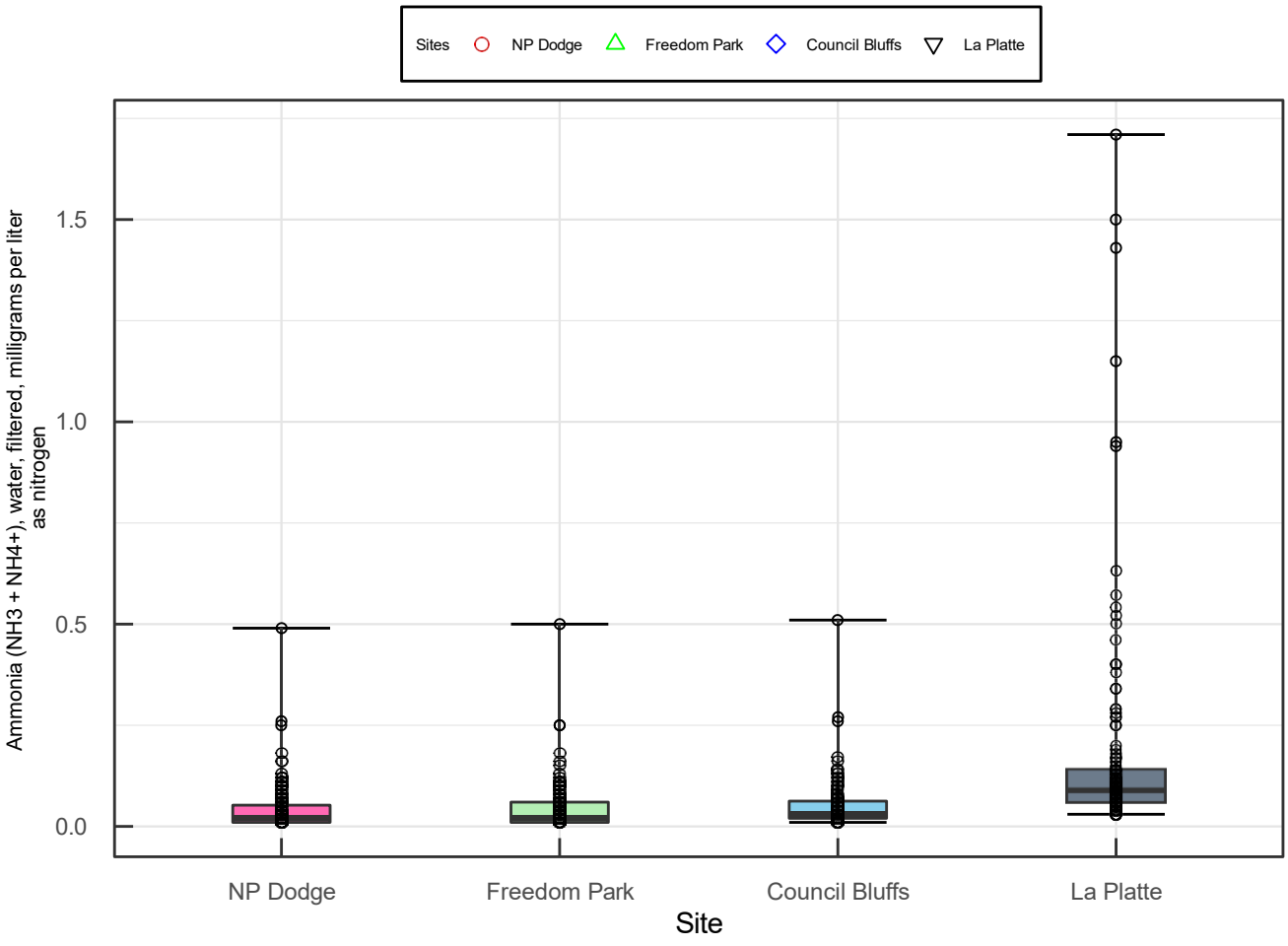
Ammonia (NH3 + NH4+)





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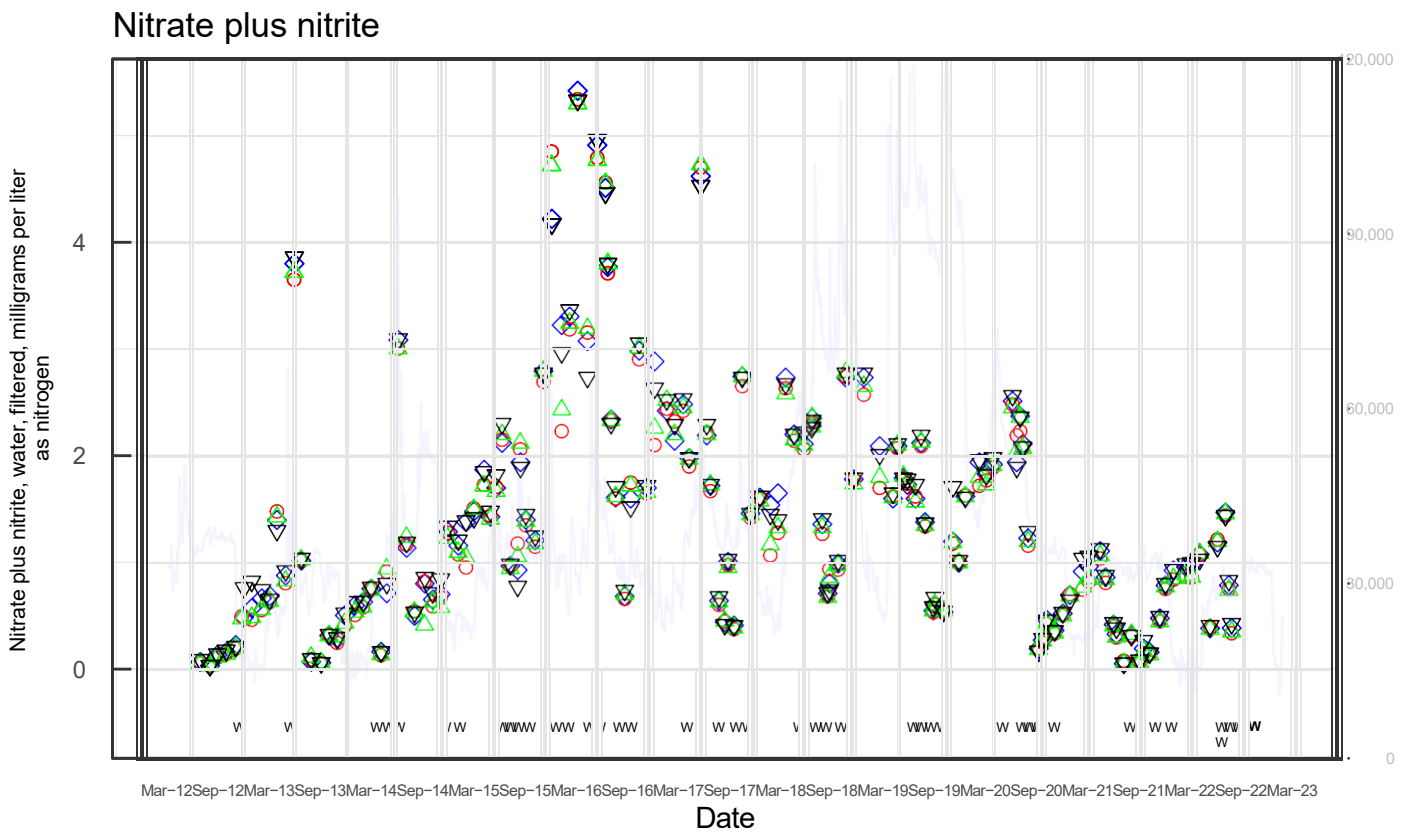

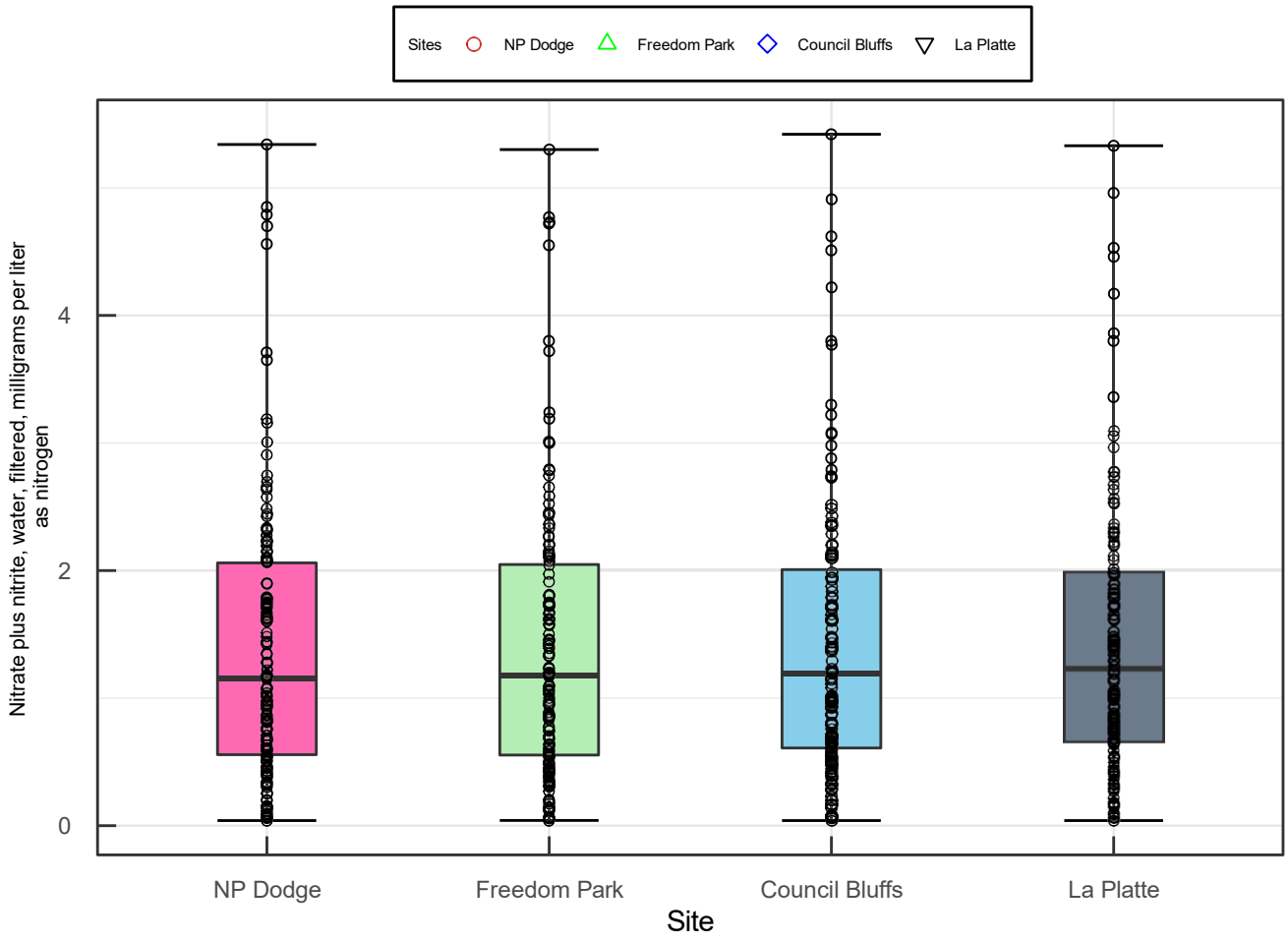

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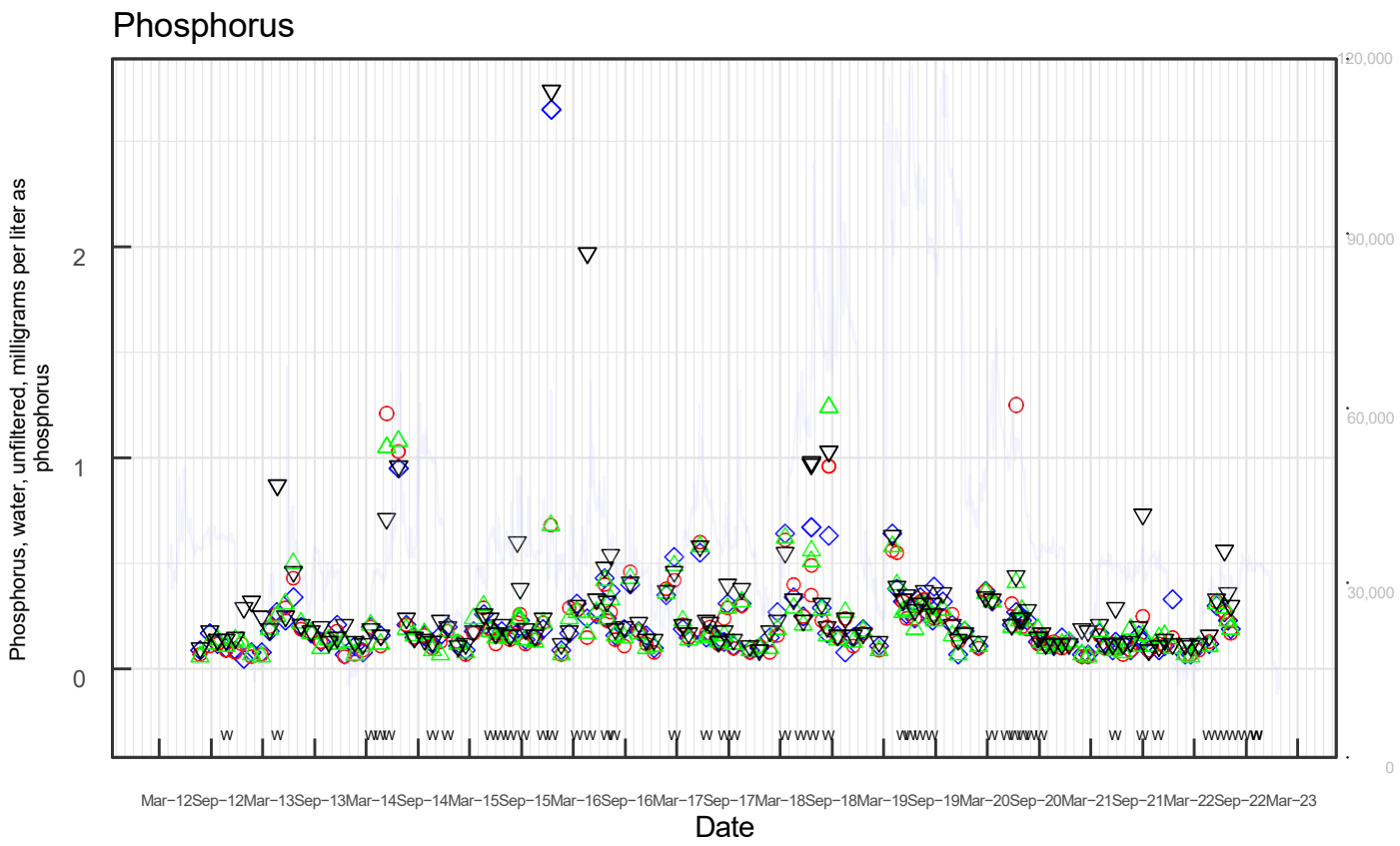

