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Jean Stothert, Mayor

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Robert G. Stubbe, P.E.
Public Works Director

December 28, 2020

Ms. Shelley Schneider
Nebraska Department of Environment and Energy
Suite 400, The Atrium
1200 N Street
P.O. Box 98922
Lincoln, NE 68509-8922

RE: 2020 CSO Annual Report
City of Omaha Combined Sewer Overflows NPDES Permit No. NE0133680

Ms. Schneider:

Attached please find three (3) copies of the 2020 City of Omaha CSO Annual Report as required in Part VIII of NPDES Permit No. NE0133680. The report documents activities related to the City of Omaha combined sewer system for the period of 10/1/2019 to 9/30/2020. Electronic copies of the document will be e-mailed.

If you have any questions or require additional information, please feel free to contact me at (402) 444-3910 or Pat Nelson at (402) 444-5456.

Sincerely,

Michael T. Arends, Plant Manager
City of Omaha Missouri River WRRF

CC: Brett Anderson, NDEE,
Patrick Ducey, NDEE
Jim Theiler, City of Omaha,
Steve Andersen, City of Omaha
Jennifer Morales, City of Omaha
Adam Wilmes, City of Omaha
Tom Heinemann, CSO Program
Pat Nelson, CSO Program

2020 Annual Report

October 1, 2019 - September 30, 2020

CSO!
Clean Solutions for Omaha

City of Omaha, Nebraska
Jean Stothert, Mayor

City of Omaha
Combined Sewer Overflow
Annual Report
NPDES Permit No. NE0133680
October 1, 2019 through September 30, 2020

CSO!
Clean Solutions for Omaha

Report of Certification:

"I certify, under penalty of law, that this document and all attachment s 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	December 28, 2020 Date
Michael T. Arends, P.E. Print Name	WRRF Manager Title

Executive Summary

The 2019-2020 CSO Annual Report summarizes information on activities, actions, and measures taken by the City of Omaha (City) and the Combined Sewer Overflows (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]. The items upon which the City is required to report are as follows:

- Nine Minimum Controls (NMC)
- Long Term Control Plan (LTCP) Documentation
- Compliance Schedule
- CSO Outfall Monitoring
- In-stream 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 combined sewer overflows 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 period:

1. **Proper Operation and Maintenance (O&M):** As required, revisions or additions to the O&M procedures for the combined sewer treatment and collection systems are included in this section. The Sewer System O&M Manual (SSOMM) for the Sewer Maintenance Division (Brown and Caldwell 2006) is reviewed semiannually and has many parts. The updated procedures documents are included in Attachment 1 and include the following:

    - Updated parts of the Wastewater Overflow Emergency Response Plan (WOER Plan)
    - SSOMM Appendix D – Standard Operating Procedure for Reporting and Public Notification of Wastewater Bypass, Unpermitted Combined Sewer Overflow and Sanitary Sewer Overflow
    - SSOMM Appendix B – CSO Station and Monitoring Device Procedures and Locations
    - SSOMM Appendix F – CSO Station Procedure Manual
    - Improvements in Asset Inspection protocols

[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.

The WOER Plan and procedure updates are appendices to the SSOMM. Sewer Maintenance continued to implement data collection and asset management procedural improvements that have gained a significant amount of condition assessment.

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:

   - Inspection of the collection system and removal of obstructions continued. The City inspected 387,606 linear feet (LF) of pipe, performed preventive maintenance (PM) cleaning on 1,101,295 LF, and corrective cleaning on 78,864 LF in the CSS.
   - Additional PM program improvement efforts continued this year. PM planning meetings were held with the objective of filling gaps where the PM basis data is missing. The feedback loop between operators and supervisors improved and observations are being used to refine the PM further, which will be leveraged into efforts to develop PM basis documents.
   - Completion of 2,386 pre-survey manholes in CSS, and simple inspections by jetting crews, were conducted.
   - Interceptor Sewer Lamping investigation of 423 manholes was performed for sewer condition assessment investigations of 128 miles of 18-inch- to 144-inch-large-diameter collector and interceptor sewers in Douglas County.
   - Heavy cleaning on the 60-inch diameter reinforced concrete pipe (RCP) combined interceptor from Grace Street to Burt-Izard Lift Station (this is the South Interceptor Gravity Sewer between CSO 106/107 and 108) removed 24 to 30 inches of compacted debris. This was a complex project in that it included issues with inaccessibility, sewer depth, and debris content. This project is still ongoing and an estimated 1,600 tons will be removed from the 4,400-foot stretch of sewer. Sewer inspection, cleaning and inspection efforts included :
     - Sewer Line Rapid Assessment Tool (SL-RAT; acoustic) inspection of 701,836 LF of 6-inch to 12-inch diameter gravity sewers was completed during the reporting period, 23,203 LF of which were in the CSS.
     - Levee Certification process required all pipes that penetrate the Missouri River levee system to be inspected and cleaned; this included private storm sewers, and City storm and CSO outfall pipes cleaned during the report year.
     - Level sensors and camera devices were installed at 10 CSO diversion and CSO outfall locations along the Papillion Creek and Missouri River levee system.
     - CSO 207 diversion structure was reconstructed into a sanitary junction box, with the outlet to the 30-inch diversion outfall sewer plugged off with concrete block and grout, and a portion of the pipe was removed and the remaining segment abandoned in place. The outfall sewer remaining carries only storm flows. This was completed in the 42nd and Q Street Sewer Separation project (Omaha Public Works [OPW] 52257) during the previous reporting period. The City monitored the downstream CSO 208 diversion in 2019 and 2020 to determine if CSOs are still occurring.

In addition, maintenance and repair on several Missouri River flap gates were performed as part of several separate projects, and construction of the Leavenworth Flood Mitigation project was completed along with other efforts to reduce river intrusion. Some CSO regulators were adjusted and sensors were added and/or adjusted at some locations. Work was performed to reduce inflow and infiltration (I/I) in some locations, as well as efforts to develop standard processes for future I/I reduction were initiated. Work was done to upgrade pumping capacity and reliability at multiple lift stations. Improvements were made to the City's sewer system real-time monitoring capabilities.

3. **Review and Modification of Pretreatment Programs:** A Memorandum of Agreement (MOA) between the City and the State of Nebraska governs the Pretreatment Program in the City (administered through the City of Omaha Environmental Quality Control Division [EQCD]). The MOA provides for the direct cooperation between the City and state in the implementation of the Nebraska Pretreatment Program (NPP) and lists the responsibilities of each. As required, the City continues to minimize impacts of industrial facilities and report new significant industries within the CSS. A summary of new significant industrial users and measures taken by the City to address discharges during wet weather are documented in the City's semiannual reports to the state for the Pretreatment Program.

4. **Maximization of Flow to the Publicly Owned Treatment Works (POTW) for Treatment:** As required, the City evaluates and implements simple modifications to the CSS and procedures at water resource recovery facilities (WRRFs), as appropriate, to achieve maximization of flow to the POTW. The City has previously evaluated various methods for maximizing flow to the WRRFs. Much of the evaluation supported the decisions that resulted projects in the LTCP; however, some operational changes were made and are ongoing to allow for better wet-weather management and improved water quality. For example, since the new South Interceptor Force Main (SIFM) is operationally complete the City no longer closes the CSO 106 or CSO 107 dry-weather flow gates during wet-weather events. Therefore, more flow gets to the Missouri River Water Resource Recovery Facility (MRWRRF). Also, the LTCP MRWRRF Improvement Project achieved operational completion, and the disinfection system at CSO 102 became operational at the MRWRRF during the reporting period. As a goal for this NMC, the City continues to consider ways for maximizing treatment of wet -weather flows, which will be incorporated into the next LTCP Update.

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 were nine dry-weather overflows or basement backups that were contained and did not reach waters of the State.
    - There were six dry-weather overflows that reached waters of the State, four directly through a permitted CSO discharge point and two by a waterway or nearby separate storm sewer.
    - Each of these events were evaluated for true cause and appropriate long-term corrective action. The City also placed an increased emphasis on sewer design and

construction controls. Construction specifications regarding pipeline and manhole channel construction, and removing debris remaining in new pipe, are being enforced with the goal of minimizing maintenance issues and eliminating dry-weather CSOs. As a result of these efforts, the City has seen better finished products from contractors; in one case, a manufacturer made modifications to their product (manholes) to help meet the City's Specifications requirements. The City's updated Wastewater Collection Systems Design Manual (adopted August 27, 2019), Standard Specifications (April 20, 2020), Standard Plates (March 19, 2020), and Standard Bid Items (September 17, 2020) for Public Works Construction were made available during the reporting period.

6. **Control of Solid and Floatable Materials in CSOs:** As required, the City shall implement site-specific controls, in relatively simple measures and as appropriate. Any reassessment or implementation of new controls is reported here as follows:

   - Work was done to existing screening facilities impacted by the 2019 flooding.
     - The CSO 105 flap gates were temporarily repaired during early 2019 and were fully replaced in February 2020.
     - The City continues work on a project to develop specifications for bidding a project to repair the floatables screen in the Grace Street ditch CSO channel downstream of CSO 106 North Interceptor and CSO 107 Grace Street.
     - The City replaced two horizontal, manual bar racks just upstream of the flap gates downstream of CSO 108 (Burt-Izard) in the spring of 2020 as part of their ongoing work at the Burt-Izard Lift Station.
   - Construction at the Burt-Izard Lift Station continued during this reporting period and is scheduled to be completed in 2021. This work is a LTCP project that includes replacement of the existing pumps to add more capacity, replacement of the mechanically cleaned bar screen with a new bar screen, addition of a gate for channel isolation, a new bar rack, and concrete modifications to the existing grit basin inlets and grit basins to maximize grit capture to protect the pumps and downstream infrastructure. The work also includes updating the Bar Screen Room to add a second screen, new gates, installation of new screenings handling, and replacing the existing flap gates on the CSO 108 outfall pipes. The Burt-Izard Lift Station's sluice gates were replaced in 2019 and were made operational in 2020.
   - The City continued work designing improvements to the 6th and Leavenworth Grit Facility (not a CSO Program project; issued a request for proposal for design services in fall 2020).
   - The CSO 117 existing flap gate is being rehabilitated as a change order to the OPW 51997b Missouri Avenue/Spring Lake Phase 2 sewer separation project.
   - The Saddle Creek Retention Treatment Basin (SCRTB) construction continued, which includes a new grit pit for the retention treatment basin (RTB) and another grit pit for the dry-weather flow. The RTB is designed to capture floatables at design flows.

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 and work groups within the City: Sewer Maintenance, EQCD, and Street Maintenance.
    - The municipal separate storm sewer system (MS4) Annual Report (City of Omaha, 2019) 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.
    - The City completed 341 work orders for PM jet-vac tasks, with 219 of these on the combined system.
    - Additional corrective measures included (unplanned) cleaning tasks on 824 storm structures (for example, inlet/catch basin, grated manholes, and/or junction boxes) as a result of findings from 6,321 proactive inspections.

8. **Public Notification:** As required, the City shall document any revisions or updates to public notification procedures and provide any public announcement in 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. CSO outfall sign inspections were completed in this reporting period in winter 2019-2020 and summer 2020. The City found several signs by the Missouri River missing after the 2019 flood. Several signs along the riverside were challenging to navigate reinstallation after the flood impacts. As of the last inspection date of August 12, 2020, 47 of the 48 signs were in place. The exception was CSO 114 at the riverside location, which was repaired after the report period, on November 9, 2020.
    - No public notifications were issued during the reporting period. Public Works Assistant Director-Environmental Services determines “Significant” qualification in conjunction with Nebraska Department of Environment and Energy (NDEE) on a case-by-case basis under these guidelines: duration of overflow greater than 24 hours; and overflow quantity greater than 100,000 gallons, considering nature of pollutants and location.

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 period. The following was found:

    - There were no known beach closings or fish kills during the reporting period.
    - Routine inspection of CSO diversions and outfalls continued. No new CSO locations were discovered.
    - Six basement backups resulted due to wet weather, another two backups and two manhole overflows resulted due to storm debris. One record of manhole cover missing on a combined system was recorded during a significant storm event. Seven

of these items are related to June 9 to 10, 2020 rain event. Other notable rain events that occurred in October 2019 and July 2020 did not result in any recorded issues in the CSS.

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 report year, recent flow monitoring data were used to evaluate the InfoWorks model's calibration in specific areas, with an emphasis on post-construction flow monitoring data following completion of CSO projects. The City continued to use the InfoWorks model in the optimization task to evaluate alternatives to achieve LTCP goals with lower costs. The model was used to provide flow data for input to the City's water-quality model of the Missouri River. Also, a new LTCP model was assembled to reflect information resulting from the optimization task and provide data for the 2021 LTCP Update.
    - Other characterization efforts of the CSS include water-quality monitoring of select outfalls (CSO 102 currently, with future plans at CSO 205), 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).
    - For the reporting year, there were 36 permanent flow monitoring sites, 52 temporary flow monitoring sites, and 11 CSO surveillance locations to support a variety of efforts. Additionally, the City gathered precipitation data using 12 permanent City-managed rain gauges, 15 U.S. Geological Survey (USGS) rain gauge sites, and three temporary consultant-managed rain gauges. The City obtained radar processing of rainfall data for increased spatial accuracy and to assist with accurate calibration of the hydraulic model.

2. **Public Participation Plan.** As required, the City shall continue a public participation process and document activities in the Annual Report, which is as follows:

    - The focus of the Public Participation Program continues to be centered on two major efforts: (1) continued involvement, education, and acceptance by the public about the need for and overall progress of the CSO Program; and (2) the progress on the specific projects, in particular during construction.

3. **Consideration of Sensitive Areas.** As required, the City shall include any changes to the status of previously identified sensitive areas in the Annual Report, which is listed as follows:

    - No changes were made to the sensitive areas in the Annual Report year. An update to the evaluation will be included in the 2021 LTCP Update.

4. **Evaluation of Alternatives.** The CSO Permit requires any significant changes or revisions to the controls set forth in the LTCP be submitted to the NDEE by March 31, 2021, as changed in a permit amendment issued November 1, 2019. The following is provided as an update:

    - The City continued working toward the LTCP Update. This included the City undertaking several tasks to define future projects or to evaluate potential alternative controls for the Missouri River Watershed and CSO 204 sub-basin.
    - Because of the significant cost associated with the deep tunnel system (DTS) that is included in the current LTCP, the City and PMT conducted an Optimization Evaluation from 2018 to 2020 to make sure that the City implements the most cost-effective and beneficial approach for capturing the required volume of combined sewage (85 percent). Out of more than 100,000 alternatives evaluated using optimization and hydraulic modeling software, the City and PMT identified High Performing Alternatives (HPAs), which were further evaluated in the following manner: performing further cost validations; performing representative year runs with InfoWorks; assessing performance under high river-level conditions; and estimating the benefits of employing advanced control techniques in the system. As a result of this work, a preferred alternative has been identified for inclusion in the 2021 LTCP Update. The preferred alternative does not include a deep tunnel component, and is referred to as a “non-tunnel solution” (NTS). An LTCP implementation strategy and schedule are being developed for the 2021 LTCP Update in coordination with the WRRF Master Plan, which is evaluating the current needs of the wastewater treatment systems and its ability to meet future regulatory requirements.
    - The DTS conceptual development continued in 2020, incorporating a refined approach based on the Optimization Evaluation. One of the outcomes from the Optimization Evaluation was to further evaluate a shorter but larger-diameter tunnel option, the collector tunnel system (CTS). The CTS is a less costly option than the DTS while still providing CSO reduction benefits. The conceptual tunnel development work in 2020 focused primarily on the development of a horizontal alignment for the tunnel in the CTS. The identified alignment was used for the Optimization Evaluation.
    - An evaluation was performed of the CSO 204 Basin in preparation for the LTCP Update. The City and PMT evaluated various approaches in hopes of finding an alternative that would neither require deep excavations or the purchase of residential property. It is currently anticipated that construction of a stormwater sewer that diverts stormwater flows off the combined system may be the best approach. In addition, rehabilitation of the Cole Creek interceptors is planned to improve reliability and performance. This evaluation will be discussed in the 2021 LTCP Update.

5. **Cost and Performance Considerations.** As required, the City will submit a financial report with the LTCP Update by March 31, 2021. The report will include a strategy to obtain sufficient revenue to fund the CSO Program through at least 2026. The City’s current rate ordinance sets sewer use fees through 2023 and is based on a detailed rate model. Rate model projections indicate that the current total escalated CSO Program cost of $2.387 billion can be afforded. However, financial projections are more accurate in the near term, and become increasingly uncertain further into the future.

6. **Operational Plan.** As required, the City will report updates to the Wet Weather Operational Strategy Plan. This plan will be updated as Major CSO projects are constructed and are operationally complete. There were no changes to the Operational Plan during the year.

7. **Maximizing Treatment at the Existing POTW Treatment Facilities.** As required, the City must continue to evaluate opportunities to maximize treatment, and a summary of any new processes shall be included in the Annual Report. No new approaches were identified.

    - The MRWRRF Improvements project was operationally complete in December 2019. The CSO 102 disinfection facilities were placed into operation in May 2020. Th disinfection/dechlorination system has the operational capacity to provide a peak hour of up to 101 million gallons per day (mgd) of prior to discharge through CSO 102.

    - Major projects included in the LTCP and being implemented during the next few years include construction of the Burt-Izard, Blake Street, and Riverview Lift Stations, and design/construction of the Monroe Street Lift Station. These all contribute to the City's ability to maximize treatment of combined wastewater at the MRWRRF.

8. **Implementation Schedule.** As required, the City shall include progress reports on implementation of the CSO projects as set forth in the compliance schedule. The City reports the following:

    - .
    - Project-specific progress reports on implementation of the CSO major projects and sewer separation projects are included in Attachment 2.

9. **Post-construction Monitoring Program.** As required, the Annual Report includes in-stream monitoring data and the results of studies performed to verify eliminating CSO points following completion of sewer separation, which are listed as follows:

    - The City's Post-construction Monitoring Program includes outfall monitoring at designated CSO points, in-stream monitoring, and verification of sewer separation projects. See Sections VI, In-Stream Monitoring Data, and VII, Performance Report, for results.
    - The Post-construction Monitoring Plan is being updated as part of the 2021 LTCP Update.

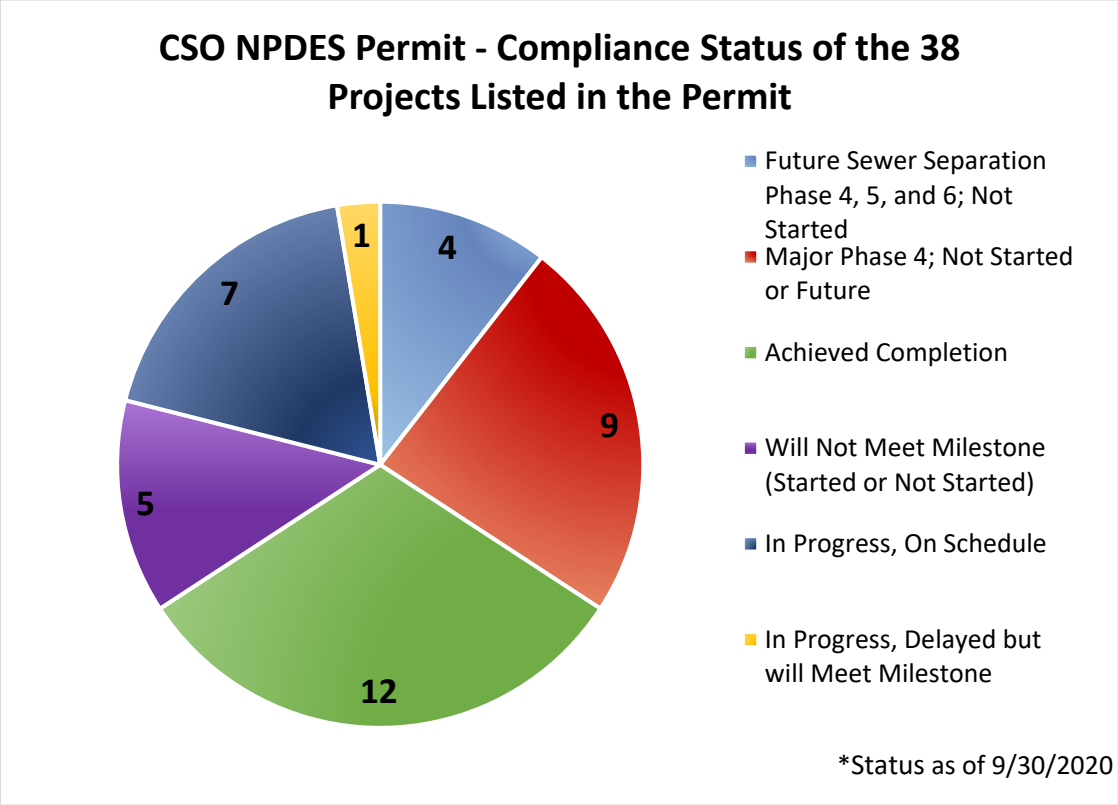
C. Compliance Schedule

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 (see Figure ES-1) as follows:

- Annual Project Progress Reports (APPRs) are provided in Attachment 2 for projects with reportable activity.
- Changes or impacts to scope, schedule and budget are documented by the CSO Program in a process called Change Notification Request (CNR) procedure. Attachment 3 contains the CNRs drafted during the report period.

- Construction start and completion dates are not expected to meet the LTCP schedule for Ohern-Monroe CSO 119 South Barrel Sewer Separation Project as a result of delays during the development of the Conceptual Basis of Design Report. Construction was scheduled to be completed by June 30, 2023, for Phases 5A and 5B. A CSO Permit and LTCP modification was obtained that reflects the new anticipated date of December 31, 2023 for commencing bidding, for Phases 5A and 5B.
- The Nicholas Street Sewer Extension Phase 3 Project eliminated the need for the 18th and Seward Project as a part of LTCP Phase 6 as a result of a more efficient design. The Nicholas Phase 3 Project will now be constructed in two construction contracts: Phase 3A and Phase 3B. This project's construction completion date in the LTCP was December 31, 2021. With the changes shown in the CNR, the overall project will be considered complete when the Phase 3B construction is complete, which is anticipated in the fall of 2024.
- The LTCP lists construction of CSO 202 Phase 2 to be completed by June 30, 2022. It is anticipated that final design and construction of CSO 203 would be completed prior to the construction of CSO 202 Phase II; given the schedule of CSO 203, a CNR was developed by the City to reflect this delay. The updated anticipated substantial completion date for this project is now September 30, 2025.
- The current cost of the program is estimated to be $2.387 billion through 2037. Through September 2020, approximately $ 717 million in costs have been incurred by the City. Significant savings in future costs are anticipated to result from the ongoing Optimization Evaluation.
- The City has decided to move forward with the redesign and construction of the Forest Lawn Sewer Separation Project based on an evaluation of the cost-effectiveness under the optimization effort.

Figure ES-1. Compliance Status of the 38 Listed Projects in the Permit



D. CSO Outfall Monitoring

As required, a summary of monitoring data from CSO Outfall 102 is included. 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. The following is a summary of the data:

- CSO 102 had 27 days with overflow events. Results from the monitoring are reported on quarterly discharge monitoring reports.
- A permit modification changed the date for the discharge from CSO 102 to meet effluent limits from January 1, 2022, to January 1, 2023. The permit modification was issued on November 1, 2019.
- Interim requirements for the monitoring of CSO Outfall 205 were not in effect this year. As the result of an approved permit modification, these requirements are not set to begin until the next permit cycle, with anticipated monitoring to begin in 2024.

E. In-stream Monitoring

As required, a summary of in-stream monitoring data consistent with the Implementation Monitoring Plan objectives is included. The following is a summary of the City's efforts:

- Sewer Maintenance Division staff monitored seven sites (along the Papillion Creek system) for water-quality parameters.

- USGS continued discrete water-quality sampling for the City at four sites along the Missouri River and three sites where continuous monitoring is performed.
- The City and USGS monitoring locations are listed in Section VI, In-Stream Monitoring Data, and shown on Figure 7-1.
- The USGS data are summarized in Table 7-3 in Section VI, In-Stream Monitoring Data.

F. Performance Report

As required, a performance report is submitted 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:

- During the 2019-2020 report period, City staff logged 1,718 total CSO checks; 1,313 were post-rain and snow-melt checks, and the remainder were biweekly checks for potential dry-weather occurrences. Dry-weather overflows are reported in Section II, Nine Minimum Controls.
- A 1-year pilot project is being conducted to install cameras and level sensors to monitor the occurrence of CSO overflows at 11 locations. The purpose of the project is to assist the City in verifying overflow events, verifying maintenance needs, and providing alerts to staff of flow depths and potential overflow events. Because this is a pilot project to test the equipment, City staff is continuing to physically check all CSO devices along with using the level sensors and cameras. Until the staff becomes familiar with the equipment and the equipment proves to be reliable, no changes will be made to the City's CSO device check program. It is hoped that use of the cameras eventually may be able to reduce the number of trips to visit the sites and the manpower required to do so, and that locations that are less safe for staff to enter may be able to be observed remotely.
- Table 8-1 in Section VII, Performance Report, provides a summary of the CSO frequency for each outfall. The frequencies range from 1 at CSO 103, CSO 107, and CSO 108 to 45 at CSO 204. Some CSO visual checks will count as a single occurrence even though the wet weather spans several days. This is because there can be storm events lasting for more than 1 day with short dry periods between periods of rainfall, and also there is often not enough time between daily events to manually reset the CSO devices. Discharges at CSO 102 are reported by each day of occurrence, with 27 days with wet-weather overflows this year (CSO 102 is monitored for each day on which CSOs occurred. Other CSOs may count multiple-day rain events as a single occurrence.)
- The rainfall during the report year was just over 24 inches. When compared against the average annual rainfall of 31 inches, this was a lighter-than-average rainfall year. Eppley Airport rain data registered 37 days of trace precipitation and 106 days with 0.01 inch or greater. After comparison with City rain gauges, 114 days were counted as wet-weather days in the combined sewer area. Of that, 55 of the recorded rain events were 0.10-inch or greater.
- Attachment 4 is the CSO Wet-Weather Occurrences Report. In total, 56 days of wet-weather checks were performed, some counting for multi-day rain events and snow-melt. An additional 16 days of inspections were performed biweekly on dry days to catch any reportable discharges. Dry-weather occurrences are reported in

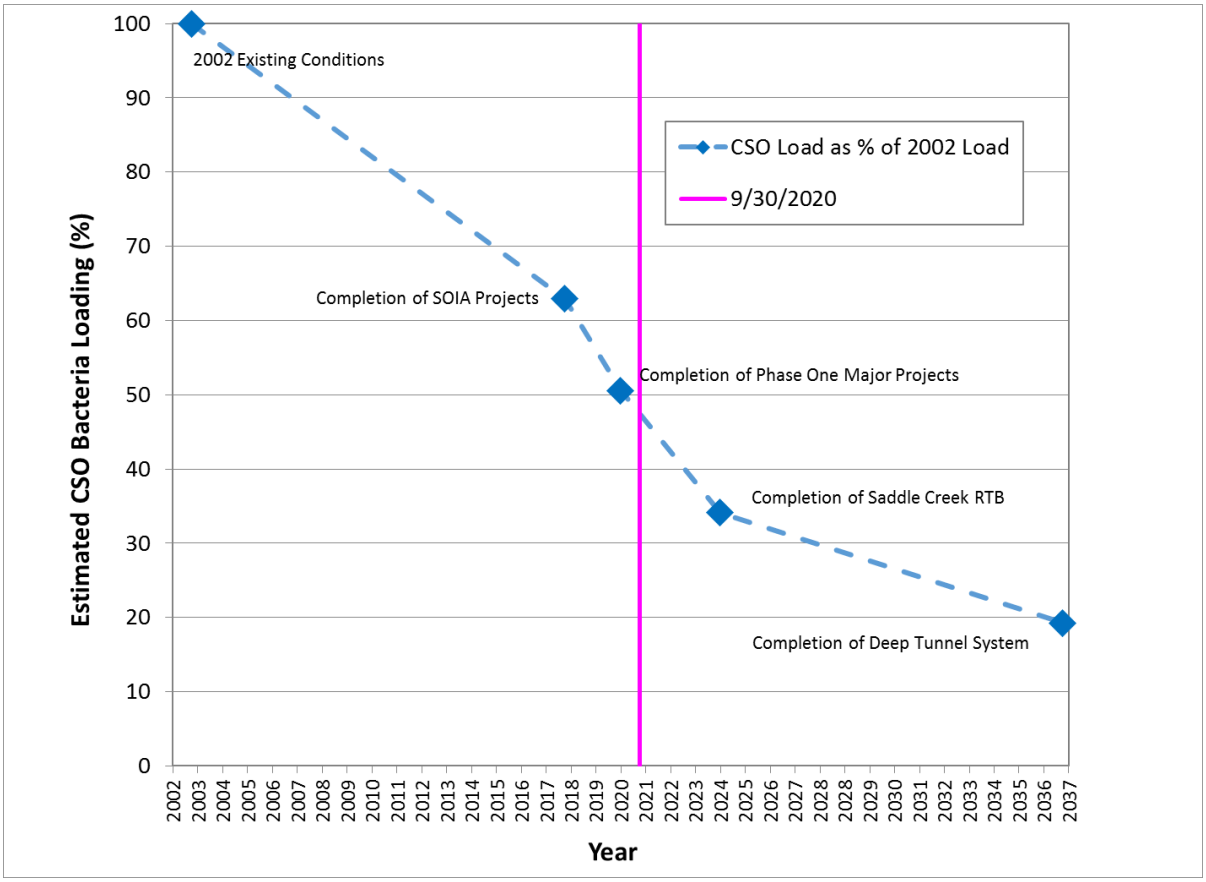
Section II.E, Prohibition of CSOs during Dry Weather. In the report year, five dry-weather discharges at CSO points were discovered and reported to NDEE.

G. Other Information

The CSO Permit, Part VII.F, 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, no other CSOs have been eliminated. CSO 103 and CSO 208 had a reduction in CSO events.
- CSO Permit NDEE Inspection: On July 29, 2020, NDEE requested records to show compliance with the permit including responding to the U.S. Environmental Protection Agency (EPA) CSO Evaluation Checklist. The information such as photos of instrument calibration, discharge monitoring reports for CSO 102, sampling procedures, CSO system map, frequency of CSO, and records of dry-weather overflows, was shared electronically with NDEE in a cloud-based file to serve as the inspection. The hard-copy submittal of requested items is filed at Sewer Maintenance Division.
- Receiving Water Quality: Previously significant reduction in E. coli load to the Missouri River occurred with the completion of the MRWRRF Improvements project in December 2019 and the putting in operation of the Chlorine Contact Basin at CSO 102. Figure ES-2 indicates a prediction in the reduction of E. coli loading over time as a result of LTCP implementation.

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



- Material Management: Waste material, including building demolition materials, general construction debris, and soil were taken to landfills and industrial fill sites in the area from construction of capital projects associated with the CSO Program. Several projects commenced or continued construction in 2020, but only a few generated excess soil or waste material that required landfill disposal. Approximately 218 tons of construction and demolition (C&D) waste were disposed of at Pheasant Point Landfill. Approximately 98,860 tons of soil were taken to an industrial fill site. No hazardous waste was disposed of in 2020. The City monitors and tracks contaminated soils and other waste material and uses this report to update the NDEE Waste Management Division.

    - Contractor Engagement: The City pursued numerous contractor engagement strategies for each project in 2020, aiming to involve the contractor community throughout all project phases. As a result of Omaha's challenging construction market, promoting opportunities and hosting outreach events, including constructability review workshops with general contractors, has been beneficial in increasing contractor awareness of CSO project opportunities. The CSO Program was also impacted by COVID-19 and converted to virtual constructability review meetings and pre-bid meetings to provide project information and encourage informed contractor bidding. Other activities included e-mailing Small and/or Emerging Businesses (SEBs) about bid opportunities, preparing preliminary quantities for projects, holding virtual pre-bid meetings, bid notifications via email,

early advertisement of bidding documents, and SEB engagement all contributed to the City's cost management and cost control process of the CSO Program.

- WRRF Master Plan: The City has contracted with a team of consultants to develop a Master Plan for the City's two WRRFs. The Master Plan impacts the CSO Program in several ways, including evaluating the impacts of wet-weather flows at the City's two WRRFs, site requirements at the MRWRRF, and the significant cost of WRRF improvements, which may affect the implementation schedule of the CSO Program.
- Large Diameter Sewer Inspection: Because of the reliance on large-diameter sewers as part of the CSO controls, the City is conducting an assessment of their condition. During the late spring and summer 2019, lamping of manholes along targeted sewers was performed to provide a preliminary indication of pipe and manhole condition, verify access, and determine the anticipated magnitude of debris. The City has contracted with ACE Pipe Cleaning (ACE) to perform multi-sensor inspections of approximately 12 miles of prioritized large-diameter sewers. Following field data collection, the data will be post-processed and provided to the PMT for further analysis, identification of rehabilitation/replacement strategies (as appropriate), and development of business case evaluations for improvement recommendations based on the assets total risk rating.
- COVID-19 Impacts: All elements of the CSO Program were impacted by coronavirus disease (COVID-19) pandemic, requiring a transition of all virtual design progress meetings and most construction progress meetings to virtual or with limited staff in person. Delivery of materials for the Burt-Izard and Transfer Lift Stations were delayed because of manufacturing delays, inability to travel to witness pump testing, and the need for equipment from outside the United States. City staff and programs adjusted, experienced set-backs, but also made progress and came out ahead on data collection during the pandemic.

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Acronyms and Abbreviations

°C	degree(s) Celsius
<	less than
<=	less than or equal to
%	percent
1D	one-dimensional
ACE	ACE Pipe Cleaning
APPR	Annual Project Progress Report
BOD_5	5-day biochemical oxygen demand
C&D	construction and demolition
CCTV	closed-circuit television
cfs	cubic foot/feet per second
cfu	colony forming unit(s)
CIP	capital improvements plan
City	City of Omaha
CMOM	capacity, management, operations, and maintenance
CNR	Change Notification Request
COF	consequence of failure
CSO	combined sewer overflow
CSO!	Clean Solutions for Omaha!
CSS	combined sewer system
CTS	collector tunnel system
CTS-JDS	collector tunnel system - joint drop shaft
DMR	discharge monitoring reports
DO	dissolved oxygen
DTS	deep tunnel system

DTS-PI	deep tunnel system – pumped in
DTS-PO	deep tunnel system – pumped out
EPA	U.S. Environmental Protection Agency
EQCD	City of Omaha Environmental Quality Control Division
FOG	fats, oils, and grease
GIS	geographic information system
gpd	gallons per day
gpm	gallons per minute
HEC-RAS	Hydrologic Engineering Center-River Analysis System
HPA	High Performing Alternative
ICM	integrated catchment model
ID	identification
I/I	inflow and infiltration
IMP	Implementation Monitoring Plan
LF	linear foot/feet
LOF	likelihood of failure
LTCP	Long Term Control Plan
MG	million gallons
mg/L	milligram(s) per liter
mgd	million gallon(s) per day
MH	manhole
min	minute(s)
mL	milliliter(s)
mMHO/cm	millimho(s) per centimeter
MNP/100mL	most probable number per 100 milliliters
MOA	Memorandum of Agreement

MPN	most probable number
MRWRRF	Missouri River Water Resource Recovery Facility
MS4	municipal separate storm sewer system
M.U.D.	Metropolitan Utilities District
N/A	not applicable
NDEE	Nebraska Department of Environment and Energy formerly the Nebraska Department of Environmental Quality (NDEQ)
NMC	Nine Minimum Controls
NOAA	National Oceanic and Atmospheric Administration
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NPP	Nebraska Pretreatment Program
NRD	Natural Resources District
NTS	non-tunnel solution
O&M	operation and maintenance
OERP	Overflow Emergency Response Plan
OPW	Omaha Public Works
PACP	Pipeline Assessment Certification Program
PCWRRF	Papillion Creek Water Resource Recovery Facility
PM	preventive maintenance
PMR NRD	Papio-Missouri River Natural Resources District
PMT	Program Management Team
POTW	Publicly Owned Treatment Works
QA/QC	quality assurance/quality control
RCP	reinforced concrete pipe
RTB	retention treatment basin
SCADA	supervisory control and data acquisition

SCRTB	Saddle Creek Retention Treatment Basin
SEB	Small and/or Emerging Business
SGS	South Gravity Sewer
SIFM	South Interceptor Force Main
SL-RAT	Sewer Line Rapid Assessment Tool
SOIA	South Omaha Industrial Area
SOP	standard operating procedure
SRF	State Revolving Fund
SSES	sanitary sewer evaluation survey
SSO	sanitary sewer overflow
SSOMM	Sewer System Operation and Maintenance Manual
SWO	stormwater outfall
TKN	total Kjeldahl nitrogen
TSS	total suspended solids
USGS	U.S. Geological Survey
WOER	Wastewater Overflow Emergency Response
WRRF	Water Resource Recovery Facility

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)[3] was reissued in 2015 and is effective from October 1, 2015, thru September 30, 2020. This permit has been administratively extended as of October 1, 2020 until a new permit is issued, which is anticipated by October 1, 2021.

This Annual Report is for the period of October 1, 2019, through September 30, 2020, and is submitted in accordance with the CSO Permit. 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. Throughout the report, the permit will be referred to as the CSO Permit, which is in effect from October 1, 2015, to September 30, 2020, as modified.

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 the City has 25 permitted CSO outfalls; 16 of these are associated with the Missouri River Water Resource Recovery Facility (MRWRRF) collection system; the other 9 are 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 1-1 reflects the permitted CSOs remaining. CSO 102 at the MRWRRF undergoes treatment prior to discharge.[4] This Annual Report includes actions, activities, and measures taken by the City with regard to the Nine Minimum Controls (NMC), the Long Term Control Plan (LTCP) 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) staff that make up the CSO PMT.

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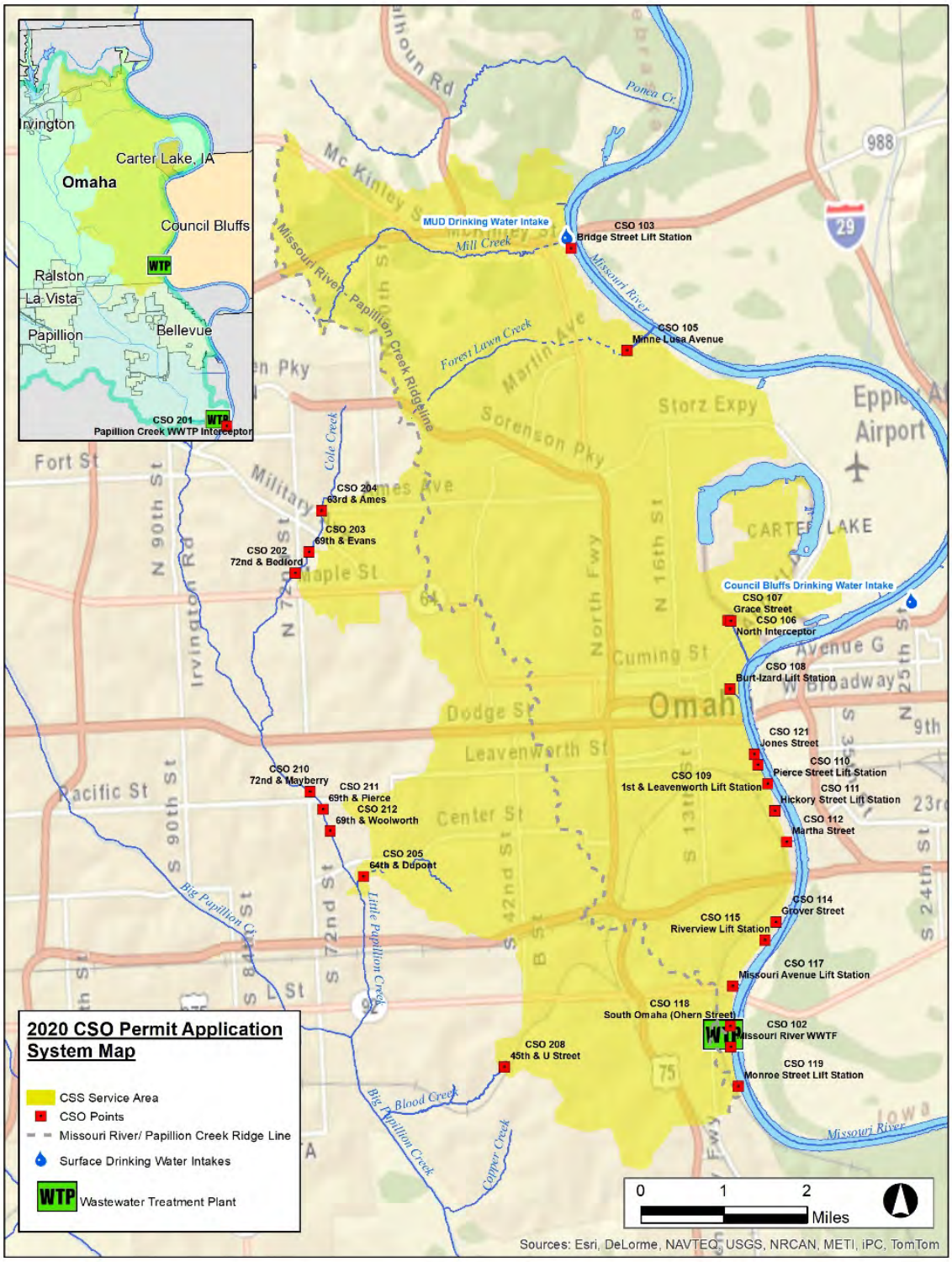
[3] Formerly the Nebraska Department of Environmental Quality

[4] The MRWRRF manages a wet weather bypass which is referred to as "CSO Outfall 102" which, 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 1-1. CSO Outfall Locations



II. Nine Minimum Controls

As defined in the CSO Permit, NMCs are operations and procedures that can reduce CSOs and their effects in receiving water quality, do not require significant engineering studies or major construction, and are consistent with the City's LTCP. The City and the NDEE have worked together over the last several years 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:

- "The NPDES Permitting authority should … develop and issue Phase I NPDES Permits requiring CSO communities to implement the NMCs."
- "The NPDES Permitting authority should… develop and issue Phase II NPDES Permits requiring continued implementation of the NMCs and implementation of an LTCP."
- "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 Phase I Permit to the City, which contained a series of 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 the CSO Phase II 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 continue to fulfill 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 the Phase I Permit, 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 has continued to implement the NMCs in accordance with the submittals on record with the NDEE and in accordance with EPA guidance and policy. The NMC documentation that follows is written according to the conditions and requirements of Part IV of the CSO Permit. Additional information is included to annually document measures of success or identify a focal area of improvement.