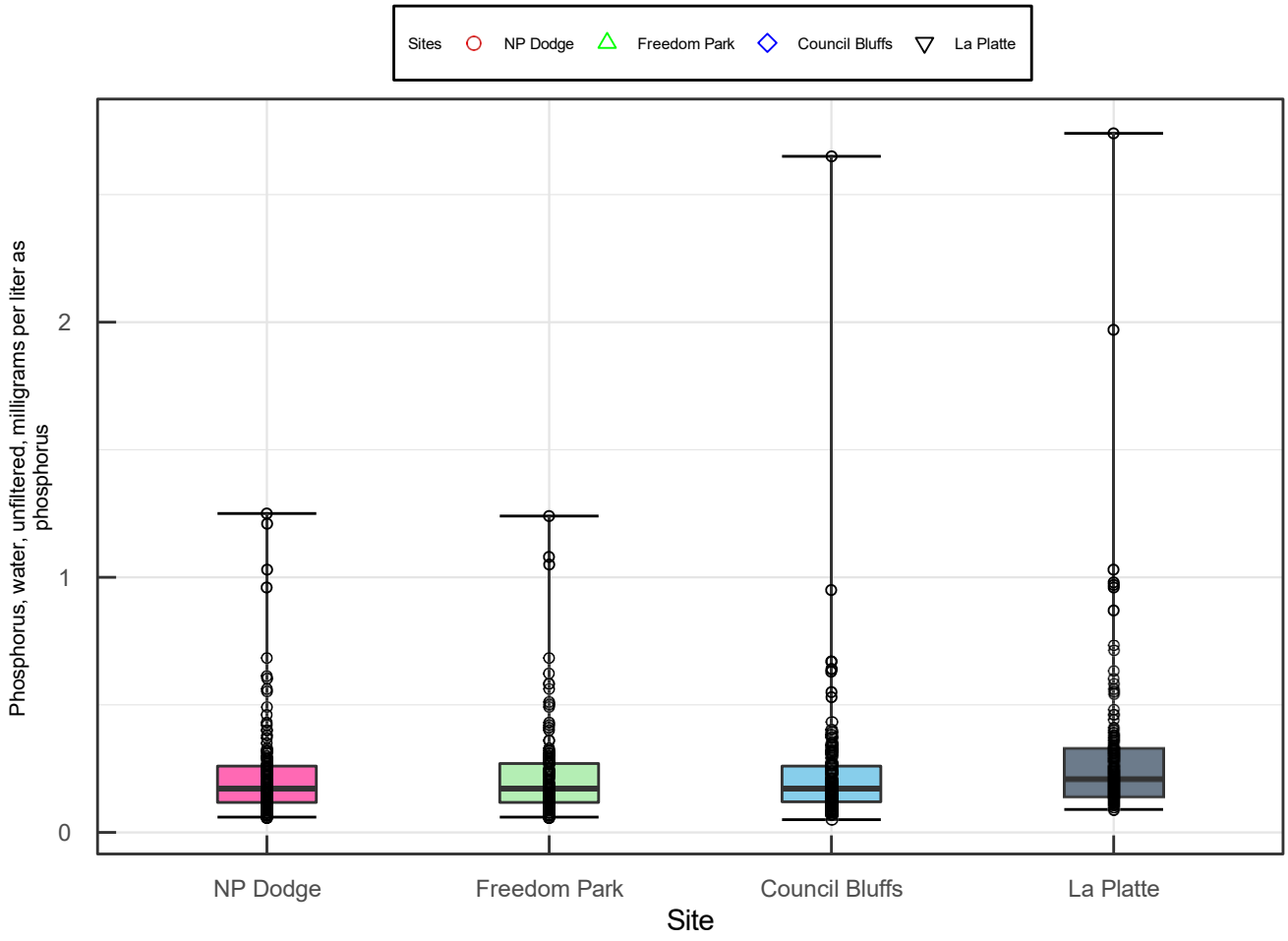

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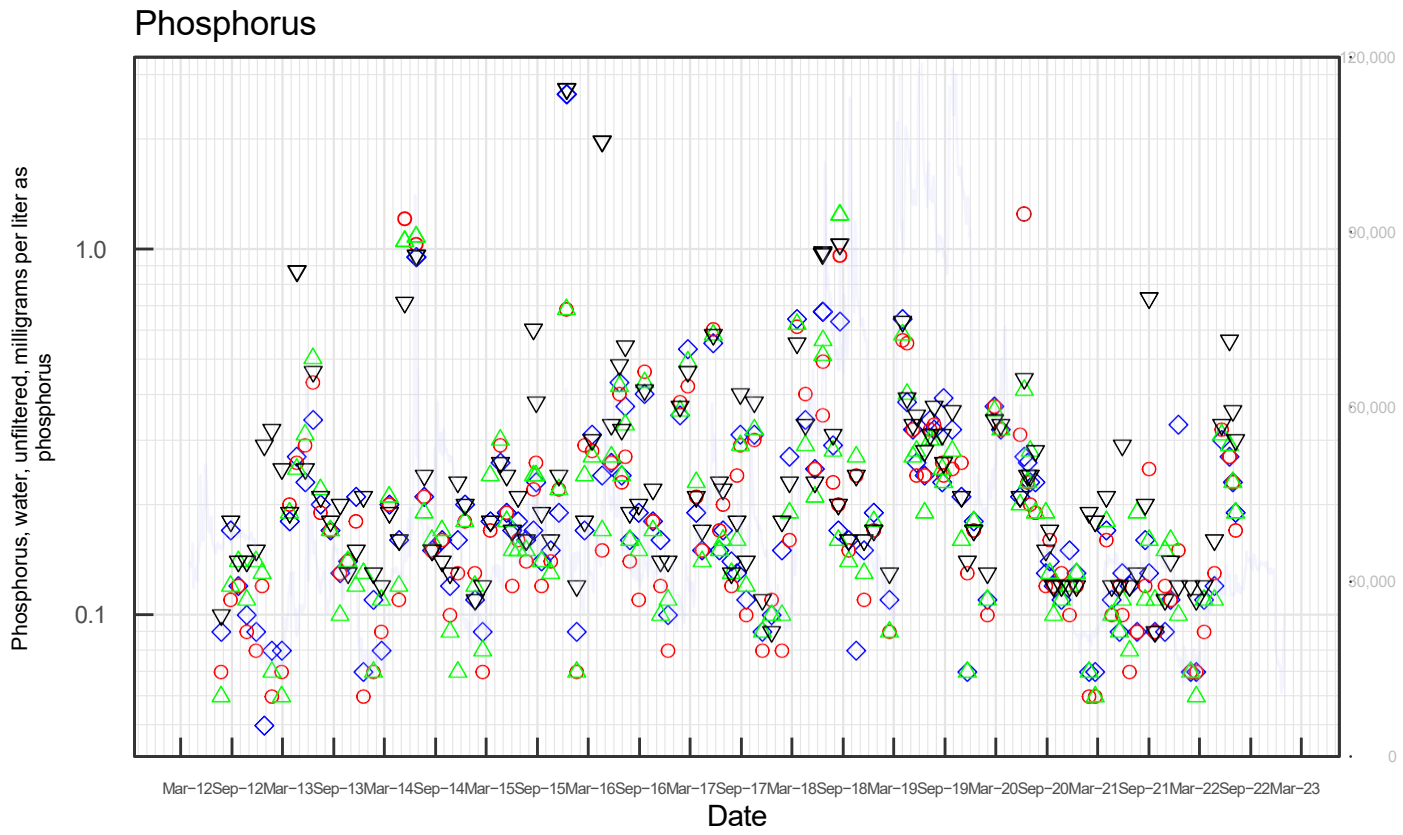

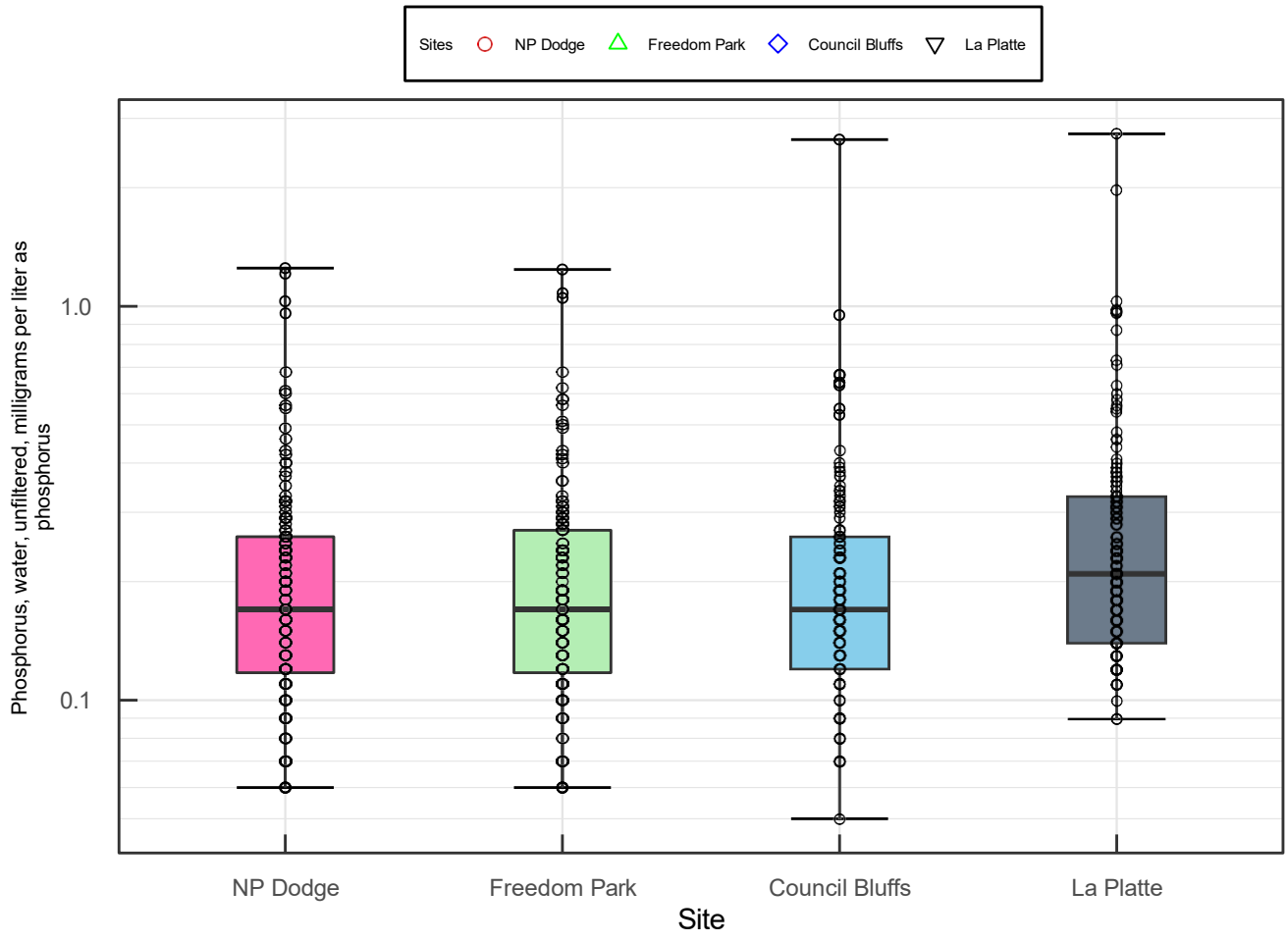

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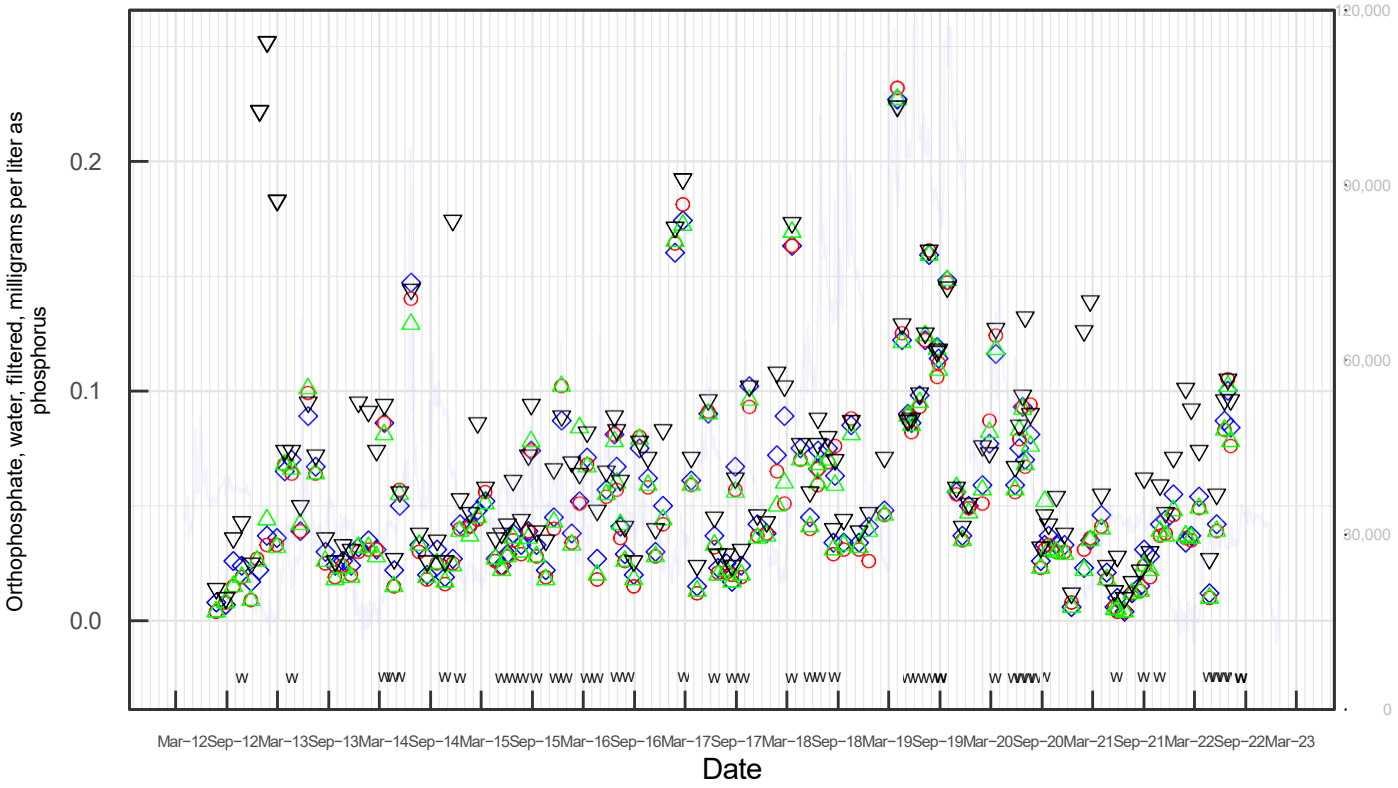
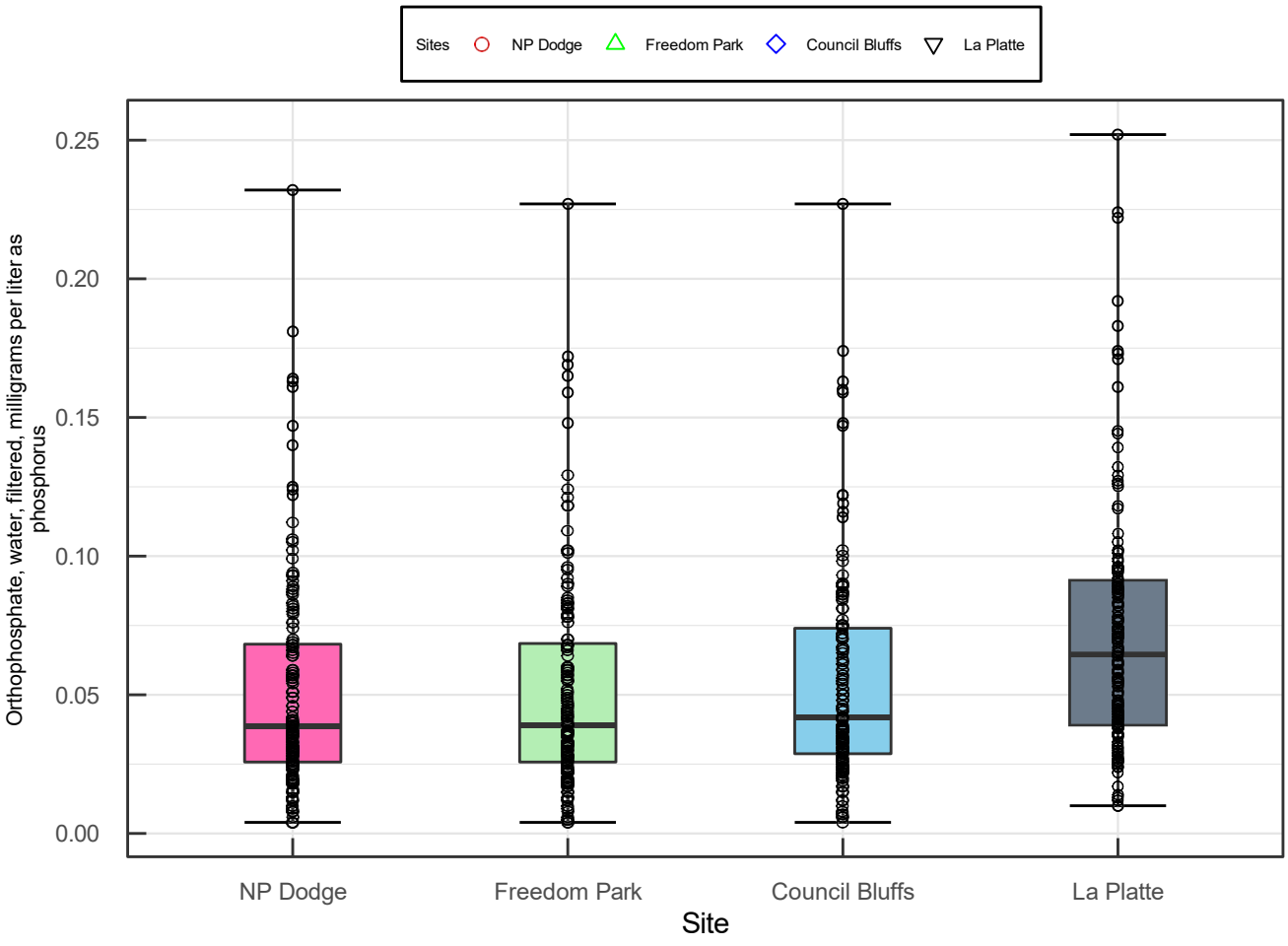
Orthophosphate





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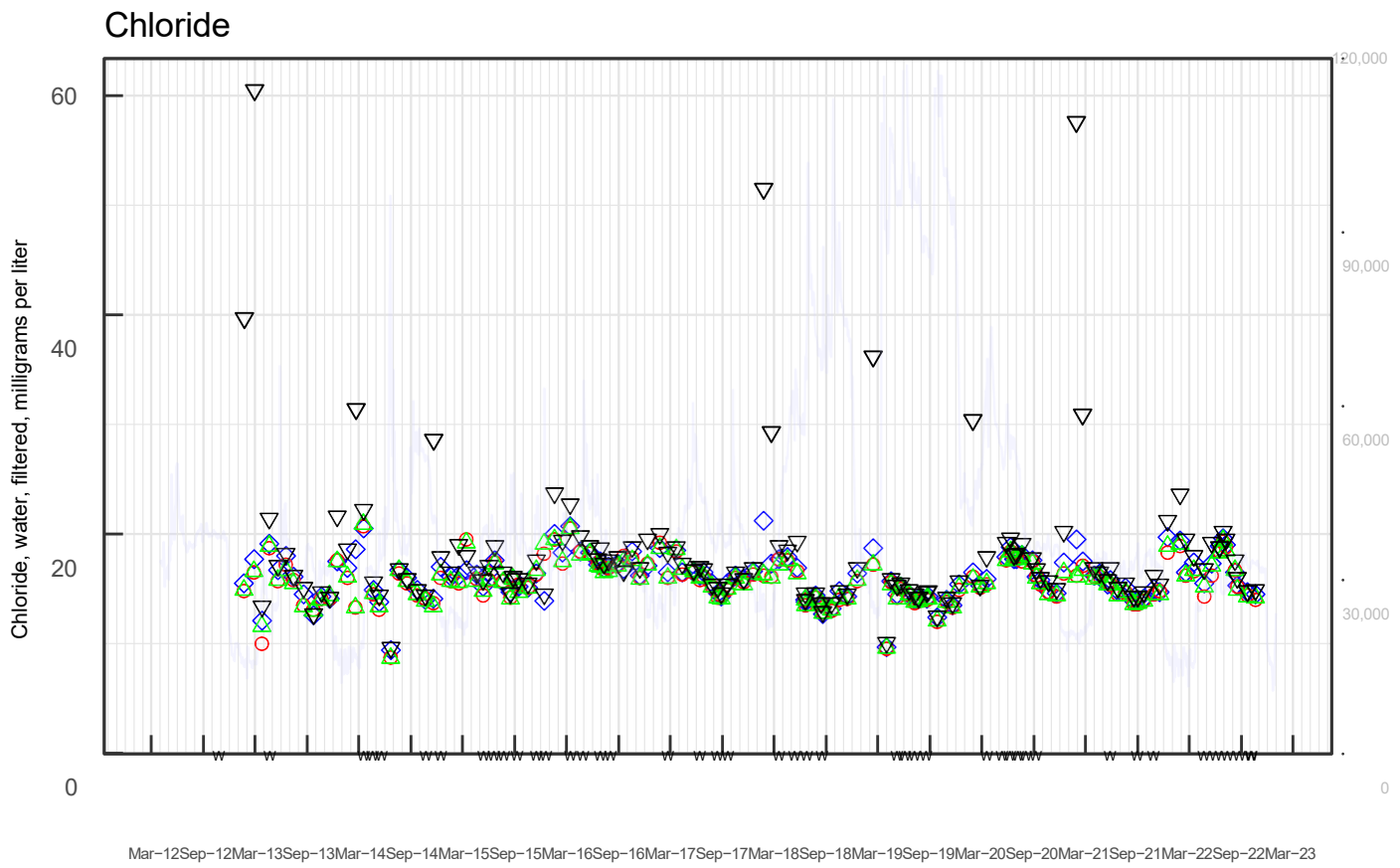