A. Proper Operation and Maintenance

Per the requirements of the CSO Permit, proper operation and maintenance (O&M) of the CSS and CSO outfalls should include periodic reviews of O&M procedures, updates to the procedures as needed, and proper procedure documentation. A major emphasis of the NMC is the elimination of dry-weather overflows. When a significant procedure is changed

updated or added, the City will provide the required documentation to NDEE. Revisions and additions to the O&M procedures that occurred during the October 1, 2019 to September 30, 2020 reporting period are included in Attachment 1 of this Annual Report.

The City continues to follow a periodic review of procedures that are a part of proper O&M of the CSS. The O&M procedures involved are carried out across the several workgroups in the City's Public Works Department, Environmental Services as described in previous CSO Annual Reports.

The Sewer System Operation and Maintenance Manual (SSOMM) (original publication by Brown and Caldwell 2006) is reviewed semiannually or more frequently as needed. The following is a summary of reviews and updates during this reporting year with excerpts of improvements included in Attachment 1.

1. SSOMM Appendix D is amended to include the City's Wastewater Overflow Emergency Response (WOER) Plan. The original reference to an Overflow Emergency Response Plan (OERP) is now referred to as the WOER Plan. These updates and activities took place in the reporting year.

    a. Meetings on the WOER Plan occurred weekly between response superintendent and compliance engineering on continued improvements to the structure of the WOER Plan. The WOER Plan title page and table of contents are submitted to show the development of an improved procedure. Subsection flow charts and CSS incident diagram are included.

    b. The Overflow Report Form was revised twice during the reporting year. A second iteration of the form was after NDEE shared new non-compliance reports. The City was advised that their custom report form was adequate and could be turned in as initial notification of a sanitary sewer overflow (SSO) or dry-weather CSO. During this report year, there is no requirement yet to move toward electronic reporting. This form's primary function is to guide the responder to the information needed for reporting to NDEE, but also for evaluation of public notification, adverse impacts, and follow-up actions. In October of 2019, a training and feedback session occurred with key members of the response crews. This training went over terms and definitions, in particular waters of the State, and how to gather a wastewater sample. A second training session for staff is planned in the winter of 2021.

Standard Operating Procedure for Reporting and Public Notification of Bypass, Dry Weather Combined Sewer Overflow & Sanitary Sewer Overflow: Updated the WOER organizational chart and contact lists, job titles, acronyms, and any reporting changes. This SOP is a stand-alone document but is part of the WOER Plan.

2. SSOMM Appendix B: CSO Station and Monitoring Device Procedures and Locations

    c. The SSOMM Appendix B consists of a single-page list and outline of general instruction for monitoring for wet -weather CSOs and prevention of dry-weather CSOs, and CSO Station and Monitoring Device Procedures and Locations.

        i. The Pierce Street Lift Station CSO 110 existing diversion was moved west to a new location due to the activated diversion structure (in April 2020) routing the Pierce basin's flow to the Leavenworth Lift Station's via the South Gravity Sewer

(SGS). The existing CSO 110 diversion was decommissioned along with the existing Pierce Lift Station.

ii. Although a new Hickory diversion to the SGS , which flows to the Leavenworth Lift Station was also activated during this reporting period (in April 2020), the downstream existing Hickory Street CSO 111 diversion remains active and is monitored by the City, as flow from the Martha basin (from the south) is currently temporarily pumped north to the existing Hickory Lift Station. In addition, there is a property to the west of the Hickory Street Lift Station that also has sanitary flows routed to the lift station, which will be routed west after the completion of a new sanitary sewer service for the property. The existing Hickory Lift Station is still active and connects to the new South Interceptor Force Main (SIFM). When these two new lift stations are operational, the Martha flow will be conveyed south to the Blake Street and Riverview Lift Stations to the new SIFM, the existing Hickory Lift Station will be decommissioned, the existing CSO 111 diversion will be deactivated, and the new CSO 111 diversion to the Leavenworth Lift Station SGS will be monitored.

3. SSOMM Appendix F: Combined Sewer Overflow Station Procedure Manual has been updated. A summary of updates is included. Note that Appendix B is also the first page of this manual and is situated as such in Attachment 1. Most notable change is that a low hydraulic pressure alarm was added to the CSO 118 diversion gate.

4. Sewer Maintenance Division has added more structure and technology to certain operations.

   a. Incorporated a monthly CCTV strategy meeting with O&M and engineering as a way to look at in-house and contracted resources, as well as new equipment and technology. Used rapid inspection methods and hired Pipeline Assessment Certification Program (PACP) technicians to post process defect codes.

   b. Continued to refine processes related to implementation of field tablets and work management that integrate with geographic information system (GIS)-based data management software.

   c. Continued simple manhole inspection for jetting crew staff to collect basic information to update inventory (for example, cover type and depth from rim to invert) and general condition ratings. Also expanded to other O&M crews for use. Manholes that receive a poor condition as noted on the inspections were investigated further by technical staff. Any maintenance issues were routed to correct crews for cleaning.

   d. Expanded use of the ArcGIS Collector application to outside contractors. Improvements were made to inspection forms in the spring of 2020, including collection methods, condition ratings, training, and quality assurance and quality control (QA/QC) processes (see Asset Inspection App Training excerpt in Attachment 1).

   e. Using these approaches allowed for a significant increase in-system condition data such as 9,601 manholes and 150 percent increase in annual pipeline assessment.

The City will continue to adhere to the NMC Guidance to properly operate and maintain the CSS and the CSO outfalls by using current procedures and implementing new procedures as necessary.

B. Maximize Use of the Collection System for Storage

The CSO Permit requires the City to continue to implement NMC efforts to maximize the use of the collection system for storage as well as review the CSS, as appropriate, to identify locations where minor modifications can be made to increase in-system storage. The permit requires that modifications be implemented as the City is able and documented in this Annual Report.

No modifications were made regarding storage in the collection system during this report period. As noted in Executive Summary.B, LTCP Documentation, use of system storage utilization is being evaluated. The following is a summary of practices within the City that contribute to maximizing the use of collection system.

Inspection of the collection system and removal of obstructions. The Sewer Maintenance Division is the primary organization involved with inspection and maintenance of the collection system and lift stations. Procedures are in place to identify and provide corrective maintenance, which includes inspection, cleaning, and removing blockages. Several corrective repairs to inlet, manholes, and pipelines were performed during the Annual Report year. A 5-year cycle jetting program for 15-inch and smaller pipes, and a preventive maintenance (PM) program, are among the practices to meet this control. The City contracts services to clean a small percentage of large-diameter pipelines. The City is also in the process of evaluating transition to a risk-based prioritization approach for sewer inspection and cleaning, using asset management principles. For the report year, the City accomplishments include the following:

- Inspected 387,606 linear feet (LF) in the CSS (from Granite XP database and information from subcontractors), including the following:
  - 99,543 LF completed as part of normal O&M
  - 232,694 LF completed as contracted work within Sewer Maintenance Division
  - 55,369 LF completed as part of the CSO Program for large-diameter sewers:
    - This represents 81 percent of the total planned inspection footage (approximately 68,300 feet).
    - The City inspected at least portions of 11 of the 12 interceptor sewers identified for inspection.
    - Some segments of several sewers could not be inspected due to silt, debris, and rock accumulation or a missing pipe invert. The City is continuing work to clean these segments and find other means to complete the planned inspections.
  - Completed 2,386 pre-survey simple manhole inspections in CSS by jetting crews: additional crews were dispatched to inspect manholes in anticipation of a reduced workforce from the COVID-19 pandemic, and the web application allowed office staff to make decisions about where to dispatch cleaning crews more efficiently

  - Performed Interceptor Sewer Lamping investigation of 423 manholes for sewer condition assessment investigations of 128 miles of 18-inch- to 144-inch-large-diameter collector and interceptor sewers in Douglas County

- Performed PM cleaning on 1,101,295 LF in CSS: note that because of how the City cycles are set up and because several CSS basins came due, these numbers are high this year:

  - 832,233 LF were part of the 5-year cleaning program.
  - 190,198 LF were part of the additional, more frequent PM program.

- Performed corrective cleaning on 78,864 LF in CSS
- Performed heavy cleaning and inspection of a critical 60-inch diameter reinforced concrete pipe (RCP) combined interceptor that conveys flow from Grace Street to Burt-Izard Lift Station (this is the South Interceptor Gravity Sewer between CSO 106/107 and 108). The contracted cleaning effort is still ongoing. This was a massive effort to locate access points and strategically remove 24 to 30 inches of compacted debris, consisting of years of silt build up and construction debris, from a period of damaged screens at CSO 107. An estimated 1,600 tons will be removed from the 4,400-foot stretch of sewer.
- Performed additional on-call closed-circuit television (CCTV), and cleaning contracts were executed to clean up to 54 inches of combined and sanitary sewers.
- Continued Area Jetting Program quality assurance checks with GIS exercises to verify that all combined sewers 8-inch to 15-inch wastewater collectors are on at least a 5-year cleaning cycle. There was an exception made for a portion of the collection system not under the CSO Permit, where acoustic testing, manhole inspections, or CCTV, were used to eliminate or postpone the planned cleaning for the year.
- Continued additional PM program improvement efforts. CCTV strategy meeting started in 2020 to plan in-house and contracted resources. This meeting discussed manpower, equipment, and strategies among the different technologies. A main objective is to fill gaps where the PM basis data is missing. The pipeline condition is considered for the recommended schedule and type of cleaning. The feedback loop between operators and supervisors improved and observations are being used to refine the PM further. Future asset management efforts are still planned and will include developing a PM basis document for each structure to document the following:

  - What kind of PM is needed, and why it is needed
  - PM frequency
  - Decision criteria
  - Feedback loop for when to convert the PM into a construction project to eliminate the need for the PM

- Sewer inspection, cleaning, and monitoring efforts included the following:

  - Pilot-tested Sewer Line Rapid Assessment Tool (SL-RAT (sewer inspection acoustic technology), which provides information about sewer blockages for 6-inch- to 12-

inch-diameter gravity sewers (701,836 LF of SL-RAT inspections were completed during the reporting period, 23,203 LF of which were in the CSS).

- Performed 8,328 LF of SL-RAT inspection in annexed areas to provide preliminary condition information (none in the combined sewer area); work included lamping of some pipes. Flagged poor condition pipes for more detailed condition investigation. Followed up with construction contractors and inspectors, resulting in better construction products that meet City standards.

- Initiated scoping contracts for additional sewer inspection on interceptor sewers in Sarpy County to support planned sewer rehabilitation projects. Inspections will include manhole inspections, CCTV, and multi-sensor sewer investigations and will continue into 2021.

- Levee Certification process required all pipes that penetrate the Missouri River levee system to be inspected and cleaned; this included private storm sewers, and City storm and CSO outfall pipes cleaned during the report year. These through-pipes were cleaned as needed, including removal of accumulated sediment that deposited during the 2019 spring flood events and extended period of elevated Missouri River water levels in 2019.

- In the summer of 2020, the City installed level sensors and camera devices at 10 CSO diversion and CSO outfall locations along the Papillion Creek and Missouri River levee system. In-person device checks continued to allow the City to gain confidence in this newer technology. The photo resolution was not always reliable. However, this technology is promising in that several overflow events showed brief durations, where prior to this, duration was largely unknown.

- CSO 210 diversion structure existing configuration allows for debris to accumulate in the junction box in the conveyance channel to the dry-weather pipe that leads to the grit structure. This CSO diversion was selected as one of the sites to monitor with level sensor and camera devices. The sewer separation in the CSO 210 area, with anticipated completion of construction in 2022, will reconfigure the diversion structure. PM cleaning will continue until this project is complete.
- CSO 207 diversion structure was reconstructed into a sanitary junction box, with the outlet to the 30-inch diversion outfall sewer plugged off with concrete block and grout, and a portion of the pipe was removed and the remaining segment abandoned in place. The outfall sewer remaining carries only storm flows. This was completed in the 42nd and Q Street Sewer Separation project (Omaha Public Works [OPW] 52257) during the previous reporting period. The City monitored the downstream CSO 208 diversion through spring and summer 2019 to determine if CSOs are still occurring. The City continued to monitor the CSO 208 outfall per routine CSO device checks with no overflows recorded after the fall of 2019. During the summer of 2020, the CSO 208 diversion had a level sensor and camera device installed. During a 1-inch storm event on September 9, 2020, the data revealed only a slight elevation in flow and did not reach the overflow standpipe.

Maintenance, repair, and replacement of tide (river) and control gates. Gate inspections at key CSO facilities occur once every year, at a minimum, with appropriate follow-up actions. Flap gates are inspected weekly by the Levee and Lift Station when the gates are

visible (when river levels do not submerge gates) to confirm the gates are sealing. The City made progress on updating the computerized maintenance management system to IBM's Maximo v7.6.1 for the flood protection system, the treatment plants, and the collection system lift stations. Part of the process of implementing the extended use of Maximo for maintenance management was assuring that assets were correctly located, identified, and coordinated between the Maximo and GIS systems so that City staff can coordinate efforts.

Elevated river levels can result in intrusion of water from the Missouri River or groundwater into the collection system, particularly in low-lying areas along the Missouri River. The City has an ongoing plan to replace CSO outfall flap gates and/or flap gate seals to reduce river intrusion. This work to replace and repair flap gates on CSO outfalls is also part of the flood protection system associated with the Missouri River levee system (regulated under the U.S. Army Corps of Engineers PL84-99 program). The following activities occurred during this reporting year:

- The three CSO 105 (Minne Lusa) flap gates were replaced.
- The City finished construction of the Leavenworth Flood Mitigation project. The project was designed to reduce the influence of elevated river levels on the new Leavenworth Lift Station by maximizing flow to the station via a closed pipe system that is not directly influenced by river level or intrusion from the CSO 109 outfall gates.
- The CSO 117 existing flap gate is being rehabilitated as a change order to the OPW 51997b Missouri Avenue/Spring Lake Phase 2 Sewer Separation Project.
- Replaced and/or repaired screens and gates at CSO 107 and 108, described further in Section F - Control of Solid and Floatable Materials in CSOs.

Future CSO projects, which are still in the planning phases, will consider river intrusion by replacing flap gates at additional CSO outfall locations.

During periods of sustained high river elevations, the City uses existing infrastructure as much as possible to reduce river intrusion. The Papio-Missouri River Natural Resources District (PMR NRD) is conducting ongoing work to elevate the crest elevation of the Papillion Creek levee system, which will make it less likely in the future for the PCWRRF to be inundated by Missouri River and Papillion Creek flood flows, as occurred in 2019. The City completed work in conjunction with the PCWRRF repairs to replace the flow meter at the influent to the PCWRRF, which is near the CSO 201 diversion.

The City used the elevated Missouri River levels in 2019 to continue the development and refinement of a High River Operation Plan during this reporting year. This work-in-progress includes identifying critical monitoring of locations impacted by elevated river levels, planning for the possible need to install temporary pumps at critical lift stations, and identifying impacts to the system (including changes to the cost, schedule, and design/construction of ongoing projects). The City is continually adapting O&M plans to improve wastewater system operation effectiveness during high river levels. City staff have access to the web-based GIS dashboard for real-time coordination that includes information regarding Missouri River current and projected levels, weather forecasts, references to U.S. Geological Survey (USGS) stream flow and level gauges, critical flood stages, and locations and status of temporary pumping facilities along the levee and low-lying areas. This GIS

dashboard was created and used as the authoritative data source on the 2019 temporary pump sites and flood control infrastructure for flood operations managers.

Installation and adjustment of regulators: Previous studies have indicated that there may be some potential for in-line storage in the existing sewer system of the Missouri River Watershed. However, there are complex issues that must be considered in evaluating opportunities in each area. The possibility of using in-system storage capacity may be considered in design projects in appropriate areas, with an understanding of the limitations of the current hydraulic model. Ongoing activities described further in Section III. D, Evaluation of Alternatives (for example, the optimization work) are further evaluating several potential alternatives for in-line storage. The use of the sewer model and other technologies to optimize the system that go beyond the NMC requirements may be pursued in the future with the City's adaptive management strategy as part of the LTCP. The City will evaluate the addition and modification of regulators on a case-by-case basis.

The Pierce CSO 110 existing diversion was moved to a new location due to the connection of the Pierce basin's flow to the Leavenworth Lift Station's SGS. The existing CSO 110 diversion was decommissioned along with the existing Pierce Lift Station because this flow now goes to the Leavenworth Lift Station.

Although a new Hickory diversion to the SGS to the Leavenworth Lift Station was also put into service during this reporting period, the downstream existing Hickory CSO 111 diversion is still monitored by the City because it is closest to the river outfall. The Hickory CSO 111 existing diversion remains active, as flow from the Martha basin (from the south) continues to be temporarily pumped north to the existing Hickory Lift Station. The existing Hickory Lift Station is still active and connects to the old SIFM until the new Riverview and Blake Street Lift Stations are constructed downstream. When these two new lift stations are operational the Martha flow will travel south to the Blake Street and River Lift Stations to the new SIFM, the existing Hickory Lift Station will be decommissioned, the existing CSO 111 diversion will be deactivated, and the new CSO 111 diversion to the Leavenworth Lift Station SGS will be monitored. The new Riverview Lift Station design was completed during the reporting period and was bid for construction, which is planned to start in 2021. The Blake Street Lift Station project is also designed and expected to bid for construction in 2021.

The City installed level sensors and camera devices at 2 interior CSS locations and 10 CSO diversion and CSO outfall locations along the Papillion Creek system and Missouri River levee system. These data will be used to understand how water levels react to wet-weather conditions in the CSS. In particular, the sensor at CSO 103 will be used to understand what adjustments at the weir to the outfall can be incorporated to minimize further occurrence of wet-weather overflows.

The Saddle Creek Retention Treatment Basin (SCRTB) construction continued, including modifications to the CSO 205 outfall, which is anticipated to be complete in the summer of 2023.

In the Papillion Creek Watershed, the City uses regulators at the influent to the PCWRRF to maximize in-line storage in the Papillion Creek Interceptor to maximize the amount of wet weather that goes to the PCWRRF and minimize activation of CSO 201.

Reduction and retardation of inflows and infiltration: The City continues to include and evaluate these methods of inflow reduction as part of management of the CSS. There are a few items to note, as follows:

- The City has added more staff for the monitoring and enforcement of City code related to illicit connections, lateral defects, and new plumbing connection. No new illicit connections were found during this reporting period.
- 18th and Fort Sewer Separation project was bid for construction. The primary goal of this project is to reduce and potentially eliminate the surcharging experienced in the 36inch combined line in Fort Street between approximately 16th and 20th Streets. Despite the extensive sewer separation work that has occurred upstream of this line, wet-weather flows continue to overwhelm the system, occasionally displacing the manhole lid at MH 0032057, and leading to combined sewage flooding at Fort Street and adjacent properties. Because this 36-inch line directly ties into the North Interceptor, CCTV of the North Interceptor has been conducted with this project. The effects of river intrusion in the North Interceptor and systems feeding into it is yet another factor that needs to be addressed to improve conditions in the area.
- The City continued refining a more formalized procedure and list of techniques for inflow and infiltration (I/I) reduction. The City continues to work on a guidance technical memorandum for how to develop and implement a plan for I/I reduction. The task gathered field data in a pilot area during the reporting period to demonstrate how to use such a plan.
- Stormwater management practices are required to be evaluated during the design of all CSO projects for applicability, cost-effectiveness, and long-term maintenance requirements.

Upgrade and adjustment of pumps: The Sewer Maintenance Division's Levee 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. During the Annual Report year, the City continued with the design of the pump replacement and lift station upgrades at the Monroe Lift Station to replace aging equipment and increase the pumping capacity to the MRWRRF.

The Burt-Izard Lift Station Improvements Project to send more flow (total of 50 million gallons per day [mgd]) to the MRWRRF continued construction, and a project to replace the pumps at the MRWRRF Transfer Lift Station continued construction.

The new Riverview Lift Station is currently under construction and Blake Street Lift Station projects will commence construction in 2021.

Work at the South Omaha Industrial Area (SOIA) Lift Station continued to improve the performance and reliability of the pumps.

The City of Bellevue's Paradise Lift Station (which pumped wastewater to the PCWRRF) was damaged during the 2019 flood. The City is working with Bellevue as they implement repairs and plan for long-term replacement of this lift station, which may include changes to the service area and monitoring location.

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 water resource recovery facility (WRRF). As new facilities are built, permanent meters are installed and connected to the SCADA system for real-time monitoring at the WRRFs.

The Papillion Creek Interceptor flow meter just upstream of the PCWRRF was damaged during the March 2019 flood and was replaced November 19, 2019. The replacement meter is connected to the PCWRRF's SCADA system so the data can be pushed to the Sewer Maintenance Division.

C. Review and Modification of Pretreatment Programs

The CSO Permit requires the City to minimize the impacts of discharges into the CSS from non-domestic sources. When new significant industrial users are added to the CSS, the City is required to determine what impact the dischargers would have on the quality and quantity of CSO discharges during wet-weather events. In addition, as current Service Agreements with bulk user customers expire every 10 years or there are changes to the wastewater of the wholesale customers, the City continues the process of updating existing agreement language for clarification and consistency with current monitoring requirements and references to state code.

A MOA between the City and the State of Nebraska governs the Pretreatment Program in the City. The MOA provides for the direct cooperation between the City and state in the implementation of the Nebraska Pretreatment Program (NPP) and lists the responsibilities of each. The NPP is limited to the categorical industries as defined by EPA. The categorical industries with NPP-permitted discharges, either through voluntary agreements or through the NPP permit, are requested, whenever possible, to restrict or prohibit discharges during rain events.

The City's EQCD is responsible for the review and modification of the Pretreatment Program. The City's Permit requires the City to minimize the impacts of discharges into the CSS from non-domestic sources. The categorical industries with NPP-permitted discharges, either through voluntary agreements or through the NPP permit, are requested, whenever possible, to restrict or prohibit discharges during wet-weather events. When new significant industrial users are added to the CSS, the City is required to determine what impact the dischargers would have on the quality and quantity of CSO discharges during wet-weather events. The City coordinates with the state to review draft NPP permits before they are final to make changes as needed. The City sees the approved permits when they are on public notice on the state website. The posted NPP terms are then in place for a 5-year period. A summary of new significant industrial users and measures taken by the City to address discharges during wet weather are documented in the City's semiannual reports to the state for the Pretreatment Program.

As part of the NPP permit requirements, permittees must notify the City of permit violations and provide the City with a copy of all Notice of Violations (NOVs) (including non-compliance discharge reports and paperwork violations) and discharge monitoring reports (DMRs) submitted to the state. The City will notify the state if permittees do not provide the City with these notifications in a timely manner, based on the files that are posted to the state's

website. The City does annual sampling and walk-through inspections of each NPP permittee for permit compliance.

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

The CSO Permit requires, as appropriate, the City to evaluate and implement simple modifications to the CSS and procedures at the WRRFs to maximize flow to the Publicly Owned Treatment Works (POTWs) and document such modifications in Annual Reports.

In 2005 and 2006, the City evaluated various methods for maximizing flow to the WRRFs. Much of the evaluation supported the decisions that resulted in the LTCP; however, some operational changes were made immediately and are ongoing to allow for better wet-weather management and improved water quality. For example, since the new SIFM is operationally complete, the City no longer closes the CSO 106 or CSO 107 dry-weather flow gates during wet-weather events. Therefore, more flow gets to the MRWRRF. Also, the Chlorine Contact Basin facility at CSO 102 was put into operation at MRWRRF during the reporting period. As a goal for this NMC, the City continues to consider ways for maximizing treatment of wet-weather flows, which will be incorporated into the next LTCP Update.

E. Prohibition of CSOs during Dry Weather

As stated in the CSO Permit, “Dry weather overflows from the City CSS are prohibited.” The City is required to document all dry-weather overflows related to the CSS and the measures taken to correct the cause of the overflow and report them in this Annual Report.

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 3-1 includes summaries of the dry-weather overflows discovered during the 2019 report period that did not reach a water of the State. Table 3-5 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, NDEQ).

Additional information for each event was submitted to NDEE, in accordance with reporting requirements in the CSO Permit.

- There were nine dry-weather overflows or basement backups that were contained and did not reach waters of the State. These resulted from: construction debris or debris/tile and rocks; roots; line defects; water main breaks; sewer overload; private business fats, oil, and grease (FOG) contributor; grease or roots; mechanical malfunctions; power failure; lift station operations affected by high Missouri River levels; and line defects (Table 2-1).
- There were six dry-weather overflows that reached waters of the State, four directly through a permitted CSO discharge point and two by a waterway or nearby separate

storm sewer. Cause included grit/debris in the system, water main breaks, line defects, or mechanical malfunction (Table 2-2).

- A significant discharge event occurred at CSO 105 on October 7, 2019, with notice given to NDEE. The City was still in Flood Action stage at this time. Several rain events in September and early October created high ground water levels. After a summer of high river levels and saturated soils, a force main that serves Carter Lake, Iowa was in failure and the system was surcharged in the area. To facilitate that repair and relieve the overflowing manholes in the community, a controlled discharge occurred at CSO 105, Minne Lusa channel.
- The old SIFM had several leaks and mitigation occurred December 2019 through March 2020 to repair the old SIFM. This force main is under regular surveillance for any additional occurring defects. The intermittent rate of flow was estimated at 2 gallons per minute and was contained onsite.

Each of these events were evaluated for true cause and appropriate long-term corrective action. The City also placed an increased emphasis on sewer design and construction controls. Construction specifications regarding pipeline and manhole channel construction, and removing debris remaining in new pipe, are being enforced with the goal of reducing maintenance issues and eliminating dry-weather CSOs. As a result of these efforts, the City has seen better finished products from contractors, and in one case a manufacturer made modifications to their product (manholes) to help meet the City's Specifications requirements. The City's updated Wastewater Collection Systems Design Manual (adopted August 27, 2019), Standard Specifications (April 20, 2020), Standard Plates (March 19, 2020), and Standard Bid Items (September 17, 2020) for Public Works Construction were made available during the reporting period.

Table 2-1. Basement Backups or Contained Dry-weather Overflows

Start (Discovery) Date	Location of Overflow	Cause	Mitigation Steps	Long-Term Corrective Action
11/12/2019	**South 27 and Q St.**	Construction Debris	Remove Debris	Other Coordination
11/18/2019	**4966 Newport Ave.**	Grease Line Defect	Remove Debris	PM
11/25/2019	**6223 South 26 St.**	Debris	Jet Line	PM
12/3/2019	**SIFM (near 1st and Marcy)**	Line Defect	Containment/Inspection	Repair/Replace
2/11/2020	**North 39 St. and North Ridge Dr.**	Debris Vandalism	Remove Debris Jet Line Vacuumed	Scheduled Inspection
3/10/2020	**1st and Jones St. (SIFM)**	Other	Containment/Inspection	Repair/Replace
4/9/2020	**4515 South 15 St.**	Grease	Jet Line	PM Scheduled Inspection
5/15/2020	**3557 Cass St.**	Construction Debris	Jet Line Saw Line Vacuumed	Other
7/16/2020	**4966 Newport Ave.**	Rags	Jet Line	PM

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

Start (Discovery) Date	Location of Overflow	Duration	Estimated Quantity	Cause	Mitigation Steps	Long-Term Corrective Action
10/7/2019	9th and Ave. H; Carter Lake, IA	Unknown	Unknown	Mechanical Malfunction	Vacuumed Containment	Repair/Replace
10/7/2019	7198 JJ Pershing Dr. (CSO 105)	30 minutes	10 mgd	Bypassed to mitigate Carter Lake, IA	Other	Repair/Replace pipe serving Carter Lake
1/17/2020	1506 Abbot Dr. (CSO 106)	Unknown	1,500 gallons	Entity Overloaded	Water Main Repaired	(None) Unavoidable
3/27/2020	7th and Jones St. (CSO 121)	Unknown	Unknown	Entity Overloaded Water Main Break	Water Main Repaired	None
8/10/2020	6059 Taylor St. (CSO 204)	Unknown	2.5 gpm	Power Failure	Repaired	Found during routine checks; future CSO project
8/14/2020	5600 South 10 St. (CSO 118)	6.75 hours	100,000 gallons	Power Failure	Repaired	Low pressure failure alarm installed

gpm = gallons per minute

F. Control of Solid and Floatable Materials in CSOs

The CSO Permit restates the objective of this NMC as "control of solid and floatable materials in CSOs is intended to reduce visible floatables and solids using relatively simple measures." The permit requires the City to, as appropriate, re-assess and implement site-specific processes to control solids and floatable-s in CSOs using relatively simple measures. Re-assessments, the conclusions, and implementation of control measures are documented in this Annual Report. During the reporting year, City staff cataloged grit facilities and stormwater facilities and developed information packets for maintenance crews to have ready access to information on how to properly maintain the facilities.

Based on previous evaluations, many of the CSO points are not conducive to the implementation of floatable controls without significant modification. Some of the existing screening facilities were impacted by the 2019 flooding. The CSO 105 Minne Lusa flap gates were temporarily repaired during early 2019 and were fully replaced in February 2020.

New flap gates were installed at CSO 107 in 2020. 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 Abbot Drive), was damaged by the March 2019 flooding. This is a traveling rake arm that was inundated with flood waters and ceased to work. To address the potential issue of blinding the screen during CSO events,

the City removed one of the racks that were part of this floatables removal system and continued to function that way through the reporting period, as the City continues work on a project to develop specifications for bidding a project to repair this screening system. The City is also pursuing Federal Emergency Management Agency reimbursement for this work.

Construction of modifications at the Burt-Izard Lift Station continued during this reporting period and is scheduled to be completed in 2021. This work includes replacement of the existing pumps to add more capacity, replacement of the mechanically cleaned bar screen with a new bar screen, addition of a gate for channel isolation, a new bar rack, and concrete modifications to the existing grit basin inlets, and grit basins to maximize grit capture to protect the pumps and downstream infrastructure. The work also includes updating the Bar Screen Room to add a second screen, new gates, installation of new screenings handling, and replacing the existing flap gates on the CSO 108 outfall pipes. The Burt-Izard Lift Station's sluice gates were replaced in 2019 and were made operational in 2020. The two horizontal, manual bar racks just upstream of the flap gates downstream of CSO 108 (Burt-Izard) were damaged during the 2019 flooding. Erickson Construction replaced both bar racks in the spring of 2020 as part of their ongoing work at the Burt-Izard Lift Station. CSO 108 flap gates were replaced in January 2020. The Burt-Izard Lift Station's sluice gates were replaced (at Manhole A in February 2019 and at Manhole B in June 2019) and were made operational with installation of hydraulic cylinders and hydraulic power units in January and February 2020. When all the improvements are complete, including increased grit removal capabilities, the City will allow flow from the Burt-Izard Lift Station to be conveyed through the new SIFM and improve floatables controls to protect pump operations.

The City also continued work designing improvements to the 6th and Leavenworth Grit Facility (not a CSO Program project; issued a request for proposal in fall 2020), which will be used in the future with the recently completed Leavenworth Flood Mitigation CSO Project. The purpose of the Flood Mitigation Project was to maximize dry-weather and some wet-weather flows to the new Leavenworth Lift Station, while preventing river intrusion to the lift station during high river conditions.

The CSO 117 existing flap gate is being rehabilitated as a change order to the OPW 51997b Missouri Avenue/Spring Lake Phase 2 Sewer Separation Project.

The SCRTB construction continued, which includes a new grit pit for the retention treatment basin (RTB) and another grit pit for the dry-weather flow. The RTB is designed to capture floatables at design flows.

Grit removal facilities in the collection system continued to be maintained by Sewer Maintenance Division staff (either the Levee Group or O&M Group). As new stormwater facilities are built, grit and floatables controls are incorporated into these designs.

G. Pollution Prevention

As stated in the CSO Permit, "Pollution prevention is intended to keep contaminants from entering the CSS and accordingly the receiving waters by way of the CSOs." The CSO Permit requires the City to document in this Annual Report any new pollution prevention measures enacted by the City.

Pollution prevention efforts are shared between several divisions and work groups within the Public Works Department. Most records for pollution prevention are compiled and included in an Annual Report as required by the City's municipal separate storm sewer system (MS4) NPDES Permit NE0133698. Specifically, the MS4 Annual Report contains a section on Pollution Prevention/Good Housekeeping and includes a summary of storm sewer cleaning and other sewer maintenance records as well as street-sweeping efforts from January 1 to December 31, 2019.

A specific query of PM jet-vac tasks for the 2019-2020 Annual Report period showed that the City completed 341 work orders, with 219 of these on the combined system.

In addition, 6,321 inlets were proactively inspected resulting in unplanned cleaning tasks on 824 storm structures in the combined system (for example, inlet/catch basin, grated manholes, and/or junction boxes).

Additional measures for pollution prevention in the sewer collection system are shared duties between the Sewer Maintenance Division O&M Group and the Levee Group for sewer system grit removal. In general, the Levee Group is responsible for the maintenance of structures associated with the CSO lift stations, the CSO screens located at CSO 106/107 and CSO 108, and aerated and non-aerated grit facilities associated with some of the larger CSO points. The Sewer Maintenance O&M Group is responsible for the maintenance of small grit pits located throughout the collection system, with some of these being associated with diversion structures and pits located near the smaller CSO overflow points. Each Maintenance Group is responsible for recording and documenting their own activities. The Levee Group maintains these records in a log located at the MRWRRF. The Sewer Maintenance O&M Group tracks work in Cityworks AMS, a GIS-centric and web-based software package to help schedule and track O&M work.

The EQCD also 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 report period.

H. Public Notification

As stated in the CSO Permit, "Public notification is intended to inform the public of location of CSO outfalls, occurrences of CSOs, plus health and environmental effects of CSOs." The CSO Permit requires the City to document revisions or updates to public notification procedures in the Annual Report and include public announcements related to CSO discharges.

Locations of CSOs 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. Procedure responsibilities continue to be carried out by Sewer Maintenance Division staff. CSO outfall sign inspections were completed in this reporting period in winter 2019-2020 and summer 2020. The City found several signs by the Missouri River missing after the 2019 flood. . Several signs along the riverside were challenging to navigate reinstallation after the flood impacts. As of the last inspection date of August 12, 2020, 47 of

the 48 signs were in place. The exception was CSO 114 at the riverside location. This was recently repaired after the report period, on November 9, 2020.

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*, which was updated this reporting year as described in Section A of this report and is included in Attachment 1. This standard operating procedure is reviewed semiannually. No other policies or procedures for public notification have been revised or updated.

No public notifications were issued during the reporting period. Public Works Assistant Director-Environmental Services determines "Significant" qualification in conjunction with NDEE, on a case-by-case basis under these guidelines: duration greater than 24 hours; quantity greater than 100,000 gallons, considering nature of pollutants and location. Two significant events as reported in Section E. under Prohibition of CSOs during Dry Weather were communicated to NDEE and deemed not to warrant additional public notice. One occurred while the City was still impacted by high river levels and heavy rainfall impacts in October 2019. A notification to the public was still in effect regarding the Missouri River and an additional notice was not warranted. A second significant discharge at CSO 118 (which is marked with signage as a CSO outfall) followed shortly after a wet-weather event. The discharge ended minutes after it was discovered and was deemed to have caused no more of an impact than the wet-weather CSO. An additional summary is provided in Section III.B LTCP Documentation for Public Participation, documenting public informational methods with regard to understanding CSOs and the CSO program.

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

As stated in the CSO Permit, "Monitoring to Characterize CSO impacts involves inspections and other simple methods to determine the occurrence and apparent impact of CSOs." The CSO Permit requires the City to document in this Annual Report any additional CSOs discovered by the City during routine inspections.

Information on efforts made during implementation of the LTCP to characterize the CSS system can be found in Section IV.A, 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 the Efficacy of CSO Controls section 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, 2019, to September 30, 2020, 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. Six basement backups resulted due to wet weather, another two backups and two manhole overflows resulted due to storm debris. One record of a manhole cover missing on a combined system was recorded during a significant storm event. Seven of these items are related to one significant event (June 9 to 10, 2020 rain event). Other notable rain events occurred in October 2019 and July 2020, with no recorded issues in the CSS.

The area of 66th and Charles is downstream of the CSO 210 diversion structure, however, this system still receives flow from four storm inlets connected upstream. Two basement backups and two manhole overflows occurred during wet weather on May 30, which were primarily due to excessive roots in the 18-inch diameter collector pipe's joints and storm debris. These remaining inlets will be removed with the CSO 210 sewer separation project. The storm event was minor in both intensity and duration.

The storm events are outlined in Table 2-3, and additional information regarding the reported events are listed in Table 2-4.

Table 2-3. Storm Events

Date	Duration (Hours)	Total Rainfall (Inches)	Recurrence Interval (NOAA)
October 1, 2019	6	2.00	1 year
Summary: Peak Hour Intensity of 0.74 inch per hour			
October 5, 2019	1.2	0.90	< 1 year
Summary: Peak Hour Intensity of 0.89 inch per hour			
October 10, 2019	6.5	1.53	< 1 year
Summary: Peak hour Intensity of 0.48 inch per hour			
May 30, 2020	7.66	0.65	< 1 year
Summary: Peak Hour Intensity of 0.17 inch per hour			
June 9, 2020	1.0	1.83	> 5 year
Summary: Peak Hour Intensity of 1.71 inch per hour			
July 1, 2020	0.75	1.00	1 year
Summary: Peak Hour Intensity of 1.07 inch per hour			

> = greater than

< = less than

NOAA = National Oceanic and Atmospheric Administration

Table 2-4. Reported Basement Backups or Manhole Overflows During Wet-weather CSOs

Date	Category	Location of Overflow	CSO Outfall
5/30/2020	CSO - Overflow in CSO Service Area (Not at Outfall)	6640 Charles St.; 1715 Mayfair	Downstream of diversion structure but reached CSO 210 outfall
6/9/2020	CSO - Excursion (Confined to Basement or Private Property)	704 Lucia Plaza	CSO 109 - Leavenworth
6/9/2020	CSO - Excursion (Confined to Basement or Private Property)	720 Pierce St.	CSO 110 - Pierce
6/9/2020	CSO - Excursion (Confined to Basement or Private Property)	618 Pierce St.	CSO 110 - Pierce
6/10/2020	CSO - Excursion (Confined to Basement or Private Property)	1702 South 11 St.	CSO 109 - Leavenworth
6/10/2020	CSO - Excursion (Confined to Basement or Private Property)	2208 South 12th St.	CSO 109 – Leavenworth / CSO 121 - Jones
~6/10/2020 (Complaint received 6/25/2020)	CSO - Excursion (Confined to Basement or Private Property)	1054 S 20th St.	CSO 109 – Leavenworth
6/10/2020	No overflow reported or observed, cover reported as blown off	2306 Burt St.	CSO 108, Burt-Izard

All basement backups and manhole overflows are evaluated for actual cause or conditions that lead to the backup or overflow. OPW Environmental Services engineering groups will refer 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 I/I sources are completed. 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 the original LTCP to NDEE September 25, 2009, in fulfillment of Permit requirements and EPA's CSO Control Policy. The LTCP was approved by NDEE on February 10, 2010. An update to the LTCP was submitted to NDEE on September 29, 2014, which was approved by NDEE on January 23, 2015. Minor modifications to the LTCP Update were submitted and approved by the NDEE on April 3, 2015; August 28, 2015; July 19, 2017; May 20, 2019; and July 9, 2019. The City is currently in the process of development of an update to the LTCP to be submitted in March 2021.