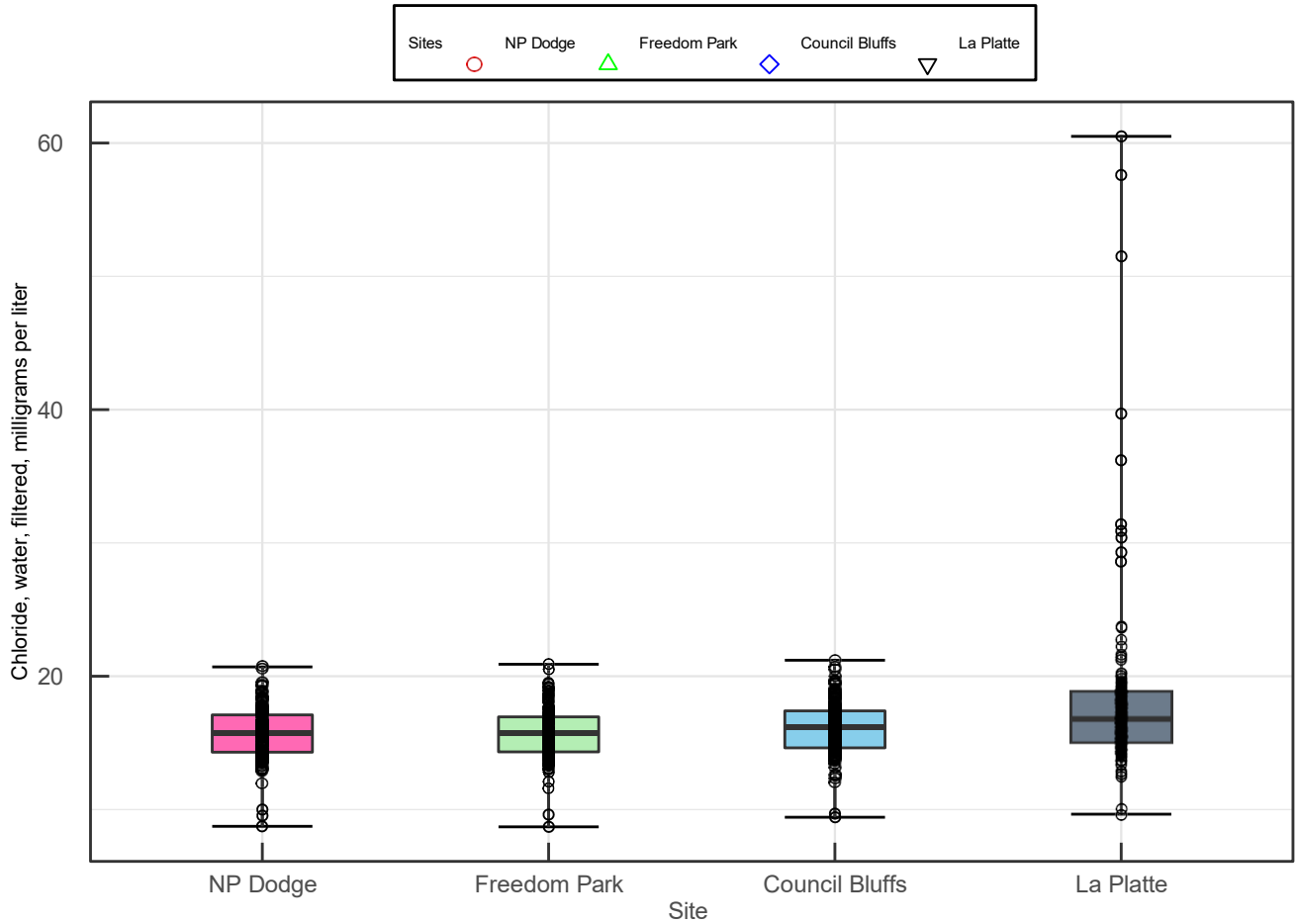

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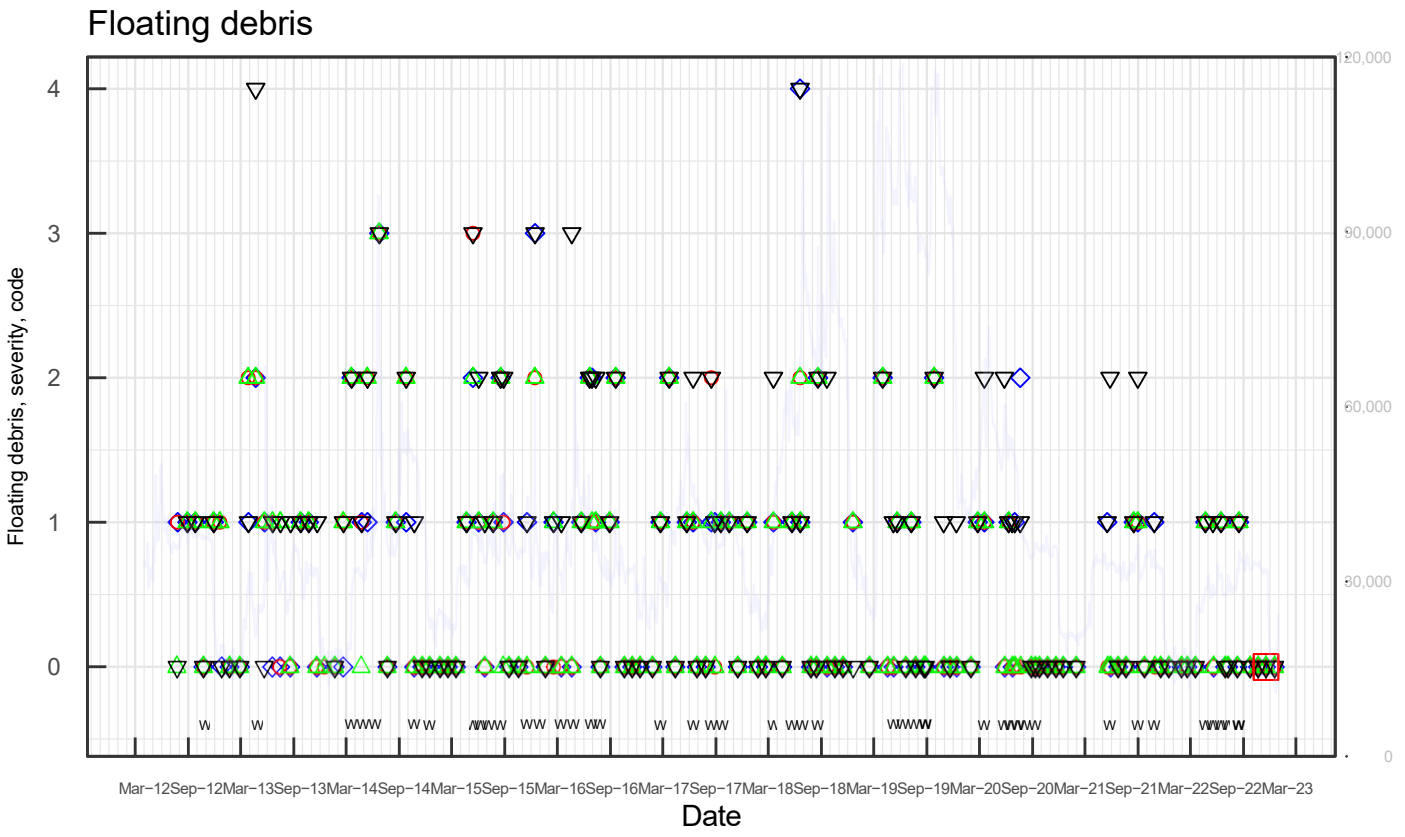

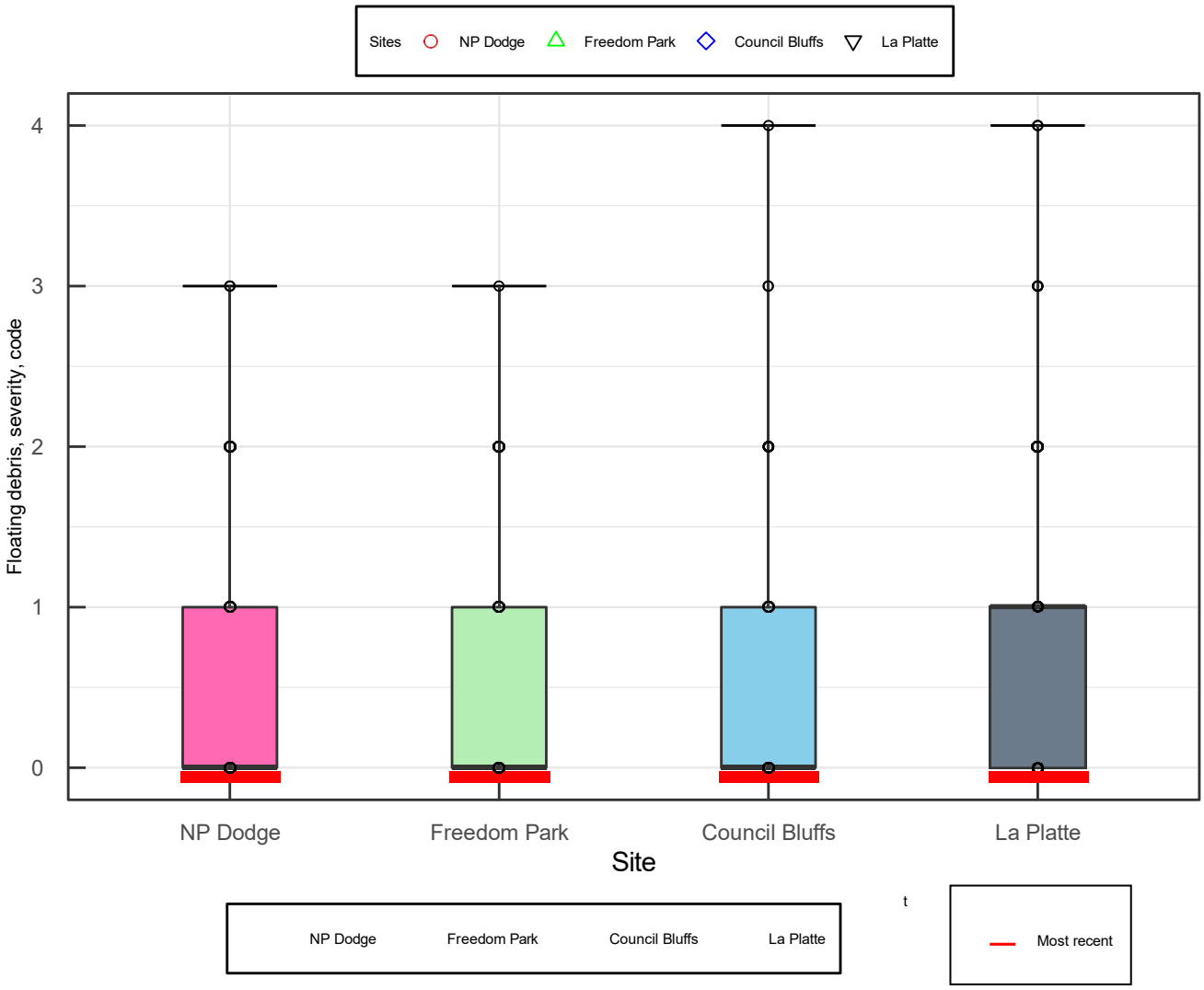

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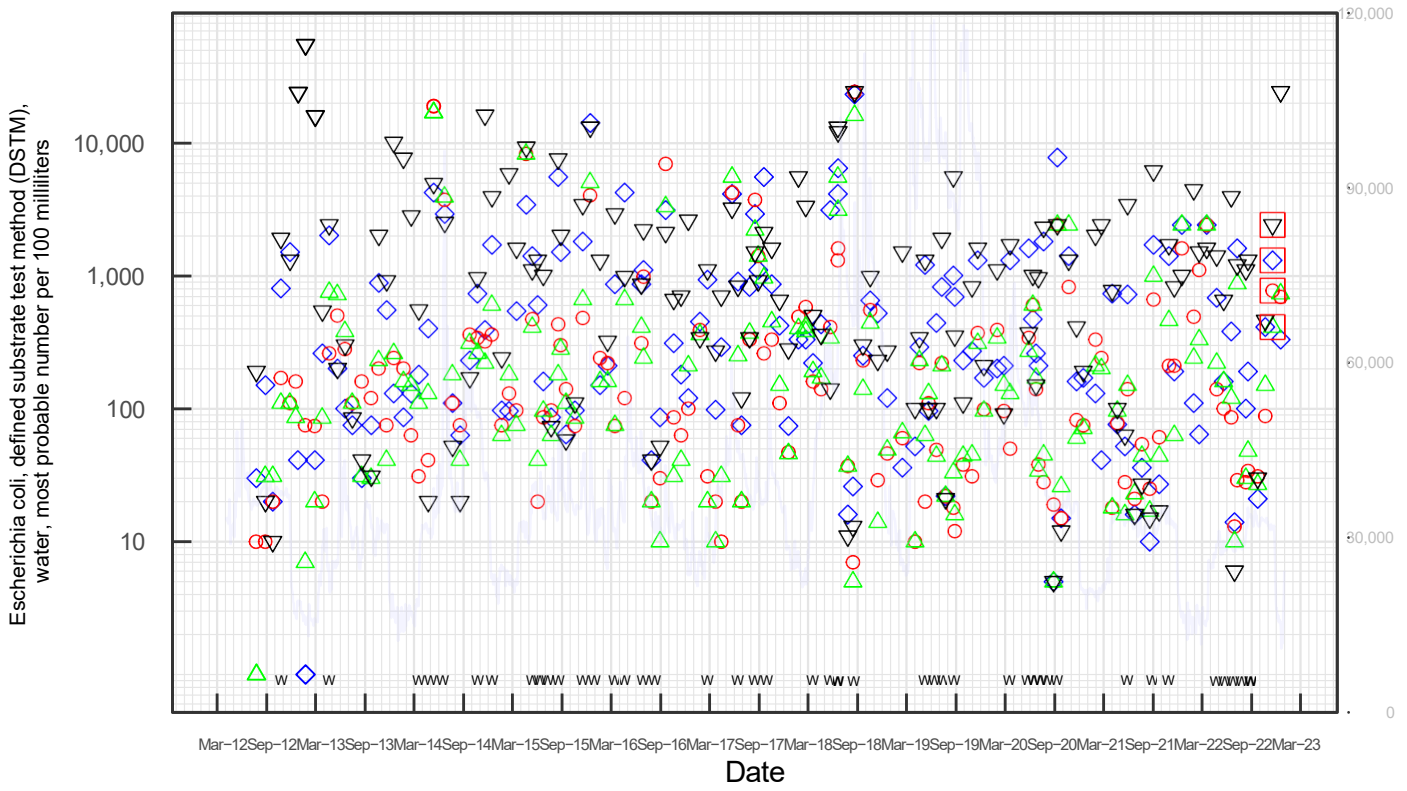
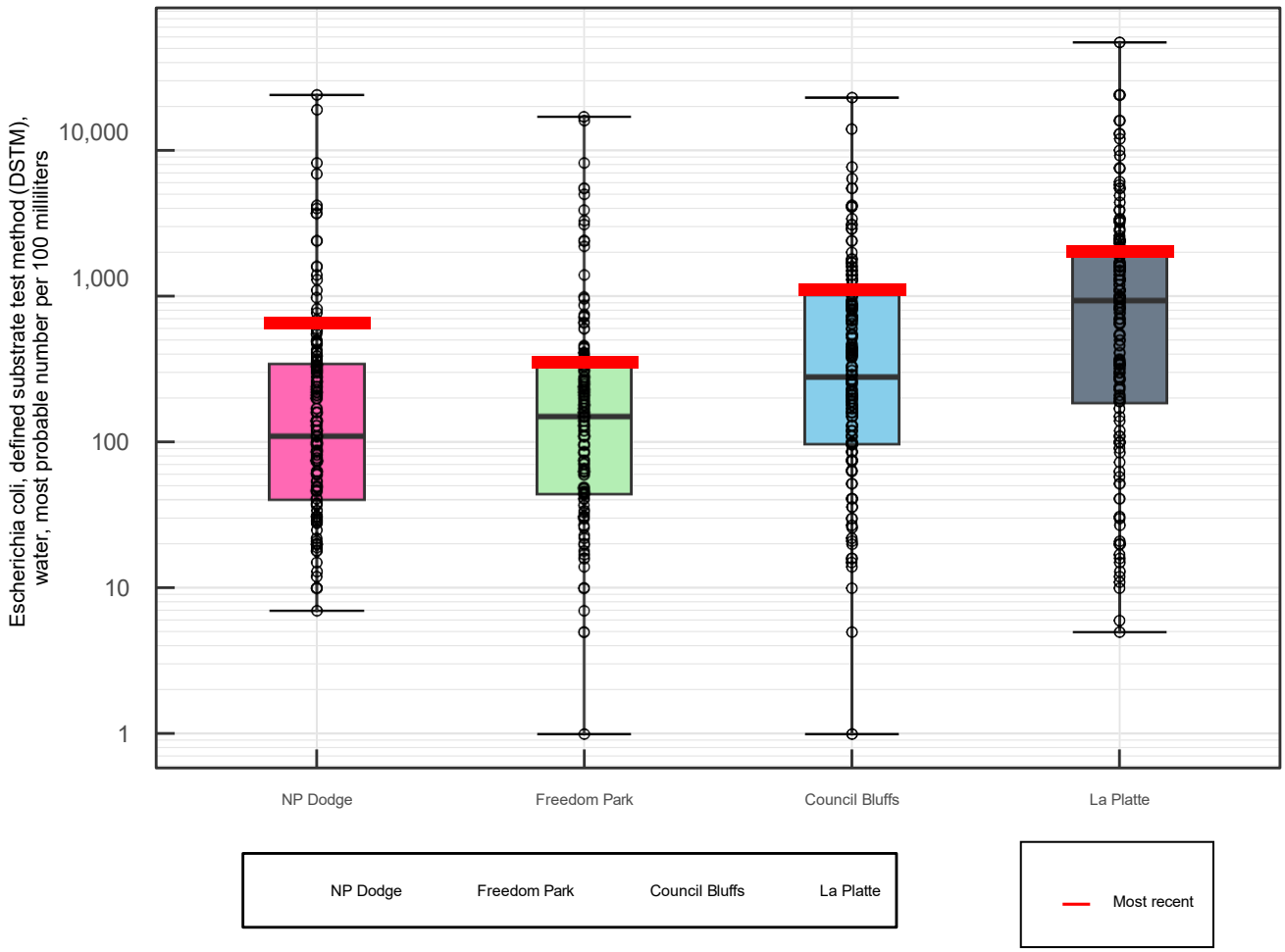
Escherichia coli





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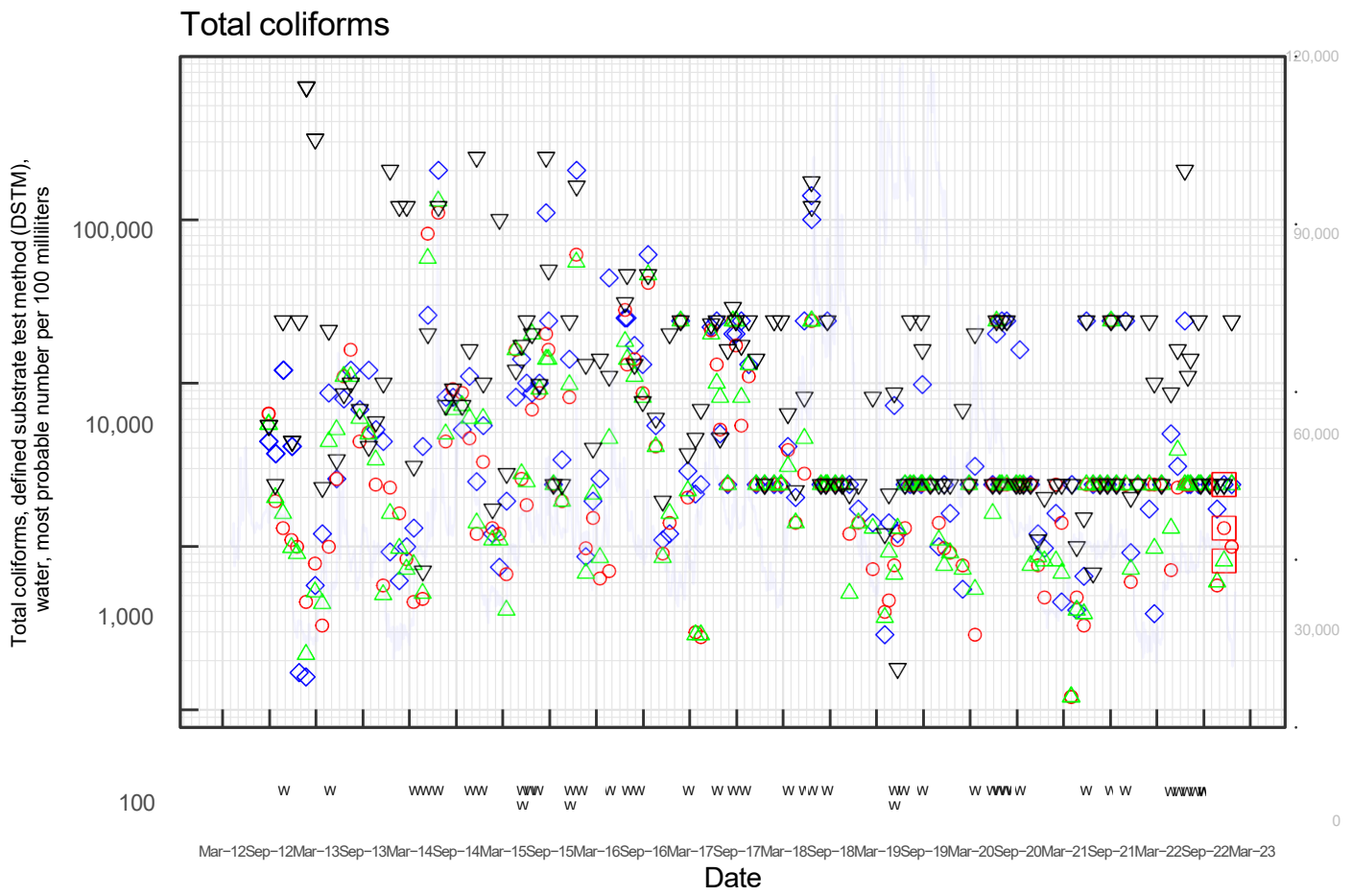

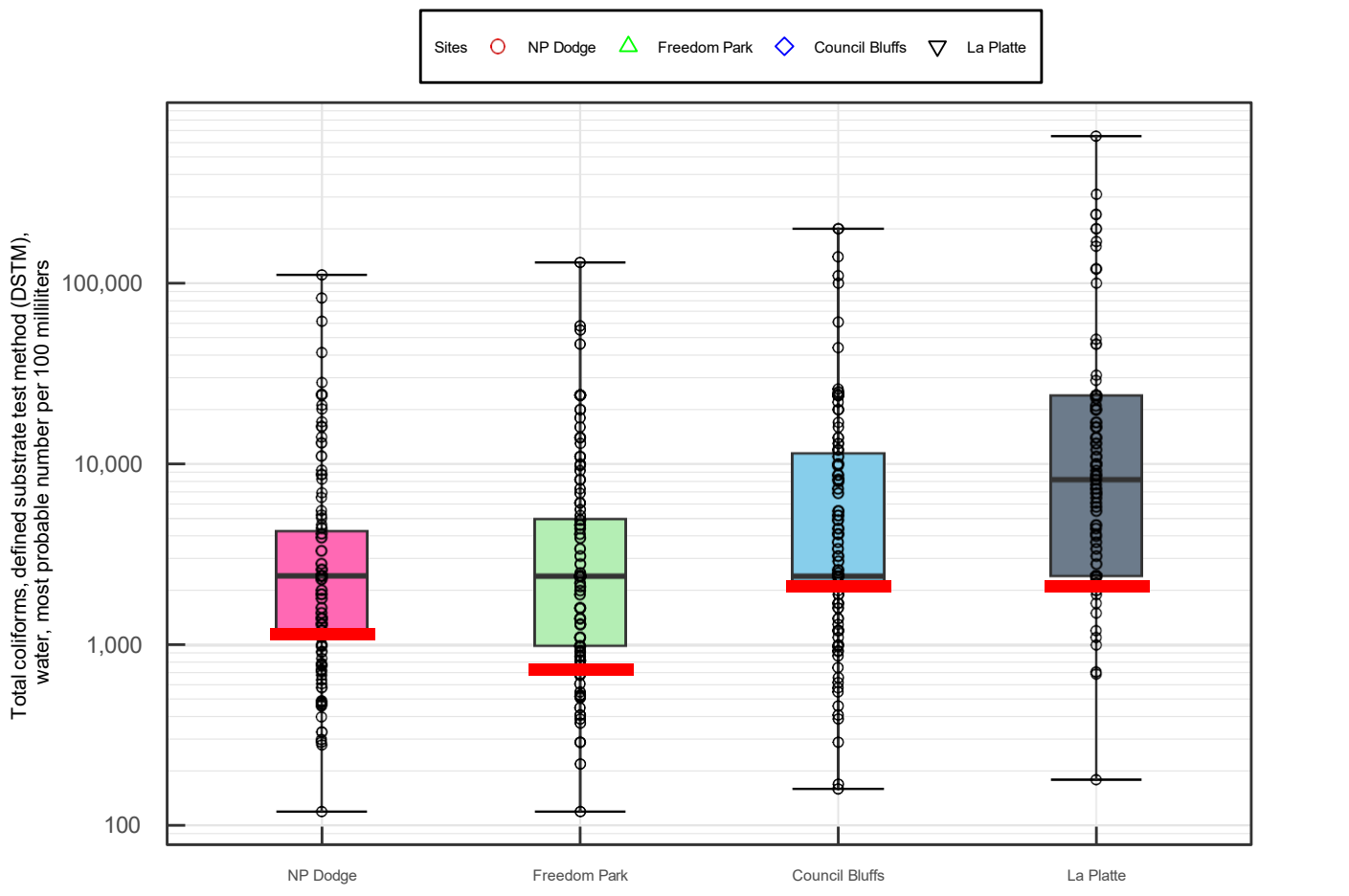

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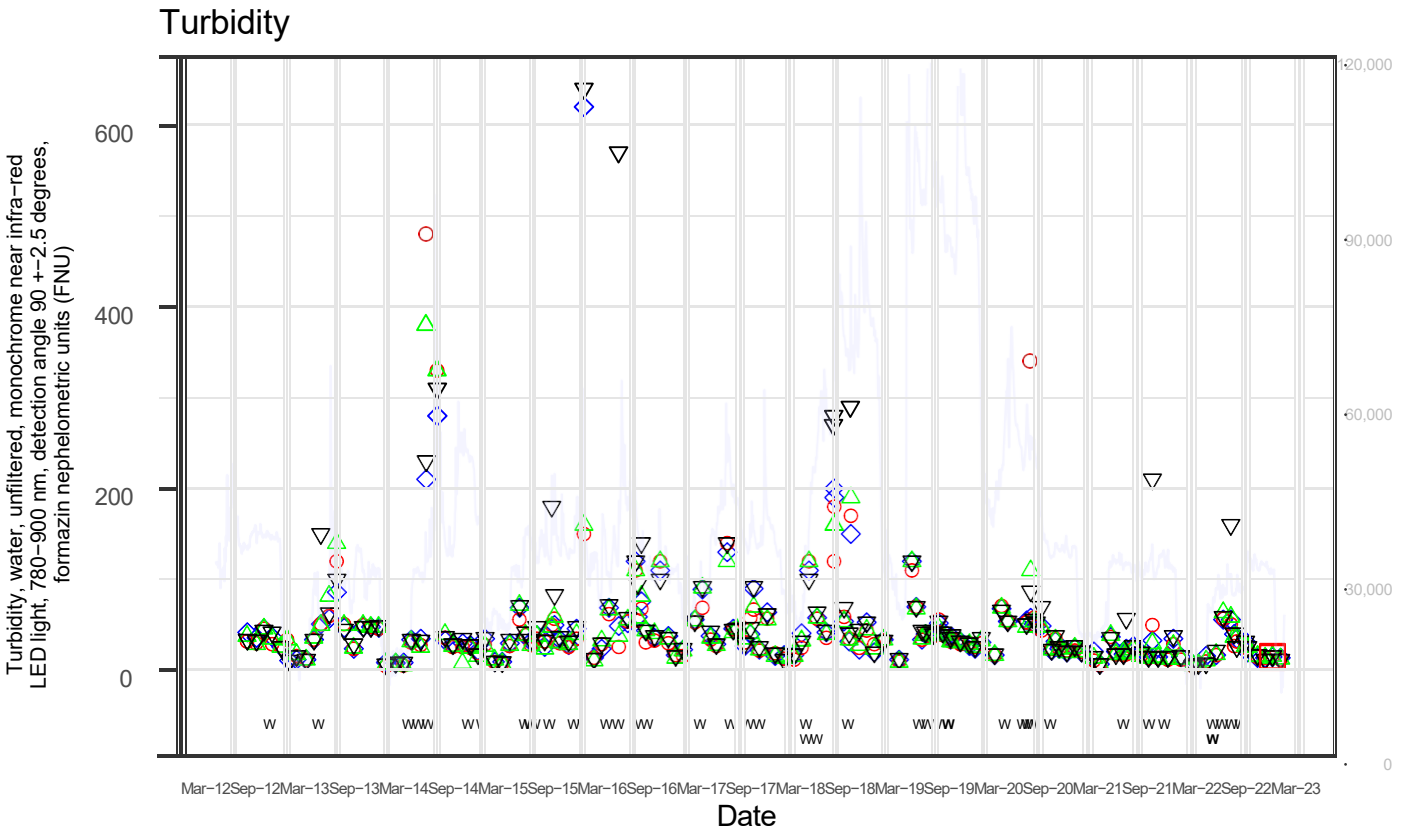