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 and are presented in the same order that is outlined in Part VIII of the Permit.

A. Characterization and Modeling of the CSO System

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 2014 LTCP Update provided new information on these items. The permit requires the City to continue to characterize, monitor, and model the CSS. A narrative summary of changes during the last 12 months to the characterization, monitoring, and modeling of the CSS as construction and sewer separation projects are implemented must be included in each Annual Report.

While the CSS is almost completely mapped in GIS, data trends show that the City is continuously updating the attributes of the assets. An average rate of 10 percent, or approximately 3,500 line segments, are updated per year with diameter, material, slope, and elevations. Creation of new or newly discovered assets equals an annual increase of about 3.5 percent to the total assets mapped. These are primarily due to regular updates occurring as field differences are discovered or per as-built record drawings for projects. In particular, where new storm or sanitary sewer was constructed as part of the CSO Program, updates would be performed both to the existing system as well as mapping the new assets. The CSO system characterization continues to be updated as LTCP projects are designed and implemented. 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 computer model to ensure the level of control specified in the LTCP is ultimately achieved. The following is a summary of the City's activity during this report period.

Characterization Efforts

Characterization efforts of the CSS 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 conditions 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.

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.

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. Further information follows.

Monitoring Efforts

The City has been performing flow monitoring of its CSS, specifically related to the characterization of the system, since 2004. The City continued City-wide flow monitoring of the Papillion Creek Interceptors and conducted temporary flow monitoring in multiple locations. For the reporting year, 36 permanent flow monitoring sites, 52 temporary flow monitoring sites, and 11 CSO surveillance locations (with camera and level sensor) supported a variety of studies. In particular, flow monitoring for excessive I/I in post-separated, post-rehabilitated sewers was a focus.

Additionally, the City gathered precipitation data using 12 permanent City-managed, 3 temporary consultant-managed rain gauges, and 15 USGS gauges. The City also obtained radar processing of rainfall data from April 15 through September 15, 2020, to provide increased spatial accuracy. The Sewer Maintenance Division coordinates with the CSO PMT and other City divisions to plan the flow and rain monitoring program.

Figure 3-1 provides a location map for the flow monitors and rain gauges used in 2020, including locations of gauges within the Papio-Missouri River Natural Resources District alert rain gauge system (managed by USGS), which is used to supplement the City's rain gauge network. City and consultant rain gauges are listed in Table 3-1, and permanent and temporary flow monitoring locations are listed in Tables 3-2 and 3-3, respectively. 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.

Table 3-1. City and Consultant Rain Gauges

Rain Gauge Name	Longevity	Sewer Area
RG 1 - 10205 U St. (Oak Heights Pool)	Permanent	Sanitary
RG 2 - 3200 Ed Creighton (Hanscom Park)	Permanent	Combined
RG 3 - 5120 Maple St. (Benson High School)	Permanent	Combined
RG 4 - 4845 Curtis Ave. (Wakonda Elementary School)	Permanent	Combined
RG 5 - 1313 North 156th St. (Grace Abbott Elementary School)	Permanent	Sanitary

Rain Gauge Name	Longevity	Sewer Area
RG 6 - 5304 South 172nd St. (Russell Middle School)	Permanent	Sanitary
RG 7 - 7198 JJ Pershing Dr. (Minne Lusa Grit Station)	Permanent	Combined
RG 8 - 5411 South 43rd and T St. (Roth)	Permanent	Combined
RG-9 - 100 Martha St. (Martha CSO Diversion)	Permanent	Combined
RG-10 - 19615 Old Lincoln Highway (Elkhorn WRRF)	Permanent	Sanitary
RG-11 - 120 South 24th Street (Family Lutheran Service Building)	Permanent	Combined
RG-12 - 2232 South 64th Ave. (Aksarben Village Parking Garage)	Permanent	Combined
GBA 2020 RG 1 - 11809 Old Maple Road	Temporary	Combined
GBA 2020 RG 2 - 5134 North 156th Street	Temporary	Combined
GBA 2020 RG 3 - 4405 Fontenelle Blvd. (Fontenelle Park)	Temporary	Combined

Table 3-2. Permanent Flow Monitoring Sites

Location	Pipe Size	Longevity	Purpose
0225352 - 6900 Ames Ave.	24-inch circular	Permanent	CC Interceptor-E/CSS
0225354 - 6900 Ames Ave. North	12-inch circular	Permanent	CC Interceptor-E/CSS
0225354 - 6900 Ames Ave. Southwest	24-inch circular	Permanent	CC Interceptor-E/CSS
0246042 – 7601 Corby Circle	24-inch circular	Permanent	CC Interceptor-W
0246069 – 2808 North 75th St.	18-inch circular	Permanent-6/17/2020	CC Interceptor-E
0247046 – 7306 Maple St. (Relocated to 0246069)	18-inch circular	– Relocated 4/20/2020	CC Interceptor-E/CSS
0265099 – 460 North 80th St.	42-inch circular	Permanent	LP Interceptor
0293022 - 1501 North 85th St.	36-inch circular	Permanent	LP Interceptor
0297005 - 3020 Keystone Dr.	24-inch circular	Permanent	LP Interceptor
0302017 - 8769 Browne St.	30-inch circular	Permanent	LP Interceptor
0390004 - 10875 West Dodge Rd.	21-inch circular	Permanent	LP Interceptor
0452002 – 12440 West Maple Rd.	36-inch circular	Permanent	BP Interceptor
0692078 - CSO 205 – 64th and Dupont	10-foot by 12-foot box	Permanent	Saddle Creek CSO Outfall
0699028 - 6303 L St.	66-inch circular	Permanent	LP Interceptor/CSS
0726052 - 402 Rose Blumkin Dr. and 7309 Jones St.	60-inch circular	Permanent	LP Interceptor/CSS
0737008 - 73190 North Plaza	72-inch circular	Permanent	BP Interceptor

Location	Pipe Size	Longevity	Purpose
0786041 – 9503 Walnut St.	36-inch circular	Permanent	BP Interceptor
0839020 - 10800 Leavenworth St.	54-inch circular	Permanent	BP Interceptor
0941005 - 4131 South 143rd Circle	48-inch circular	Permanent	WP Interceptor-W
0942004 - 4526 South 140th St.	30-inch circular	Permanent	WP Interceptor-E
1141001 - 162296 Harney St.	18 inches	Permanent	WP Interceptor-E
1141017 - 323 S. 166th St.	30 inches	Permanent	WP Interceptor-W
4001001 - 15705 Harlan Lewis Rd.	9-foot x 9-foot box	Permanent	Papio Interceptor/CSS
4016001 – South 13th St. and Capehart Rd.	120-inch circular	Permanent	Papio Interceptor
4026001 - 25th and Hwy. 370	8-foot x 8-foot box, 96-inches	Permanent	Papio Interceptor/CSS
4051002 - 11820 Harry Andersen Ave.	60-inch circular	Permanent	WP Interceptor
4052005 - 10808 Olive St.	18-inch circular	Permanent	Hell Creek Interceptor
4052015 - 10900 Harry Andersen Ave.	72-inch circular	Permanent	WP Interceptor
4052029 – 1107 East 1st Street – Papillion	78-inch circular	Permanent	Papio Interceptor
4052051 - 11435 South 36th St.	78-inch circular	Permanent	WP Interceptor
4052060 - 10808 Olive St.	30-inch circular	Permanent	Hell Creek Interceptor
4062002 - 8970 South 48th St.	90-inch circular	Permanent	LP Interceptor/CSS
4079029 - 8001 South 120th St., 12001 Cary Circle	30-inch	Permanent	SP Interceptor-N
4088200 - 8001 South 120th St.	42 inches	Permanent	SP Interceptor-S
0515351G - MRWRRF- SIFM	48-inch force main	Permanent	Lift station
0517512 - Leavenworth Diversion	144 inches x 100 inches	Permanent	Lift station (level only)
0517514 - Leavenworth Interceptor	54 inches	Permanent	Lift station (level only)

Table 3-3. Temporary Flow Monitoring Sites

Location	Pipe Size	Longevity	Purpose
0004505 – 1333 North 16th St.	24 inches	Temporary	RNC/Post Separation
0016001 - 6421 John J Pershing Dr.	10 inches	Temporary	RNC/Post Separation
0016103 - 6395 North 16th St.	10 inches	Temporary	RNC/Post Separation
0036016 - 6639 North 16th St.	10 inches	Temporary	RNC/Post Separation
0063067 – 9308 North 28th Ave.	48 inches	Temporary	CSO

Location	Pipe Size	Longevity	Purpose
0075034 – 4304 North 33rd St.	114 inches	Temporary	CSO
0124060 – 3700 Fontenelle Blvd.	54 inches	Temporary	Separated stormwater
0124517 – 4405 Fontenelle Blvd.	60 inches	Temporary	Separated stormwater
0125025 – 4405 Fontenelle Blvd.	80 inches	Temporary	CSO
0125538 – 4295 North 48th St.	72 inches	Temporary	Separated stormwater
0125545X - 4405 Fontenelle Blvd.	60 inches	Temporary	Separated stormwater
0125545Y - 4405 Fontenelle Blvd.	30 inches	Temporary	Separated stormwater
0125545Z - 4405 Fontenelle Blvd.	24 inches	Temporary	Separated stormwater
0125548B - 4405 Fontenelle Blvd.	31 inches x 51 inches	Temporary	Separated stormwater
0147082B - 4877 Bedford Ave. (West)	30 inches	Temporary	Separated stormwater
0147082B - 4877 Bedford Ave. (East)	24 inches	Temporary	Separated stormwater
0147082B - 4877 Bedford Ave. (South)	60 inches	Temporary	Separated stormwater
0147083 - 4883 Bedford Ave.	24 inches	Temporary	Separated stormwater
0175108 - 4229 North 60th St.	8 inches	Temporary	CSO
0175115 - 4030 N. 56th St.	10 inches	Temporary	CSO
0198057 - 6245 Pratt St.	54 inches	Temporary	CSO
0200001 - Benson Park Dr.	21 inches	Temporary	CSO
0304022 - 6012 Wenninghoff Rd.	30 inches	Temporary	LP Interceptor
0305018 - 6112 North 89th Circle	24 inches	Temporary	LP Interceptor
0420005 - 2301 North 117th Ave.	36 inches	Temporary	BP Interceptor
0422002 - 11111 West Maple Rd.	24 inches	Temporary	BP Interceptor
0426046 - 4712 North 120th St.	24 inches	Temporary	BP Interceptor
0546541 - 1000 Missouri Ave.	18 inches	Temporary	CSO
0645024 - 5813 South 46th St.	12 inches	Temporary	CSS/WA23
0786049 - 9503 Walnut St.	54 inches	Temporary	BP Interceptor
0805001 - 1701 South 105th St.	15 inches	Temporary	BP Interceptor
0845081 - 2820 South 108th St.	12 inches	Temporary	BP Interceptor
0857025 - 11605 Farnam St.	18 inches	Temporary	BP Interceptor
0858043 - 11815 Leavenworth Rd.	12 inches	Temporary	BP Interceptor
0863008 - 11421 Cryer Circle	10 inches	Temporary	BP Interceptor
0975053 - 3460 South 144th St.	24 inches	Temporary	WP Interceptor
0977005 - 3407 South 152nd St.	30 inches	Temporary	WP Interceptor
0993095 - 2625 South 158th Plaza	36 inches	Temporary	WP Interceptor

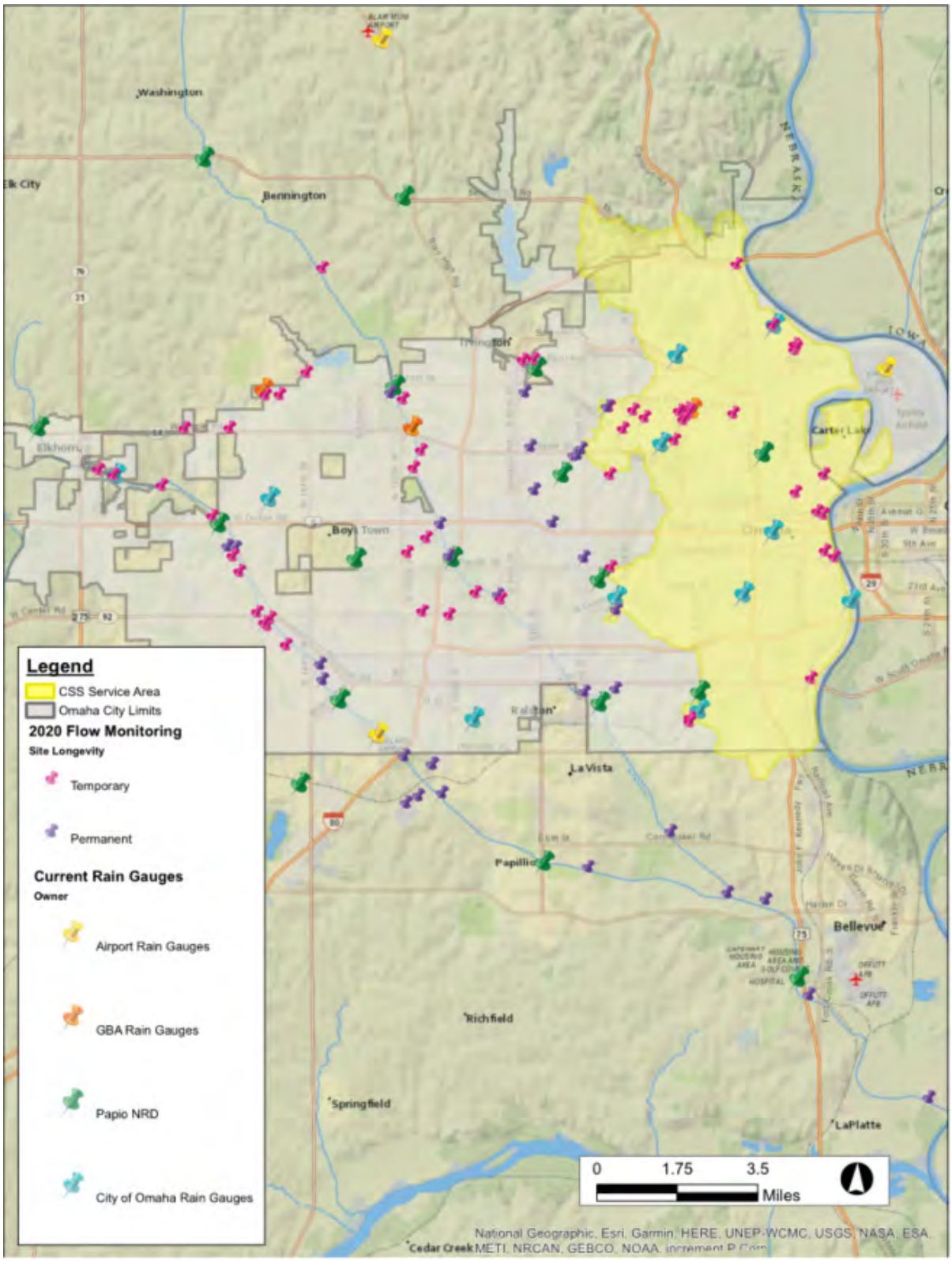
Location	Pipe Size	Longevity	Purpose
0994021 - 15701 Elm St.	15 inches	Temporary	WP Interceptor
0994023 - 2995 South 156th St.	10 inches	Temporary	WP Interceptor
1038004 - 9111 North 138th St.	18 inches	Temporary	Papio Interceptor
1054203 - 5902 North 144th St.	48 inches	Temporary	WP Interceptor
1077070 - 15162 Redman Ave.	15 inches	Temporary	BP Interceptor
1111130 - 15587 Saratoga St.	12 inches	Temporary	BP Interceptor
1139085 - 1205 Peterson Dr.	36 inches	Temporary	WP Interceptor
1140037 - 515 South 166th St.	36 inches	Temporary	WP Interceptor
1152001 - 3904 North Branch Dr.	24 inches	Temporary	WP Interceptor
1188007 - 721 North 172 Court Circle	36 inches	Temporary	WP Interceptor
1240001 - 3798 North 177th St.	8 inches	Temporary – Removed	Sanitary
1279019 - 18380 Honeysuckle Dr.	36 inches	Temporary	Elkhorn Decommissioning
1368022 - 19560 Old Lincoln Hwy.	18 inches	Temporary	Elkhorn Decommissioning
1412019 - 19954 Old Lincoln Hwy.	18 inches	Temporary	Elkhorn Decommissioning

Note: RNC is the funding program for the renovation of combined sewers

Table 3-4. CSO Surveillance Locations

CSO ID	Approximate Location	Manhole ID	Notes
CSO 103	Bridge St. and Dick Collins	0063067	Monitor weir wall
CSO 105	North 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 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 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
CSO 211	66th and Pacific	0708026	Monitor overflow pipe

Figure 3-1. Flow and Rain Monitoring Locations



Modeling Efforts

The City uses and upgrades the InfoWorks integrated catchment model (ICM) computer model (InfoWorks model) of the combined, sanitary, and storm sewer systems during the implementation phase of the CSO Program. Updates occur as additional information in the system is discovered and as the system is modified as CSO controls are implemented.

This year, recent flow monitoring data were used to evaluate the model's calibration in specific areas, with an emphasis on post-construction flow monitoring data following completion of CSO projects. The City continued to use the InfoWorks model in the optimization task to evaluate alternatives to achieve LTCP goals with lower costs. The model was used to provide flow data for input to the City's water-quality model of the Missouri River. Also, a new LTCP model was assembled to reflect information resulting from the optimization task and provide data for the 2021 LTCP Update.

In addition to the program-level work, models of smaller areas are created as part of many design efforts for individual projects under the CSO Program. A hydrologic and hydraulic modeling approach technical memorandum is developed by each project's design consultant to ensure consistency with CSO Program goals. The details added to these models are included where deemed appropriate in the City's master model.

B. Public Participation

During the Annual Report year, the CSO Program facilitated engagement with neighborhoods and the general public, both in person and virtually. This, in addition to conveying timely and accurate project information, resulted in continually building upon strong relationships and advancement toward the community acceptance of the LTCP. Examples are shown in the section below and full page examples can be found in Attachment 6 Public Information.

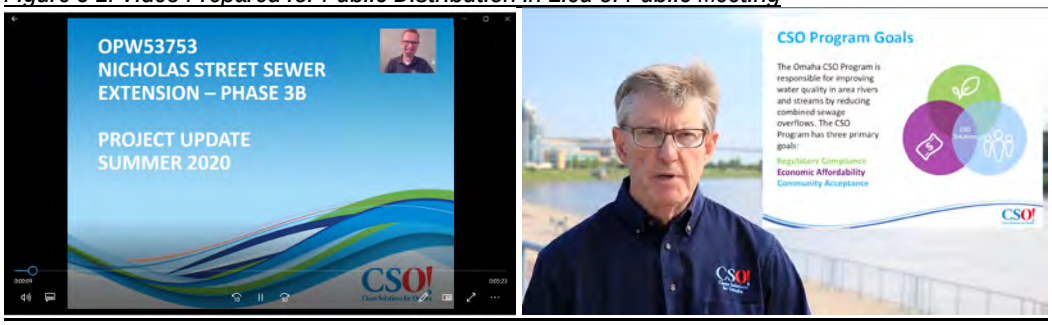
Pandemic Outreach

As a result of the COVID-19 pandemic, many aspects of public outreach were transitioned to a virtual environment to safely inform and educate neighborhood stakeholders, students, elected officials, and the community.

Informing Stakeholders

The CSO Program used email, phone calls, and video conferencing to inform neighbors about upcoming projects in their area, and attended neighborhood alliance meetings both in person (when possible and as safely as possible) and virtually (Figure 3-2). The CSO Program also executed a plan to create on-demand, narrated presentations and short videos to keep neighbors and businesses informed about projects as they proceed through design and construction.

Figure 3-2. Video Prepared for Public Distribution in Lieu of Public Meeting



Reaching Youth Online

To increase understanding of the CSO Program and its projects among the community's youth, all outreach materials such as animations, worksheets, and brochures, were consolidated on a CSO Program E-Learning page (Figure 3-3) created for the website. This made the material easy to access and download as more families looked for activities and resources online to supplement learning from home. This page was then sent to school and organization educators to integrate into their e-learning curriculum and programming.

Figure 3-3. Homepage of the E-Learning Webpage for the CSO Program

Three animated videos were created and hosted on the E-Learning page to explain green infrastructure, sewer separation, and an overview of the CSO Program for both youth and adults. The team also created a green infrastructure brochure (Attachment 6) with kid-friendly information and a worksheet, and an educational activity guide with puzzles, coloring pages, and water conservation tips (Figure 3-4). The program overview animation and downloadable brochures and guides are available in Spanish, with plans for all animations to be translated in the future.

The green infrastructure animation, paired with a CSO online quiz show game (Figure 3-5), were promoted for the virtual 2020 World O' Water event, a fun, annual event for all ages to learn about the important role our river and streams play in our lives and community. This event typically occurs in person at the Chalco Hills Recreation Area. This year's virtual option was a combination of social media Facebook posts leading visitors to a "Choose Your O! Adventure" website where Clean Solutions for Omaha! (CSO!) was one of many virtual exhibitors.

Figure 3-5. Quiz for the World O! Water Online Event

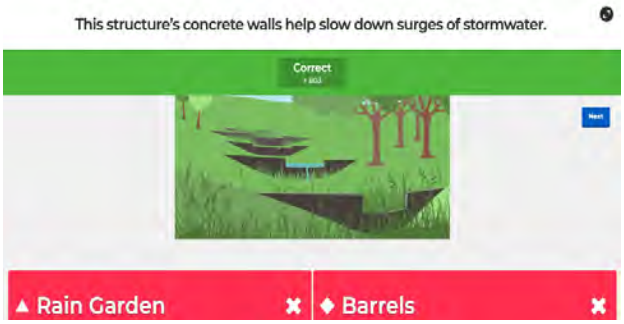
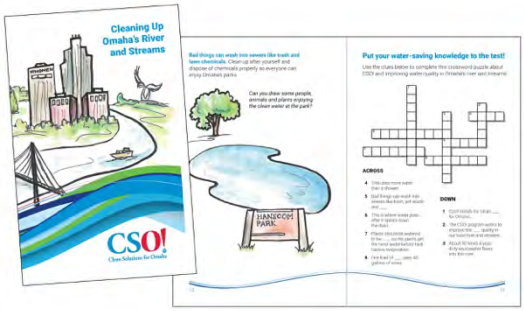


Figure 3-4. Student Activity Guide



Engaging the Community

The City of OPW Department continued an expanding social media strategy, posting CSO Program tweets to inform the community about project progress, different project types, and benefits of the program (Figure 3-6). Tweet frequency was increased from one time a month to four times each month. In the 2019-2020 Annual Report year, the total number of tweet impressions, the number of times a tweet was seen, was 11,912.

Figure 3-6. Sample Omaha Public Works Tweet that displays the CSO Program

In October and November of 2019, the 10-foot by 10-foot traveling, informational kiosk (Figure 3-7) was updated with new graphics and messaging to reflect the latest CSO Program information. The kiosk moved between libraries and public offices every 2 weeks to build awareness and inform people of all ages about CSO Program benefits. Libraries and community message boards also featured CSO posters (Figure 3-8) that were able to remain permanently in each building's common areas. In addition, a one-page activity guide (Figure 3-9) was created for younger visitors at the library to complete.

Figure 3-7. CSO Program Display in Public Libraries and Treasury Offices

Figure 3-8. CSO Program Community Poster (Example at a Local Grocery Store Board)

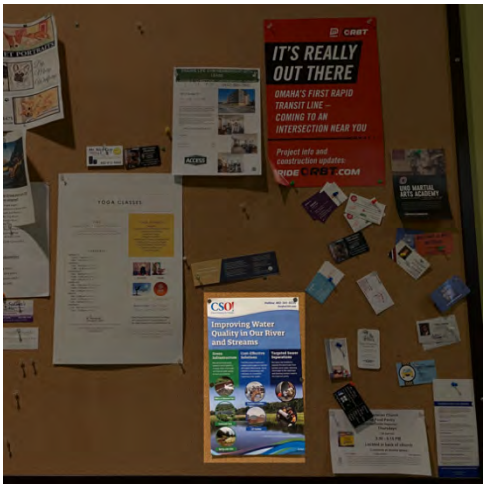
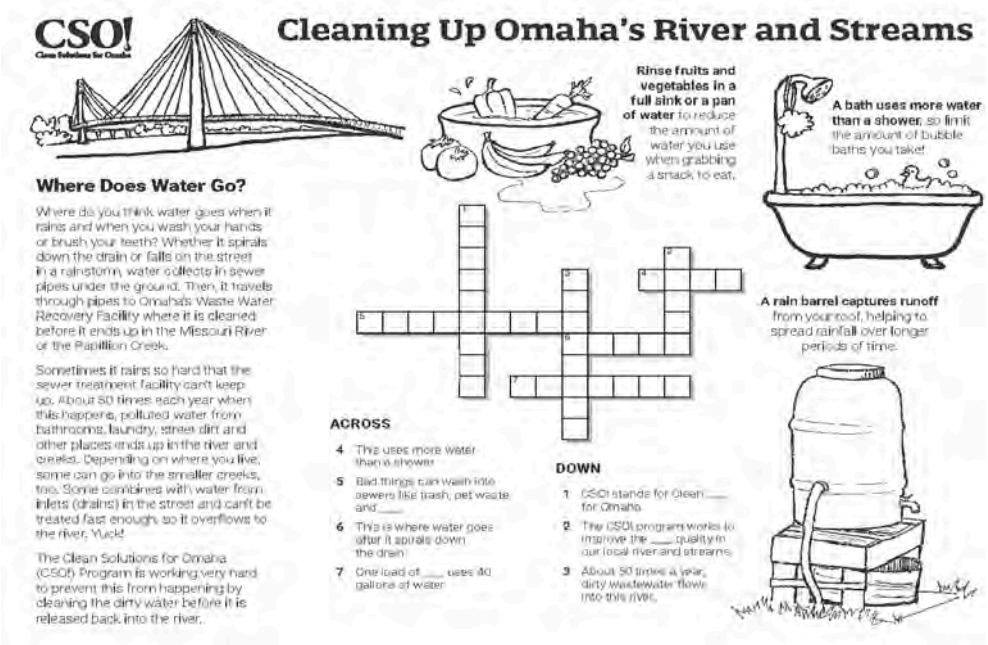


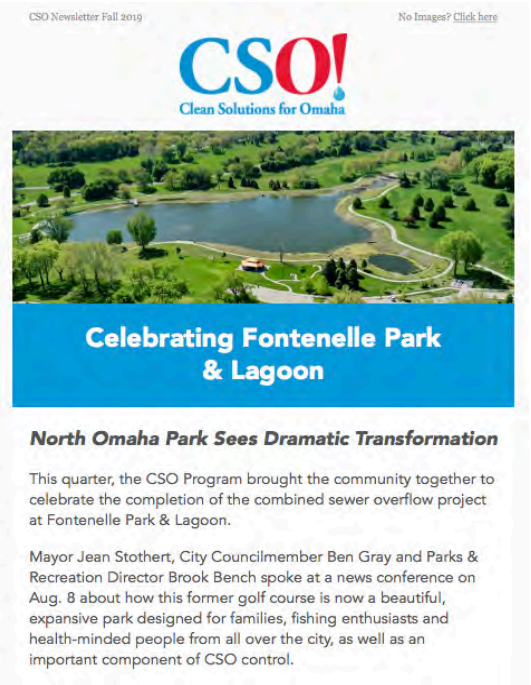
Figure 3-9. CSO Program One-Page Activity Sheet



The CSO Program continued to release monthly Snapshots and quarterly reports to inform key City officials of project progress and outreach updates via electronic distribution from Jim Theiler. They were then sent to the PMT and made available on the CSO Program's website. The Snapshot topics this year included briefings about the Nicholas Street Project's public outreach efforts, Spring Lake Park Storm Water Solutions updates, the Minne Lusa Flap Gates, new public outreach efforts during the pandemic, updates to the Public Outreach Guidance document, and the latest on ratepayer assistance.

Quarterly e-newsletters (Figure 3-10) were distributed to the community to detail project progress, feature a component of green infrastructure, give rate assistance updates, and highlight interesting program stories. This new tactic proved to be very well received, with an average open rate of 25.67 percent and a click-through rate of 23.06 percent — well outpacing expectations and standards. The list of approximately 900 subscribers is composed of every email submitted at community meetings, contractor events, public outreach engagements and those who signed up via our subscriber form.

Figure 3-10. Portion of Fall 2019 Quarterly E-Newsletter


CSO Newsletter Fall 2019

No Images? Click here

CSO!

Clean Solutions for Omaha

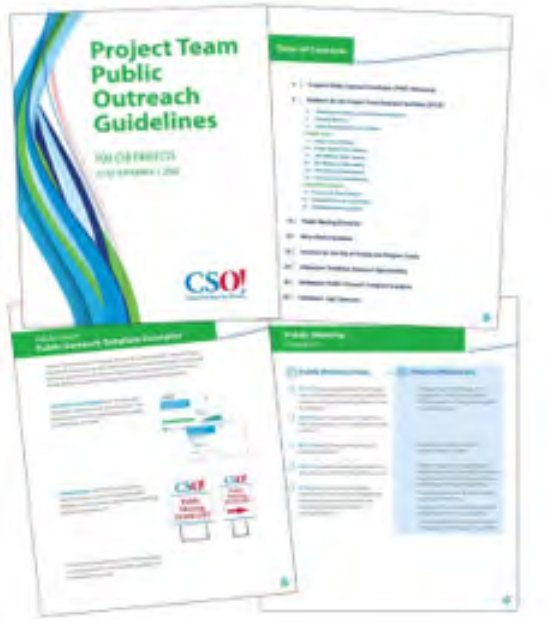
Celebrating Fontenelle Park & Lagoon

North Omaha Park Sees Dramatic Transformation

This quarter, the CSO Program brought the community together to celebrate the completion of the combined sewer overflow project at Fontenelle Park & Lagoon.

Mayor Jean Stothert, City Councilmember Ben Gray and Parks & Recreation Director Brook Bench spoke at a news conference on Aug. 8 about how this former golf course is now a beautiful, expansive park designed for families, fishing enthusiasts and health-minded people from all over the city, as well as an important component of CSO control.

Figure 3-11. Project Team Public Outreach Guidelines Document



Expanding Outreach

The CSO Program updated its Public Outreach Guidance document (Figure 3-11) to align with evolving best practices and to ensure consistent, appropriate outreach across all projects. The document thoroughly walks through the process of establishing a fully tailored plan to engage the public at each step of a project and includes new suggestions for safe, virtual engagement.

Efforts to engage the news media at a national level was successful. "Storm Water Solutions Magazine" featured the CSO Spring Lake Park project (Figure 3-12) as an excellent example of stormwater management through the revitalization of one of Omaha's historic parks in its February 2020 issue.

Figure 3-12. February Cover of Storm Water Solutions Magazine

Economic Equity and Inclusion

The CSO Program is committed to helping create a more diverse future workforce in engineering, construction, and related fields by engaging students with special outreach events and learning opportunities.

Omaha North High School: Fontenelle Lagoon Tour

Prior to the pandemic, a group of 50 engineering and biology students from Omaha North High School visited Fontenelle Lagoon to learn about the stormwater detention basin. Students participated in a series of hands-on activities and interactive conversations, learning about the lagoon's ecosystem, touring the reconstructed lagoon, completing engineering worksheets, and testing their knowledge by competing in a CSO trivia game (Figures 3-13 and 3-14).

Figure 3-13. Omaha North High students in a conversation about engineering.

Figure 3-14. Omaha North High students on a walking tour of Fontenelle Lagoon.

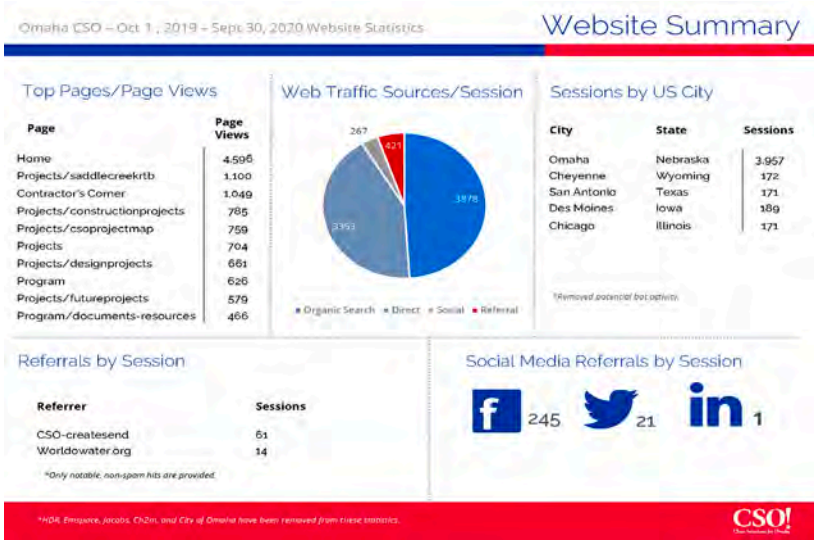
Graduate Student Project

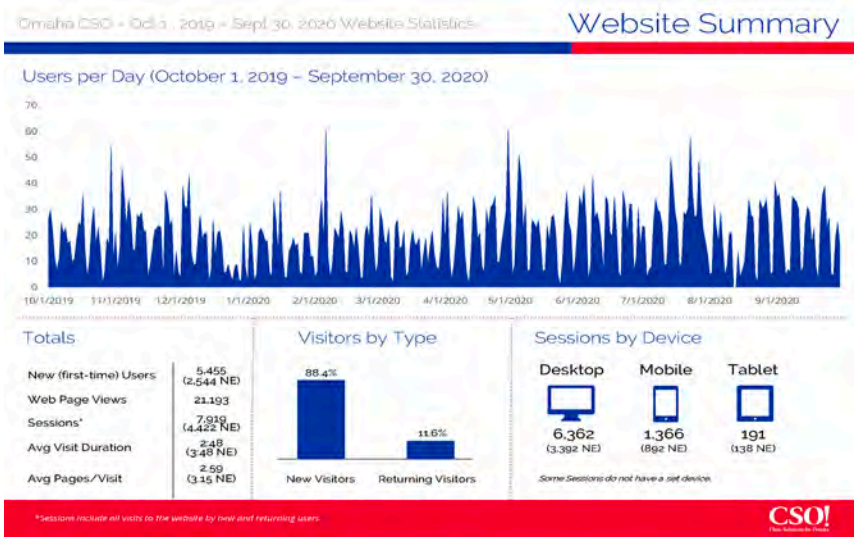
A University of Nebraska Lincoln student, pursuing a Master's of Applied Science with a specialization in Community Development, researched the CSO Program, toured project sites, and wrote a major paper for her course in Community Natural Resources Management. The course entails place-based research that involves theoretical frameworks and methodological investigations. The PMT assisted in conducting in-depth interviews and guided tours at two green infrastructure project locations.

CSO Program Website

The CSO Program website (www.omahacso.com) is a major source of information to the general public on the program. Figure 3-15 shows usage statistics from October 1, 2019, to September 30, 2020. During the Annual Report year, the website had 5,455 new (first-time) users.

Figure 3-15. CSO Program Website Statistics





C. Consideration of Sensitive Areas

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. An update of the known sensitive areas was included in the 2014 LTCP Update. The CSO Permit states the City should provide any changes to the status of previously identified sensitive areas in the Annual Report. No changes were made this year to the sensitive areas during the Annual Report period. As part of the 2021 LTCP Update development, the City is performing a re-evaluation of the sensitivity areas. Updates, if any, will be included in the LTCP Update to be submitted in March 2021.

D. Evaluation of Alternatives

The process the City originally undertook to identify, screen, evaluate, and select CSO control technologies and alternatives for the Missouri River and the Papillion Creek Watersheds is described in the 2009 LTCP and the 2014 LTCP Update (City 2009, 2014). That process resulted in a group of selected CSO controls that included two RTBs, four tanks, upgrades to the MRWRRF, replacement of force mains, a deep tunnel for conveyance and equalization, green infrastructure, and sewer separation projects. All selected CSO controls were anticipated to satisfy the presumption approach of EPA's CSO Control Policy while not precluding adherence to water-quality standards.

During the last year, the City has begun the development of the 2021 LTCP Update. A large portion of the development of the LTCP has centered on an optimization evaluation of the Missouri River Watershed and an evaluation of CSO 204 area in the Cole Creek Sub-Watershed in the Papillion Creek Watershed. These tasks are summarized in this report in the following text.

Optimization Evaluation

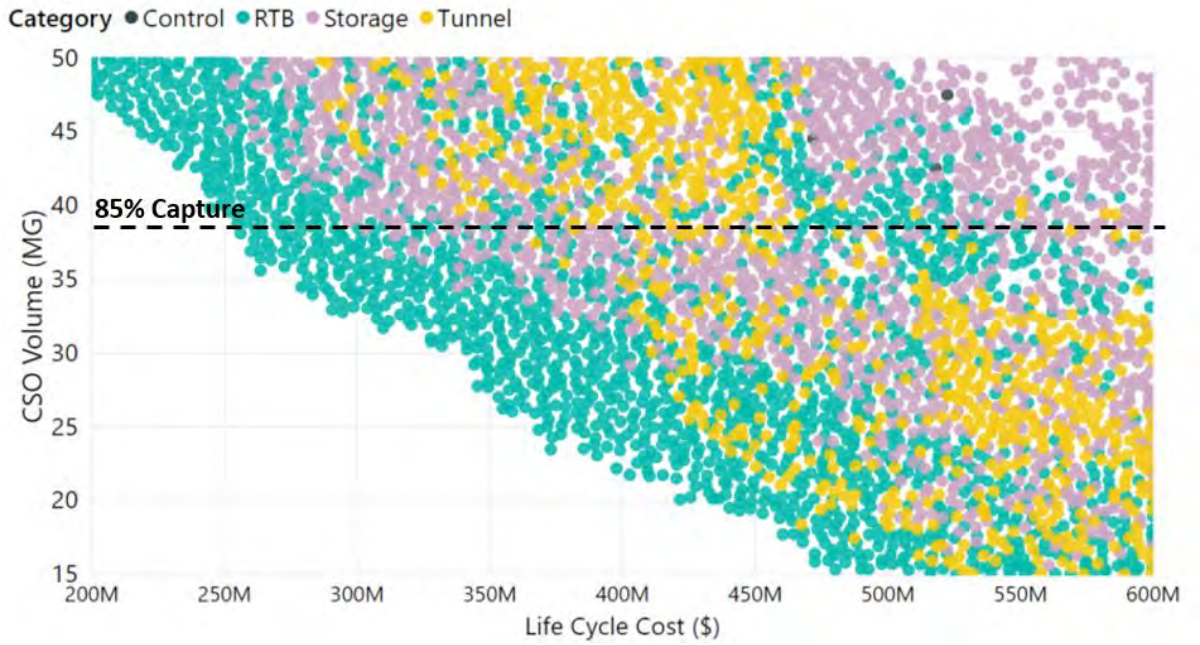
The 2014 LTCP Update calls for the construction of a deep tunnel system (DTS) to provide the final volume capture in the Missouri River Watershed that is required to achieve a minimum of 85 percent volume capture in the representative year as stated in the City's amended Consent Order. The basic components of the DTS include collector sewers, drop shafts, a deep tunnel, a deep tunnel lift station, and a RTB for high-rate treatment. An Optimization Evaluation by the City and PMT was conducted from 2018 to 2020 to determine if a more cost-effective alternative than the DTS could be identified as the CSO Program as it has evolved. Potential outcomes of this evaluation ranged from maintaining the current DTS concept "as-is", to modifying the DTS concept, to replacing this concept with a no-tunnel combination of other improvements, or some combination thereof. Due to the complexity and significance of the Optimization Evaluation, it took over 2 years to complete.

The Optimization Evaluation employed the CSO Program's InfoWorks model of the collection system, along with optimization software called Optimizer. This software was selected for use because it is the current industry standard. Numerous alternative components were identified by the City and PMT, consisting of various CSO control technologies, such as sewer separation, conveyance, green infrastructure, lift stations, storage tanks, real-time controls, in-line storage, and RTBs, in addition to various tunnel configurations. These alternative components were incorporated into the InfoWorks model, which establishes how the CSS would perform with the added components. Optimizer orchestrates the InfoWorks model by having it run thousands of combinations of these components to see how they perform and what they would cost in terms of both capital and lifecycle. This process is not done at random; the Optimizer actually "learns" which component combinations have better performance and lower cost.