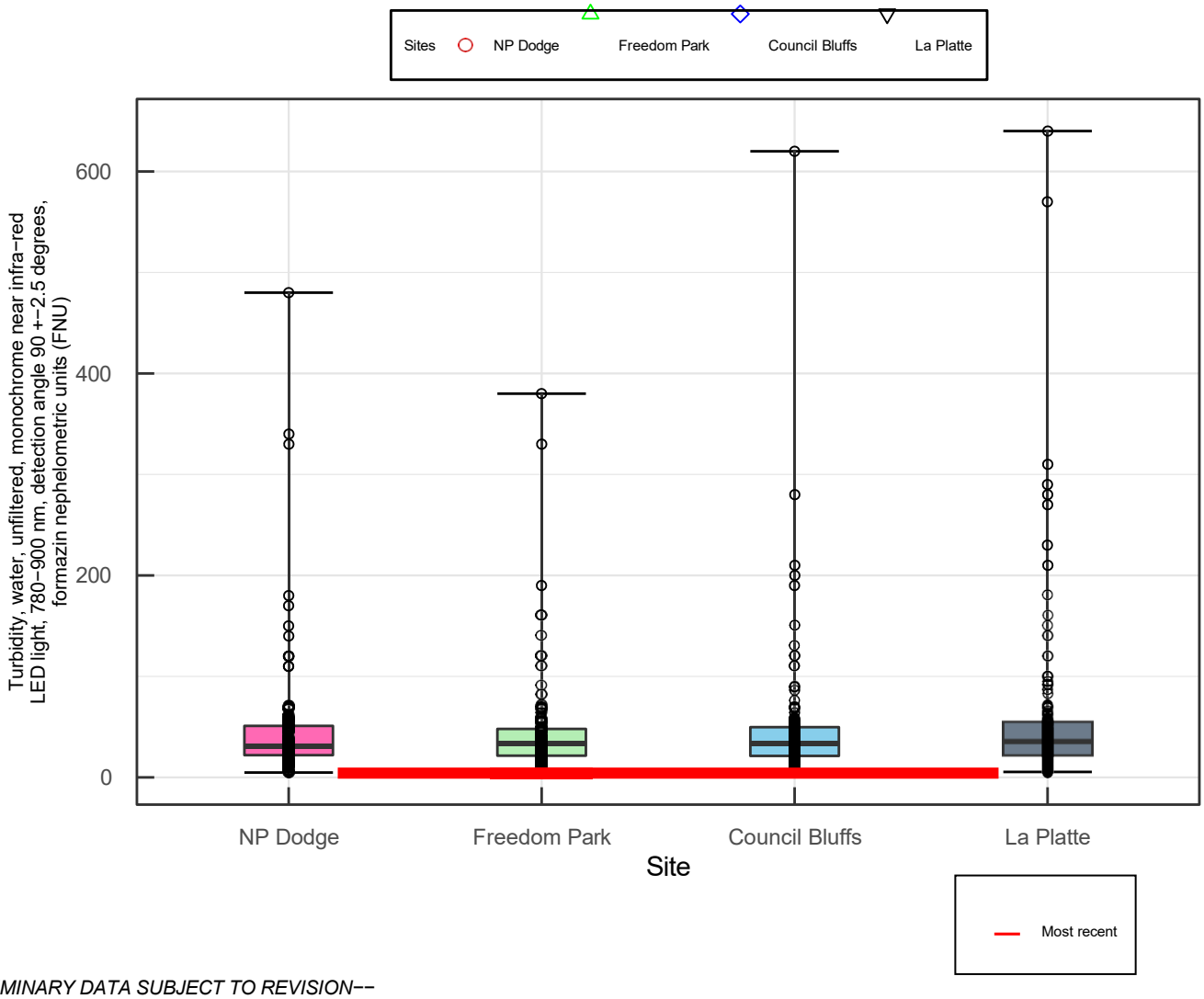

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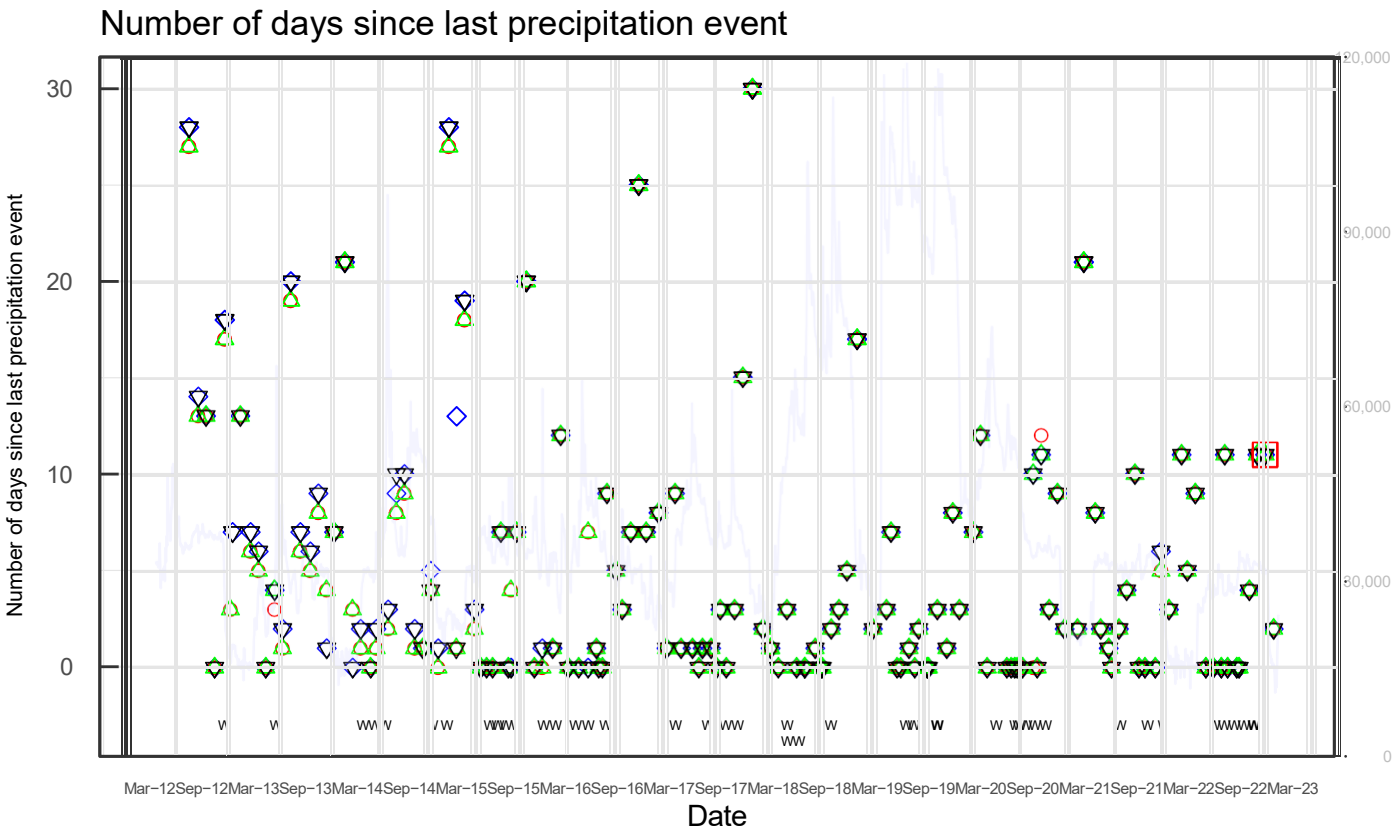