More than 100,000 solutions (combinations of alternative components that achieve various levels of volume capture) were evaluated by Optimizer/InfoWorks. The speed at which each evaluation was performed was greatly increased by developing a simplified InfoWorks model and identifying a precipitation "proxy period" that provides good statistical correlation with the entire representative year of precipitation. Detailed cost curves were also developed for use by Optimizer. Using tools developed by the Optimization team, solutions were

plotted on a performance graph of remaining CSO volume versus cost, which helps to facilitate understanding of the tradeoffs between benefit (CSO reduction) and cost (see an example graph in Figure 3-16).

Figure 3-16: Example Performance Graph of Results from an Optimization



From the thousands of solutions that were developed by Optimizer/InfoWorks, 26 “Solutions of Interest” were selected based on cost and volume capture, and inclusion of a range of technologies and of specific attributes of those solutions, such as reuse of existing infrastructure or volume capture at certain CSO outfalls. The City and PMT then evaluated the Solutions of Interest to arrive at five high performing alternatives (HPAs). Of the five HPAs, one was a tunnel-based solution and four were non-tunnel solutions (NTS). The tunnel-based solution was based on the collector tunnel system (CTS), which includes a shorter, larger-diameter tunnel than what is part of the DTS. The non-tunnel solutions included various combinations of storage tanks, RTBs, and active controls.

The five HPAs were vetted by evaluating them with the full InfoWorks model and representative year precipitation instead of the proxy period and simplified model. This resulted in some refinements to facility sizes in the HPAs, such as RTB sizes and tunnel diameter. In addition, the HPAs were evaluated for performance under high river conditions in the Missouri River to see how quickly the sewer system could restore normal operation after a significant storm event. This evaluation resulted in the decision to include an RTB with the CTS alternative rather than assuming that the tunnel would be dewatered to the MRWRRF. Considerations of other City preferences resulted in a narrowing of five HPAs to two, one tunnel-based and one non-tunnel-based. The two HPAs are briefly summarized as follows:

- NTS, consisting of a 185-mgd RTB at the Grace/North Interceptor outfall, conveyance of flow from the Burt-Izard Basin to the Grace RTB, a 5.5-million gallon storage tank at the Leavenworth CSO outfall, and active controls to maximize flow conveyance. This HPA was evaluated in two configurations where flow to the Grace

RTB would either be non-tunnel solution - pumped in (NTS-PI) or non-tunnel solution - pumped out (NTS-PO).

- CTS, consisting of a 17-foot-diameter, 9,800-foot-long collector tunnel; three drop shafts; a 50-mgd RTB at the southern end of the tunnel; active controls to maximize flow conveyance; and in-line storage along the North Interceptor. This HPA was also evaluated in a second configuration with only two drop shafts by using a joint drop shaft located at the Grace/North Interceptor outfall would also serve the Burt-Izard Basin, called the collector tunnel system - joint drop shaft (CTS-JDS). The alignment was based on the information gathered as part of the DTS alignment study.

The two HPAs, each with two configurations, were further evaluated in detail by verifying concepts and developing Class 4 construction cost estimates[5] (Conceptual Cost estimate with a 30 percent to 50 percent uncertainty. The cost results of this evaluation are summarized in Figure 3-17, including the following cost components:

- Base Construction Cost: the cost that would be anticipated at bid time
- Indirect Cost: based on percentages of construction cost for Engineering and Construction Management, plus costs for property/easement acquisition and City-funded utilities work
- Capital Cost: Base Construction plus Indirect Costs
- Contingency: based on percentages of construction cost for risk and change orders.

Figure 3-17. Cost Summary for HPAs

HPA (July 2020 Costs)

	CTS	CTS-JDS	NTS-PO	NTS-PI
Base Construction Cost	**$290,859,000**	**$299,923,000**	**$249,142,000**	**$237,109,000**
Indirect Construction Cost	**$140,188,184**	**$146,596,060**	**$123,677,640**	**$118,623,780**
Capital Cost	**$431,047,000**	**$446,519,000**	**$372,820,000**	**$355,733,000**
Contingency (Risk + Change Order, 25%)	*$ 72,716,000*	*$ 74,983,000*	*$ 62,288,000*	*$ 59,279,000*
Estimated Project Costs	**$503,763,000**	**$521,502,000**	**$435,108,000**	**$415,012,000**

Subject to further confirmation by elected officials, the City has identified NTS-PI as the preferred alternative. The current intent is for the City to not make a major investment into the Grace Street RTB until experience is gained and after an "interim period" of approximately 5 years during which time ongoing CSO projects will be completed and real-time controls and other strategies will be implemented to maximize the performance of the existing collection and treatment system. Also, during the interim period, operating experience will be gained with the MRWRRF CSO 102 disinfection/dchlorination sytstem and the Saddle Creek RTB, which will be completed in 2023. Based on that experience, the

[5] Class 4 construction estimates are generally prepared based on limited information and are typically used for project screening, determination of feasibility, concept evaluation, and preliminary budget approval. Typical accuracy ranges for Class 4 estimates are -15 percent to -30 percent on the low side, and +20 percent to +50 percent on the high side,

NTS-PI facilities will be implemented, or a shift will be made to another alternative, such as CTS, that would achieve the same level of control.

As noted in previous Annual Reports, the City contracted with a specialty consultant to help identify opportunities to use technology, such as sensors and real-time controls, to develop possible strategies for enhanced operation of the collection system in the Missouri River Watershed. The inclusion of this technology is intended to maximize flows to the WRRFs and use of the system through improved operation of the existing and future controls in the collection system. These strategies will be included to an appropriate extent as part of the CSO Program.

CSO 204 Evaluation

The original control for the CSO 204 basin consisted of five phases and a storage tank. However, challenges arose during the design for the Cole Creek 204 Phase 2 project. Escalating construction cost estimates and assessment of construction risks associated with the construction of the deep sewers and use of trenchless technologies in a confined residential area construction corridor resulted in the CSO 204 Phase 2 project being put on hold. An evaluation suggested that a more cost-effective solution would be to select another alignment that would avoid the deep sewers but would require purchasing and demolishing approximately a dozen homes adjacent to the existing combined sewer.

As a preparation to the LTCP Update, the City and PMT performed an evaluation of various approaches in hopes of finding an alternative that would neither require deep excavations nor the purchase and demolition of homes. It is currently anticipated that construction of a storm sewer that diverts stormwater flows off the combined system may be the best approach. This evaluation will be discussed in the 2021 LTCP Update.

As required in the CSO permit and the Consent Order, these changes to the controls are required to be submitted to NDEE for review and approval by March 31, 2021.

E. Cost and Performance Considerations

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 LTCP Update).

The CSO Permit requires that the City submit a financial report to the NDEE by March 30, 2021. The report must set forth a strategy to obtain sufficient revenue to fund the CSO program. Sufficient funding means that it must be through at least the year 2024 for the specific projects in the Implementation Schedule, Section 7 of the LTCP and LTCP Update.

The City adopted a new rate ordinance on August 21, 2018. The new ordinance sets sewer use fees for 2019 through 2023, which are based on a rate study performed by the City's rate consultant, and considers the Financial Capabilities Assessment that evaluated the burden of the sewer rate increases on the Omaha community and various sectors of the community.

- The next rate ordinance, to be finalized in 2023, will reflect any changes that are made in the LTCP Update, which must be submitted to NDEE in March of 2021. It

will also be developed to address other significant City infrastructure needs at the MRWRRF and PCWRRF, and in the collection system.

F. Operational Plan

The CSO NPDES Permit requires the City to update the *Monitoring Program and CSO Wet Weather Operations Plan* as CSO controls are constructed and sewers are separated.

A submittal was provided on November 13, 2015, to NDEE. The plan included a summary of the anticipated operation of the MRWRRF once the construction of the MRWRRF Improvement project is complete. The modifications to the MRWRRF were substantially complete in August 2019, and were operationally complete in December 2019. The Disinfection and Dechlorination Operations and Maintenance Manual was submitted to NDEE in June 2020 as part of the State Revolving Fund (SRF) loan requirements. The City will have until January 1, 2023[6], to refine the operation of the treatment system before having to meet the effluent limits in the permit.

The City began operation of the new facilities on September 29, 2019. Since then, the facilities have treated 9 total storms during disinfection season. Additionally, several events have been fully captured in storage and the treatment basin without discharge during that time period.

As noted in the previous Annual Report, the SOIA Lift Station has been in operation since 2014; however, issues have continued to persist with operation of the pumps, as they continue to have problems with the seals requiring frequent replacement. The City continues to work with the pump manufacturer to resolve the cause of the seal failures. In addition, after 5 years of operation, the City has completed a study of the facility to improve operations and reduce maintenance requirements. This study included an evaluation of the wet well and pumping operations, grit management, grease management, odor control systems, and the gates and valves. The City is now evaluating the next steps to address the findings.

G. Maximizing Treatment at the Existing POTW Treatment Facilities

An evaluation of the feasibility of expanding wet-weather treatment at both the MRWRRF and the PCWRRF is included in Section 3 of the 2009 LTCP and the 2014 LTCP Update. The MRWRRF CSO 102 disinfection facilities were placed into operation in December 2019. The system has the capacity to disinfect , a peak hour flow of up to 101 mgd prior to discharge through CSO 102. The project was originally anticipated to be put into operation in early 2019 before the recreation season of May 1 to September 30. However, during the 2019 flood, the Chlorine Contact Basin and construction area were inundated with flood waters. As a result, the NDEE modified the interim limits to be in place for another recreation season.

Major projects included in the LTCP and being implemented during the next few years include construction of the Burt-Izard, Blake Street, and Riverview Lift Stations, and

[6] The date was changed in a permit modification dated November 1, 2019.

design/construction of the Monroe Street Lift Station. These all contribute to the City's ability to maximize treatment of combined wastewater at the MRWRRF.

The CSO Permit requires the City to continue to evaluate opportunities to maximize treatment at the WRRFs as part of the adaptive management strategy for implementation of the LTCP and provide a summary of any new approaches identified to maximize treatment of combined wastewater at the WRRFs in this Annual Report. No new approaches have been identified since the last Annual Report.

Projects related to current strategy are discussed in more detail in the Annual Project Progress Reports (APPRs) in Attachment 2. Currently, as part of the City's WRRF Master Plan, an evaluation of the wet-weather treatment capacity of the PCWRRF is underway. Section VIII.G., Other Information includes a summary of this project.

H. Implementation Schedule

Section 7 of the 2009 LTCP outlined an implementation schedule that complied with the October 1, 2024, deadline for completing the CSO projects. The 2011 Missouri River flood constituted a force majeure event that impeded the City's design and construction efforts and impacted the schedules of several projects. As a result of the 2011 Missouri River flood, a modified deadline of October 1, 2027, was put into effect. On January 17, 2018, NDEE approved a 10-year extension to the CSO Consent Order, resulting in a final completion date of October 1, 2037.

On April 4, 2019, the City notified the NDEE of a force majeure event because of the historic flooding that occurred on the Missouri River and other local streams. On June 3, 2019, the City requested a modification to the submission date of the LTCP Update from March 1, 2020, to March 31, 2021. The letter also requested modifications to the expiration dates for the City's CSO Permit and the permits for the MRWRRF and PCWRRF to correspond with the change in the LTCP date.

- The City was granted its request for the extension of the LTCP Update, the modifications in the milestone dates, and submittal as documented in the CSO permit modification issued November 1, 2019. Key dates are summarized here: In Part II. C Final E. coli Requirements for CSO Outfall 102, modified to January 1, 2023 (because the 2019 flooding meant the facility lost a recreation season to operate)
- In Part V. Long Term Control Plan, D. Evaluation of Alternatives, modified to March 31,2021.
- In Part VI.E. Schedule for Phase 4 Major Projects of the LTCP milestone for "Begin Final Design" of one project modified to December 31, 2023.
- In Part VI.J Schedule for Phase 6 Sewer Separation, the "Commence bidding of one project" modified to December 31, 2021

Section IV, Compliance Schedule, provides a status update on the implementation of the CSO Major and Sewer Separation Phase projects. Attachment 2 contains an APPR for each of the active projects under a compliance schedule.

System Reliability Projects

The 2009 LTCP identified four projects (Burt-Izard Lift Station, Bridge Street Lift Station, Riverview Lift Station, and Monroe Street Lift Station) 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 three active projects is listed in the following text (modifications to the Bridge Street Lift Station have not yet begun). The Transfer Lift Pump Replacement Project, which is not a LTCP project, was undertaken to improve the reliability of the lift station pumps, and its status is included following.

Burt-Izard Lift Station – The project includes lift station improvements, including replacing the inlet isolation gates and actuators; two bar screens; three wastewater pumps, piping, and valves; providing a new electrical room; and removing concrete in the existing grit basins to maximize the available capacity. These improvements will allow for flows up to 50 mgd to be conveyed to the MRWRRF during wet-weather events. Construction Notice to Proceed was issued in August 2018. The inlet isolation gates have been replaced, grit basins capacity has been increased, bypass pumping operations are currently in operation, existing pumps and electrical systems have been removed, and new pumps and electrical systems are currently being installed. Construction is anticipated to be completed in April 2021.

Riverview Lift Station: The project includes two construction contracts. The first construction contract includes the Grover Diversion Structure, a 42-inch sewer along Gibson Road that will convey flows from the Grover Sewer to the Riverview Sewer, and the Riverview Diversion Structure, and a 7-mgd lift station. The second construction contract includes a gravity sewer extending south from the Spring Street Lift Station to a new lift station near Blake Street and Hascall Street (Blake Street Lift Station). A force main will extend 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.

The two construction contracts, when completed, will maximize flow to the MRWRRF during wet-weather events. The Riverview Lift Station construction contract was awarded to the contractor on November 19, 2019. Construction Notice to Proceed was issued on March 2, 2020, and will extend for 30 months to September 2022. The Blake Street Lift Station construction contract is anticipated to bid in late 2020 or early 2021 and extend for a duration of approximately 12 months.

Monroe Lift Station: 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 to the MRWRRF. Conceptual design was completed in December 2018, and preliminary design was completed in March 2020. The project has proceeded into final design and is anticipated to bid in 2021.

MRWRRF Transfer Lift Station: The 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. Design of the MRWRRF Transfer Lift Station Pump Replacement Project commenced in late 2018 and extended through 2019. The project was advertised for bids on September 11, 2019, and bids were opened on October 23, 2019.

The project was awarded to the contractor on November 28, 2019, Notice to Proceed was issued on March 16, 2020, and construction will extend for a duration of approximately 18 months.

I. Post-Construction Compliance Monitoring Program

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 received by NDEE on March 29, 2010.

As required by the CSO Permit, in-stream monitoring data are provided in Section VI, In-Stream Monitoring Data, and Attachment 5. No modifications were made to the Monitoring Plan during the Annual Report period.

As part of the 2021 LTCP Update, a modification to the Post-construction Monitoring Plan will be submitted.

For this Annual Report period, CSOs 103 and 208 are being monitored for post-construction verification. The City continues to monitor these outfalls for the occurrence of overflow. During the reporting year, the City installed surveillance cameras to observe the outfalls in addition to level sensors. During other City capital projects and studies, several pipeline and manhole investigations have been carried out. These data will integrate with the sewer risk model for potential rehabilitation projects. The City will evaluate if I/I remaining is at an excessive rate and warrants rehabilitation to meet the goal of CSO closure.

IV. Compliance Schedule

This section provides information about the LTCP implementation as required by the City's CSO Permit and the Complaint and Compliance Order by Consent (or Consent Order), dated August 8, 2007, NDEQ Case No. 2710 issued to the City (amended May 30, 2012; January 17, 2018; and October 16, 2019) and the status of individual or component projects. The January 17, 2018, amendment to the Consent Order changed the completion date from October 1, 2027, to October 1, 2037. The October 2019 amendment to the Consent Order changed the LTCP Update submittal date from March 1, 2020, to March 31, 2021.

The City, through quarterly progress meetings and correspondence, has communicated any potential changes to the schedule to NDEE. The CSO Permit sets compliance schedules for the permit cycle based on the 2014 LTCP Update schedule and subsequent schedule approvals with NDEE.

During the Annual Report year, the City worked with NDEE to obtain a modification to the CSO Permit, which involved modifying several milestones. The modification became effective on November 1, 2019.

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. The CSO Permit states: "…the City of Omaha shall implement the compliance schedule [as listed in the Permit] for construction projects set forth in the LTCP. This schedule may be modified in accordance with NDEQ Title 119 and written notice from the NDEQ." The City of Omaha is required to include a yearly summary of construction activities, actions, and other measures applicable to this compliance schedule in the Annual Report.

These 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 shall apply to compliance schedule dates. The italicized wording has been added to provide additional clarification:

- **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. This compliance action only applies to sewer separation projects.
- **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 –** When a major project or sewer separation project is substantially complete. For sewer separation and major facility projects, substantial completion is issued to the construction contractor. For major projects "Completion of Construction" is when the project is considered "Operationally Complete" as defined in the following bullet point.

- **Operationally Complete –** When a Major CSO project is substantially complete, is ready for its intended use, and has been made ready to operate by the City. *For sewer separation projects in general, the "complete construction" and "operationally complete" date are the same date.*

Consent Order Directives

- The Consent Order also provided a requirement for the Annual Report, which states that the report shall contain the following:

o 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.

o 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.

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

These requirements are achieved through the submittal of the APPRs in Attachment 2. In addition, planned or expected deviations are tracked through an internal CSO Program process to document variations in schedule, scope, or budget. The Change Notification Request (CNR) process identifies the reason or justification for a schedule change, potential impacts to related projects or LTCP Phases, and possible mitigation efforts. CNRs for the reporting year are in Attachment 3.

B. Major CSO Control Projects

Implementation of the Major CSO Control Projects continued in the reporting year. Major CSO Control Projects in Phase 1, 2, and 4 are listed in Tables 4-1, 4-2, and 4-3. These table headers list the LTCP milestone dates facing the projects and which project, if any, met the initial milestone date. For major projects, the three milestone dates are commence final design, commence construction, and complete construction. The tables also cite the project status during the reporting period, relevant dates of milestone achieved, and brief notes on status reasoning and references for further detail on compliance with the 2014 LTCP Update schedule (i.e., APPRs and CNRs). All completed component projects will continue to be included in the Annual Report until the particular phase is achieved.

Phase 4 of the Major CSO Control Projects had a milestone date of December 31, 2019. A permit modification was requested, and the permit was modified as of November 1, 2019, to change the requirement to start final design on one project by December 31, 2019, to December 31, 2023. The projects in Table 4-3 will be modified as part of the LTCP Update due in 2021.

Table 4-4 lists system reliability projects that have had activity but do not have a specific schedule for construction under the LTCP.

Table 4-1. Phase 1 Major CSO Control Project Status and Compliance

Major Project Phase 1: Missouri River Water Resource Recovery Facility Improvements LTCP Milestones[a]: Commence final design of one project by December 31, 2009 (Met 9/1/2009) Commence construction of one project by December 31, 2010 (Met 6/8/2010) *CSO Permit Requirement and LTCP Milestone*: All projects shall complete construction (operationally complete) by December 31, 2019 (Met 12/12/2019)					
ID	**Project Name**	**OPW Number**	**Status**	**LTCP Milestone Compliance**	**Notes**
1D	MRWRRF Improvements	51875 52200 52570 52494 52648	Completed Construction	ACHIEVED 12/12/2019	

[a] LTCP milestones are noted in Chapter 5 of the 2014 LTCP Update

ID = identification

Table 4-2. Phase 2 Major CSO Control Project Status and Compliance

Major Projects Phase 2 LTCP Milestone[a]: Commence final design of one project by December 31, 2010 (Met September 30. 2010) Commence construction of one project by December 31, 2011 (Met September 29, 2011) *CSO Permit Requirement and LTCP Milestone*: Project shall complete construction (operationally complete) by December 31, 2023[b]					
ID	**Project Name**	**OPW Number**	**Status**	**LTCP Milestone Compliance[a]**	**Notes**
2C	Saddle Creek CSO 205 – 64th and Dupont Retention Basin	52049	Under Construction (In Progress)	On Schedule	Expected to meet milestone

[a] LTCP milestone dates are noted in Chapter 5 of the 2014 LTCP Update.

[b] Permit modification issued June 12, 2017, changed the complete construction milestone date from December 31, 2020 to December 31, 2023.

Table 4-3. Phase 4 Major CSO Project Status and Compliance

Major Projects Phase 4

CSO Permit Requirement and LTCP Milestone: Commence final design on one project on or before December 31, 2023[a]

LTCP Milestone[b]:

Commence construction of one project by December 31, 2023

All projects complete construction (operationally complete) by September 30, 2027

ID	Project Name	OPW Number	Status	LTCP Milestone Compliance	Notes
4G	LV Jones Street to Leavenworth Diversion	N/A	Not Started		Project schedule will be modified in 2021 LTCP Update
4B	Deep Tunnel Lift Station and Force Main	N/A	Not Started		Project will be removed in 2021 LTCP Update
4A	CSO Deep Tunnel and Drop Shafts	N/A	Not Started		Project will be removed in 2021 LTCP Update
4H	Deep Tunnel Grit Basin Facilities	N/A	Not Started		Project will be removed in 2021 LTCP Update
4C	Conveyance to Deep Tunnel Drop Shafts	N/A	Future (2022)		Project will be removed in 2021 LTCP Update
4I	CSO 119 Monroe Basin Storage Facility	N/A	Future (2021)		Project will be removed in 2021 LTCP Update
4D	MRWRRF Retention Treatment Basin	N/A	Future (2023)		Project will be removed in 2021 LTCP Update
4K	CSO 118 MRWRRF Storage Facility	N/A	Future (2023)		Project will be removed in 2021 LTCP Update
4E	CSO 204 Storage Facility (If needed)	N/A	Future (2025)		Project will be removed in 2021 LTCP Update

[a] Permit modification issued November 1, 2019, changed the commence final design milestone date from December 31, 2019 to December 31, 2023.

[b] LTCP milestone dates are noted in Chapter 5 of the 2014 LTCP Update. Projects are being evaluated and either removed or modified in the 2021 LTCP Update.

N/A = not applicable

Table 4-4. System Reliability Projects

System Reliability Projects *CSO Permit Requirement and LTCP Milestone*[a]: NONE				
Project Name	**OPW Number**	**Status**	**LTCP Milestone Compliance**	**Notes**
Burt-Izard Lift Station Improvements	52472	Under Construction (In Progress)	N/A	
Riverview Lift Station Replacement	52402 53270[b]	Under Construction (In Progress)	N/A	
Monroe Street Lift Station Improvements	53082	Final Design (In Progress)	N/A	
Bridge Street Lift Station	N/A	Future project	N/A	

[a] System reliability projects do not have a specific schedule for construction under the LTCP.
[b] Includes the Blake Street Lift Station and associated gravity sewer/force main construction contract.

C. Sewer Separation Projects

Implementation of sewer separation projects continued in the reporting year. Sewer Separation Phases 1, 2, and 3 are complete and will not be further reported here. Sewer Separation Phases 4 through 6 are listed in Tables 4-5 through 4-7. These table headers list the LTCP milestone dates facing the projects and which project, if any, met the initial milestone date. For sewer separation projects, the two milestone dates are commence bidding and complete construction. The tables also cite the project status during the reporting period, relevant dates of milestone achieved, and brief notes on status reasoning and references for further detail on compliance with the 2014 LTCP Update schedule (i.e., APPRs and CNRs). All completed projects will continue to be included in the Annual Report until the particular phase is completely achieved.

Sewer separation projects listed in LTCP Update under Phase 7 are not included in the CSO Permit, and no activities occurred on these projects during the Annual Report year.

Table 4-5. Phase 4 Sewer Separation Projects Status and Schedule Compliance

Sewer Separation Phase 4 *CSO Permit Requirement and LTCP Milestone[a]:* Commence bidding on one project on or before December 31, 2016 (Lake James to Fontenelle Park Project met this date on 10/5/2016) LTCP Milestone: Complete construction of all projects by June 30, 2022					
ID	**Project Name**	**OPW Number**	**Status**	**LTCP Milestone Compliance**	**Notes**
4B	Burt-Izard (CSO 108-3, Nicholas Street, Phase 3)	52721	Under Construction (In Progress)		Delayed, will not meet milestone date and will be addressed in the 2021 LTCP Update. See CNR.
4G	Minne Lusa (CSO 105-15, Forest Lawn Separation)	52470	Bidding (On Hold)		On Hold, will not meet milestone date. See APPR.
4M	Lake James to Fontenelle Park	52658/ 52659	Completed Construction	ACHIEVED 12/6/2019	
4N	South Interceptor (CSO 117-1, Missouri Ave. Phase 2)	51997[c]	Under Construction (In Progress)		Delayed but will meet milestone date. See CNR.
4P	Papillion Creek South (CSOs 207/208, 42nd and Q)	52257	Completed Construction	ACHIEVED 7/16/2019	
e4Q	Cole Creek (CSO 204, Phase 2)	52814	Final Design (On Hold)		On Hold, will not meet milestone date and will be addressed in the 2021 LTCP Update. See CNR.
4R	Burt-Izard (CSO 108-3, Nicolas and Webster Separation, Phase 2)	N/A	Not Started		Delayed, currently evaluating need for the project. See CNR.

[a] LTCP milestone date is the name and associated date of the next milestone as noted in Chapter 5 of the 2014 LTCP Update.

Table 4-6. Phase 5 Sewer Separation Projects Status and Schedule Compliance

Sewer Separation Phase 5 *CSO Permit Requirement and LTCP Milestone*[a]: Commence bidding on one of the following projects on or before December 31, 2019 (Cole Creek 202, Phase 1 Project met this date on 11/28/2018) LTCP Milestone[a]: Complete construction of all projects on or before December 31, 2023					
ID	**Project Name**	**OPW Number**	**Status**	**LTCP Milestone Compliance**	**Notes**
5A	Papillion Creek North 210-2 Inflow Reduction Project	N/A	Future (2025)		Delayed, currently evaluating the need for the project and will be addressed in the 2021 LTCP Update. See CNR.
5B	Cole Creek 204, Phase 3	53206	Bidding (In Progress)		On Schedule. Design was completed and advertised for bid July 8, 2020. NTP expected spring of 2021. See CNR.
5C	Cole Creek 203-1 Sewer Separation	53059	Bidding (In Progress)		On Schedule. Design was completed and advertised for bid 9/9/2020. NTP expected summer of 2021. See CNR.
5D	Cole Creek 202, Phase 1	53059	Completed Construction	ACHIEVED 1/14/2020	
5E	Cole Creek 202, Phase 2	53059	Final Design (In Progress)		Delayed. See CNR.
5F	Papillion Creek North 212-1, Separation	51685	Not Started		Evaluating the need for the project and will be addressed in the 2021 LTCP Update.
5G	Papillion Creek North 210-1, Separation	53320	Final Design (In Progress)		On Schedule.
5H	Papillion Creek North 211-2, Inflow Reduction Project	N/A	Future (2021)		See CNR.

[a] LTCP milestone dates are noted in Chapter 5 of the 2014 LTCP Update.

Table 4-7. Phase 6 Sewer Separation Projects Status and Schedule Compliance

Sewer Separation Phase 6 *CSO Permit Requirement and LTCP Milestone:* Commence bidding on one of the following projects on or before December 31, 2021[a] LTCP Milestone[b]: Complete construction of all projects by September 30, 2027					
ID	**Project Name**	**OPW Number**	**Status**	**LTCP Milestone Compliance**	**Notes**
6B	South Interceptor 110-1, Pierce St.	N/A	Future (2032)		See CNR.
6C	Ohern/Monroe - 119-5A, South Barrel Conversion	53149	Preliminary Design (In Progress)		On Schedule. See CNR.
6D	Ohern/Monroe - 119-5B, South Barrel Conversion	53149	Preliminary Design (In Progress)		On Schedule. See CNR.
6F	Burt-Izard 108-8, 18th and Seward	52721	Final Design (In Progress)		On Schedule. Project is part of Nicholas Street Phase 3B, Sewer Separation Phase 5. See CNR.

[a] Permit modification issued November 1, 2019, changed the commence bidding milestone date from June 30, 2020 to December 31, 2021.

[b] LTCP milestone dates are noted in Chapter 5 of the 2014 LTCP Update, except where noted.

D. CSO Program Schedule

The Consent Order in Paragraph 29, item b, requires the City provide, “A general description of the work performed pursuant to the LTCP and component project time frame schedule for the period covered by the report and whether it conformed to the LTCP and time frame schedule” as part of the Annual Report. The APPRs provide summary information regarding this objective in Attachment 2. This section, CSO Program Schedule, and the following section, CSO Program Costs, address the overall status of the LTCP implementation.

The schedule for the overall program considers phasing and future financial planning to achieve the goals of the LTCP. Adaptive Management of the LTCP allows for the implementation of lessons learned and the adjustment of scheduling of the projects in the LTCP, with the concurrence and approval of the NDEE. As noted previously, the City has communicated and will continue to communicate any potential impacts it may have to the scheduling and completion of projects to the NDEE.

Anticipated schedules for specific projects have been reported in the APPRs for each active project and can be found in Attachment 2.

Figure 4-1 shows the count of projects per the LTCP Update and reflects the June 2017 LTCP modifications. It also shows project types and status (completed and remaining). Figure 4-2 shows the general status of completed and in-progress projects relative to their stage of study, design, and construction.

Figure 4-1. LTCP Projects Counts Graph Per LTCP Update

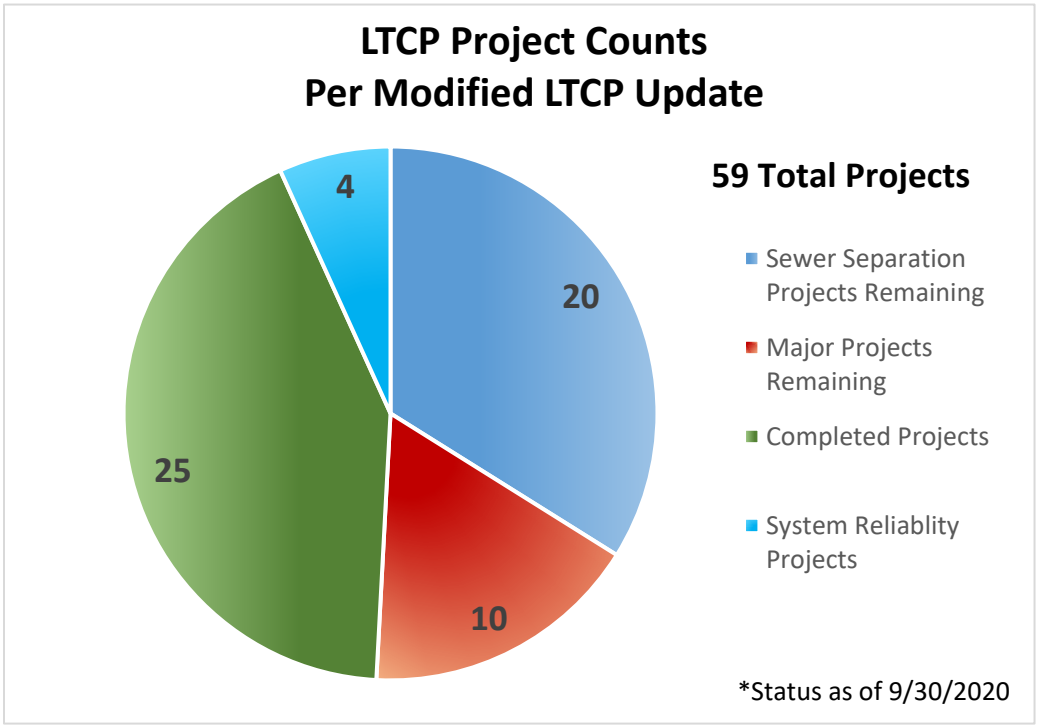
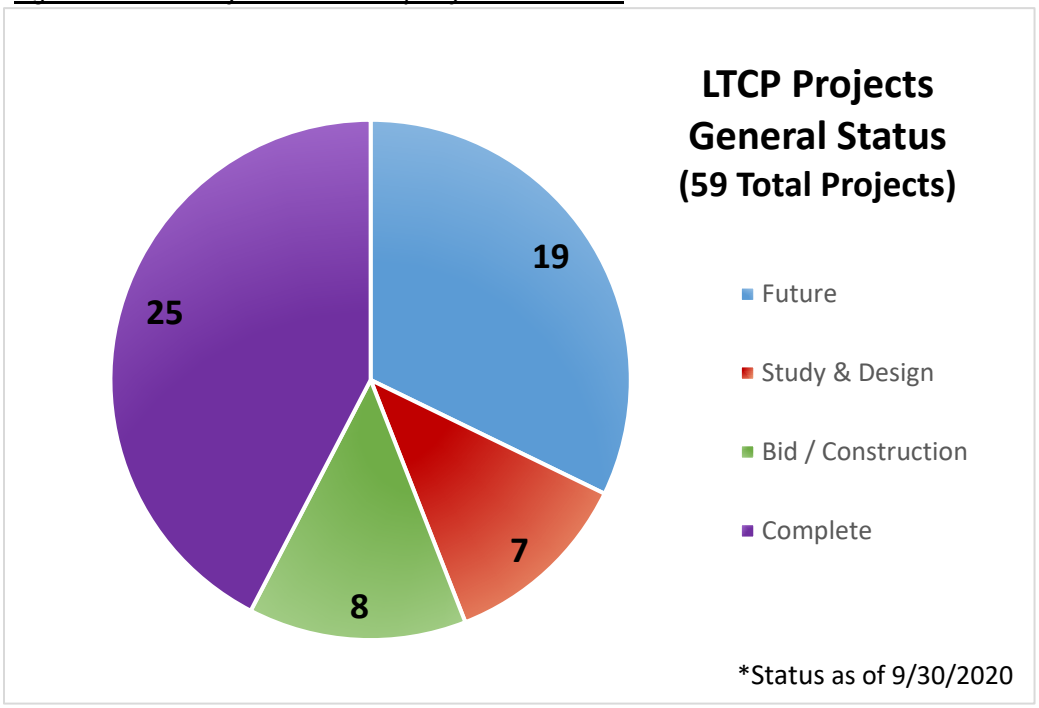
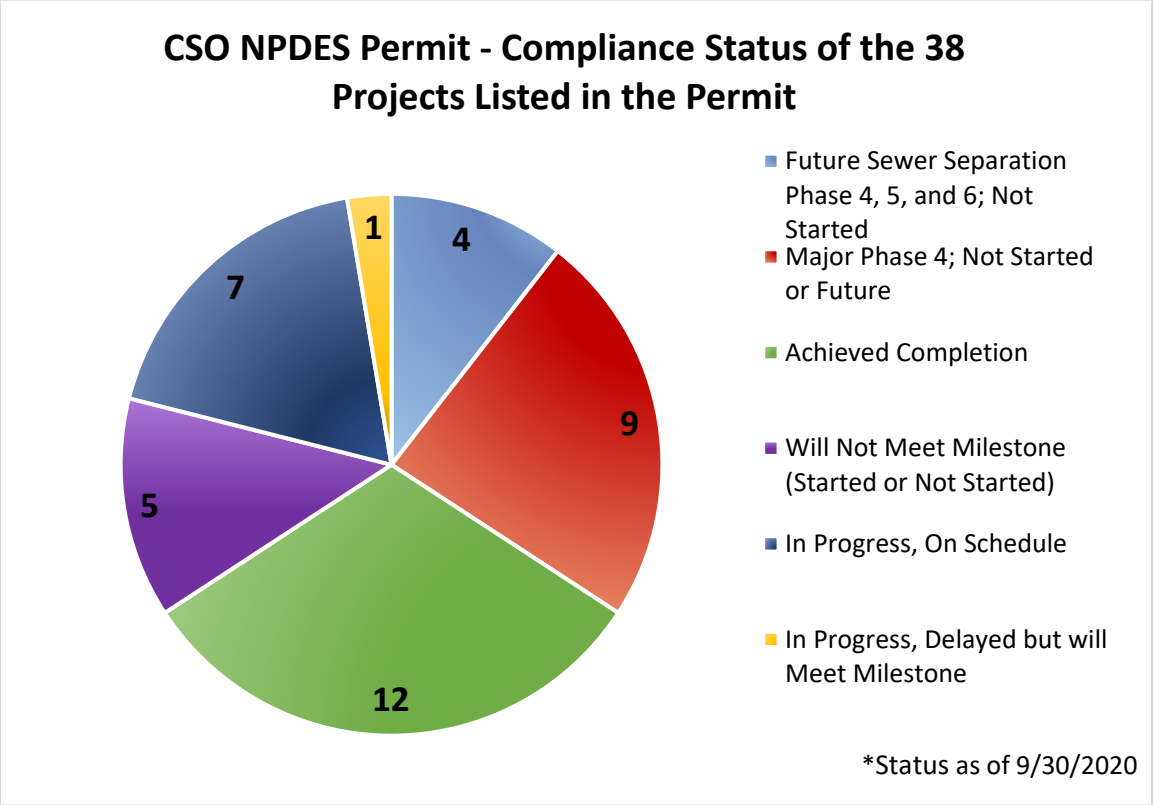


Figure 4-2. LTCP Projects Counts Graph by General Status



In the CSO Permit currently 38 are projects listed, and 30 of those projects with milestone dates that will be met are updated in this Annual Report. As shown on Figure 4-3, the majority of these projects are either active or construction has been completed (three projects were completed within the last year).

Figure 4-3. Compliance Status Summary



Of the active projects that will not meet their permit milestones, two are delayed (Nicholas Street Phase 3 and Cole Creek 202 Phase 2).

There are three non-active projects: one that has a CNR that moved dates into the future, past its milestone (Nicholas Webster Phase 2) and two are on hold. CSO 204 Phase 2 and Forest Lawn Separation continue to be on hold while the City evaluates the best approach.

A revised schedule will be developed and provided in the 2021 LTCP Update.

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. A new escalating approach was used this reporting period, the cost was not escalated to a single future year but rather escalated each project to the year(s) they are expected to be delivered in. The current cost of the program with contingencies is $2.387 billion through 2037. Rates are in place for 2019 to 2023, as noted previously. As noted elsewhere, implementation of the alternative that was identified in the Optimization Evaluation is anticipated to reduce the total cost of the program as will be noted in the 2021 LTCP Update.

Through September 2020, the City has paid $711 million to implement the LTCP. Approximately $449 million of this amount has been for construction. The City has awarded,

or is currently bidding, more than $570 million in construction contracts, and nearly 90 percent of that has been successfully won by local Omaha contractors. Another $116 million in construction value is currently under design.

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

The CSO Permit requires a summary of monitoring data from Outfall CSO 102, located at MRWRRF, and Outfall CSO 205, located at 64th Street and Dupont Street. Figure 6-1, in Section VI, shows the locations of the CSO outfalls, along with the in-stream monitoring locations.

A. Missouri River Resource Recovery Facility – Outfall 102

The Interim Requirements for CSO Outfall 102, as defined in Table 3, Part II of the CSO Permit, were in effect for this permit year. These requirements are in effect until January 1, 2023, after which effluent limits for E. coli and total residual chlorine limits will be in effect. The conditions for approved bypass of combined sewer complied with these requirements.

There were 27 overflow events at CSO 102 from October 1, 2019, through September 30, 2020, with 8 of these occurring during the recreation season of May 1 to September 30. Results from these events are reported on quarterly DMRs submitted to NDEE. Table 5-1 summarizes the data for CSO 102. The 2020 reporting year was the first year with the Chlorine Contact Basin in operation. It should be noted that all overflows in the reporting year were disinfected before being discharged at CSO 102. All water-quality parameter values improved from the previous reporting year. The values reported are defined as follows:

- Flow rate - average flow rate of each event in the reporting period
- Total flow - total of all events in the reporting period
- Duration of discharge - total of all events in the reporting period
- Total suspended solids (TSS) and biochemical oxygen demand - average concentration of each event in the reporting period
- Dieldrin and polychlorinated biphenyls – all reported events value was less than 0.0001 milligram per liter (mg/L), which is the analysis detection limit
- E. coli - geometric mean of all the events in the reporting period where E. coli monitoring is required
- pH - maximum and minimum values of all of the events in the reporting period

Table 5-1. CSO 102 Monitoring[a]

Parameter	Value	Units
Flow Rate	3.08	mgd
Total Flow	80.07	MG
Duration of Discharge	142.10	hours
TSS	142	mg/L
Biochemical Oxygen Demand	118	mg/L
Dieldrin	< 0.0001	mg/L

Parameter	Value		Units
Polychlorinated Biphenyls	< 0.001		mg/L
E. coli	74		No. 100 mL
pH 00400	Min = 6.79	Max = 7.74	Standard Units

[a] It should be noted that effluent limits do not apply to CSO 102 at this time.