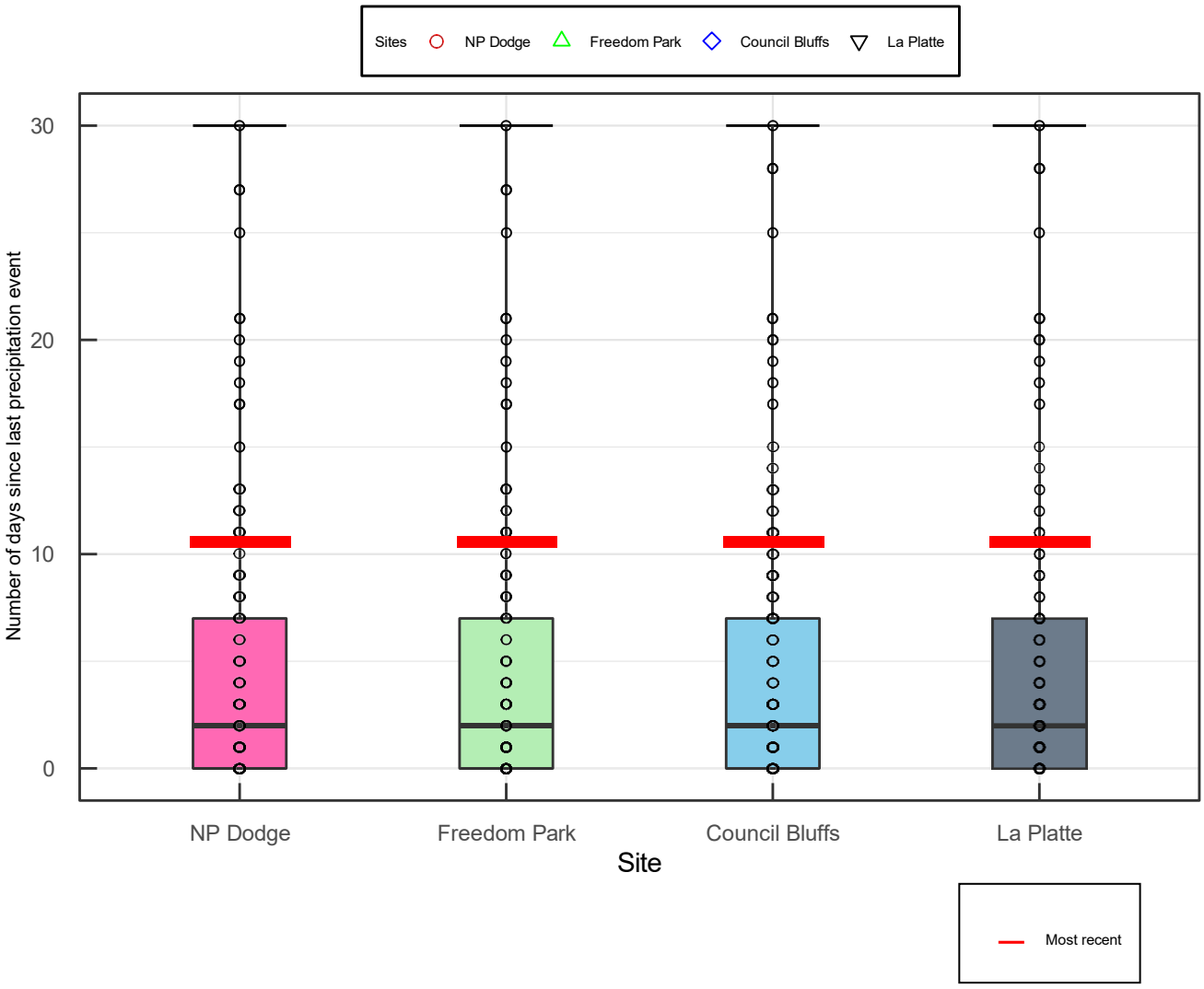

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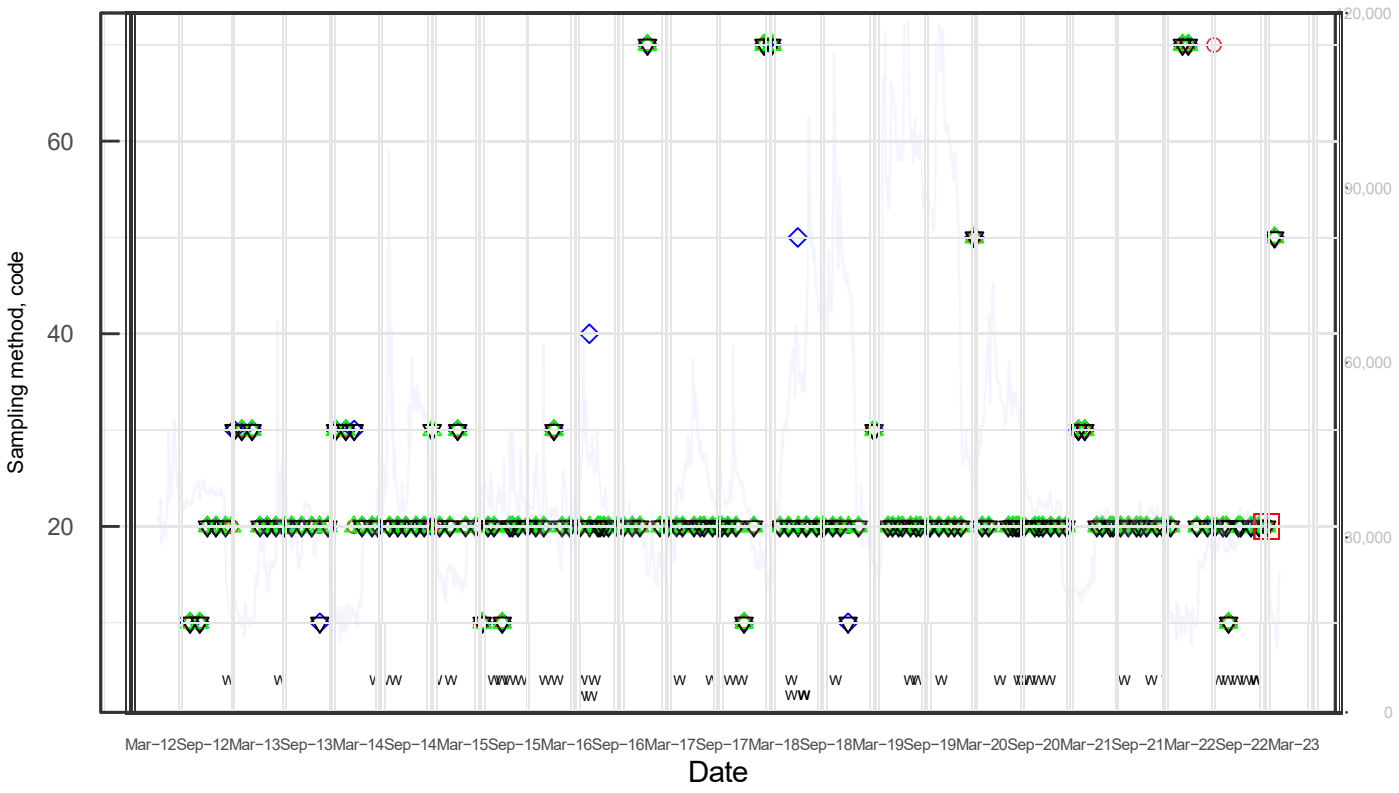
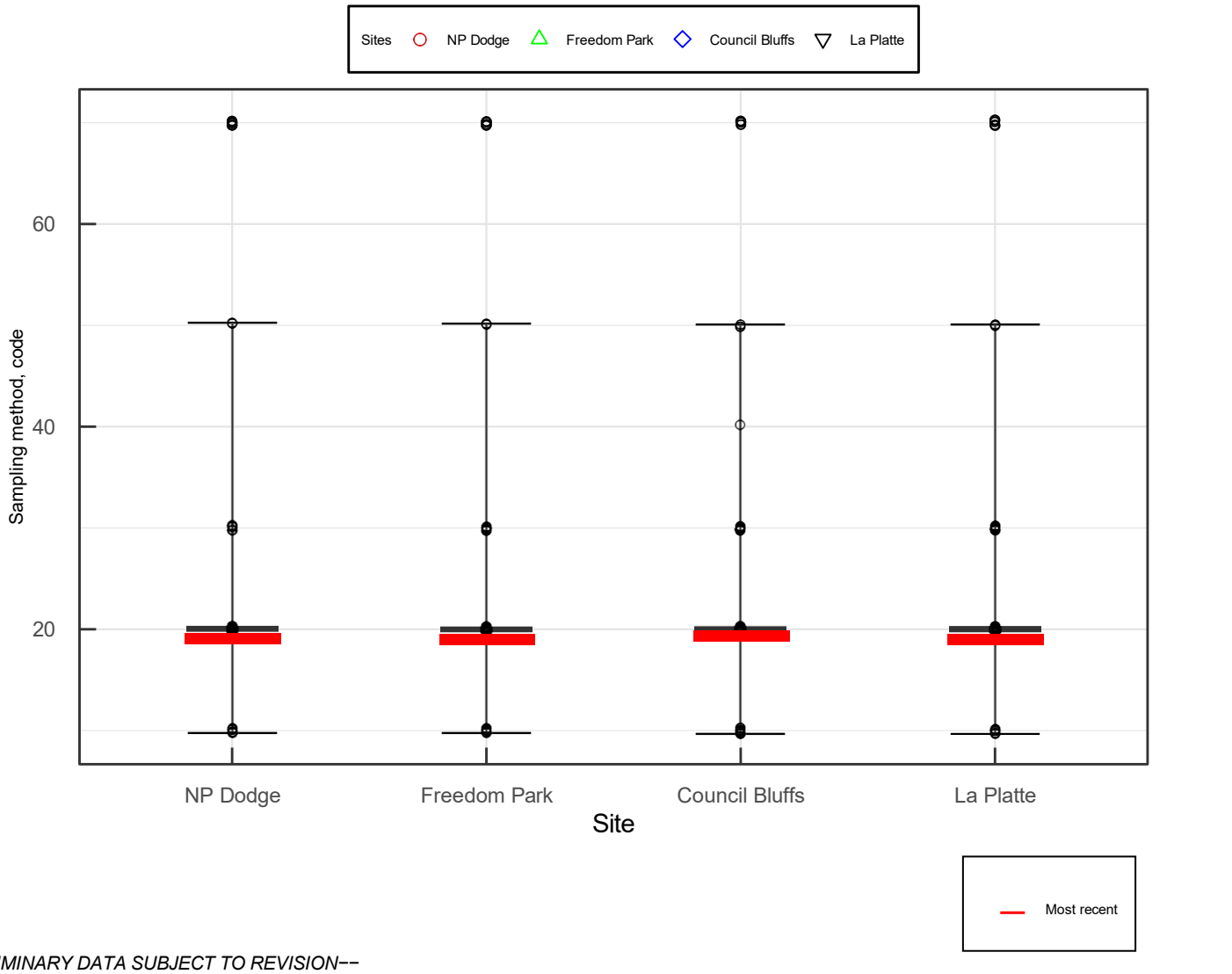
Sampling method





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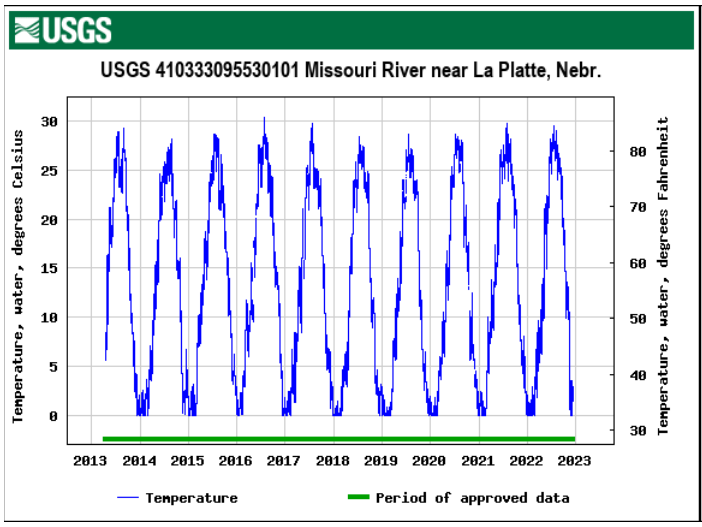
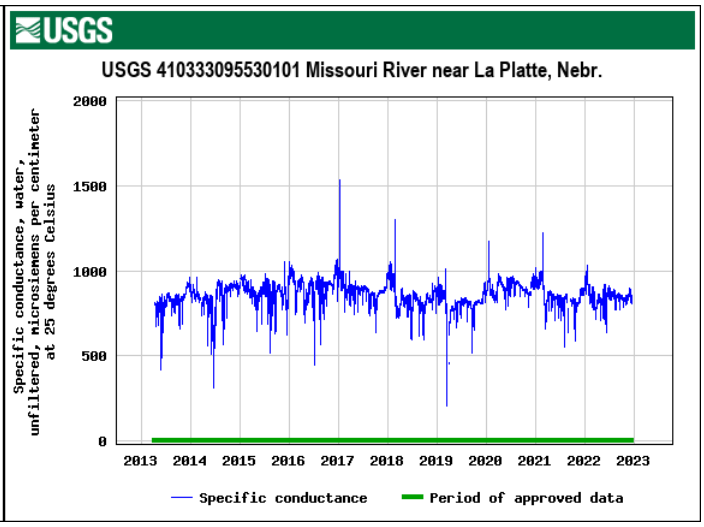
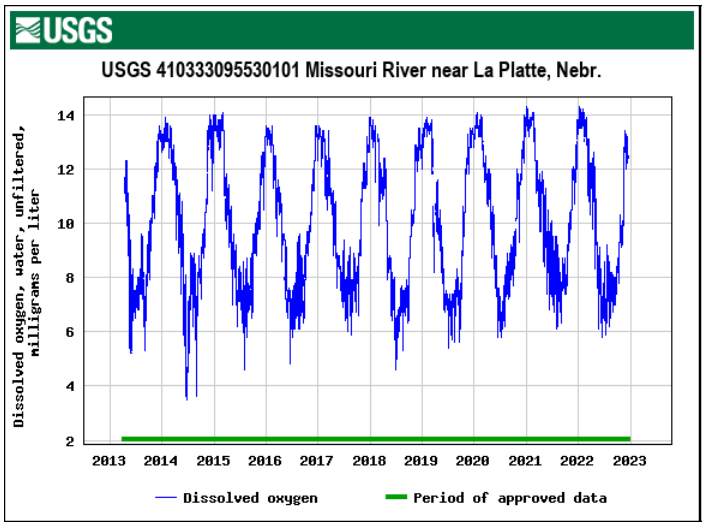
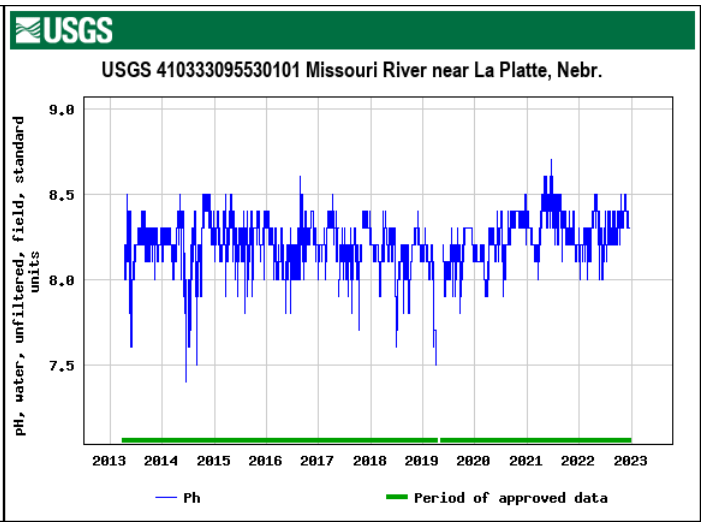
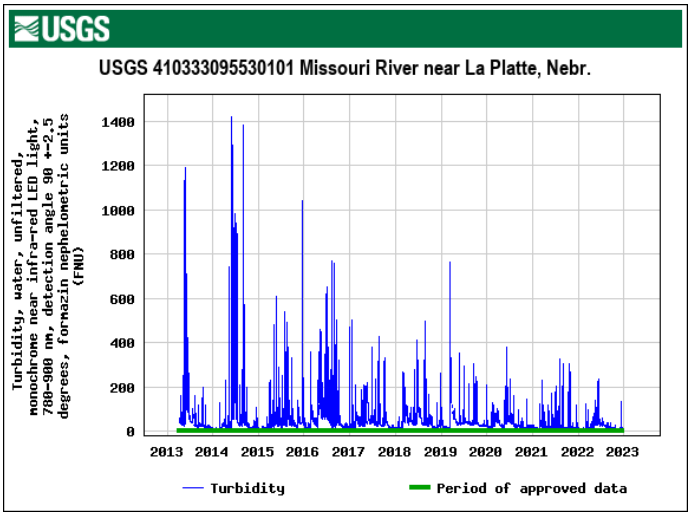
Continuous Water Quality Monitoring Graphs - Site MR-1