Notes:

MG = million gallons

Min = minute

mL = milliliter

B. 64th and Dupont Retention Treatment Basin – Outfall 205

The CSO 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. During a permit modification, effective June 2016, this was changed to January 1, 2024. A level sensor at the weir was installed in the diversion during the 2019 reporting year and will be a permanent installation until the Saddle Creek RTB is complete. Section IV lists all flow monitoring sites. See Section IV for the status of the Saddle Creek RTB project and LTCP Program compliance schedule, and Section VII for CSO occurrences during wet weather.

VI. In-stream Monitoring Data

The current CSO Permit requires a summary of in-stream monitoring data, consistent with the Draft IMP objectives, to include monitoring station identification, stream identification, the list of parameters, and monitoring results. The Draft 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 in-stream monitoring was included as part of the March 2010 Draft IMP, it also states 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."

This Annual Report summarizes the in-stream monitoring data. Figure 6-1 is a map showing the locations of the in-stream monitoring sites. Sections VI.A and VI.B summarize the data.

A. City In-stream Monitoring

The in-stream monitoring for this reporting year was performed by the City's Sewer Maintenance Division. The objectives of the monitoring were twofold: (1) to meet requirements of CSO Permit, and (2) to meet the requirements of the City's MS4 NPDES Permit. However, the MS4 Permit submitted a modification request in March 2016, which was approved by NDEE in April 2016 and which eliminated an element of the *Stormwater Monitoring Plan* that included the in-stream monitoring.

The City collected samples from in-stream monitoring sites CC-1, CC-2, LPC-3, BPC-3, PC-1, LPC-1, and BPC-4. These were analyzed through Midwest Laboratories, Inc. in accordance with the IMP. The City has contracted with USGS for sampling at sites MR-1, MR-CB, MR-4, and MR-5, which is covered in the next section. Refer to Table 6-1 for descriptions of each monitoring site the City staff administers. As stated in this report, 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 third season of 2019 and the first two seasons of the 2020 reporting period. The third season of 2019 is included in this year's report because this data was primarily collected during the 2020 reporting period. The most apparent conclusion to be drawn from these data is there is a significant increase in total coliform and E. coli during wet weather. In addition, the TSS concentration during wet weather for seasons 1 and 2 of 2020 are much lower than the TSS concentration during season 3 of 2019. The Missouri River sites were also sampled by USGS during this report period as described in more detail in the next section. It should be noted that the 2020 Season 1 dry-weather samples were not able to be collected due to COVID-19. Season 3 (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. Season 3 sampling results will be included in next year's report.

Figure 6-1. In-stream Water-Quality Monitoring

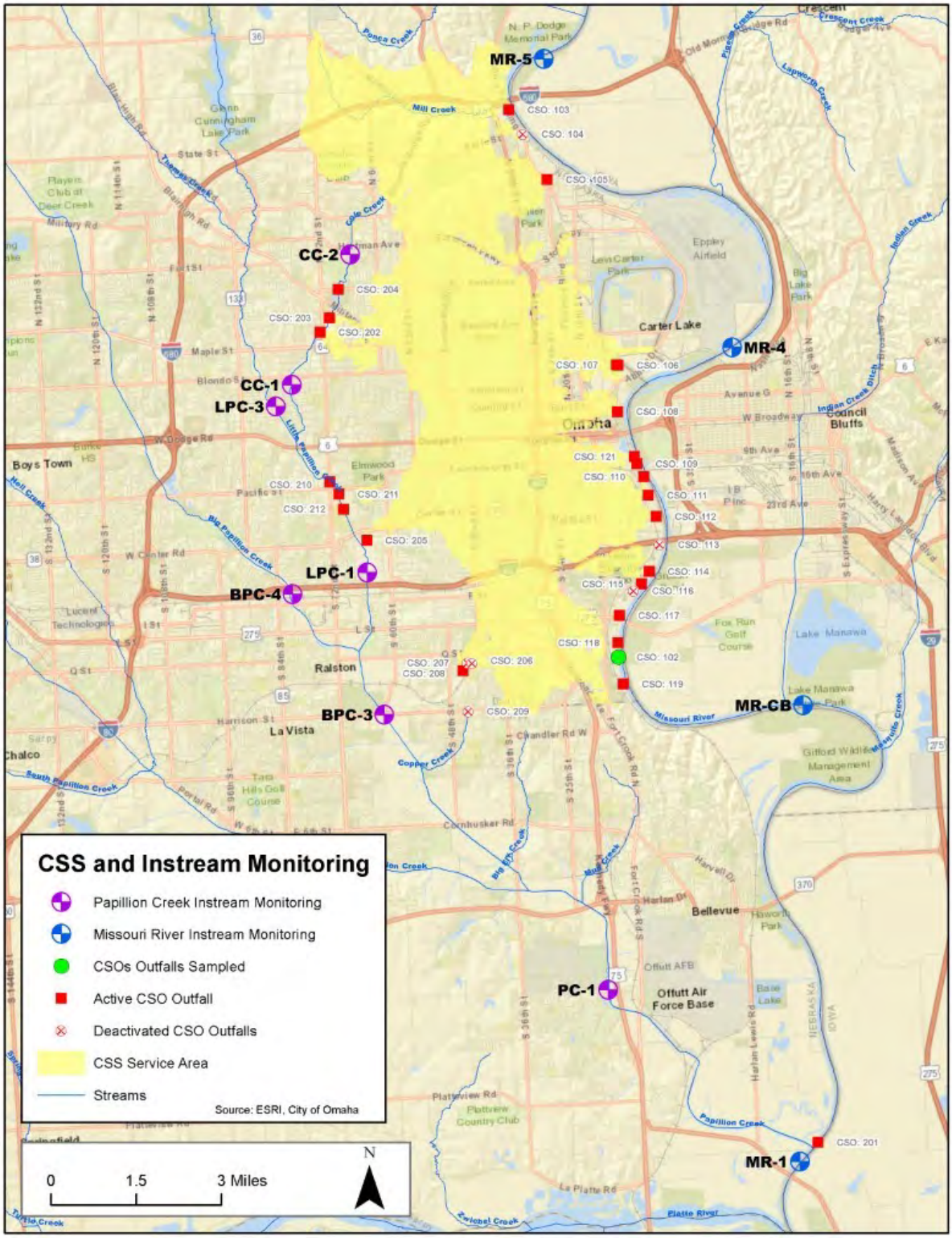


Table 6-1. 2019 City In-stream Monitoring Site Descriptions

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

Table 6-2. 2020 City In-stream Monitoring Results

2019 SEASON 3 - DRY - SEPTEMBER 1ST TO NOVEMBER 30TH							
Parameter/Site[a]	CC-2	LPC-3	CC-1	BPC-3	LPC-1	BPC-4	PC-1
Date	10/17/2019	10/17/2019	10/17/2019	10/17/2019	10/17/2019	10/17/2019	10/17/2019
Time	12:00	12:35	12:25	13:25	13:10	13:00	14:00
Field Temp, C°	12.4	12.6	11.9	13.3	12.4	12.4	12.7
Field Conductivity (mMHO/cm)	1025	565	890	626	584	633	601
Field pH	7.89	6.85	8.37	6.86	6.43	6.99	7.84
Field DO (%)	88%	93%	93%	98%	97%	92%	94%
Field DO (mg/L)	9.40	9.84	10.08	10.25	10.36	9.83	9.99
BOD (mg/L)	<	3	3	3	3	3	3
TSS (mg/L)	5	34	6	115	40	156	96
Total Coliforms (MPN/100 mL)	28,090.0	32,820.0	17,890.0	35,900.0	20,100.0	54,750.0	26,030.0
E. coli (Cfu/100 mL)	1,492	80	592	360	90	456	430
Solids or Foam Present?	NO	NO	NO	NO	NO	NO	NO
2019 Season 3 - WET - September 1ST to November 30th							
Parameter/Site	CC-2	LPC-3	CC-1	BPC-3	LPC-1	BPC-4	PC-1
Date	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019
Time	8:35	9:45	9:10	11:00	10:45	10:25	11:45
Field Temp, C°	15.4	15.7	15.7	15.8	15.9	15.7	15.7
Field Conductivity (mMHO/cm)	1,058	248[b]	898	707	762	735	685
Field pH	8.68	8.03	8.49	7.88	8.70	8.67	7.62
Field DO (%)	80%	81%	82%	79%	94%	93%	87%
Field DO (mg/L)	7.96	8.06	8.11	7.77	9.29	9.20	8.62
BOD (mg/L)	6	13	13	8	6	8	7
TSS (mg/L)	424	976	496	1140	1480	848	2200
Total Coliforms (MPN/100 mL)	>241,960*	>241,960*	>241,960*	1,414,000.0	1,733,000.0	>241,960*	>241,960*
E. coli (Cfu/100 mL)	13,700	15,000	22,700	16,400	21,400	12,600	19,100
Solids or Foam Present?	YES	YES	YES	YES	YES	YES	YES

2020 Season 1 - WET - March 1ST to May 31st							
Parameter/Site	CC-2	LPC-3	CC-1	BPC-3	LPC-1	BPC-4	PC-1
Date	5/4/2020	5/4/2020	5/4/2020	5/4/2020	5/4/2020	5/4/2020	5/4/2020
Time	10:00	10:45	10:30	12:30	12:00	11:45	13:00
Field Temp, C°	15.3	16.5	15.6	15.9	15.8	15.4	16.1
Field Conductivity (mMHO/cm)	1382	800	1138	802	876	785	827
Field pH	7.79	8.06	8.06	8.27	8.10	8.26	8.22
Field DO (%)	94%	96%	83%	110%	101%	103%	108%
Field DO (mg/L)	9.45	9.34	8.20	10.90	9.99	10.30	10.60
BOD (mg/L)	4	9	5	7	11	6	3
TSS (mg/L)	8	32	9	105	200	60	44
Total Coliforms (MPN/100 mL)	30,760.0	198,600.0	51,720.0	68,670.0	6,131.0	64,880.0	7,380.0
E. coli (Cfu/100 mL)	1,414	2,920	7,540	2,720	3,270	3,130	1,120
Solids or Foam Present?	YES	YES	YES	YES	YES	YES	YES
2020 Season 2 - Dry - June 1st To August 31ST							
Parameter/Site	CC-2	LPC-3	CC-1	BPC-3	LPC-1	BPC-4	PC-1
Date	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020	6/4/2020
Time	8:30	11:00	10:30	13:00	12:30	12:00	13:20
Field Temp, C°	20.2	23.6	22.5	25.9	26.4	25.6	26.7
Field Conductivity (mMHO/cm)	1,381	1,068	1,168	1,112	1285	868	1102
Field pH	7.68	8.24	8.23	8.26	8.19	8.25	8.21
Field DO (%)	78%	75%	94%	76%	86%	75%	80%
Field DO (mg/L)	7.09	6.34	8.13	6.18	6.90	6.12	6.41
BOD (mg/L)	2	2	<	3	<	3	3
TSS (mg/L)	9	47	7	253	28	208	129
Total Coliforms (MPN/100 mL)	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*
E. coli (Cfu/100 mL)	>2,419*	2,420	2,420	1,300	1,414	1,553	517
Solids or Foam Present?	NO	NO	NO	NO	NO	NO	NO
2020 Season 2 - Wet - June 1st to August 31st							

Parameter/Site	CC-2	LPC-3	CC-1	BPC-3	LPC-1	BPC-4	PC-1
Date	7/20/2020	7/20/2020	7/20/2020	7/20/2020	7/20/2020	7/20/2020	7/20/2020
Time	8:40	10:10	9:40	12:30	11:45	10:50	13:15
Field Temp, C°	22.7	23.2	22.5	24.5	23.9	23.1	25.4
Field Conductivity (mMHO/cm)	1,916	1,100	590	1,106	1,196	1,089	1,133
Field pH	8.38	8.04	8.16	7.98	8.08	8.14	7.94
Field DO (%)	36%	64%	73%	69%	74%	74%	89%
Field DO (mg/L)	3.06	5.45	6.30	5.70	6.24	6.28	7.28
BOD (mg/L)	5	12	20	10	9	10	9
TSS (mg/L)	60	79	156	374	117	504	468
Total Coliforms (MPN/100 mL)	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*
E. coli (Cfu/100 mL)	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*	>2,419.6*
Solids or Foam Present?	YES	YES	YES	YES	YES	YES	YES

[a] Monitoring Sites defined in Table 7-1.

[b] Three measurements were taken with three separate instruments recording values of 248, 230, and 228.

< = parameter value is less than the detection limit.

* = lab dilution mix not high enough to accurately report parameter value.

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 implement a Missouri River water-quality monitoring program at selected points near the Omaha metropolitan area. The agreement with USGS has been extended through 2022 and is anticipated to continue. This program is consistent with the Draft IMP. The scope for the USGS work includes 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)

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

The USGS indicates 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. Discrete sampling data were collected during the reporting period 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. Discrete sampling locations as described are shown on Figure 7-1. Except for site MR-4, continuous sampling is also collected at these same locations for selected parameters. The continuous sampling is further discussed below.

USGS provides continuous monitoring of selected water-quality parameters at locations important to the pursuit of understanding the water quality in the river. USGS obtains continuous data for the Missouri River at the following sites for pH, temperature, DO,

specific conductance, and turbidity. These data are provided to the City directly, and published on the USGS website for the sampling site:

Data for MR-5 may be found at:

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

Data for MR-4 may 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

Results from this effort will provide the City with information to support long-term planning goals and regulatory compliance. The data from this study will be used in the future to study temporal trends and evaluate water-quality variations during different discharge conditions. This study reinforces the goals of the USGS science direction by providing citizens, communities, natural resources managers, and policymakers with clearer knowledge of the status of the Missouri River, an increased capacity to discover trends over time, and an improved ability to make decisions about future strategies and policies. A monitoring gauge at Highway 275 was also installed this year and provisional data have been obtained for the gauge. This gauge began collecting data in May 2020 and is currently only collecting gauge height data. These data can be seen in Attachment 5.

Table 6-3 provides a range of results for the parameters listed at each of the monitoring sites for the 2020 reporting period. 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 be very low at times. The discharge remains fairly consistent as the sites move downstream because these large flows occurred when the Missouri River was at flood stage. See Section II, E. Prohibition of CSOs during Dry weather for significant discharges to Missouri River that may have impacted results. Attachment 5 provides a summary of past monitoring and recent provisional results through September 30, 2020.

Table 6-3. 2020 USGS Monitoring Parameter Results

Parameter	Monitoring Site (Upstream to Downstream)							
	MR-5 NP Dodge		MR-4 Freedom Park		MR-CB Council Bluffs		MR-1 LaPlatte	
	Max	Min	Max	Min	Max	Min	Max	Min
Discharge (cfs)	101,000	34,000	98,300	34,600	103,000	35,300	96,500	35,300
Temperature (ºC)	28.7	0	27.7	0.6	28.2	0	28.6	0

Parameter	Monitoring Site (Upstream to Downstream)							
	MR-5 NP Dodge		MR-4 Freedom Park		MR-CB Council Bluffs		MR-1 LaPlatte	
	Max	Min	Max	Min	Max	Min	Max	Min
Dissolved Oxygen (mg/L)	14.2	5.9	13.1	6.7	14.1	6.2	14.1	5.8
BOD_5 (mg/L)	4	2	3	2	3	2	6	2
pH	8.7	7.9	8.5	8.1	8.5	7.9	8.4	7.9
TSS (mg/L)	1,170	37	280	29	196	39	233	15
E. coli (MPN/100 mL)	>2,400	15	2,400	5	7,700	5	>2,400	5
Total Coliform (MPN/100 mL)	>24,000	210	>24,000	550	>24,000	550	>24,000	2,400

Notes:
Data presented are provisional unless otherwise noted.

°C = degree(s) Celsius

cfs = cubic feet per second

VII. Performance Report

As stated in the CSO Permit, Part VIII, Section E, the performance report consists of the following:

- Reporting the number of times each CSO outfall has an overflow and evaluating whether the controls are achieving their design intent
- Providing documentation that demonstrates each CSO overflow occurrence was the result of a wet-weather event
- Once in the term of the permit, providing the percent by volume of the combined sewage collected in the CSS during precipitation events on a systemwide annual average basis that is eliminated or captured for treatment

A. CSO Occurrence Inspection

Per *Combined Sewer Overflows - Guidance for Nine Minimum Controls* (EPA 1995), "The municipality should record the number of CSO overflows at as many outfalls as feasible." The City monitored all 25 active CSO points in the reporting year, when possible. These records are maintained at Sewer Maintenance Division. MRWRRF and PCWRRF are responsible for recording the number of occurrences for CSOs 102 and 201, respectively, and providing those to Sewer Maintenance Division for filing. CSO 109 and CSO 205 are monitored by level sensors and periodically field visited for quality control. The remainder are monitored by visual observation per the CSO device check procedure.

Access and safety were considered in development of the procedures. The discharge point to the receiving stream is not always the safest or most accessible location for visual observation. If the system has an upstream diversion structure, a "block" or device is placed that, when moved from its original location, functions as a simple physical indicator that an overflow has occurred. A typical arrangement would be the placement of the device on the top of a weir wall or edge of an overflow pipe in a CSO diversion structure. The occurrence of an overflow is indicated when the device is moved off the weir wall in the downstream direction.

The City's standard procedure continued this year to inspect the designated CSO structures and devices after rain or snow-melt events and make a record of 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. Apart from CSO 102, the visual observations are logged into a single database maintained at the Sewer Maintenance Division.

Table 7-1 shows the counts of wet-weather CSOs. CSOs 106, 107, and 108 are noted as lower count due to more flow routing to the SIFM, and occasional high river levels that invalidated the overflow device. The count of "other" or "unknown" determination of wet-weather CSOs is included. More information on these can be found in the Wet Weather CSO Occurrences Report in Attachment 4.

Table 7-1. Wet-Weather CSO Occurrences

CSO Outfall	Receiving Water	CSO Frequency (count)	Count of Other/Unknown Visual Results
102	Missouri River	27 days[a]	NA
103[d]	Missouri River	1	NA
105	Missouri River	14	17
106[d]	Missouri River	5	36
107[d]	Missouri River	1	28
108[d]	Missouri River	1	28
109	Missouri River	33	NA
110[c]	Missouri River	15	18
111	Missouri River	7	21
112	Missouri River	22	1
114	Missouri River	8	24
115	Missouri River	18	29
117	Missouri River	17	24
118	Missouri River	35	5
119	Missouri River	37	NA
121	Missouri River	23	NA
201[b]	Papillion Creek/Missouri Confluence	-	NA
202	Cole Creek	35	NA
203	Cole Creek	33	NA
204	Cole Creek	45	NA
205	Little Papillion Creek	43	NA
207	Blood Creek to Little Papillion Creek	DIVERSION CLOSED	NA
208	Blood Creek to Little Papillion Creek	4	NA
210[c]	Little Papillion Creek	26	NA
211	Little Papillion Creek	12	NA
212	Little Papillion Creek	16	NA

[a] CSO 102 monitored for each day on which CSOs occurred. Other CSOs may count multiple-day rain events as a single occurrence.

[b] No wet-weather overflows were recorded for CSO 201

[c] CSO 110 block device was relocated during the reporting year (in April 2020) [d] See narrative for CSO 103, 106, 107, and 108 having reduced volume and frequency.

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

- The bypass gate at CSO 201 was not opened during the reporting period, meaning no overflows occurred at CSO 201.
- CSO 102 is monitored by the MRWRRF operators who report each day with a wet-weather overflow occurrence. Other CSO diversions are checked manually after rain events and often will account for one verified occurrence of overflow for multi-day wet-weather events. For the CSO Long-Term Control Plan, a 12-hour interevent time was used to define separate storm events, meaning that any storm with a dry period shorter than 12 hours would be considered a single storm event.
- CSO 103 (Bridge Street Lift Station) had one overflow during wet weather on October 10, 2019, but it was attributed to the pump replacement. Sewer separation is complete for this basin. Flow monitoring analysis shows excessive infiltration but not excessive inflow. Condition assessment of the basin is planned in the near future.
- Gates near the diversions for CSOs 106, 107, and 108 used to be closed during wet weather when necessary to avoid causing adverse conditions in the SIFM and at MRWRRF. Since the new Leavenworth Lift Station and new SIFM were put into operation in recent years, these gates are left open during wet weather, reducing the volume and frequency of overflows at these CSOs.
- Due to sewer system configuration changes, the CSO block device for CSO 110 was relocated during the reporting year (in April 2020) to the new diversion structure that was put into operation.
- CSO 119 historically was deemed too hazardous to monitor due to dangerous atmospheric conditions and access difficulty. This primarily had to do with the conditions at the Monroe Street Lift Station diversion structure, which is on the Monroe North Barrel and continues to be hazardous. In 2018, after a system study for a future separation project, it was realized that CSO 119 South Barrel had five locations of diverted flow that could be monitored as indications of overflow to the Missouri River via the Monroe South Barrel. CSO block devices were installed at five upstream diversion structures on December 20, 2018. These diversion structures are MHs 0551001, 0551020, 0551021, 0571049, and 0551030. The City is continuing to check these manholes to verify overflows at CSO 119. The original objective of monitoring these five diversions along the CSO 119 South Barrel was to prevent dry-weather overflows; however, the data reveal that these sites are some of the most sensitive diversions in the Missouri River Basin. Less than 0.1 inch of rain has triggered an overflow. The Monroe Street Lift Station diversion structure is still too hazardous to use a block or maintain a flow meter. If the MRWRRF operators provide data on wet-well levels, crews are deployed to look at the outfall. This diversion just upstream of the lift station overflows to CSO 119 North Barrel, and it is proving to not be as sensitive as the South Barrel diversions. The City is currently reviewing options for safer monitoring of the North Barrel diversion structure as part of the design for Monroe Street Lift Station upgrades.
- CSO 207 was removed during a sewer separation project that was completed in the spring of 2019. Any further wet-weather flows would be conveyed to the diversion for CSO 208 and may overflow there.
- Dry-weather overflows are reported in Nine Minimum Controls Section II of this Annual Report.

During the report period, City staff scheduled 72 days for inspections and logged 1,718 total CSO checks. Of that, 1,313 inspections were logged for 49 post-rain and 7 snow-melt checks. The remainder were biweekly routine dry-weather inspections, which accounted for 16 of the 72 days of inspections.

A 1-year pilot project is being conducted to install cameras and level sensors to monitor the occurrence of CSO overflows at 11 locations. The purpose of the project is to assist the City in verifying overflow events, verifying maintenance needs, and providing alerts to staff of flow depths and potential overflow events. The City is using the data to verify CSO events; for example, recently a CSO event was recorded but after further verification using the sensor data and camera, it was determined that it was not a CSO but rather something else such as an animal moving the CSO device. Because this is a pilot project to test the equipment, City staff is continuing to physically check all CSO devices along with using the level sensors and cameras. Until the staff becomes familiar with the equipment and the equipment proves to be reliable, no changes will be made to the City's CSO device check program. It is hoped that use of the cameras eventually may be able to reduce the number of trips to visit the sites and the manpower required to do so, and that locations that are less safe for staff to enter may be able to be observed remotely. The surveillance camera locations can be seen in Table 7-2.

Table 7-2. CSO Surveillance Locations

CSO ID	Approximate Location	Manhole ID	Notes
CSO 103	Bridge St. and Dick Collins	0063067	Monitor weir wall
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 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 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
CSO 211	66th and Pacific	0708026	Monitor overflow pipe

Sample of CSO Surveillance

The following sequence of photos and figures provides an example of use of the surveillance camera to verify a CSO when downstream water levels were high and interpretation of the block's movement was not conclusive. At CSO 106 (North Interceptor) diversion structure, the City installed a tethered CSO block device for indication of movement of flow toward the outfall pipe, pictured to the left of the screens in Figure 7-1. The inspections are typically scheduled after a rain event has ended for crew members to reset the device manually. On June 9-10, 2020, the crew could not confirm if an overflow occurred at CSO 106 because the outfall ditch water level (connected to the Missouri River level) and the flow in the diversion had equalized.

The device did not have the appearance of moving toward the outfall, but more of an appearance of drainage intrusion back into the CSS. A CSO Surveillance camera was installed at this location and captured evidence of the overflow, as shown on Figures 7-2 through 7-6.

Figure 7-1. CSO 106 CSO block device

The CSO block device (short white "stick" shown by red arrow) installed downstream of the CSO 106 diversion structure. The CSO outfall is to the left in the photos. Normal dry-weather flows drop through the bar screen and exit the diversion structure through another screen at the top of the photo.

Figure 7-2. CSO Surveillance Camera photo (6/9/2020)

The CSO device is visible near the middle of the photo next to the bar screen, taken at 18:50, prior to the overflow.

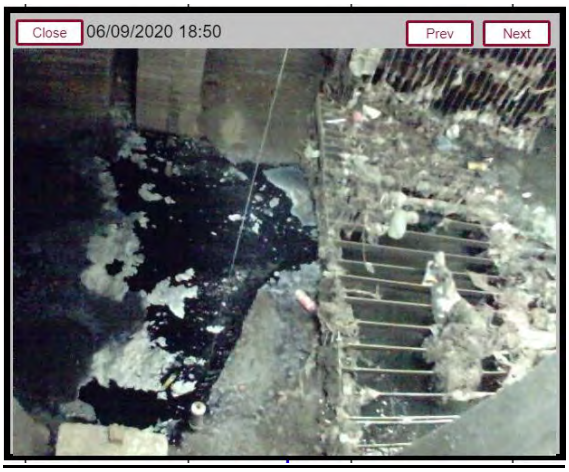


Figure 7-3. CSO 106 June 9, 2020 Water Levels

(Peak level is shown occurring at 21:35 on June 9, 2020.)

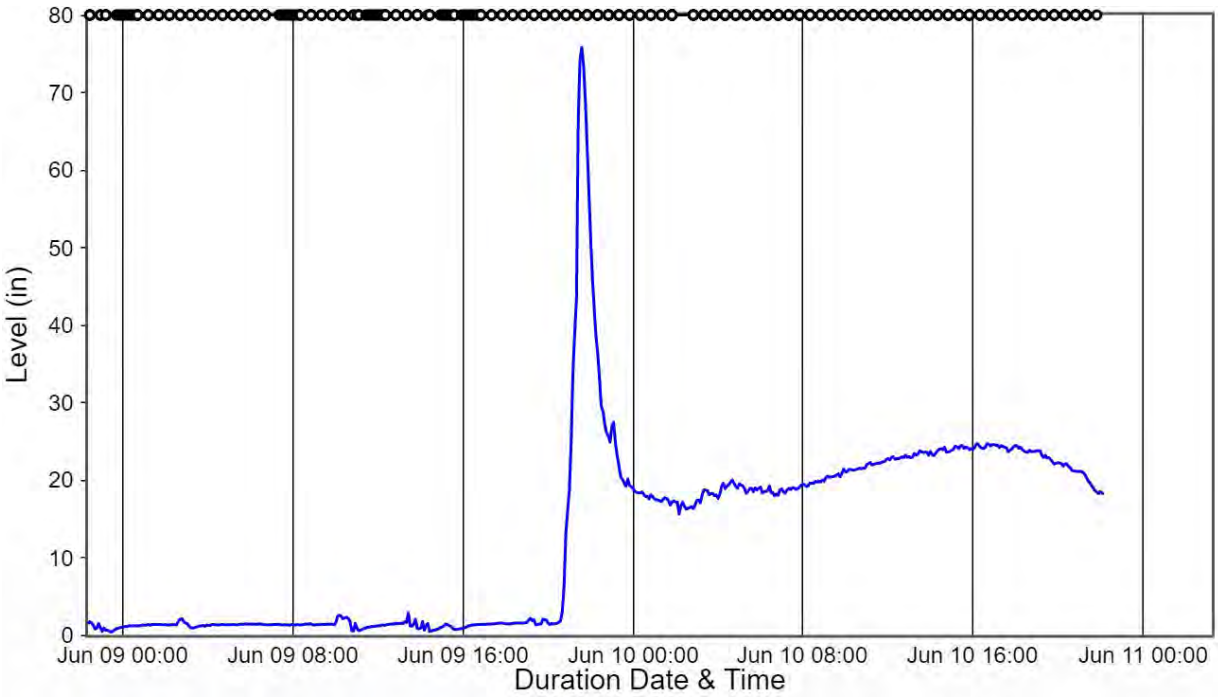


Figure 7-4. CSO 106 First post-peak flow photo at 23:50, 6/9/2020

(Although difficult to see, a slight reflection of the device in the CSO surveillance camera captured the movement of the block device toward the outfall, thus indicating a CSO event.)

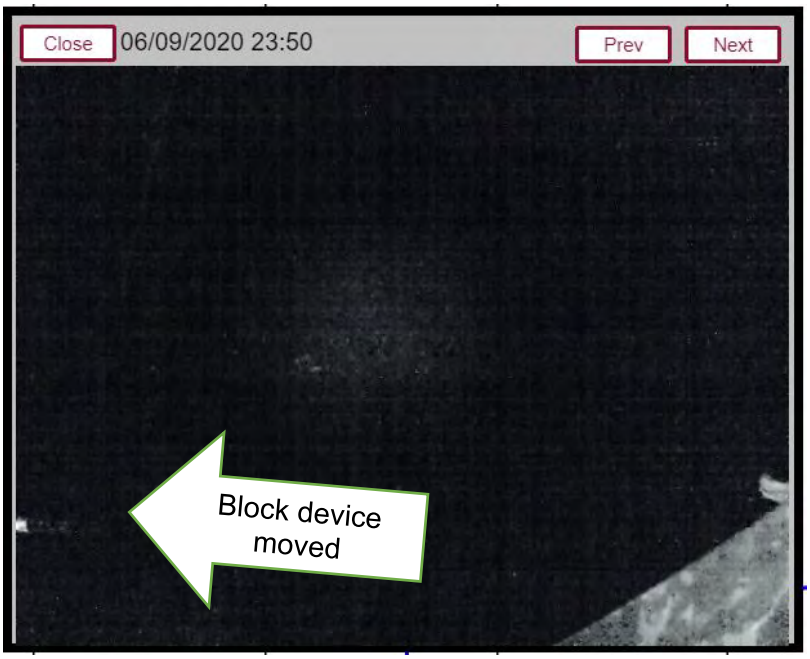


Figure 7-5.CSO 106 Surveillance Camera: Overflow at 07:50 on 6/10/2020

(The CSO event is shown still occurring at 07:50 on June 10, 2020, shown by slight pull of the device toward the outfall (to the left in the photo.)

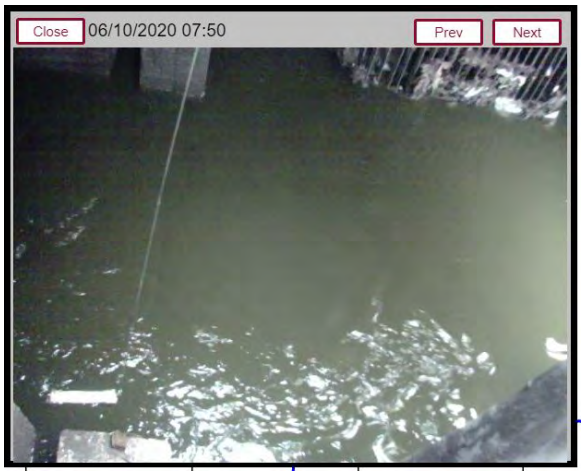


Figure 7-6. CSO 106 Surveillance Camera: Overflow at 10:50 on 6/10/2020

(Flow and river levels equalized by 10:50 on June 10, 2020, as shown by the block device floating loosely on top of the water. The crew inspecting the device was uncertain whether an overflow had occurred, as the water level in the diversion structure could have resulted from river intrusion if the outfall flap gate was not sealed properly.)

B. Evaluation of Completed Controls

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

CSOs 207/208 - A construction project was completed in 2019 to separate the sewer system for CSO 207. The CSO 207 diversion structure was reconstructed in January 2019 to convey only sanitary flow. A few remaining construction activities were completed in April 2019, with the separation officially completed on April 30, 2019. CSO 208 underwent flow monitoring in the summer of 2019, following the completion of construction. Four CSOs occurred at CSO 208 in the period 10/1/2019 to 9/30/2020, and all four were in the fall of 2019. No overflows occurred in the year 2020. Mapping and field review confirmed an existing storm sewer connection downstream of this CSO point. The storm connection has existed since 1934 according to record drawings. The CSO model and flow monitoring show that this one storm connection can cause a wet-weather CSO. A future project is planned to separate this connection, and it will be managed under an OPW Project and not as part of the LTCP. The City will continue to monitor this CSO until the inflow source is removed.

CSO 103, Bridge Street Lift Station - The 36th Street and McKinley sewer separation project was completed in November 2014. A significant 2018 flow monitoring effort by the City yielded a final report in 2019. The report for Bridge Street Basin (GBA 2019) stated: “A subsystem is considered to have excessive I/I if it averaged 2% or greater total rain volume entering the sanitary sewer” and “Subsystems with excessive infiltration are based on an infiltration rate above 2,500 gpd/IDM, which is based on historical records from flow monitoring areas of similar size and makeup.” The results of the study concluded that parts of the basin did have greater than 2% volume of rain reaching the sewer and a subsystem infiltration rate of 4,091 gpd/IDM, which falls in the excessive category. This basin did not rate excessive for inflow; therefore, it could be concluded that sewer separation is complete and effective.

The objective in the LTCP is to deactivate this CSO outfall pending verification of effective inflow reduction and additional monitoring. This CSO discharged once in the fall of 2019 and zero times in 2020. This CSO point previously averaged about 11 overflows per year. In Q4 2019, a level sensor was installed in the chamber that receives the influent flow, near the CSO overflow pipe. This sensor will be used to determine if the outfall can be partially closed by raising the overflow weir elevation, which will further reduce the frequency of CSO discharges. The basin rehabilitation plan will be assessed within the City risk-based asset management decision matrix to establish its priority for reduction of infiltration. I/I reduction is one measure in the risk assessment. The City also started a study phase for a lift station upgrade.

C. Wet-Weather CSO Occurrences

The CSO Permit requires documentation to be provided in the Annual Report demonstrating 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. In the report year, five dry-weather discharges at CSO points were discovered and reported to NDEE.

Documentation is provided in Attachment 4 to demonstrate that each CSO overflow occurrence was the result of a wet-weather event. The report identifies the CSO outfall inspected, the date and time of the inspection, 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 are noted. The depth of flow at CSO 205 is also recorded per City procedure, using a level sensor installed in 2018 that allows the monitoring of CSOs and peak depths during construction of the SCRTB.

The City reviews available rain data during the year and compares to the results of the inspections. Part of the procedure is to check against Eppley Airport rain data as a starting point of reference. On dates where 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 was just over 24 inches. When compared with the average annual rainfall of 31 inches, this was a lighter-than-average rainfall year. Eppley Airport rain data registered 37 days of trace precipitation and 106 days with 0.01 inch or greater. Based on City rain gauges, 114 days were counted as wet-weather days in the combined sewer area. Of that, 55 of the recorded rain events were 0.10 inch or greater. The CSO locations in the Papillion Creek Watershed reflect a wet-weather CSO frequency as high as 45, while the CSO locations along the Missouri River show the highest frequency of 37. 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 in the term of the permit, the City should provide the percent by volume of the combined sewage collected in the CSS during precipitation events on a systemwide 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 InfoWorks model simulation of the sewer system as of the end of 2019.

VIII. Other Information

The CSO Permit, Part VII.F, suggests the City could include other information about measures of success for the program; these may include the reduction in the number of overflow events and in the number of CSO outfalls, or other indicators of improved receiving water quality.

As a result, this year's report includes information about the reduction in overflows and CSO outfalls, receiving water quality, and associated benefits of the CSO Program. At the NDEE Waste Management Division's request, this report includes a section for materials management within each CSO Program project. 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. Notable for the reporting period is that Bridge Street Lift Station, CSO 103 experienced zero wet-weather overflows in 2020 (1/1/2020-9/30/2020). One overflow record was recorded 10/10/2019 during wet weather; however, a pump replacement occurring in that period was the cause. This CSO is being monitored with a level sensor and camera surveillance for further understanding of its potential to overflow. The City anticipates that this overflow eventually will be deactivated and closed.

Another notable reduction would be overflows at CSOs 207 and 208. The sewer separation project was completed last year and resulted in the CSO 207 diversion being modified to only convey sanitary flow. The outfall pipe to CSO 207 was partially removed, plugged and flowable filled, leaving only a storm water discharge point. The sanitary pipeline from the former CSO 207 diversion is conveyed to the diversion structure for CSO 208, which is still able to overflow during wet weather if flows are high enough. The CSO 208 45th Street and U Street CSO discharge location recorded no occurrences of overflows in the year 2020. There were four occurrences recorded in fall of 2019. This site is also under level monitoring and camera surveillance as of July 2020.

As reported in past years with the sewer separation at 66th Street and Pacific Street, CSO 211 has also experienced a reduction of CSOs. There are still approximately six inlets tied in, which will be addressed in the CSO 212 sewer separation project, which will be under design in 2021. During this reporting period, CSO 211 had only 12 wet-weather overflows. CSO 212 had 16 wet-weather overflows. CSO 211 has also had a surveillance camera and level sensor installed. 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 that impacts the magnitude, volume, and duration of the overflows at a given CSO point

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 and its 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. Four have been eliminated completely: CSO 209, CSO 104, CSO 113, and CSO 207. During this reporting year, no other CSOs have been eliminated. The City still maintains 25 active permitted CSO points. The wet-weather flows from former CSO 207 diversion are currently being conveyed to the CSO 208 diversion structure. This drainage basin contains several pre-CSO Program sewer separation projects and will require study to determine if all significant inflow sources have been removed. As reported previously, CSO 208 did not record any overflows in the 2020 wet season (1/1/2020-9/30/2020), though there were 4 CSOs recorded in the fall of 2019. 2020 was a relatively dry season; the location will be monitored further in the coming year.

Sewer separation and inflow reduction projects in the basins of CSOs 202, 203, 211, 212, and 210 are currently underway or are planned in the near future, with the goal of deactivating the outfalls.

C. CSO Permit NDEE Inspection

On July 29, 2020, NDEE contacted the City of Omaha with a request for a CSO Permit Inspection. NDEE conducts NPDES Inspections every 5 years for the Omaha CSO permitted facilities. Due to the COVID-19 outbreak, the NDEE could not visit and inspect the permitted facilities in the traditional way. However, the NDEE outlined a series of questions and requested information to be provided within 2 weeks of the request. This included the CSO Evaluation Checklist from the EPA Interim Revised NPDES Inspection Manual, 2017. The inspection information was gathered into a cloud-based file structure and shared with NDEE. A hard copy of the submittal is filed at Sewer Maintenance Division. Items included in the submittal were:

- The completed copy of the attached EPA CSO Evaluation Checklist
- Printed copies of the last four quarters of the NetDMRs for CSO Outfalls 102 and 205
- Photographs of the discharge points for CSO Outfalls 102 and 205
- Copies of the most recent Performance Reports for CSO Outfalls 102 and 205
- Photographs of the pH Meter, along with the recent calibration results
- Photographs of the pH Buffer Solutions showing the expiration dates of the solutions on the exterior of the containers
- Copies of the recent flow meter results, and the most recent flow meter calibration date
- Photographs of the flow meter if applicable
- Copies of the Sample Collection SOPs

The EPA CSO Evaluation Checklist included these following items:

- If all CSO are identified and mapped
- If the permittee has records on all dry-weather overflow and notifications have been given to the state
- Records for CSO event such as location, frequency, flow magnitude, discharge pattern, total volume, duration, pollutant characterization, rain correlation, specific causes, flow diverted and collected

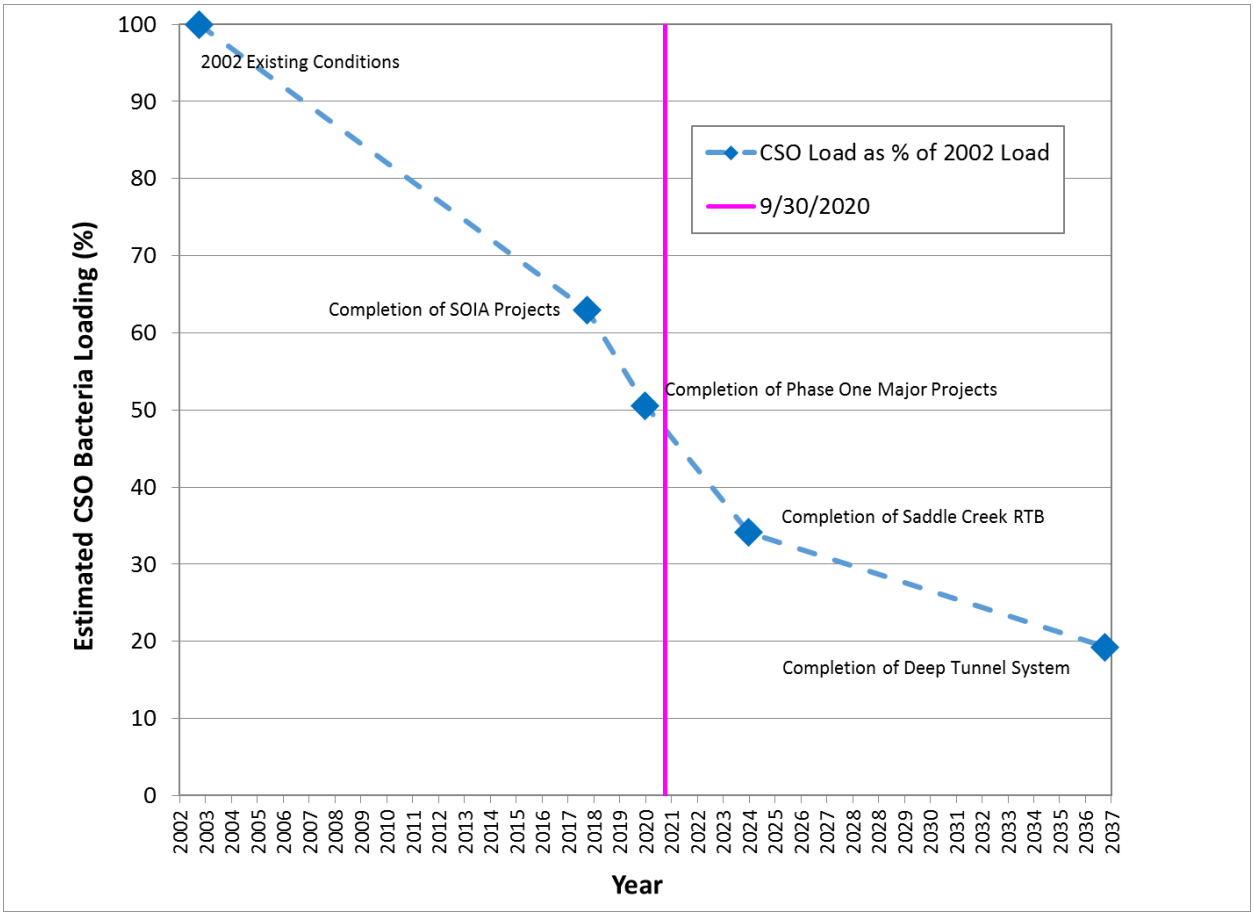
To address this request timely, remote meetings between the CSO PMT, MRWRRF staff, and Sewer Maintenance Division staff were coordinated. NDEE has not provided any compliance inspection comments in return aside from appreciation of the records being in order and easily accessible.

Of note, is that Nine Minimum Control Number 9: Monitoring to Characterize CSO Impacts (Permit submittal TM, 2004) was revisited during this inspection. The requirement at the time was to provide the best possible estimate or determination of the magnitude, frequency, and duration of CSO events. This NMC needs an update based on a more recent calibrated hydraulic model. The CSO PMT currently has a task to assist the City with an update to the NMC Plan.

D. Receiving Water Quality

Figure 8-1 shows the expected reduction in *E. coli* from CSOs resulting from the implementation of the LTCP. The *E. coli* load to the Missouri River was reduced significantly with the implementation of the SOIA Lift Station, Force Main, and Gravity Sewer, as well as the MRWRRF Schedule A improvements. Another major reduction occurred with the completion of the MRWRRF Schedule B projects.

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



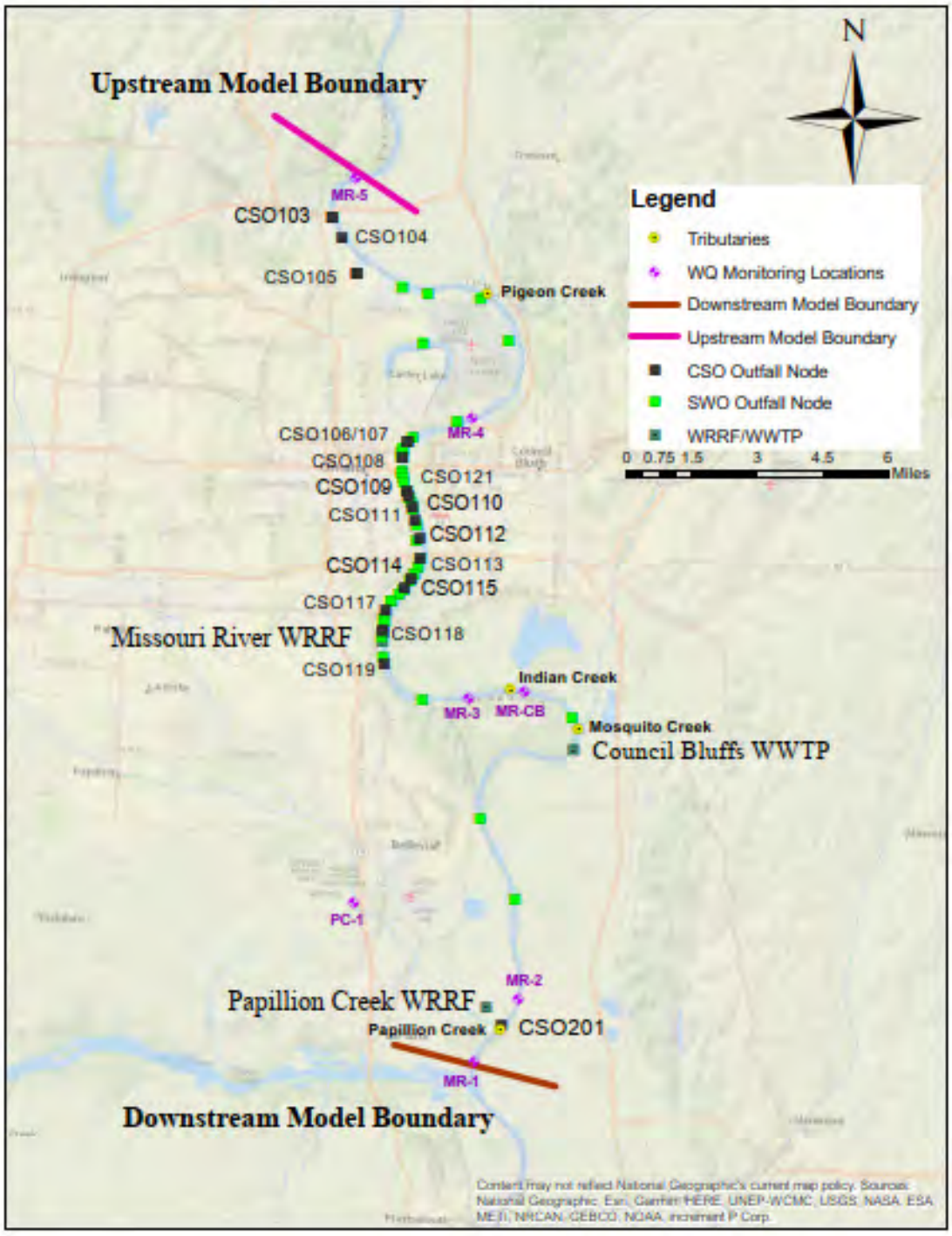
E. Water-Quality Modeling

Since development of the 2009 LTCP, the City has used a water-quality model to evaluate the possible impact that the CSO controls would have on the Missouri River and the Papillion Creek tributaries. A spreadsheet model was used. This section discusses the new models developed for the 2021 LTCP Update.

Missouri River Water-quality Model

A water-quality model that simulates E. coli was built to encompass Missouri River from NP Dodge Park downstream to just upstream of the confluence with Platte River, approximately 32 river miles. The water-quality model uses a more advanced approach than the previous LTCP spreadsheet model. The purpose of the improved water-quality model is to predict the presence of E. coli more accurately within the Missouri River near Omaha, and to better understand the impacts from the City's CSS.

Figure 8-2. Missouri River Water-Quality Model Extents and Features



The water-quality model includes all potential key sources of E. coli to the river within that portion of the river, including E. coli that enters the river from: upstream of NP Dodge Park, all City CSO and stormwater outfalls (SWOs) that discharge to Missouri River, both City WRRFs, Papillion Creek, Council Bluffs Wastewater Treatment Plant, and three streams in Iowa (Pigeon Creek, Mosquito Creek, Indian Creek) that flow into the Missouri River, as shown on Figure 8-2.

The selected water-quality modeling approach applies InfoWorks ICM to simulate the in-stream fate and transport of E. coli that is contributed from point and nonpoint sources (where the latter are captured implicitly through tributary concentrations), and the dynamic changes in E. coli concentrations during wet- and dry-weather periods. In contrast with the previous LTCP spreadsheet model, the InfoWorks ICM water-quality model performs sub-daily calculations with in-stream decay at a finer spatial resolution.

A one-dimensional (1D)[7] surface water hydraulic model was developed to provide the time-varying volumes, depths, and velocities throughout the model extent. The Hydrologic Engineering Center-River Analysis System (HEC-RAS) model applied in the Missouri River Floodway Study (USACE 2007) was obtained from the U.S. Army Corps of Engineers Omaha District, and was imported to InfoWorks ICM. Model nodes were then added in InfoWorks ICM to represent the CSO, stormwater, WRRF, and tributary discharge points that were not included in the HEC-RAS model.

Flows at the upper model boundary at NP Dodge Park were based on USGS discharge data from gauge stations at Decatur and tributaries between Decatur and NP Dodge Park. Flows from City WRRFs were based on daily observed data; flows from CSO and stormwater outfalls were based on City collection system model output; flows from Papillion Creek were based on USGS gaged data; flows from Council Bluffs wastewater treatment plant were based on reported average values; and flows from the three Iowa streams were based on Boyer River gauged discharge with drainage area adjustment.

The river hydraulic model was successfully calibrated and validated against USGS discharge and stage data from Missouri River gage stations near I-480 and Council Bluffs, respectively. The model reliably simulated discharges of 65,000 cfs or less, which is suitable for bacteria modeling that reflect low flow conditions. It is not as reliable for flows greater than 65,000 cfs

A 1D water-quality model was then developed through applying data collected by the City and USGS to represent the typical input concentrations contributed by each of the source categories previously mentioned. In particular, the 2006-2007 USGS study provided a valuable dataset, as well as ongoing sampling in Missouri River and Papillion Creek, and NPDES sampling of CSO and WRRF discharge concentrations.

The water-quality model includes the natural process of decay that occurs to E. coli as it is advected downstream, represented with a first-order decay rate that accounts for in-stream water temperature. Decay occurs faster at warmer water temperatures, and more slowly at cooler water temperatures.

A sensitivity analysis was performed on a range of decay rate and input source concentrations. A conservative first-order decay rate safely within the range of reference values (0.5 per day at 20°C) was selected based on comparison of model output to observed data. The most sensitive input was CSO concentration, which was set to 420,000 colony forming unit (cfu)/100 mL, based on the median value of 147 local measurements; it yielded a conservative set of model

[7] In 1D models, a model cell extends across the entire river width and water column; the simulated concentration varies longitudinally along the river, but not laterally or vertically. This approach is often applied for rivers and streams that are well mixed cross-channel and throughout the water column.

output that sufficiently matched observed in-stream data, whereas higher CSO concentrations were found to be overly conservative in their model output predictions.

Following the sensitivity analysis, the water-quality model was successfully calibrated against in-stream data (collected at Freedom Park, Council Bluffs, above confluence with Platte River) during six wet-weather events between 2007 and 2017 that represent a range of recreation season conditions.

Papillion Creek Watershed Model

The spreadsheet water-quality model was used for the evaluation of the CSO discharges into the various Papillion Creek tributaries. Modifications to the spreadsheet included the following:

- Used 2017 HEC-HMS model from PMR NRD study to develop runoff timeseries based on 1969 rainfall data.
- Added baseflows in each of the Papillion Creek tributaries based on available USGS streamflow data. HEC-HMS flows were ground-truthed by comparing to USGS streamflow history at available gages.
- Based upstream concentrations on available water-quality data.
- Updated wet/dry recreation season median E. coli concentrations based on existing data.
- Applied stormwater outfall and CSO concentrations that were used in Missouri River ICM model discussed previously.
- Used the values in the NDEE TMDL for Papillion Creek in the evaluation to ensure that the remaining CSOs do not preclude the stream meeting water-quality standards.

F. Condition Assessment of Large-Diameter Sewers

The City has realized the value and significance of protecting the large-diameter combined conveyance systems. With the investment in SSES for several CSO projects, the City has learned that this 100-year-old collection system is at risk for debris deposition from decades of roadway and development construction, and deteriorated brick manholes and pipelines. The success of some of the CSO controls rely on the large-diameter sewers for proper conveyance and storage of flows.

The CSO Program has selected approximately 14 miles of large-diameter combined sewers in the Missouri River Watershed for condition and risk assessments. The large-diameter sewers chosen to be investigated have been prioritized based on the criticality to achieve LTCP compliance and to operate the collection system. These condition assessments focus on one or more of the older, larger-diameter sewers that may be used more frequently, those with different hydraulic conditions, or those used for in-line storage as part of the overall strategy to achieve LTCP compliance. These sewers include some of the oldest sewers placed into service in Omaha, dating back to the early 1900s. The same sewers also have high consequence-of-failure (COF) risk ratings due to their large service areas (large number of impacted customers) and location (cost to repair or replace sewers).

During late spring and summer 2019, manholes were lamped; this consisted of investigating sewers through manholes using cameras and lights generally attached to a pole or rope.

Lamping took place along the targeted sewers to provide a preliminary indication of pipe and manhole condition, verify access, and estimate the magnitude of debris that may be anticipated.

The City contracted this year to conduct the multi-sensor investigations of the targeted sewers. A Notice to Proceed was issued on July 21, 2020, with ACE Pipe Cleaning (ACE) given 210 calendar days to complete the work. As of the end of September 2020, ACE has completed inspection of approximately 80 percent of the estimated footage. The multi-sensor investigation methods consist of CCTV and two-dimensional LiDar (Light Detection and Ranging remote sensing) for field data collected and will be post-processed by ACE prior to submission. The post-processed data will be further analyzed and evaluated by members of the PMT to update the asset's likelihood of failure (LOF) rating as well as to develop alternatives for repair/rehabilitation/replacement and, if needed, recommendations for additional analyses or inspections. Final results and recommendations, including business case evaluations, are likely to be completed by the end of March 2021.

G. Material Management

During the 2020 reporting year, waste material associated with CSO Program project construction was transported to landfills or industrial fill sites in the area. Material included building demolition materials, general construction debris, and soil. The City monitors and tracks contaminated waste materials and soils and uses this report to update the NDEE Waste Management Division.

Several projects commenced or continued construction in 2020, but only a few generated excess soil or waste material that required disposal in a landfill. These projects and the volume of soil or waste material disposed are presented in Table 8-1. No hazardous waste was disposed of in 2020.

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

In addition, 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 has recently been revised and has been sent to NDEE for review and approval.

Table 8-1. Volume of Waste Disposed during LTCP Projects

LTCP Project	OPW Number	Material Taken to Landfill	Material Taken to Construction and Demolition (C&D) Landfill or Industrial Fill Site
Spring Lake Phase 2 – Missouri Ave. CSO 117	51197B	Pheasant Point: 31 tons (refuse, debris, and soil)	0
Leavenworth Flood Mitigation	521783	0	Industrial Fill Site: 1,725 tons (soil)

LTCP Project	OPW Number	Material Taken to Landfill	Material Taken to Construction and Demolition (C&D) Landfill or Industrial Fill Site
Saddle Creek RTB	52049	187 tons	Industrial Fill Site: 97,134 tons (soil)

H. Contractor Engagement Process

The construction market in the Omaha metro area continues to be very challenging, typically trending with a low unemployment rate, a lack of available labor, material cost uncertainty, and an overall lack of general contractors bidding CSO projects because of the strong economy. The Omaha metro area market is third in the nation for development projects per capita, after being first for the three previous years (Olberding 2020). In addition to the private developments (Google, Facebook, Avenue One, and Hartwood Preserve), the metro area includes significant construction projects and programs with Omaha Public Schools, Nebraska Department of Transportation, Omaha Airport Authority, Council Bluffs Interstate System, Metropolitan Utilities District (M.U.D.), and the Riverfront Revitalization.

The labor shortage within the construction market, coupled with the Omaha metro area nearing the top of the list in the country in the number of economic development projects per capita, requires a robust contractor engagement process. Given the limitations of contractor and labor availability, and the impacts of COVID-19 requiring most events to be performed virtually, the following activities are considered for each project:

- A Constructability Review Workshop may be conducted to solicit contractor input at the 50 to 60 percent design level. A public notice is issued, inviting all contractors to participate. Examples of topics discussed are site constraints, constructability enhancements, construction sequencing, risk issues, cost-saving alternatives, schedule feasibility, and phasing options. Constructability meetings were held virtually for the Cole Creek 203 project in February 2020 with five contractors, the Papillion Creek North 210 project had virtual meetings in May with four contractors, and the Nicholas Street Phase 3B project had virtual meetings in June with four contractors. Bidding documents continued to be made available to contractors early, at the 95 percent design development level, to allow a longer period of time for the contracting community to consider a specific project before actual project advertisement.
- Small and/or Emerging Business (SEB) engagement through the Greater Omaha Chamber's REACH program. The goal is to inform both general contractors and small businesses (City-certified SEBs or not) about the construction bid opportunity. These meetings support information sharing and provide the opportunity for the project team to discuss the project and for attendees to ask questions. This is also a networking opportunity for small businesses to meet and discuss the project with general contractors who may be bidding the project. With limited opportunities for in-person meetings, the CSO Program developed early bid item quantity sheets for the Cole Creek CSO 204 Phase 3, Leavenworth Lift Station Flood Mitigation, Blake Street Lift Station, Cole Creek CSO 203, Papillion Creek North 210, and Nicholas Street Phase 3B projects to help aid SEBs understand project opportunities in advance of bid advertisement.

- As noted in last year's report, these activities and resources serve as valuable tools to strengthen the competitive advantage of all industry peers, especially those contractors who service the many markets that are similarly challenged as development-rich and/or talent-poor. Outreach is a critical component of the CSO Program to engage the contractor community and to keep general contractors and small businesses informed during each phase of a project. These practices all help provide cost control and the cost management of the CSO Program by achieving the best value for a given project, while providing a means to improve project schedule and constructability, reduce operating and overall project costs, and mitigate risk.

I. Construction Cost Data and Bid Tracking

The CSO Program continued its tracking of regional upcoming bid opportunities and is coordinating bid periods with metro area agencies and utilities (Omaha Public Schools, Nebraska Department of Transportation, Omaha Airport Authority, Council Bluffs Interstate System, M.U.D., and Sarpy County) to help maximize the number of contractors bidding each project. As bid results become available, entities are sharing the bid results in relation to the engineer's opinion of probable cost, number of bidders, and bidding issues or irregularities. This allows for a more holistic understanding of the construction market in the Omaha metro area.

The CSO Program has developed a database to capture bid costs from all bidders since 2018, which illustrated a significant increase in project costs as compared to the *Engineering News-Record* Construction Cost Index (ENR CCI). The ENR CCI values increased from 10959 (March 2018) to 11397 (March 2020), which equates to a 4 percent increase in costs. A typical sewer separation project was analyzed for the various bid groupings or cost categories over the same period and identified costs increases of approximately 24 percent.

J. Water Resource Recovery Facilities Master Plan

The City has contracted with a consultant team to develop a Master Plan for the City's two WRRFs. The two facilities are the MRWRRF and the PCWRRF. The basic purpose of the Master Plan is to identify near- and long-term facility improvements over a planning horizon of 20 years to meet current and future effluent limits, treat future wastewater flows and loadings, and meet appropriate condition and reliability requirements. Future permit limits are anticipated to include more stringent ammonia limits and those for nutrients (nitrogen and phosphorus). A 5-year CIP for the facility improvements will be developed, along with a 20-year schedule. It is expected that the improvements will cost on the order of $1 billion.

The Master Plan impacts the CSO Program in the following ways:

- The Master Plan will evaluate the impacts of wet-weather flows on the two facilities. At the MRWRRF, this will include the treatment of 64 mgd of flow through secondary treatment and disinfection. Recent improvements to the facility under the CSO Program provide for a wet-weather treatment capacity of 150 mgd through preliminary and primary treatment and 64 mgd through secondary treatment. Future process changes must accommodate these flows, including dewatering flows from future CSO facilities, such as tanks and tunnels. The Master Plan will also evaluate a wet-weather treatment capacity for the PCWRRF, which may affect overall wet-weather volume capture.
- Site requirements for new treatment facilities will impact the ability to locate any wet-weather facilities at the space-limited MRWRRF. The preferred alternative from the

Optimization Evaluation does not include any new wet-weather facilities at the MRWRRF, however, consideration should be given to potential future facilities.

- The significant cost of WRRF improvements and required schedules must be coordinated with the implementation schedule of the CSO Program. The CSO PMT, in coordination with the Master Plan team, is developing a combined strategy and schedule for inclusion in the 2021 LTCP Update. The combined strategy will consider not only impact on rates but also the ability of local contractors to bid and perform work. Having years with high cost peaks would make it more difficult for local contractors.

The WRRF Master Plan is anticipated to be completed by the end of the 2020 calendar year or shortly thereafter.

K. COVID-19 CSO Program Impacts and Response

During the report year and currently, the City is dealing with the effects of the coronavirus disease (COVID-19) worldwide pandemic. This required the City, including the CSO Program, to quickly adapt how it delivered projects. The CSO Program quickly changed to all virtual design progress meetings and, where applicable, construction progress meetings were held virtually. This has allowed project teams to minimize travel and exposure. Projects have been able to move forward with very few delays. However, for construction, most notably the Burt-Izard and Transfer Lift Stations, the pandemic has slowed progress due to manufacturing delays, inability to travel to witness pump testing, and the need for equipment from outside the U.S. The City will continue to allow virtual project meetings, progress meetings, and pre-bid and pre-construction meetings until the end of the pandemic.

The City field staff who inspect and maintain the sewer system were also impacted by the pandemic. Workflows were modified to focus on essential cleaning and regulatory inspections. The City also managed a reduced workforce due to COVID-19 exposure and family care priorities. The means to adapt required a more focused effort on technology, data collection, cloud servers, and communication. City GIS and engineering staff supported O&M with IT support of mobile devices and data collection applications. This focused effort took away from other 2020 initiatives such as further development of risk-based asset management programs and closing CMOM gaps identified during the 2018 CMOM gap analysis.

The COVID pandemic workflows also impacted timely review of technical deliverables from the CSO PMT, CSO Project Design Plans, and CMOM program initiatives. The City set out to achieve a significant amount of programmatic improvements however, experienced stunted progress. The City also operated with several staff vacancies, specifically open engineering positions, as procuring qualified staff during the pandemic proved to be very challenging. The engineering and planning sectors did not appear to slow down during the pandemic and remained occupations in demand.

The City did experience some improvement in O&M with regard to an openness to technology by the labor force. The City was also able to hire a significant amount of college interns to supplement sewer investigation and 811 sewer location work, during periods of high absenteeism due to COVID-19 related leave. This allowed the City to collect a substantial amount of sewer condition data and actually achieve some much-needed CMOM benchmarks. The data collected during the COVID pandemic workplan will be used to optimize the PM cleaning schedules as well as plan manhole rehabilitation throughout the City.

IX. Works Cited

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

Burns and McDonnell. 2019. *Wastewater Overflow Emergency Response Plan*. Draft. May 31.

CH2M HILL Engineers, Inc. (CH2M). 2018. Capacity, Management, Operation, and Maintenance (CMOM) Gap Analysis Summary. March.

City of Omaha (City). 2009. Long Term Control Plan for the Omaha Combined Sewer Overflow Control Program. October 1.

City of Omaha (City). 2014. Update to the Long Term Control Plan for the Omaha Combined Sewer Overflow Control Program. October.

City of Omaha (City). 2019. City of Omaha NPDES Permit for the Municipal Separate Storm Sewer System (MS4) NE0133698 2018 Annual Report. Environmental Quality Control Division. March 29.

GBA. 2019. *OPW 52768 & 53478 2018 Flow and Rainfall Monitoring Project Final Data Report*. Prepared for City of Omaha Public Works Department, Sewer Maintenance Division. August 12.

Olberding, Matt. 2020. “Nebraska again does well in economic development rankings.” *Lincoln Journal Star*. March 3. Updated April 8. Accessed November 2020. https://journalstar.com/business/local/nebraska-again-does-well-in-economic-development-rankings/article_06e369f1-2933-5e83-ad44-d501b14f038a.html.

U.S. Army Corps of Engineers-Omaha District. 2007. *Missouri River Floodway Study Model*. November.

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). 2017. *NPDES Compliance Inspection Manual – Interim Revised Version*. EPA Publication Number 305-K-17-001. January.

Attachment 1 – O & M Procedure Updates and Revisions Summary

The O & M procedures, as documented in the *Sewer System Operation and Maintenance Manual for Sewer Maintenance Division* (SSOMM, Brown & Caldwell, 2006), had the following updates:

- SSOMM Appendix D is amended to include the Wastewater Overflow Emergency Response Plan. The updates shared in this annual report are:
    - The WOER Plan Title page and table of contents are submitted. This plan also contains appendices in progress, so some SOPs remain active until replaced officially.
    - WEOR Plan sub-section flow charts and Combined Sewer System Overflow Classifications graphic
    - New Form was developed for response crews “Wastewater Overflow Emergency Response Form”
    - *Operating Procedure for Reporting and Public Notification of Bypass, Dry Weather Combined Sewer Overflow & Sanitary Sewer Overflow*. This SOP remains active and contains parts of the WOER Plan as attachments for easy reference.
- SSOMM Appendix F: Cover Sheet of CSO Station Procedure Manual
- SSOMM Appendix B: CSO Station & Monitoring Device Procedures and Locations

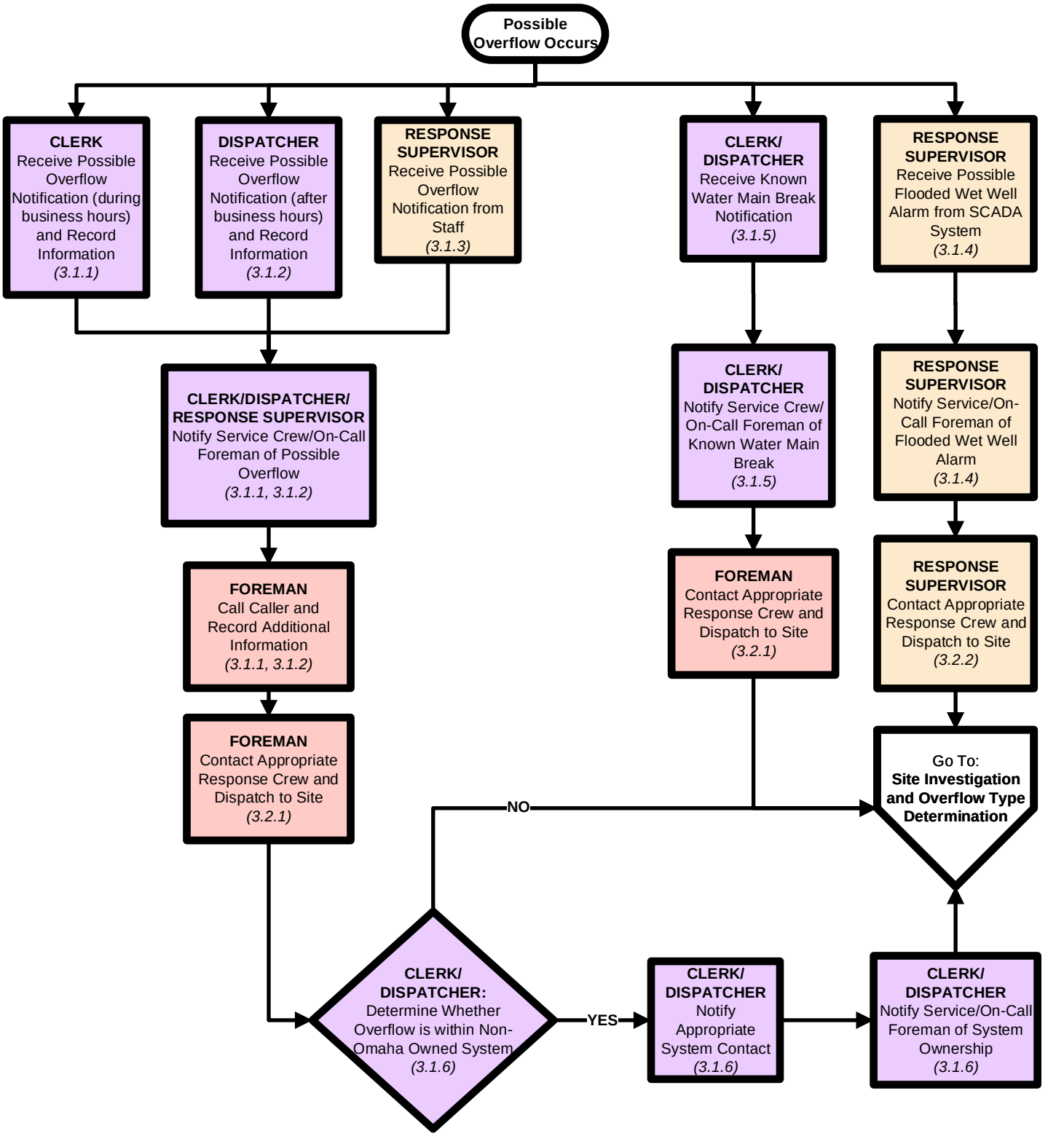
  (This sheet is also the first page of the CSO Station Procedure Manual)
- New O&M procedure for simple manhole inspections and acoustic testing: Asset Inspection App Training (cover page)
    - Defect Dictionary (Simple MH Inspection Scoring Guide)

City of Omaha
Wastewater Overflow Emergency Response (WOER) Plan

Revision 0.5
October 2020

TABLE OF CONTENTS

Incident Notification and Response



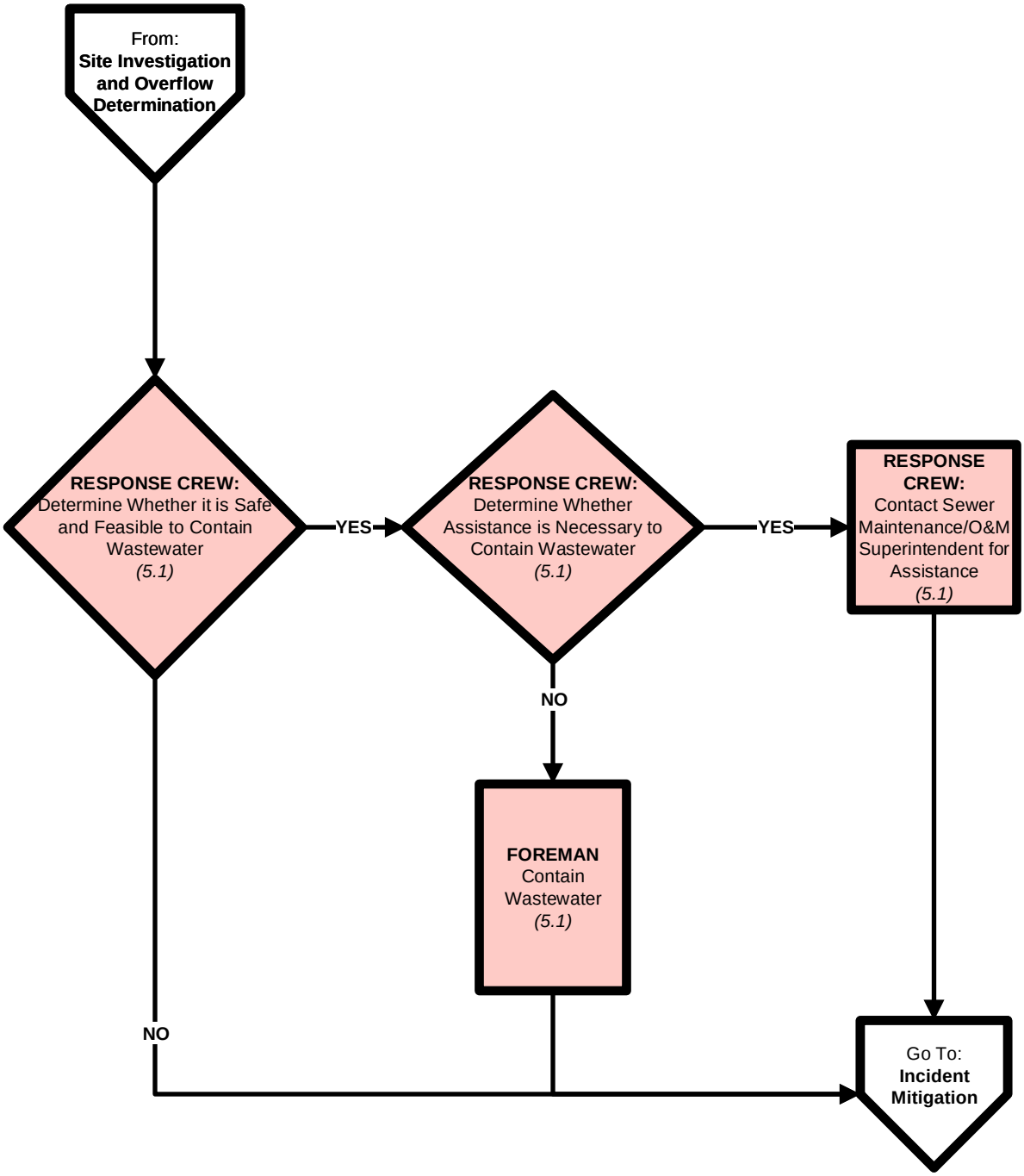
Responsibility Legend

City Leadership | Management w/ Response Staff | Engineering, Compliance, WQ, LTCA | Response Supervisors | Discovery/ Response Crew | Dispatch/ Clerk Reception

Flow Chart Symbol Legend

Start/End | Process | Decision | On-Page Reference | Off-Page Reference

Site Containment



Responsibility Legend

- City Leadership
- Management w/ Response Staff
- Engineering, Compliance, WQ, LTCA
- Response Supervisors
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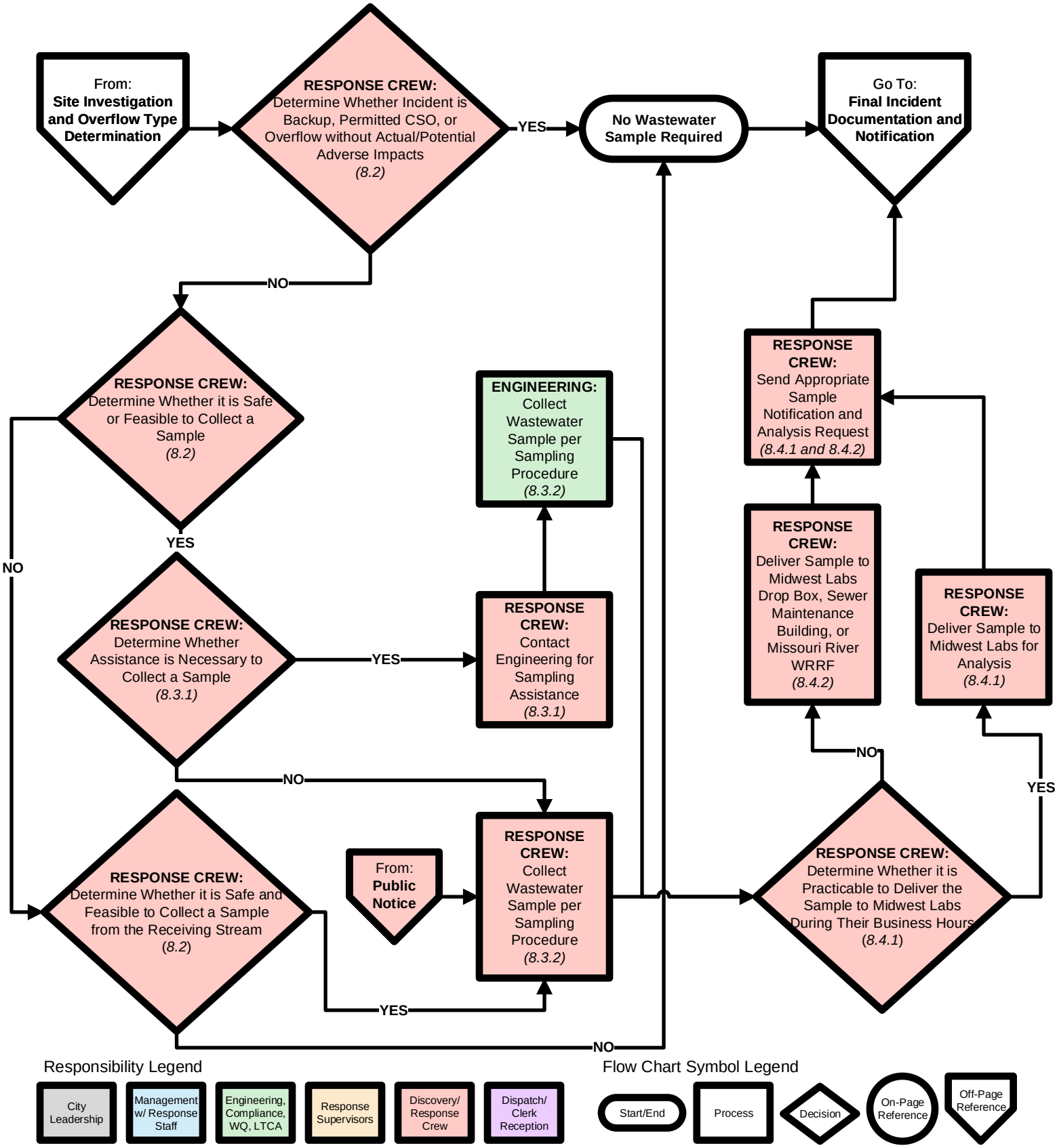
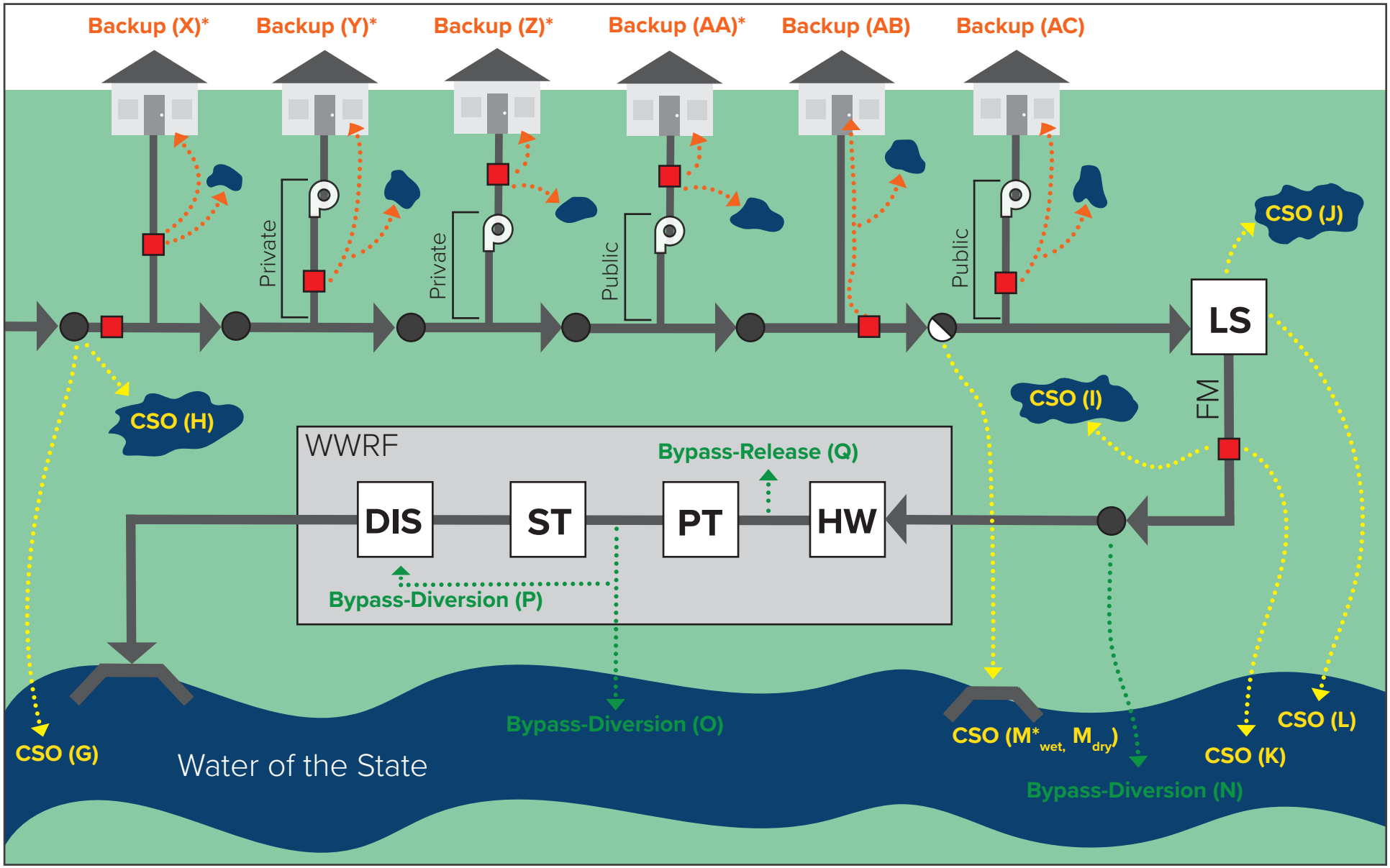
Flow Chart Symbol Legend

- Start/End
- Process
- Decision
- On-Page Reference
- Off-Page Reference

Wastewater Sampling



Combined Sewer System Overflow Classifications



FM - Forcemain
LS - Lift Station
WRRF - Water Resource Recovery Facility

HW - Headworks
PT - Primary Treatment
ST - Secondary Treatment
DIS - Disinfection

SSO - Sanitary Sewer Overflow
CSO - Combined Sewer Overflow
SSS - Separate Sewer System
CSS - Combined Sewer System

Manhole
Diversion Structure
Pump
Blockage/Break/ Inadequate Capacity
Normal Flow
Overflow
Outfall

*Initial NDEE 24 hour notification not necessary.