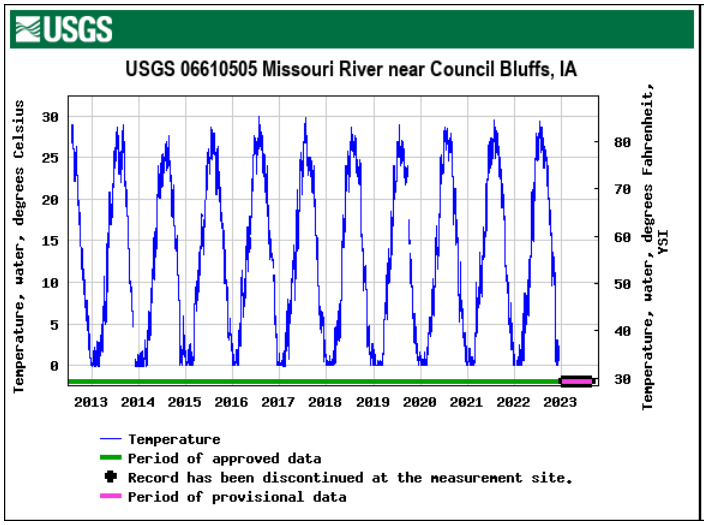


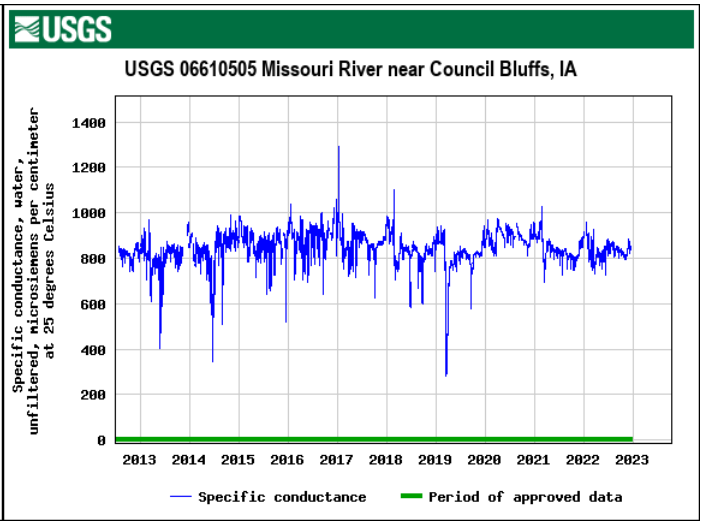


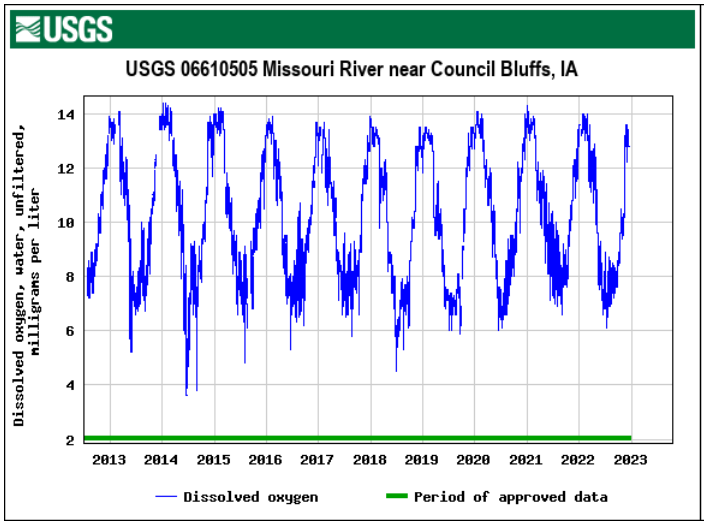


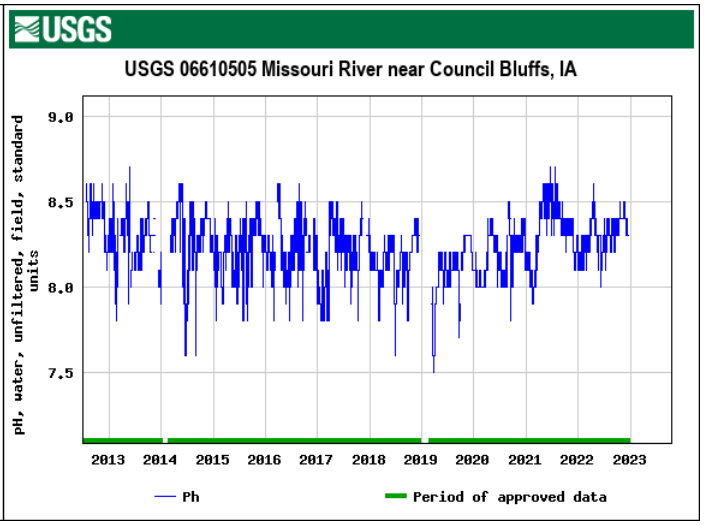


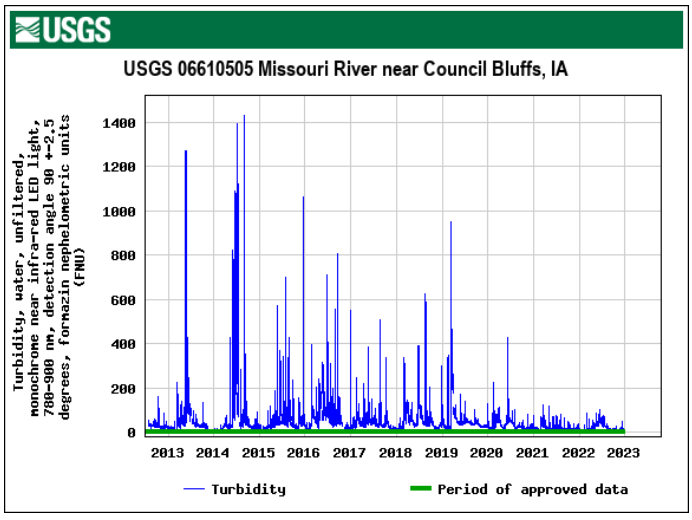
Continuous Water Quality Monitoring Graphs - Site MR-CB



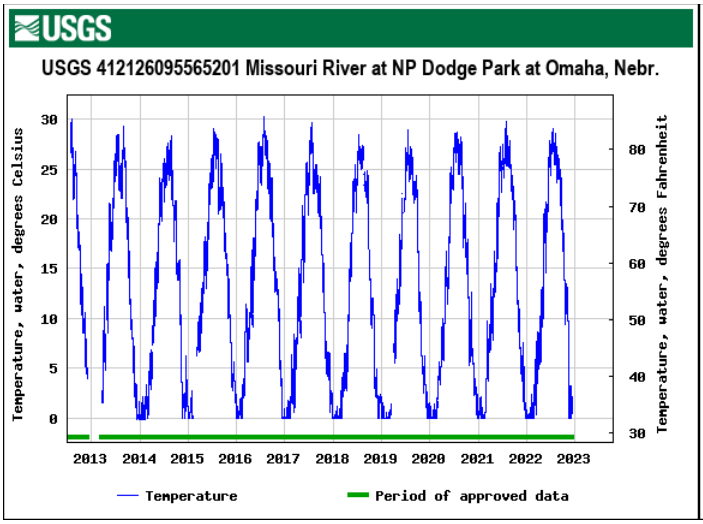


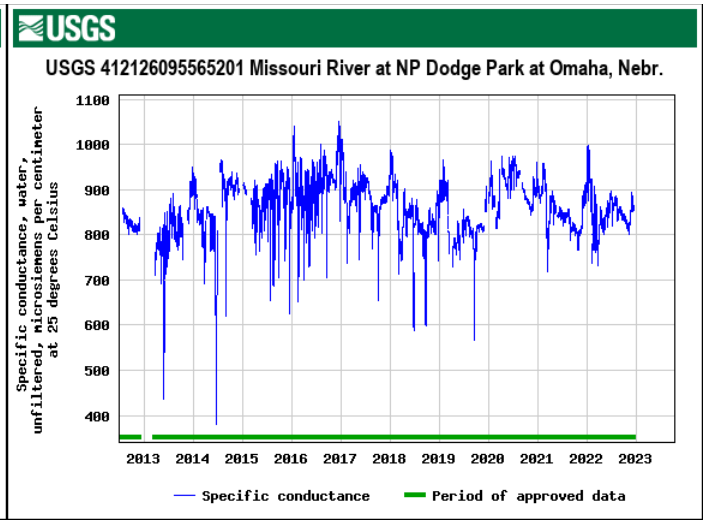


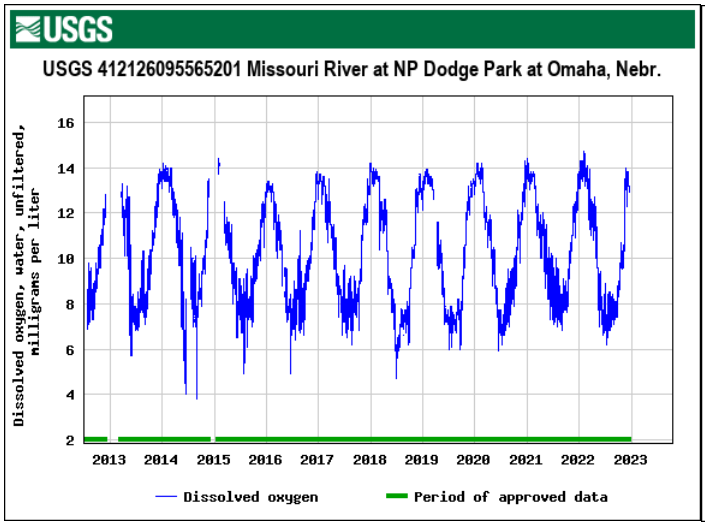


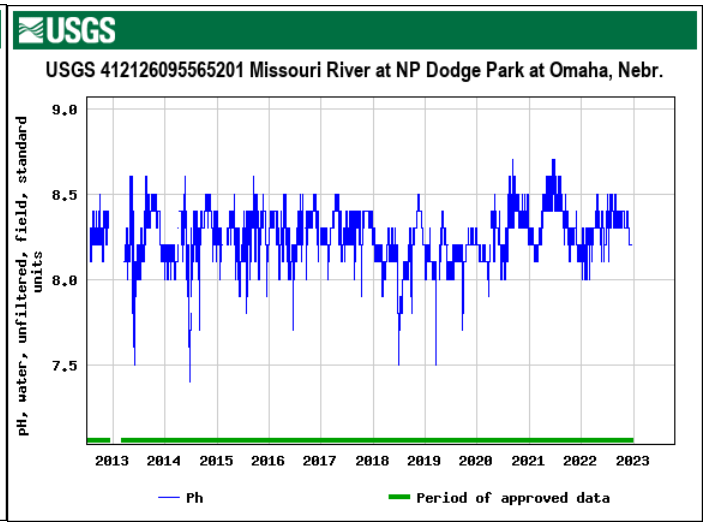


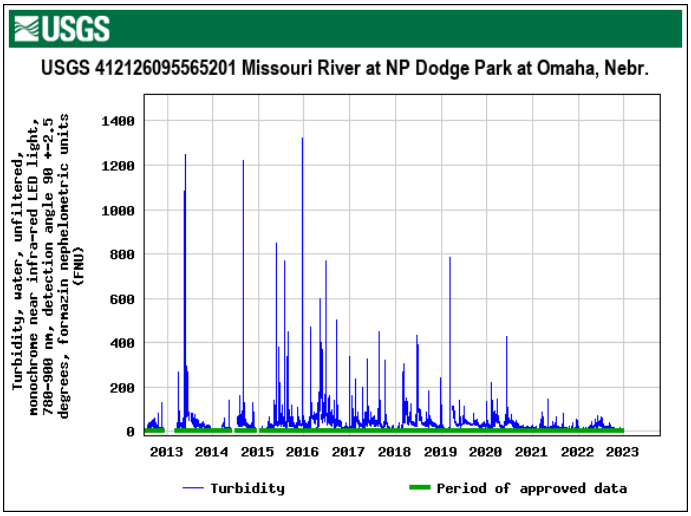
Continuous Water Quality Monitoring Graphs - Site MR-5



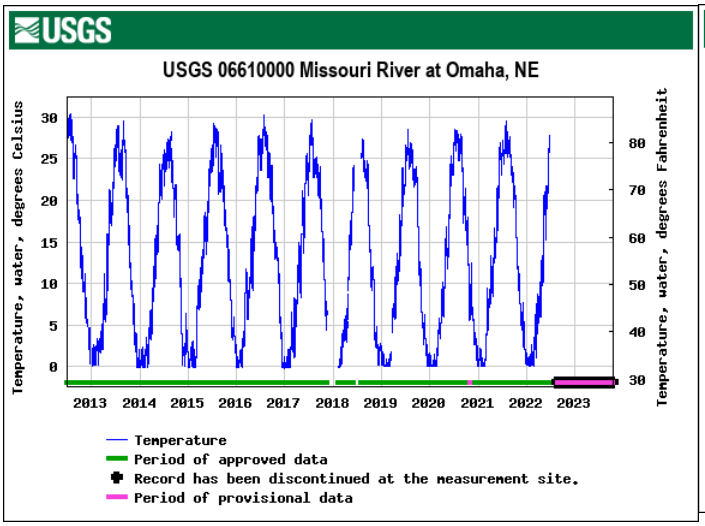


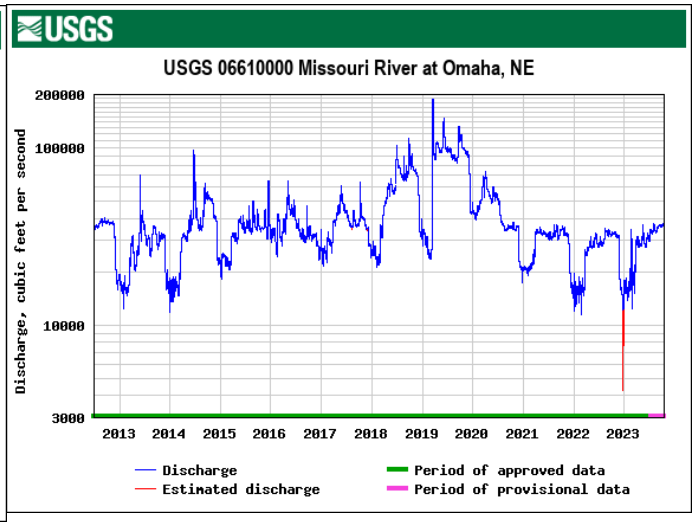


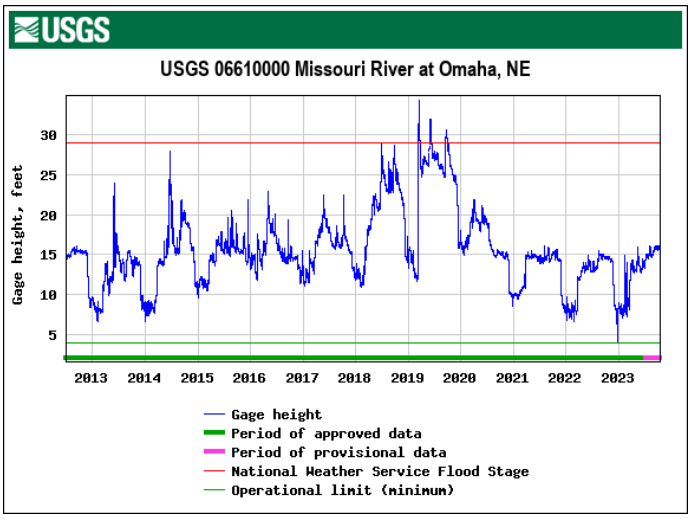




Continuous Water Quality Monitoring Graphs - Site I-480







Continuous Water Quality Monitoring Graphs - Site Highway 275