Wastewater Overflow Emergency Response Form

Incident Confirmation Date: _____ Site Arrival Time (Military): _____

Response Location Address: _____

Report Made By: _____

Contact Phone #: 402-444-5332 or:
(if other than Sewer Maintenance/O&M) _____

Called Brett Anderson with NDEE (402-679-1429):

☐ Yes ☐ No* ☐ Voicemail

Date: _____ Time: _____

Shaded items - Provide information to NDEE for 24 hour notification

System

- ☐ Combined (CSS)
- ☐ Separate (SSS)
- ☐ Sanitary & Improvement District (SID)
- ☐ Non-Omaha Owned (e.g., Sarpy County)

Precipitation

Upon arrival at site:

- ☐ Dry
- ☐ Wet (Raining/Heavy Snow Melt)
- ☐ Dry, but wet within last 24 hours

Destination(s) of Sewage / Release Location

- ☐ Ground
  Address: _____
- ☐ Structure/Basement[b]
  Address: _____
- ☐ Storm Inlet[a]
  - ☐ Standing/flowing water at time of discharge
- ☐ Drainage Channel[a]
  - ☐ Standing/flowing water at time of discharge
- ☐ West Papillion Creek[a]
- ☐ Little Papillion Creek[a]
- ☐ Big Papillion Creek[a]
- ☐ Hell Creek[a]
- ☐ Cole Creek[a]
- ☐ Papillion Creek[a]
- ☐ Blood Creek[a]
- ☐ Copper Creek[a]
- ☐ Missouri River[a]
- ☐ Elkhorn River[a]
- ☐ Other _____

[a] *Waters of the State*
[b] *Complete Basement Damage Form*

Overflow Type

- ☐ Sewer Backup[b]
- ☐ SSO
- ☐ CSO - Permitted[b],*
- ☐ CSO - Unpermitted
- ☐ Bypass - Release
- ☐ Bypass - Diversion

[b] *No wastewater samples required, unless directed otherwise.*

Mitigation Effort(s)

- ☐ Overflow Pumped
- ☐ Jet Line
  - ☐ With Flow
  - ☐ Against Flow
- ☐ Saw Line
- ☐ Remove Debris
- ☐ Water Main Repaired (MUD)
- ☐ Repaired
- ☐ Vacuumed
- ☐ Other _____

Work Order No(s). _____

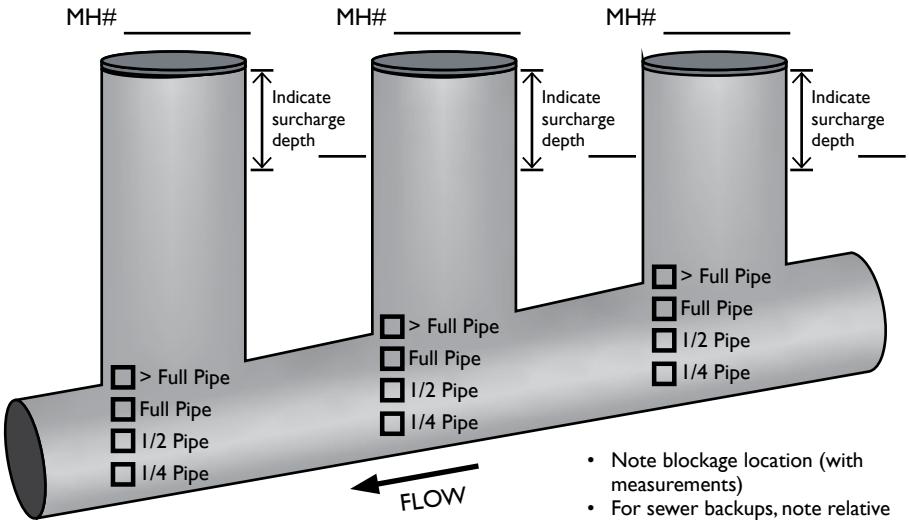
Pipe Segment(s) _____

Manholes(s) _____

Cause of Incident

- ☐ Public Line Blockage[a]
  - ☐ Debris ☐ Grease
  - ☐ Roots ☐ Grit
  - ☐ Rags ☐ Other _____
- ☐ Public Line Break (Not Utility/ Construction-Related)
  - ☐ Gravity
  - ☐ Force Main
- ☐ Intentional Bypass (Diversion)
  - ☐ Repair ☐ Maintenance
  - ☐ Construction ☐ Flood
- ☐ Sewer Overload; Inadequate Capacity (Excessive Rainfall/Snow Melt)
- ☐ Unplanned Utility/ Construction-Related Break
- ☐ Water Main Break
  (Notify MUD 402-554-6666 ☐)
- ☐ Private Line Break
- ☐ Private Line Blockage
- ☐ Equipment Failure
  - ☐ Power
  - ☐ Control System
  - ☐ Operation-Related
  - ☐ Maintenance-Related
- ☐ Illicit Connection
- ☐ Vandalism
- ☐ Unknown/Unsure
- ☐ Other _____

[a] *Note observations on sketch below*



- Note blockage location (with measurements)
- For sewer backups, note relative lateral connection location

**If unable to notify NDEE from site (due to multiple, concurrent wet weather responses, for example), notify Designee as soon as safely practicable. NDEE notification not necessary for CSO-Permitted overflow types.*

Rev. 10/14/2020

Overflow Details

Began: Date _____
Time _____
☐ Unknown

Ended/Will End:
Date _____
Time _____
☐ Unknown

Nearby Inlets:
☐ Clear
☐ Partially Plugged
☐ Fully Plugged

Estimated Volume:
☐ _____ Volume (gal)
☐ _____ Flow Rate x Duration (gpm x min)
☐ _____ Area x Depth (SF x in)
☐ _____ Flow Rate (gpm) (duration unknown)

Incident Cause Location(s)

☐ Public Sewer (Gravity)
US Manhole # _____
DS Manhole # _____
☐ Public Manhole (Manhole #) _____
☐ CSO Outfall (Outfall #) _____
☐ WRRF (Facility Name) _____
☐ Lift Station (PS #) _____
☐ Public Sewer (Force Main) (PS #) _____
☐ Constructed SSO (SSO #) _____
☐ Private Manhole/Cleanout (Address) _____
☐ Private Sewer (Gravity) (Address) _____
☐ Private Sewer (Force Main) (Address) _____
☐ Grinder Pump Station (Public/Private) (Address) _____
☐ Other _____

Sample Delivery Site

☐ Midwest Labs (13611 B Street, 402-344-7770)
☐ Sewer Maintenance Building
☐ Missouri River WRRF Lab (402-444-3915 ext. 1136)
☐ Other _____

Sample Delivery Date: _____
Time: _____
Lab WO Number: _____

☐ No Sample Necessary
- ☐ Sewer backup or CSO-Permitted
- ☐ No actual/potential adverse impacts
- ☐ Unsafe conditions _____

Description of Wastewater

☐ Domestic (e.g., residential houses, apartments)
☐ Commercial (e.g., restaurants, hotels)
☐ Industrial (e.g., factories)
☐ Other _____
☐ Unknown

Appearance of Wastewater

☐ Cloudy
☐ Clear
☐ Muddy
☐ Gray
☐ Oily
☐ Chemical Odor
☐ Foam
☐ Other _____

Actual/Potential Adverse Impacts

☐ Significant Volume (>100,000 gallons)
☐ Significant Time (>24 hours)
☐ Significant Odor
☐ Fish Kill
☐ Public Exposure/Contact
Est. # of people exposed _____
☐ Unsightly Aesthetics
☐ Priority Area Impact
- ☐ Reach Waters of the State
- ☐ Environmentally Sensitive
- ☐ Politically Sensitive
- ☐ Highly Populated

☐ Other _____
☐ None Anticipated
(No wastewater samples required, unless directed otherwise)

If any checked other than "None Anticipated":

☐ ***Notify Superintendent via phone. If no answer, leave message and notify Manager via phone.***
☐ ***Notify Superintendent, Supervisor, Designee, Manager, and Sewer Tech Crew via email.***

Recommended Follow-Up Investigation

☐ Emergency - **Notify Superintendent Immediately**
☐ Clean Nearby Inlets
Intersection/Location _____
☐ Clean Downstream Sewer(s)
US-DS Manhole #s _____
☐ Televise Downstream Sewer(s)
US-DS Manhole #s _____
☐ Child Work Order(s) _____
_____
☐ Cause of Incident Suspect; Engineering Review Needed
☐ None

CITY OF OMAHA
PUBLIC WORKS
ENVIRONMENTAL SERVICES

STANDARD OPERATING PROCEDURE

For

REPORTING AND PUBLIC NOTIFICATION

Of

WASTEWATER BYPASS, UNPERMITTED COMBINED SEWER OVERFLOW & SANITARY SEWER OVERFLOW

DATE REVIEWED:	09/28/2020
NEXT REVIEW DATE:	**3/28/2020**
LAST REVISION:	9/1/2019
ORIGINATION DATE:	12/28/03 – Marty Grate

Reviewed By: J. Morales/W. Robinson	Updated: Attachments 1, 2 & 8 and follow up flowchart.

SAFETY

Hazards	Protection Measures
1.N/A	1. N/A

KSA'S and STAFFING

Staffing will consist of Public Works Division Managers, supervisors, and field personnel who together must possess the following KSA's:

Knowledge of City of Omaha of the Water Resource Recovery Facilities and Combined Sewer System and the NPDES Permits reporting requirements.

Skill in preparing accurate and detailed reports, as well as carefully prepared statements for media distribution.

Ability to evaluate situations and conditions and exercise good judgment in determining a course of action

EQUIPMENT

-Telephone -Personal computer -Mobile device -Sewer Maps (maps w/ waterbody, contours, parcels, City and SID boundaries)

TASK DESCRIPTION

As part of the City of Omaha Wastewater Overflow Emergency Response Plan (WOER Plan), this SOP addresses the overflow notifications and reporting procedure. NPDES Permits regulate discharges at the Water Resource Recovery Facilities and the Combined Sewer Overflow facilities. Violations to the Permit require reporting to the NDEE and shall apply when any of the following occur:

- Bypass – A wastewater release that occurs within or at a Water Resource Recovery Facility (WRRF) after the headworks or the diversion from any portion of the WRRF. "Dry weather CSO" - overflows or spills from the CSS during dry weather or prolonged discharge after a wet weather event due to a blockage or system malfunction.
- Overflow – when used without qualification, shall be a general term to mean any release of any volume of wastewater from the collection or treatment system, for the purpose of action within the WOER Plan and this Notification SOP. This term shall be all inclusive of bypasses, backups, discharges, SSOs and reportable CSOs.
- Sanitary Sewer Overflow (SSO) – A wastewater release that occurs within or from the separate sanitary sewer system. SSOs could occur during dry and wet weather, and may or may not impact Waters of the State. A backup into private property, caused by the public system, is reportable as SSO.
- Unpermitted Combined Sewer Overflow (CSO) – A wastewater release that occurs within or from the combined sewer system, during dry or wet weather, not permitted to discharge under the NPDES Permit.

PROCEDURE - GENERAL

Upon discovery of a potential violation, critical information needs to be reported to the Nebraska Department of Environmental & Energy (NDEE) Regional Office within 24 hours. Verbal notification (via telephone or message system) is acceptable, but City procedure requires all discharges that reach the Waters of the State to have both a **verbal** and **written** communication within this timeframe.

In addition, any discharge within public ROW, or near areas where the public may be exposed, or would be raised up as a concern to City government or media needs to be elevated up the chain of command , as soon as is practicable, to the ***Sewer Maintenance Division Manager*** and ***Designee*** of the *Assistant Director of Public Works-Environmental Services.* One of these individuals shall be responsible to notify the Assistant Director and/or Director in some cases. This internal notification should generally be within 1 hour of discovery.

The **Initial Notification** must be made as soon as practicable to all Supervisors and the Manager with staff involved in the discovery and mitigation of the event. This immediate initial notification is needed to make decisions and carry out further portions of the notification procedure. See *Bypass Memorandum Form* for appropriate information to report. Sewer Maintenance Division Manager and Designee will present information to the Assistant Director to determine criticality and impact to health of humans and environment. If warranted a **Public Notification** will be issue via the Mayor's Media coordinator.

A **Follow-Up Report,** in the form of a letter, citing final cause, mitigation and long term corrective action, needs to be mailed to the NDEE Headquarters **within 5 days of the event.**

Designee is responsible for proper documentation and filing of all events reported sent to the State and periodic review of this SOP.

PROCEDURE – DETAILED

1. **DISCOVERY:** The City is made aware of an event, such as a sanitary sewer overflow (SSO, which includes basement backups), overflow in the Combined Sewer Service (CSS) area during dry weather, or an otherwise unscheduled bypass of treatment. Usually discovery is made in these ways:

    - A call is received by Sewer Maintenance Division dispatch, typically from a citizen, utility company, plumber, contractor, or other City staff and a Work Order is issued to the correct response crew.

- WWTPs, EQCD, or Sewer Maintenance Division staff discover an event during standard daily procedures and will involve other response staff as needed.

2. **CRITICALITY:** response or discovery crew to inform immediate supervisor to assess criticality and elevate information to appropriate manager.

   Response or Inspection Crew→Foreman Supervisors→ City Maintenance Supervisors →City Maintenance Superintendent or Engineering Supervisor→Sewer Maintenance Division Manager or Plant Manager→Assistant Director

   - **If reaching waters of the State**, and/or a defect or discharge of scale that would attract public and media concern, or impose a threat to human health and safety, require immediate notification to responsible City management to completely assess criticality. Discharges that reach a municipal separate storm system (MS4) or a combined sewer outfall (during dry weather) will be considered as "reaching waters of the State" unless specifically contained and prevention or clean up measures performed.

   - The Supervisor or Superintendent whose staff had the lead role in responding to or eliminating the overflow or unanticipated discharge must understand criticality and elevate information to appropriate manager. One must call the following personnel to discuss the severity of the discharge and determine the need for public notice (Step 6).

     1. Plant or Division Manager of Crew Responding
     2. Designee of the Assistant Director of Public Works - Environmental Services
     3. Assistant Director of Public Works - Environmental Services

   Notice to Assistant Director will typically come from Division or Plant Manager, or Designee in their absence. *Attachment 2* lists the incumbent staff.

3. **DETAILS:** Complete an ***Unscheduled Bypass Memorandum*** form (see Attachment 1). The employee(s) responding to or discovering the event must gather the required information, at a minimum, on the paper form.

- The paper form is a 2-sided document, generally printed on blue paper, with required information to be filled out on the front and guidance provided on the back.

- The electronic form is available, and can be saved locally on a desktop computer, laptop, or mobile device. It is encouraged that most of the critical information gets filled in while out in the field. The template is on the City Network and Google Docs:
  - P:\CSO\CSO_SSO\SOPs\Notif1_Unscheduled_Bypass_Excursion_Memorandum_Sept 2019.doc
  - https://drive.google.com/file/d/1KbAWhp76qcJC1lsmQSdLE5R8jPbKbhTB/view?usp=sharing

- A completed form can also be generated through data entry into the Bypass Tracking.mdb for New Bypass/Excursion Report. Hit the "Generate Report" button for a neat and complete version of the form.
  - If the responding crew is unable, untrained, or uncertain about this process, contact the Office Supervisor and assistance will be provided. Instructions for authorized users to obtain a copy of the database are in Attachment 7.

4. **INITIAL NOTIFICATION (Verbal):** notification to NDEE Field Office representative listed in Attachment 3 shall be made by the responding crew or management as decided in Step 2 for all prohibited bypasses or overflows reaching surface waters of the State.

   - If the NDEE Field Office representative is not available, a voice mail message will satisfy the requirement.

   - This shall serve as the Initial Notification to the NDEE. The Initial Notification shall be made as soon as possible and at all times must be made within 24 hours of the discovery of the event.

   - Verbal notification of wastewater discharges not reaching waters of the United States shall be at the discretion of the Division that discovers the discharge.

5. **INITIAL NOTIFICATION (written):** The *Unscheduled Bypass Memorandum* shall be sent to the NDEE Field Office representative and circulated to appropriate City Staff as follows:

    - Either email or fax. If no phone call was warranted or made, the form shall serve as the **Initial Notification** to the NDEE. Again, the **Initial Notification** shall be made as soon as possible and at all times must be made within 24 hours of the discovery of the event**.** The employee(s) who responded/discovered the event are responsible for making the Initial Notification unless told otherwise by a supervisor or manager.

    - A **copy** of the completed *Unscheduled Bypass Memorandum* form should be forwarded to appropriate manager(s). Copy Assistant Director of Public Works - Environmental Services and Designee for events that reached waters of the State. Copy the Office Supervisor for record keeping and to begin the Follow-Up Report (Step 8).

6. **PUBLIC NOTICE CRITERIA:** Determination of the need for a news release will be on a case-by-case basis and may be made in consultation with the NDEE and the Douglas County Health Department. Factors alone or in combination that support the need for a news release include the following:

    - The anticipated duration of the incident – is an overflow or bypass likely to continue for 24 hours or more?

    - The estimated quantity of wastewater discharged – is the quantity expected to exceed 100,000 gal?

    - The nature of the overflow – does the wastewater likely contain pollutants in concentrations presenting an imminent threat to health or the environment?

    - The location of the overflow – is the release in an area that cannot be secured or is likely to cause adverse impacts on health or the environment?

7. **ISSUING A PUBLIC NOTICE**: This will generally be determined by the Assistant Director of Public Works - Environmental Services. If absent or unavailable, this responsibility will pass to the Designee.

    - This responsibility requires evaluating the need for and drafting any news release for notification to the public of an overflow or bypass event.

    - Use the general format provided in the ***Unscheduled Bypass News Release*** template provided as *Attachment 4*. Whenever possible, the draft release should be reviewed by the Assistant Director of Public Works - Environmental

Services and/or the Public Works Director and then forwarded to the Mayor's Media Coordinator for release. *Attachment 8* contains current contact information for the Mayor's Media Coordinator and instructions to follow if unable to make contact.

- When the magnitude or duration of the event may have adverse impacts on downstream communities, the person drafting the news release should email a copy of the final version to the local, state and regional contacts on the attached ***Bypass Email Addresses*** list provided as *Attachment 5*.

- **FOLLOW-UP REPORT:** The Plant or Division Manager whose staff had the lead role in eliminating the overflow or bypass will typically responsible for drafting the letter. For Sewer Maintenance Division, the Office Supervisor will prepare the follow up report for review by the Manager and Designee. The Designee shall offer assistance to writing report when requested. The letter must include the following information:

- A description and location of the discharge and cause.

- The period of event, including dates, times and quantity, or if not corrected, the anticipated time the discharge is expected to continue.

- Identification of the receiving steam and any environmentally sensitive areas impacted.

- The steps taken to reduce eliminate and prevent the reoccurrence of the overflow or bypass.

Attachment 6 is provided as a template for this letter. The MS Word file may be found at P:\CSO\CSO_SSO SOPS\Notif2_Follow-up_Letter_Template.doc

8. **REVIEW OF FOLLOW-UP REPORT**: bypasses and overflows reaching waters of the State should be reviewed by the Plant or Division Manager whose crew led mediation activities. For Sewer Maintenance Division, the Designee, at a minimum, shall review all reports prior to submission to NDEE.

- For Levee and Sewer Maintenance, email a draft report to the Office Supervisor who will circulate for review with Division Manager and Designee.

- Comments will be compiled and submitted back to the original author or edits will be made directly and report will be signed by the authorized reviewer.

9. **SUBMIT FOLLOW-UP REPORT:** Follow-up must be signed by an authorized Designee or Manager and mailed to the NDEE as soon as practically possible, postmarked no later than:

    - 5 calendar days after the initial notification**. For the purpose of this procedure, the City shall apply this deadline to any prohibited Bypass or Overflow that reach waters of the State.
    - 7 calendar days after becoming aware of any other noncompliance with the NPDES requirements.***

**This is prescribed by the NDEE Title 119 Rules And Regulations Pertaining To The Issuance Of Permits Under The National Pollutant Discharge Elimination System, Chapter 14, General Terms and Conditions (001.04G) and specifically outlined in the CSO NPDES Permit (NE0133680) for substantial dry weather overflows.
***Specifically outlined in the NPDES Permits for the Wastewater Treatment Plants/Facilities (NE0112810; NE0036358; NE0040096).

10. **COPY AND FILE REPORTS:** A signed copy of the final version of all Initial and Follow-Up reports must be provided as follows:

    - Both a hard copy and scanned electronic copy of the follow up letter shall be provided.
    - The Office Supervisor at Sewer Maintenance shall be responsible for cataloging all of this information, both in hard copy and electronically, under direction of the Designee. (See SOP for Bypass Records Retention)
    - Additionally, electronic copies shall be provided to the Assistant Director of Public Works - Environmental Services, and the Managers and Supervisors depending on which Division had the lead role in notification.
    - The electronic distribution of the follow reports mailed to NDEE shall occur, at a minimum, every two weeks.

11. **SOP REVIEW:** The Designee is responsible for review and updating this SOP semi-annually by March 1 and September 1, or more frequently as needed.

Attachment 2

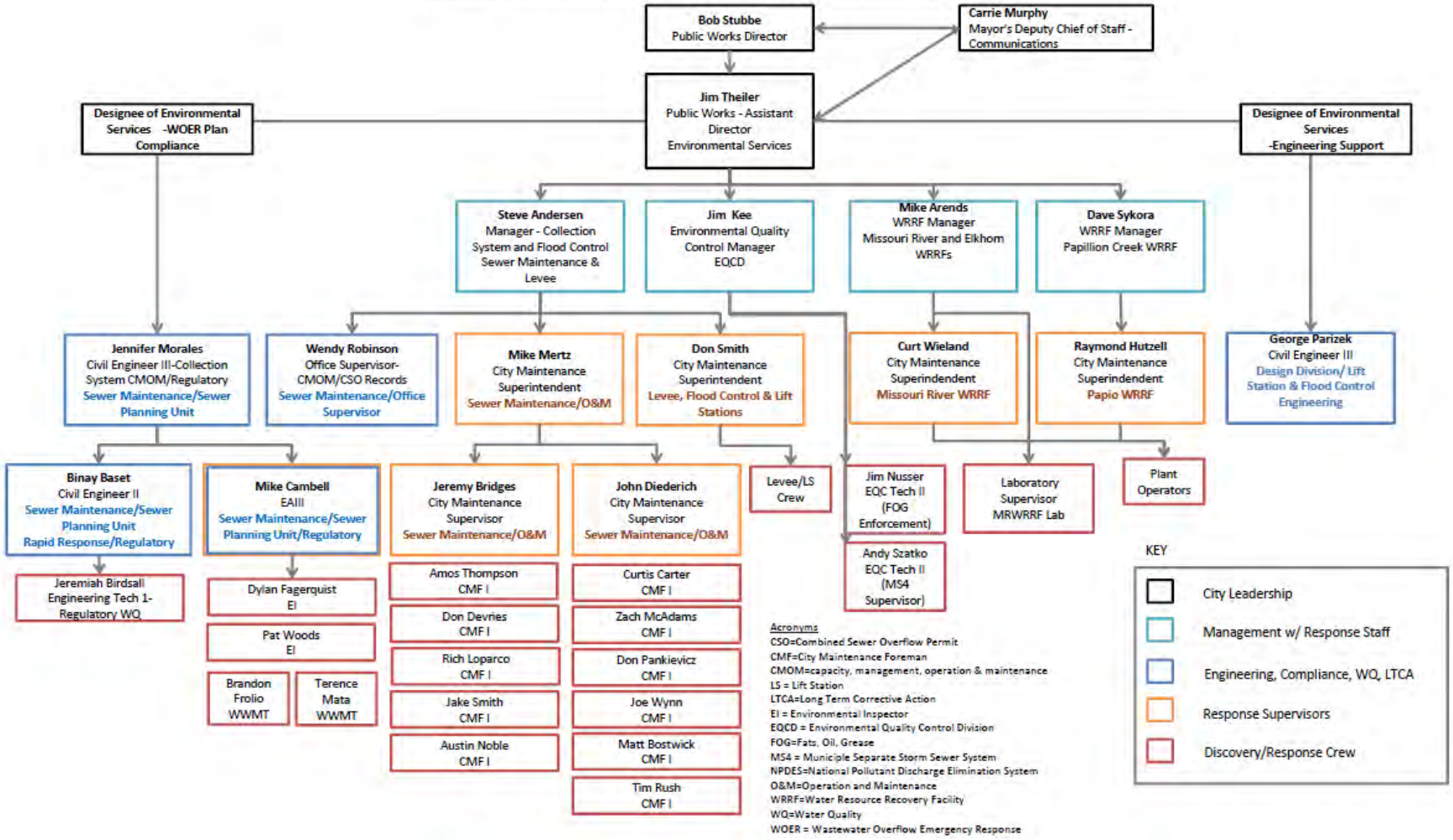
Listing of Incumbent City Staff as of September 2019

WOER Plan Contacts

September 2020

First name	Last name	Phone	Cell Phone	Job Title	Pwks Divison / Org
Steve	Andersen	402-444-5265	402-215-8517	Manager - Collection System and Flood Contrc	Sewer Maintenance & MRWWTP Levee
Mike	Arends	402-444-3910	402-619-0067	WRRF Manager	Missouri River WRRF
Binay	Basnet	402-444-6005	531-225-5130	Civil Engineer II-Rapid Response	Sewer Maintenance / Sewer Planning Unit
Ron	Bartlett	402-444-1113	n/a	Quality Control Technician II	Missouri River WRRF
Jeremiah	Birdsall	402-444-5332	402-740-9150	Environmental Inspector	Sewer Maintenance / Sewer Planning Unit
Matt	Bostwick	402-444-4633	402-670-8028	City Maintenance Foreman I	Sewer Maintenance / O & M
Jeremy	Bridges	402-444-4726	402-618-6743	City Maintenance Supervisor	Sewer Maintenance / O & M
Curtis	Carter	402-444-5332	402-619-6084	City Maintenance Foreman I	Sewer Maintenance / O & M
Devries	Don	402-444-4633	402-281-8693	City Maintenance Foreman I	Sewer Maintenance / Construction
Erik	Dickes	402-444-5332	402-676-1673	Sewer Tech Crew supervisor	Sewer Maintenance / Sewer Planning Unit
John	Diederich	402-444-4717	402-660-3993	City Maintenance Supervisor	Sewer Maintenance / O & M
Andrew	Etholer	402-444-3388	402-658-3896	Maintenance Mechanic II	Sewer Maintenance
Dylan	Fagerquist	402-444-5332	402-490-8063	Environmental Inspector	Sewer Maintenance / Sewer Planning Unit
Jake	Hansen	402-444-5107	402-214-5301	Civil Engineer III	Design Division / Plant Engineering
Christina	Tisko	402-444-3915 ext 1034	402-682-2613	WRRF Laboratory Supervisor	Missouri River WRRF / Laboratory Supervisor
Raymond	Hutzell	402-444-3922 ext 2302	402-505-0099	City Maintenance Superintendent	Papio WRRF
Jim	Kee	402-444-3909	402-657-2951	Environmental Quality Control Mgr	Environmental Quality Control Division
Zach	McAdams	402-444-1693	402-990-5847	City Maintenance Foreman I	Sewer Maintenance / O & M
Mike	Mertz	402-444-4923	402-660-3997	City Maintenance Superintendent	Sewer Maintenance / O & M
Jennifer	Morales	402-444-7136	402-661-0053	Civil Engineer III-Designee	Sewer Maintenance / long Term Planning
Jacob	Nusser	402-444-1032	402-619-6815	Engineer Technician I	Sewer Maintenance / Sewer Planning Unit
Jim	Nusser	402-444-1033	402-660-3671	Quality Control Technician I	Missouri River WRRF
Don	Pankievicz	402-444-5332	402-619-0448	City Maintenance Foreman I	Sewer Maintenance / O & M
George	Parizek	402-444-4765	na	Civil Engineer III	Design Division / Lift Stations
Wendy	Robinson	402-444-3467	na	Office Supervisor / CSO Records	Sewer Maintenance / Sewer Planning Unit
Tim	Rush	402-444-5332	402-315-0864	City Maintenance Foreman I	Sewer Maintenance / O & M
Don	Smith	402-444-3915 ext 1180	402-505-0664	Provisional City Maintenance Superintendent	Flood Levee Control & Lift Stations
Michael (Jake)	Smith	402-444-5332	402-676-1157	City Maintenance Foreman I	Sewer Maintenance / Construction
Bob	Stubbe	402-444-5228	402-960-5241	Public Works - Director	Public Works
Dave	Sykora	402-444-3915 ext 1006	402-505-0981	WRRF Manager	Papio WRRF
Andy	Szatko	402-444-1101	402-657-7418	Stormwater Program Supervisor / EQCT II	Missouri River WRRF
Jim	Theiler	402-444-5225	531-222-7901	Public Works - Assistant Director	Environmental Services
Amos	Thompson	402-444-5332	402-660-5296	City Maintenance Foreman I	Sewer Maintenance / Construction
Evan	Wickham	402-545-0700	402-619-1730	Civil Engineer II-SSES	Sewer Maintenance / Sewer Planning Unit
Curt	Wieland	402-444-3915 ext. 116	402-505-1918	City Maintenance Superintendent	Missouri River WWRF
Joe	Wynn	402-444-5332	402-658-3759	City Maintenance Foreman I	Sewer Maintenance / O & M

CITY OF OMAHA PUBLIC WORKS DEPARTMENT
WASTEWATER OVERFLOW EMERGENCY RESPONSE PLAN (WOER Plan)
ORGANIZATIONAL CHART
To maintain in compliance with the NPDES Permits issued to the wastewater collection and treatment systems



Attachment 3

NDEE Contact and Reporting Information

Initial Notification shall be provided to the NDEE Field Office in Omaha, NE as soon as possible and always within 24 hours verbally by phone, by fax, or by email per the requirements of this SOP. Contact Information is as follows:

Mr. Brett Anderson
NDEE Field Office
8901 South 154th Street, Suite 5
Omaha, NE 68138-3621
Phone: (402) 595-1766
Fax: (402) 895-6543
Email: brett.anderson@nebraska.gov

Follow-up Letters shall be mailed to the NDEE Headquarters in Lincoln, NE as soon as practically possible, postmarked no later than 5 or 7 days after initial notification per the requirements of the NPDES Permit and this SOP. Contact Information is as follows:

Mr. Reuel Anderson
Nebraska Department of Environment & Energy
PO Box 98922
Lincoln, NE 68509-8922

Please provide a copy of the follow up letter to the NDEE Field office by mail or email. CC: Shelley Schneider (NDEE)

Douglas County Health Department Contact Information

If the location of the overflow is in an area that may cause Public Health concerns, contact:

Russell Hadan
Environmental Supervisor
Phone: 402-444-6162
Cell: 402-547-0154
Email: Russell.hadan@douglascounty-ne.gov

OR

Dr. Larry Figgs
Division Chief of Environmental Health Division
Phone: 402-444-7490
Cell: 402-669-8485
Email: Larry.figgs@douglascounty-ne.gov

Papio-Missouri River NRD Contact and Reporting Information

If mitigation requires work within the Papio-Missouri River NRD's jurisdiction, such as closing a gate along the Papio levee system, contact:

Martin P. Cleveland, PE
Construction Engineer, Papio-MRNRD
Phone: 402-444-6222
Direct Line: 402-315-1707
Cell: 402-670-4304
E-Mail: mcleveland@papionrd.org

OR

Bill Warren
O/M Superintendent
Cell: 402-669-7744
Email: bwarren@papionrd.org

Attachment 4

Unscheduled Bypass news release template

<date>

City of Omaha, Nebraska
News Release for Wastewater Discharge to the <receiving stream>

Contact - Bob Stubbe, OPWD, 402-444-5228

Due to <problem> at approximately <time> on <date> at <location>, approximately <discharge rate> of untreated wastewater is being discharged to the <receiving stream>. Repairs to the <problem> that will allow treatment to resume are expected by <time/date>.

<If applicable insert…Seasonally cool temperatures are expected to limit recreational use of the river and therefore minimize adverse health impacts. However,> Until repairs are completed the Omaha Public Works Department is issuing the following advice:

Avoid wading, swimming and other primary body contact with the waters of the <receiving stream> in the area near and several miles downstream from <location A> to <location B>.

This advisory will remain in effect until further notice.

Attachment 5

Email Addresses & Emergency Phone Numbers for Bypass notification

Local officials:

Russell.hadan@douglascounty-ne.gov
cjacobsen@papionrd.org
Kirk.Morrow@Nebraska.gov
mcleveland@papionrd.org
tfoster@cityoflavista.org
jcalentine@cityoflavista.org
jefft@papillion.org
jchancellor@cityofralston.com
epiphany.ramos@bellevue.net
dick.mcclemons@bellevue.net
Larry.figgs@douglascounty-ne.gov
Brett.Anderson@Nebraska.gov
Pat.nelson@CH2M.com
publicworks@cityoflavista.org
jsoucie@cityoflavista.org
mfreese@papillion.org
dfreshman@cityofralston.com
jeff.roberts@bellevue.net
jhare@bellevue.net

Offutt AFB Civil Engineering: Jason Teem (402)294-5232

Regional officials:

earl.imler@nebraska.gov
elizabeth.esseks@nebraska.gov
howard.isaacs@nebraska.gov
Doug.Woodbeck@nebraska.gov
jackson.Robertw@epamail.epa.gov
dan.olson@dnr.iowa.gov
robert_f_stewart@ios.doi.gov
DDierks@CouncilBluffs-IA.Gov
todd.eichholz@ndr.mo.gov

Downstream officials:

elizabeth.basnett@sema.dps.mo.gov
Brian.Quinn@sema.dps.mo.gov
todd.farley@sema.dps.mo.gov
Tom.Masso@sema.dps.mo.gov
Michael.booth@sema.dps.mo.gov
Maureen.Burke@sema.dps.mo.gov
dawn.warren@sema.dps.mo.gov
Alan.Reinkemeyer@dnr.mo.gov
Cory.Jorgensen@dnr.mo.gov
ken.tomlin@dnr.mo.gov
deana.cash@dnr.mo.gov
jamie.gaggero@ks.gov
bob.jurgens@ks.gov
john.mitchell@ks.gov
mike.mcnulty@ks.gov

If it reaches the Missouri River, notify all three groups and the following emergency call centers: Missouri DNR 573-634-2436, Kansas emergency spill: 785-291-3333, Iowa DNR spill reporting line 515-725-8694.

Kansas Bureau of Water needs notification. Public Water supply: general office number (785) 296-5514. After Hours Emergency Contact Phone: (785) 296-1679

Attachment 6

City of Omaha
Jean Stothert, Mayor

Public Works Department
Omaha/Douglas Civic Center
1819 Farnam Street, Suite 601
Omaha, Nebraska 68183-0601
(402) 444-5220
Fax (402) 444-5248

Robert G. Stubbe, P.E.
Public Works Director

Date

Mr. Reuel Anderson
Nebraska Department of Environment & Energy
P.O. Box 98922
Lincoln, NE 68509-8922

RE: Location or Facility, Description of Event

Dear Mr. Anderson:

Description of Event. Include all relevant information. Refer to Notification of Bypass SOP when preparing this document and the initial notification form to make sure all required information is included in this document.

If you have any questions or require additional information, please do not hesitate to contact me at (402) 444-XXXX.

Sincerely,

Author
City of Omaha Public Works Department
Facility
Address

Cc: Brett Anderson (NDEE), Schneider (NDEE), Theiler (OPW), Andersen (OPW), Mertz (OPW), Diederich (OPW), Robinson (OPW)

Attachment 7

Bypass Tracking Database

A copy of the user “front end” of the database is located at ***Public on 'Omdotcfil03' (P:) \CSO\CSO_SSO Bypass Tracking\ Bypass Tracking.mdb).***

Users should copy this file and save to a location on their computer such as on their desktop. Users should be connected to the City network in order for the data to register in the “back end” of the master database.

The Bypass Tracking Database is maintained at Sewer Maintenance by the Designee.

See also *SOP for Bypass Tracking Database Entry of Initial Memorandum Reports.*

Attachment 8

Mayor's Media Coordinator Contact Information
And Media Distribution List

News Release shall be forwarded to one of the following personnel for proper media distribution:

Carrie Murphy
Deputy Chief of Staff - Communications
Phone (402) 444-3520
Cell (402) 679-6603

Brandi Preston
Community Services Manager
Phone (402)-444-6274
Cell (402)-659-3438

In cases of emergency where the above personnel cannot be reached after 1 hour of attempt, the drafted press release, approved by Director or Assistant Director to Public Works-Environmental Services, may be distributed among the list included here:
Omaha World-Herald <news@owh.com>, WOWT <sixonline@wowt.com>, Brian Mastre <brian.mastre@wowt.com>, Beeler, Cathy M <cbeeler@hearst.com>, Burbach, Christopher <Christopher.Burbach@owh.com>, David Earl <dearl@hearst.com>, Jeff Robb <jeff.robb@owh.com>, Cole, Kevin <Kevin.Cole@owh.com>, Kevin Westhues <kevin.westhues@wowt.com>, Ken Dudzik <ken.dudzik@ops.org>, Melissa Fry <MFry@hearst.com>, roger.hamer@wowt.com <roger.hamer@wowt.com>, Glissmann, Bob <Bob.Glissmann@owh.com>, dave.z@wowt.com <dave.z@wowt.com>, Stone, Alexandra <alstone@hearst.com>, Tom Becka <tbecka@hotmail.com>, Jennifer Griswold <jennifer.griswold@kmtv.com>, Sadlemyer, Gary <GarySadlemyer@iheartmedia.com>, Connie White <connie.white@owh.com>, Aaron Sanderford <aaron.sanderford@owh.com>, news@kios.org <news@kios.org>, KPTM <news42@kptm.com>, Cassie Crowe <cassie.crowe@wowt.com>, John Chapman <john.chapman@wowt.com>, Jenna L. Garcia (CClk) <jlgarcia@omahalibrary.org>, Jill Bruckner <jbruckner@omahachamber.org>, KMTV 3 News Now <news@3newsnow.com>, Marion Bailey <marion.bailey@wowt.com>, <LynnR@lonm.org>, Joe Jordan <jjordan@newschannelnebraska.com>, Joe Jordan <joeiteam@hotmail.com>, Roth, Geoffrey <Geoffrey.Roth@3newsnow.com>, Zozaya, Jose <Jose.Zozaya@hearst.com>, Gaarder, Nancy <GAARDER@owh.com>, Baker, Chris (KFAB) <chris@kfab.com>, Voorhees, Scott <scottvoorhees@iheartmedia.com>, Duffy, Erin <eduffy@owh.com>, <acortes@telemundonebraska.com>, <mrosado@telemundonebraska.com>, <aaron@telemundonebraska.com>, <adelgado@telemundonebraska.com>, Brianna Puccini <brianna_puccini@fischer.senate.gov>, <chanse_jones@fischer.senate.gov>, Baker, Holly (Fischer) <Holly_Baker@fischer.senate.gov>, <mike.hogan@ops.org>, KETV <news@ketv.com>, <scott@omahadailyrecord.com>, Leia Baez (DC Commissioners) <leia.baez@douglascounty-ne.gov>, Kipper, Jon <Jon.Kipper@3newsnow.com>

Unscheduled Bypass or Non-permitted Overflow Notification and Reporting 2020 Flowchart

Overflow/Backup discovered or called into Sewer Maintenance Front Desk

Sewer Maintenance Crew or Sewer Tech Crew respond to event and fill out ***Unscheduled Bypass Memorandum***

Notification of Bypass SOP

Reach Waters of the State (W.O.S.)?

No

Visible concern to public or press?

No

Crew to: NOTIFY NDEE (Brett Anderson@402-595-1766)

Provide completed paper form to Front Office (CC Designee)

Yes

Yes

Crew to: NOTIFY Supervisor

Supervisor OR Superintendent to:
1) NOTIFY Division Manager w/ CC to Designee
2) NOTIFY NDEE (Brett Anderson@402-679-1429)

CALL PWKS Asst. Director - ES* (Jim @ 402-444-5225)
BRIEF on details: locale, duration, amount, mitigation
DECIDE if Public Notice warranted
*If not available, Designee will make Decision

Front Office reviews form

No

NDEE Called?

Yes

Immediatetly

Collection System Staff

Bypass Database Entry SOP

Front Office Enters form details into Bypass Tracking Database

Generate Bypass Memorandum Report from Bypass Tracking database

Notification of Bypass SOP

Fax or Email Bypass Memorandum to Brett Anderson (NDEE)

Attach to Cityworks Work Order and Print Hard Copy for office tracking

Cityworks Work Order Process at Sewer Maintenance

Crew or Supervisor to provide Work Order Number with investigation, mitigation, and prevention noted, to Front Office **as soon as possible/practicable.**

Ask Crew or Supervisor for additional information.

Flowchart Key

Teminator		Database	
Document		Multidocument	
Process Step		Preparation	
Decision		SOP	
Share Info			

Workflow for Immediate Notification

WorkFlow

Concurrent

Guidance

Within 24 hours

Within 2-5 Days

Front Office & Designee

Are follow up investigation and corrective actions complete?

No

Yes

Notification of Bypass SOP

Prepare Follow-Up Letter. Subject line to include NPDES Permit # (past letters may be used as template)

Is the event due to only wet-weather and in CSS?

Yes

No

Did overflow reach W.O.S. at non-permitted CSO point?

No

Yes

No Follow Up Letter RQ'd. Courtesy information is provided for rain events resulting in several wet weather issues in CSS along w/ any SSOs

At minimum, must make "MEMO to the file" stating the storm event information provided by Eng Tech staff.

Save Memo with other follow-up letter files adding "NR" as a suffix to the filename

Email Draft to Designee, OR in their absense , to Sewer Maintenance Manager for Review.

Revise draft and add the reviewer contact and signature information to final letter.

Save Final Follow-up Letter to Public on sewerdc (***L:)\CSO_SSO\YYYY CSO_SSO NDEE\Follow-up Letters word docs***

Note the "Extra Details" in Bypass Tracking database; Also Final Cause and Long Term Corrective Action

Bypass Database Maintenance and Review SOP

By Day 5

Obtain Signature from the Final Author/Reviewer

Return any WOs to Owner or Foreman along with hard copy of Follow-Up Letter and initial memorandum

File Hard Copy of MEMO with other Follow-up Letters

Bypass Records Retention SOP

Scan Signed Letter and save as a PDF in L:\CSO_SSO\YYYY CSO_SSO NDEE\Follow up Letters-Final PDFS.

One copy of Follow-up Letter and Memorandum, stapled and filed in front office.

Front Office

Notification of Bypass SOP

eMail Follow-Up Letter to Reuel Anderson, NDEE. Include NPDES Permit # on email subject;
NO LATER THAN the 5th business day after discovering event reached W.O.S. CC . Shelley Schneider; Brett Anderson

Email PDF of signed Letter to Brett Anderson; Jim Theiler; Jennifer Morales; the Division and/or Plant Manager(s); and Jim Kee for reached MS4 bi-weekly or sooner if requested

Use EMAIL TEMPLATE in L:\CSO_SSO\SOPs\Current\

Within 5 business days - Filed/CC'd Bi-Weekly on Monday

COMBINED SEWER OVERFLOW STATION PROCEDURE MANUAL

FOR

SEWER MAINTENANCE DIVISION

CITY OF OMAHA, NEBRASKA

SEPTEMBER 2020

CSO STATION AND MONITORING DEVICE PROCEDURES AND LOCATIONS

ALL CSO LOCATIONS ARE CHECKED EVERY OTHER WEEK ON PAYDAYS AND WITHIN 24 HOURS OF ANY WET WEATHER EVENT. ALL STATIONS WITH MANUALLY CLEANED BARSCREENS ARE TO BE CHECKED PRIOR TO ANY RAIN EVENT AND IMMEDIATELY FOLLOWING THE RETURN TO NORMAL OPERATION OF THE NORTH INTERCEPTOR, GRACE, BURT-IZARD AND LEAVENWORTH STATIONS.

EQUIPMENT AND STATIONS ARE CHECKED AT LEAST ONCE DURING THE WORK WEEK, MONDAY THROUGH FRIDAY.

			Equipment and Stations	CSO Device Check (routine)	CSO Device Check (WW)
BRIDGE ST	CSO 103		Levee Crew	Sewer Tech	Sewer Tech
MORMON ST (DEACTIVATED)	CSO 104		na	na	na
MINNE LUSA	CSO 105		Levee Crew	Sewer Tech	Sewer Tech
NORTH INT DIV	CSO 106		Levee Crew	Sewer Tech	Sewer Tech
GRACE DIVERSION	CSO 107		Levee Crew	Sewer Tech	Sewer Tech
BURT IZARD	CSO 108		Levee Crew	Sewer Tech	Sewer Tech
6TH LEAVENWORTH	CSO 109		Converting to grit stucture only, not currently online		
NEW LEAVENWORTH	CSO 109	(1)	Levee Crew	Sewer Tech-ND	Sewer Tech-ND
PIERCE	CSO 110		LS Decommissioned	Sewer Tech	Sewer Tech
HICKORY	CSO 111		Levee Crew	Sewer Tech	Sewer Tech
MARTHA ST	CSO 112		Levee Crew	Sewer Tech	Sewer Tech
SPRING ST (DEACTIVATED)	CSO 113		na	na	na
GROVER	CSO 114		Levee Crew	Sewer Tech	Sewer Tech
RIVERVIEW	CSO 115		Levee Crew	Sewer Tech	Sewer Tech
MO AVE	CSO 117		Levee Crew	Sewer Tech	Sewer Tech
SO OMAHA/OHERN	CSO 118		Levee Crew	Sewer Tech	Sewer Tech
MONROE ST LS (N)	CSO 119	(8)	Levee Crew	Sewer Tech	Sewer Tech
MONROE ST (S)	CSO 119	(2)	na	Sewer Tech	Sewer Tech
JONES ST	CSO 121		Levee Crew	Sewer Tech	Sewer Tech
72ND BEDFORD	CSO 202	(3)	Levee Crew	Sewer Tech	Sewer Tech
69TH EVANS	CSO 203	(3)	Levee Crew	Sewer Tech	Sewer Tech
61ST TAYLOR	CSO 204	(3)	Levee Crew	Sewer Tech	Sewer Tech
63RD PRATT	CSO 204	(3)	Levee Crew	Sewer Tech	Sewer Tech
66TH AMES (NEW)	CSO 204	(4)	na	Sewer Tech	Sewer Tech
64TH DUPONT	CSO 205	(7)	Levee Crew	Sewer Tech-ND	Sewer Tech-ND
43RD & R ST	CSO 207	(5)	na	Sewer Tech-ND	Sewer Tech-ND
45TH & V ST	CSO 208	(6)	na	Sewer Tech	Sewer Tech
44TH & HARRISON ST	CSO 209	(DEACTIVATED)	na	na	na
66TH & BLONDO	CSO 210		na	Sewer Tech	Sewer Tech
66TH & PACIFIC	CSO 211		na	Sewer Tech	Sewer Tech
64TH & WOOLWORTH	CSO 212		na	Sewer Tech	Sewer Tech

(1) ND=no device. Level sensor in Diversion Structure #1 reported to Sewer Tech by MRWRRF Operations
(2) Devices installed on 12/20/2018 at MH 0551001, 0551020, 0551021, 0571049, 0551030 and incorporated into CSO routine checks
(3) CSO SITES LOCATED IN THE BENSON AREA. Notify Levee crew if gates are still down and flow level below bubbler indicator.
(4) CSO block device was installed as a redundant QC measure due to questionable flow metering readings.
(5) ND Check MH 0644015 for overflow.
(6) Check of device in ditch (end of corrugated metal pipe sewer node #0645036F and MH 0645025)
(7) ND Level data from Mission flow meter using telemetry indicates "Peak Depth" reading and indicates if overflow occurred. Access to site to check device is limited due to construction.
(8) MRWRRF operations will notify SM staff when LS wet well level reaches 12.5'. If no overflows occurred at Monroe diversions and LS wet well reaches 12.5', the CSO 119 outfall will be inspected.

DRY WEATHER CSOs PROHIBITED - INSTRUCTIONS TO PREVENT

ENSURE THE GATES ARE OPEN

CHECK FOR OBSTRUCTION BETWEEN GATE, DRY WEATHER SANITARY LINE, AND THE GRIT PIT

IF UNABLE TO CLEAR THE OBSTRUCTION, THEN CALL SEWER MAINTENANCE FRONT DESK 402-444-5332 IMMEDIATELY

THIS WILL INITATE A SERVICE REQUEST: NEED TO RECORD WHO MADE DISCOVERY, WHO WAS NOTIFIED, DATE, TIME, OBSERVATIONS

IF OVERFLOWING WITHIN 24HRS OF STORM EVENT, SUBMIT OBSERVATIONS TO COMPLIANCE DESIGNEE FOR REPORTABLE DETERMINATION

ALL DRY WEATHER CSOs REQUIRE IMMEDIATE REPORTING AND MITIGATION EFFORTS

NOTIFY DIVISION MANAGER, 402-444-5265 AND COMPLIANCE DESIGNEE, 402-444-7136

THESE RECORDS ARE SUBJECT TO AN SEMI-ANNUAL REVIEW FOR REVISIONS

REVISED 9/30/2020

2019-2020 CSO Station Procedure Manual Changes

Summary of changes:

CSO 103 Bridge Street Weekly

- "Pull rags from barscreen" to "Check automatic barscreen Changed operation" (An automatic barscreen was installed a few years ago)
- Changed "Check sewage pumps for:" to "Run pumps in hand and check for"
- Removed "Shaft seal leakage and Driveshaft wobble or excessive vibration" (This referred to the old style pumps that were replaced in 2004 with ABS drywell submersible pumps that do not have driveshaft's or exposed shaft seals)
- Added "Check sump pump"
- Added "Check drywell condition"
- **2020 added level sensor at the overflow weir and a surveillance camera (monitored by Sewer Tech Crew)**

CSO 105 Minne Lusa Weekly

- Removed "Check blower ok – rotate weekly" (The blowers are no longer used)
- Added "Check position of diversion gate"
- Added "Check flap gates for damage/obstructions"
- Added "Check ventilation fan (Seasonal)"

CSO 105 Minne Lusa Semi Annual

- Removed "Check flap gates and outfall for obstructions" (This was moved to weekly)

CSO 106 North Interceptor Weekly

- Added "Check flap gates for damage/obstructions"
- Added "Check barscreen for debris"

CSO 106 North Interceptor Semi Annual

- Removed "Check flap gates and outfall for obstructions" (This was moved to weekly)

CSO 107 Grace St. Weekly

2019-2020 CSO Station Procedure Manual Changes

- Added “Check flap gates for damage/obstructions”
- Added “Check barscreen for debris”

CSO 107 Grace St. Semi Annual

- Removed “Check flap gates and outfall for obstructions” (This was moved to weekly)

CSO 108 Burt Izard Weekly

- Changed “Check flap gates and outfall for obstructions, Semi Annually” to “Check flap gates for damage/obstructions, Weekly”(The outfall is submerged in the river and not visible)
- Added “Check instrumentation devices, Weekly”
- Added “Check drywell condition, Weekly”
- Added “Check drywell ventilation fan, Weekly”
- Added “Check Makeup air units, Weekly”
- Added “Check diversion barscreens for debris, Weekly”
- Added “Check oil in air compressors, Weekly”
- Removed “Light bulbs” from “Check overall condition of facilities:”
- Added “Check interior and exterior lighting, Weekly”
- Added “Check odor scrubbers, Monthly”
- Added “Check Cranes, Annually”

CSO 110 Pierce Street

- Shut down the Pierce Street Lift Station so we no longer check the station but we do still check the flap gate for damage or obstructions.
- ~~Changed “pull rags from barscreen, Weekly” to “Remove debris from pump station barscreen, Weekly”~~
- ~~Added “Check diversion barscreen for debris, Weekly”~~
- ~~Changed “Check sewage pumps for:” to “Run pumps in hand and check for”~~
- ~~Added “Check sump pump, Weekly”~~
- ~~Removed “ Check accumulator pressure (80-100 psi)”~~
- Changed “Check flap gates and outfall for obstructions, Semi Annually” to “Check flap gates for damage/obstructions, Weekly”

2019-2020 CSO Station Procedure Manual Changes

- **2020 Redirected flows to this lift-station to Leavenworth.**
- **2020 a CSO device added to 0518380, checked bi-weekly and after wet weather events.**

CSO 111 Hickory Street

- Changed “pull rags from barscreen, Weekly” to “Remove debris from pump station barscreen, Weekly”
- Added “Check diversion barscreen for debris, Weekly”
- Changed “Check sewage pumps for:” to “Run pumps in hand and check for”
- Added “Check sump pump, Weekly”
- Removed “ Check accumulator pressure (80-100 psi)”
- Changed “Check flap gates and outfall for obstructions, Semi Annually” to “Check flap gates for damage/obstructions, Weekly”
- **2020 new diversion structure constructed to direct flow to new Leavenworth LS. CSO Check device remains at diversion structure 0508003.**

CSO 112 Martha Street

- Changed “pull rags from barscreen, Weekly” to “Check barscreen for debris, Weekly”
- Changed “Check flap gates and outfall for obstructions, Semi Annually” to “Check flap gates for damage/obstructions, Weekly”
- Added “Check grit level in grit pit, Weekly”
- Added “Check pump operation, Weekly”
- Added “Check for general pipe leaks, Weekly”
- Added “Clean electrode and bowl, BI Monthly”

CSO 113 Spring Street

- Removed all inspection activity, CSO point has been eliminated due to sewer separation.

2019-2020 CSO Station Procedure Manual Changes

CSO 114 Grover Street

- Removed “Check accumulator oil in site gauge, Weekly”
- Removed “Check accumulator pressure, Weekly”
- Removed “Bleed condensate from air tank, Weekly”
- Removed “Check air pressure 80 – 100 psi, Weekly”
- Added “Check hydraulic oil system pressures, Weekly”
- Added “Check barscreen for debris, Weekly”
- Added “Check level of grit in grit pit, Weekly”
- Changed “Check flap gates and outfall for obstructions, Semi Annually” to “Check flap gates for damage/obstructions, Weekly”

CSO 115 Riverview

- Changed “pull rags from barscreen, Weekly” to “Remove debris from pump station barscreen, Weekly”
- Added “Check diversion barscreen for debris, Weekly”
- Changed “Check sewage pumps for:” to “Run pumps in hand and check for”
- Added “Check sump pump, Weekly”
- Removed “ Check accumulator pressure (80-100 psi)”
- Added “Check flap gates for damage/obstructions, Weekly”
- Removed “Check accumulator pressure, Weekly”
- Added “Check drywell condition, Weekly”
- Added “Operate isolation gates, Semi Annually”

CSO 116 Homer Street

- Removed all inspection activity, CSO point has been eliminated years ago due to sewer separation.

CSO 117 Missouri Avenue

- Changed “pull rags from barscreen, Weekly” to “Remove debris from pump station barscreen, Weekly”
- Added “Check diversion barscreen for debris, Weekly”
- Changed “Check sewage pumps for:” to “Run pumps in hand and check for”

2019-2020 CSO Station Procedure Manual Changes

- Added “Check sump pump, Weekly”
- Removed “Check accumulator pressure, Weekly”
- Added “Check drywell condition, Weekly”
- Added “Check level of grit in grit pit, Weekly”
- Added “Preform weekly inspection on generator, Weekly
- Changed “Check flap gates and outfall for obstructions, Semi Annually” to “Check flap gates for damage/obstructions, Weekly”
- Added “Operate isolation gates, Semi Annually”
- **2020 Added low-pressure hydraulic alarm at Diversion Gate**

CSO 118 Ohern Street

- Added “Check barscreen for debris, Weekly”
- Added “Check odor control equipment (Seasonal), Weekly”

CSO 120 Arena Convention Center - To be determined at future date

- Found this in the manual, Should it be removed?

CSO 202 72nd & Bedford

- Added “Check diversion gate position, Weekly”
- Added “Check air pressure and drain condensate, Weekly”
- Added “Check diversion gate controls, Weekly”
- Added Check heater (Seasonal), Weekly”

CSO 203 69th & Evans

- Added “Check diversion gate position, Weekly”
- Added “Check air pressure and drain condensate, Weekly”
- Added “Check diversion gate controls, Weekly”
- Added Check heater (Seasonal), Weekly”

CSO 204 63rd & Pratt

- Added “Check hydraulic oil level, Weekly”
- Added “Check diversion gate position, Weekly”
- Added “Check diversion gate controls, Weekly”
- Added Check heater (Seasonal), Weekly”

2019-2020 CSO Station Procedure Manual Changes

CSO 204 61st & Taylor

- Added “Check diversion gate position, Weekly”
- Added “Check air pressure and drain condensate, Weekly”
- Added “Check diversion gate controls, Weekly”
- Added Check heater (Seasonal), Weekly”

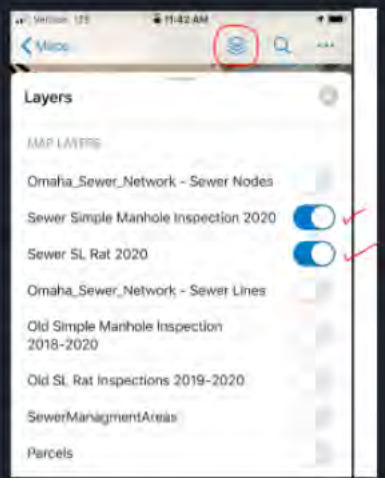
Asset Inspection App Training

SEWER MAINTENANCE DIVISION
4/15/2020

Using the App Step by Step

5. Once the map loads, open the layers list and make sure Sewer Simple Manhole Inspection 2020 and Sewer SL Rat 2020 layers are toggled on

(Other layers maybe useful to have on, such as Sewer Management Areas or Parcels while performing inspections)



Photos Cont.

Defect Photos

- Close up picture of defect observed or any pertinent observation
- Does not need to be facing North
- Photos should be conclusive enough to support a follow up work order without having to dispatch a call out foreman to the site to collect additional details

Defect Dictionary

MH Score	Defect	Definition	Photo Required
0	No defects found		Topside, Vicinity & Channel
1	Cracks-(Small)	Crack less than 3/8”	Topside, Vicinity & Channel
	Inflow or Infilitration-(Light)	Staining and/or weeping observed	
	Debris-(Light)	<1 gallon	
	Offset of any manhole part	1-2" (measuring the greatest offset distance)	
2	Cracks-(Medium)	3/8” to 3/4”	Topside, Vicinity & Channel
	Inflow or Infilitration-(Light)	Trickle and/or dripping (1-3 gallons per minute)	
	Debris-(Moderate)	1-3 gallons	
	Offset of any manhole part	2-3" (measuring the greatest offset distance)	
	Surcharge Evidence	Greater than pipe height	
	Mortar or Joint	Material Missing	
3	Cracks-(Large)	3/4” to 1”	Topside, Vicinity & Channel
	Inflow or Infilitration-(Medium)	Streaming or running (3-10 gallons per minute)	
	Debris-(Heavy)	3-5 gallons	
	Offset of any manhole part	3-4" (measuring the greatest offset distance)	
	Surcharge Evidence	Within 5 ft of the MH rim	
	Chimney/Chamber material	Missing/Deteriorated	
	Bench/Channel	Missing material/ Poor hydraulics	
	Flowline Obstruction	Any un-removable object obstructing less than 50% of flow	
	Flow	Greater than 50% of pipe but less than top of pipe	
4	Voids Visible	Manhole Material Loss and or Cracks >1” with material loss	Topside, Vicinity & Channel
	Inflow or Infilitration-(Heavy)	Gusher (>10 gallons per minute)	
	Debris-(Extremely Heavy)	>5 gallons	
	Offset of any manhole part	>4" (measuring the greatest offset distance)	
	Surcharge Evidence	Evidence to the rim or overflow (comment: "Possible SSO")	
	Bench/Channel	Material mostly missing/Slow stagnant hydraulics	
	Flowline Obstruction	Any un-removable object obstructing greater than 50% of flow	
	Flow	Greater than top of pipe	
5	Unable to Inspect	**REQUIRED TO POPULATE "Reason Not Inspected" FIELD** If possible locate with metal detector and mark with paint	Vicinty

**** If a manhole is given a 3 or 4 rating, a comment is required. Comment should include what defect (s) were observed****

Topside, Vicinity & Channel should be taken facing North.

Coverting Inch Ft to Tenth Ft Reference Chart

Tape Measurement	Tenth Foot	Tape Measurement	Tenth Foot
2 inches =	0.17	8 inches =	0.67
4 inches =	0.33	10 inches =	0.83
6 inches =	0.50	*Ex: 10ft 8in = 10.83ft*	

Attachment 2 – LTCP Annual Project Progress Reports (APPR)

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019, THROUGH SEPTEMBER 30, 2020

Missouri River Water Resource Recovery Facility (MRWRRF) Improvements

CSOP.01.01.1D00 1D - MRWRRF Improvements

Project Description as stated in the 2009 LTCP:

Missouri River Water Resource Recovery Facility (MRWRRF) Improvements were identified in the 2009 LTCP to treat an increase in combined sewage flow during wet weather of up to approximately 150 million gallons per day (mgd) (peak hour) through preliminary and primary treatment, and to provide a firm capacity for secondary treatment of 64 mgd for both dry- and wet-weather flows. Flow in excess of the secondary treatment system capacity will be discharged through CSO 102 after chlorination and dechlorination.

Key components of the MRWRRF Improvements described in the 2009 LTCP include a new headworks facility, primary clarifier splitter structure improvements, odor control facilities, chlorine contact basin, chemical building, industrial waste treatment system, and an upgraded Transfer Lift Station.

LTCP Phase: Phase 1 Major Combined Sewer Overflow (CSO) Control Projects

CSO Permit Requirement:

A chlorine contact basin shall be constructed to disinfect that portion of the effluent from the primary clarifiers that is discharged through CSO Outfall 102 rather than being treated by MRWRRF's secondary treatment system. The system shall also include the capability to chlorinate the effluent from CSO 102 followed by dechlorination. The project shall be operationally complete by December 31, 2019.

LTCP Schedule[1]

All projects operationally complete by December 31, 2019.

Compliance Report

The Phase 1 Major Projects LTCP Milestone to be operationally complete by December 31, 2019, was met at the end of the report period. The following table lists the project-specific LTCP schedule dates.

Activity	LTCP Schedule Date	Actual Date
Substantial Completion	9/13/2019	8/30/2019
Operational Completion	12/31/2019	12/12/2019

[1] For Major Projects, there are three milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence final design, having one of the projects in a phase commence construction, and having all projects in the phase complete construction by the end date of the phase.

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019, THROUGH SEPTEMBER 30, 2020

Project Activities and Progress as of September 30, 2020

The following table lists the actual dates or anticipated dates for completion of the activities listed.

City Project #	LTCP Project Name	Activity	Actual Date
OPW 52200, 51875, 52648	Missouri River WWTP Improvements	Began Preliminary Design	9/10/2009
		Began Final Design	11/24/2010
		Bidding	11/3/2011
		Began Construction	3/21/2012
		Substantial Completion	8/30/2019
		Operational Completion	12/12/2019

The following is a brief synopsis of project activities and progress during the current Annual Report period.

- The MRWRRF Improvements Schedule B2 Project Operational Completion was achieved on December 12, 2019, as required in the CSO Permit.

Anticipated Project Activity for Next Period

This project is complete.

Costs

LTCP Update Estimated Construction Cost (December 2013[2]): $132,318,000 with contingency

Current Estimated Construction Cost: $131993,938.58[3] (actual construction costs)

Changes from the LTCP

There were no changes since the last report.

Other Items of Interest

2 Engineering News Record Construction Cost Index 9668

3 Comprising: Schedule A final payment of $19,606,842; Schedule B1 final payment of $61,650,375.61 (not counting $1,014,828.36 in costs not related to the CSO Program); Schedule B2 current contract is $50,736,720.97 (not counting $2,521,144.15 in costs not related to the CSO Program). This cost does not include the Missouri River Bank Stabilization Project construction costs nor the Transfer Lift Station Pump Replacement Costs. Missouri River Bank Stabilization final payment was $7,055,316. The Transfer Lift Station Pump Replacement Costs has a construction budget of $5,700,000.

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019, THROUGH SEPTEMBER 30, 2020

Site Restoration in Progress East of the Chemical Building at the MRWRRF Site, Looking North (Feb. 2020)

Site Restoration in Progress around the Chlorine Contact Basin, Looking Northeast (April. 2020)

ANNUAL PROJECT PROGRESS REPORT-
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Site restoration in Progress and new access road east of the Chlorine Contact Basin, Looking South (April. 2020)

***Chlorine Contact Basin** at the MRWRRF Site, Looking North (Feb. 2020)*

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019, THROUGH SEPTEMBER 30, 2020

MRWRRF Schedule B2 CSO 102 Chemical Building Laboratory (March 2020)

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019, THROUGH SEPTEMBER 30, 2020

Saddle Creek CSO 205 64th and Dupont Retention Treatment Basin (RTB)

CSOP.01.02.2C00 2C - Saddle Creek Retention Treatment Basin

Project Description as stated in the 2009 LTCP:

The Saddle Creek CSO 205 64th and Dupont Retention Treatment Basin (RTB) will be located at 64th Avenue and Dupont Street, and will provide treatment and disinfection of combined sewage prior to discharge to Little Papillion Creek. The RTB will provide an underground basin where combined sewage is stored during wet weather events and treated (grit and screenings removal, settling, chlorination, and dechlorination) before discharge.

LTCP Phase: Phase 2 Major CSO Control Projects

CSO Permit Requirement:

CSO Permit reflects Operationally Complete by December 31, 2023.

LTCP Schedule[1]:

All projects operationally complete by December 31, 2023.

Compliance Report

The CSO Permit requires all projects in the Phase to be Operationally Complete by December 31, 2023, to meet the Phase 2 Complete Construction milestone.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual or *Anticipated* Date[a]
Start Final Design	7/1/2018	12/7/2016
End Construction	12/31/2023	*7/3/2023*

[a] Anticipated dates are italicized.

[1] For Major Projects, there are three milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence final design, having one of the projects in a phase commence construction, and having all projects in the phase complete construction by the end date of the phase.

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Project Activities and Progress as of September 30, 2020

The following table lists the actual dates or anticipated dates for completion of the activities listed.

City Project #	LTCP Project Name	Activity	Actual or *Anticipated*[a] Date
OPW 520498	Saddle Creek CSO 205 64th and Dupont RTB	Began Preliminary Design	4/7/2011
		Began Final Design	8/3/2013
		Restarted Final Design	6/29/2017
		Bidding	8/5/2015
		Re-Bidding	10/10/2018
		Began Construction	4/30/2019
		Substantial Completion	*1/28/2023*
		Operationally Complete	*12/31/2023*

[a] Anticipated dates are italicized.

The following is a brief synopsis of project activities and progress that have taken place during the current Annual Report period:

- Channel improvements on the eastern side of the CSO 205 outfall and construction of a new CSO 205 diversion structure were constructed during the winter of 2019-2020.
- Deep foundation H-piles and anchor installation work commenced in November 2019 and were completed in April 2020.
- Base slab and mass concrete installation commenced in summer 2020.
- A U.S. Environmental Protection Agency (EPA) Desktop Review was performed on August 13, 2020. The project team and EPA are commenting, and the final outcome will be discussed in the next reporting year.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021):

- Basin base slab and walls mass concrete installation will be completed by March 2021. Basin columns are under construction and will be completed in the first half of 2021. Top slab in the basin will be poured in 2021.
- Basin electrical and mechanical improvements will commence after the mass concrete pours are completed.
- H-piles work will commence in December 2020 for the Chemical Building.
- Construction on the Operations Building and Chemical Building are planned to commence in summer 2021.

ANNUAL PROJECT PROGRESS REPORT-
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Costs

LTCP Update Estimated Construction Cost (December 2013[2]): $99,100,000 with contingency

Current Estimated Construction Cost: $92,790,798.55 (Current Contract Value as of September 30, 2020)

Changes from the LTCP

Changes to the original project occurred after a high, single bid received in 2015. The chosen alternative to be implemented is an RTB with a 160-mgd) capacity. Additional detail is included in the 2017 to 2018 Annual Report.

Other Items of Interest

On June 20, 2018, EPA and the City closed on the Water Infrastructure Finance and Innovation Act (WIFIA) loan agreement, which allows the City to borrow up to $69.7 million for the Saddle Creek RTB project.

The RTB is being designed to accept a peak-hour flow rate of 160 mgd to provide equivalent-to-primary treatment, with provisions to allow up to 320 mgd of peak wet weather flows for disinfection. The completion of this facility will result in a significant reduction in the volume of untreated CSO, total suspended solids (TSS), and E. coli bacteria entering Little Papillion Creek. Flows in excess of the facility capacity will be routed around the RTB and discharged into Little Papillion Creek.

Saddle Creek RTB Basin and Walls Mass Concrete Pours (Sept. 2020)

[2] ENRCCI 9668

ANNUAL PROJECT PROGRESS REPORT-
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Saddle Creek RTB CSO 205 New Diversion and Outfall Channel Improvements, Sept. 2020

ANNUAL PROJECT PROGRESS REPORT-
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Nicholas Street Phase 3/18th & Seward Sewer Separation

CSOP.02.04.4B00 4B-BI Basin 108-3 Nicholas Street Phase 3

CSOP.02.05.6F00 6F-BI Basin 108-8 18th & Seward

Project Description as stated in the 2009 LTCP:[1]

Nicholas Phase 3 - The conceptual plan for this project includes an alignment extending north from 16th and Nicholas Street and west to 24th Street and provides conveyance capacity for both sanitary and storm flows for other sewer separation projects within the northerly portion of the Burt-Izard Basin. This project will reduce the combined sewer flows downstream of the project and thereby reduce CSOs to the Missouri River. It is a predecessor to sewer separation Burt-Izard-108-3 and additional City Combined Sewer Renovation (RNC) sewer separation projects.

18th and Seward - This project is located in the easterly portion of the Burt-Izard Basin and provides separation to an area east of the east side of 20th Street from the north side of Locust Street south to Grace Street. South of Grace Street, the area extends east to include 16th Street. The southerly limit is Nicholas Street at 16th Street and Charles Street at 20th Street. The concept for this project includes construction of both sanitary and storm, re-utilizing the existing combined sewer for either storm flows or sanitary as appropriate. This area receives flows from 107-6 and discharge to 108-3.

This project would result in reduced flows in the downstream combined sewer system, reducing flows to the diversion structures and ultimately to the Missouri River. This project could potentially convert Sewer #2 to a storm sewer only in this project area. It is a predecessor to sewer separation Burt-Izard-108-3 and additional City RNC sewer separation projects.

Project Description as stated in the LTCP Update

Nicholas Street Sewer Separation Phase 3 – Construction of both sanitary and storm sewer to provide capacity for flows from other sewer separation projects upstream of the area.

18th Street and Seward Street Sewer Separation – Construction of both sanitary and storm sewer. This project will reduce flows to the downstream CSS.

LTCP Phase:

Phase 4 Sewer Separation Projects – Nicholas Street Phase 3

Phase 6 Sewer Separation Projects – 18th & Seward

[1] As noted in the Annual Report for 2017-2018, the revised design for Nicholas Phase 3 area eliminates the need for the 18th and Seward Project. Both are being listed here for completeness, as the 18th and Seward Project will remain part of the LTCP until the LTCP Update is submitted in 2021.

CSO Permit Requirement:

Nicholas Phase 3 - On or before December 31, 2016, the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 4.

18th & Seward - On or before December 31, 2021 , the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 6.[2]

LTCP Schedule[3]

Sewer Separation Phase 4

Bid Year – Commence bidding of one project by December 31, 2016
Complete Construction of all projects by June 30, 2022

Sewer Separation Phase 6

Bid Year – Commence bidding of one project by June 30, 2020
Complete Construction of all projects by December 31, 2023

Compliance Report

The LTCP Milestone for Phase 4 Sewer Separation Projects for one project to commence bidding was met by Lake James to Fontenelle Lagoon Improvements Project (OPW 52658) on October 5, 2016.

The remaining Phase 4 Sewer Separation milestone in the LTCP is to complete all projects by June 30, 2022. The Nicholas Phase 3 project will not meet the project dates in the 2014 LTCP Update, nor the milestones. The project dates will be re-evaluated as part of the development of the LTCP Update due to the NDEE in 2021. The dates below reflect a Change Notification Request (CNR).

XXX

Table XX. Project-specific LTCP schedule dates for Milestone activities.

Activity	Phase 4 LTCP Schedule Date	Phase 9 LTCP Schedule Date	Actual or *Anticipated* Date[a]
Bidding	8/7/2019	7/1/2021	8/28/2019 (Met by Nicholas Phase 3A)
Complete Construction	6/30/2024	12/31/2024	*6/30/2024*[b]

[a] Anticipated dates are italicized.

[b] This date is outside of the milestone date for Phase 4 Sewer Separation for completion of construction by June 30, 2022.

[2] Date was modified from June 30, 2020 to December 31, 2021 by the Permit Modification issued on November 1, 2019.

[3] For Sewer Separation Projects, there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding, and having all projects in the phase complete construction by the end date of the phase.

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019, THROUGH SEPTEMBER 30, 2020

Project Activities and Progress as of September 30, 2020

The following is a brief synopsis of project activities and progress that have taken place during this reporting period. It should be noted that the LTCP projects of Nicholas Phase 3 and 18th and Seward were combined, and then were split into the Nicholas Phase 3A and Phase 3B projects. The basis for the splitting of the projects is discussed in the Annual Project Progress Report for 2017 to 2018.

The Nicholas Phase 3A final design was completed, and the project was advertised for construction bids. The Metropolitan Utility District (M.U.D) completed water and gas utility relocations in the Phase 3A project area. The Phase 3A sewer separation construction contract was awarded, construction started in spring 2020, and Substantial Completion was awarded on September 4, 2020. Final completion of Phase 3A construction is anticipated by the end of 2020. The Nicholas Phase 3B project was designed through 90 percent. The City continued to coordinate other utilities in anticipation of the Phase 3B final design to be completed by the end of 2020 and construction, anticipated to begin in 2021.

Table XX. Actual dates or anticipated dates for completion of activities

City Project #	City Project Name	Activity	Actual or *Anticipated* Date[a]
OPW 52721	Nicholas Phase 3A	Began Preliminary Design	7/1/2016
		Began Final Design	2/26/2018
		Advertised	8/7/2019
		Bid Opening	8/28/2019
		Begin Construction	3/30/2020
		Substantial Completion	9/4/2020
OPW 52721a	Nicholas Phase 3B and 18th & Seward Sewer Separation	Began Preliminary Design	7/1/2016
		Began Final Design	10/21/2019
		Advertise	*11/27/2020*
		Bid Opening	*1/6/2021*
		Begin Construction	*8/6/2021*
		Complete Construction	*8/2/2024*

[a] Anticipated dates are italicized.

The schedule for both Phase 3A and 3B is impacted by significant utility relocation in the project area. Anticipated dates for advertising, bidding, and the beginning and end of construction are dependent on utility relocation. These dates are likely to be updated

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021):

- Construction of Nicholas Phase 3A Final Completion in fourth quarter of 2020
- Completion of final design of Nicholas Phase 3B in fourth quarter of 2020; bidding for construction in first quarter of 2021 and beginning construction in the third quarter of 2021

Costs

LTCP Update Estimated Construction Costs (December 2013[4]):
$14,950,000 (Nicholas Phase 3); $21,800,000 (18th & Seward) with contingency

Current Estimated Construction Cost: $17,266,841; costs are based on the bid price for the Phase 3A project of $1,877,555 and the 90% Opinion of Probable Construction Cost (OPCC) for the Phase 3B project of $21,219,398

Changes from the LTCP

A CNR was developed (dated October 15, 2019) to document changes in scope and schedule related to splitting the project into the Nicholas Phase 3A and 3B construction contracts.

The project schedule for Nicholas Phase 3B is included in the next LTCP Update due in March 2021.

Other Items of Interest

There are no other items to report.

[4] ENR CCI 9668

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

Forest Lawn Sewer Separation
CSOP.02.04.4G00 4G - ML 105-15; Forest Lawn Separation

Project Description as stated in the 2009 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.

LTCP Phase: Phase 4 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2016, the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 4.

LTCP Schedule[1]:

Bid Year – Commence bidding of one project by December 31, 2016

Complete Construction of all projects by June 30, 2022

Compliance Report

This Phase 4 Sewer Separation LTCP Milestone for commencing bids on one project by December 31, 2016, was met by the bidding of Lake James to Fontanelle Park – Fontenelle Lagoon (OPW 52658) on October 5, 2016. The City has made a determination to move forward on this project based on the Optimization Evaluation. The cost of the project is in the same range as that estimated in the Value Engineering review and provides additional benefits such as reducing the risk of basement backups and reducing conveyance and treatment costs. A CNR was developed in 2019 and those dates are still valid.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities.

Activity	LTCP Schedule Date	Actual or *Anticipated* Date[a]
Re-Bidding	3/31/2019	*12/31/2022*
Complete Construction	12/31/2021	*12/31/2024*

[a] Anticipated dates are italicized.

[1] For sewer separation projects, there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a commence bidding phase and having all projects in the complete construction phase by the end date of the phase.

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

Project Activities and Progress as of September 30, 2020

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

This project has been on hold since late 2018. The City recently has made a determination to move forward on this project based on the results of the Optimization Evaluation. The Optimization task included the Forest Lawn project as a baseline project, meaning it was assumed to be constructed. The Program Management Team conducted an evaluation to determine the impact on the Optimization task's High Performing Alternatives (HPAs) if the Forest Lawn project was not constructed. The results of the evaluation determined that to capture the additional volume of wet weather that the Forest Lawn project would have captured otherwise, the size of the control facilities proposed in each HPA would have to be increased. This cost increase would be comparable to the cost estimate from the Value Engineering review of the Forest Lawn project. However, the project provides additional benefits such as reducing the risk of basement backups and reducing conveyance and treatment costs. The Table 2 below provides projected dates, assuming that the City moves forward with a modified project, as determined through the Optimization Evaluation and will be documented in the LTCP Update due to Nebraska Department of Environment and Energy (NDEE) in 2021. These dates are unchanged from the 2019 Annual Report.

Also, M.U.D. has completed the utility relocations to replace the low-pressure gas system in the project area.

Table 2. Actual dates or anticipated dates for completion of activities

City Project #	LTCP Project Name	Activity	Date[a]
OPW 52470	Forest Lawn Sewer Separation	Began Preliminary Design	6/12/2014
		Began Final Design	02/16/2016
		Re-Advertise	*3/31/2022*
		Bid Opening	*12/31/2022*
		Begin Construction	*3/1/2023*
		Substantial Completion	*12/31/2024*

[a] Anticipated dates are italicized.

Anticipated Project Activity for Next Period

It is anticipated that the redesign for this project will commence in early 2021, at which time a revised schedule will be developed for completion of the design and construction. Any changes will be included in the 2021 LTCP Update.

Costs

LTCP Update Estimated Construction Costs[2]: $17,500,000 with contingency

Current Estimated Construction Cost: $20,000,000 to $23,000,000 based on 2019 Value Engineering

Changes from the LTCP

A CNR has been developed for the changes in the schedule of this project and was included in Attachment 3 of the 2019 Annual Report. It is not anticipated that there will be major

[2] Engineering News Record Construction Cost Index 9668

changes to the project scope, however the budget may need to be updated as will the schedule. Forest Lawn Sewer Separation will be incorporated in the next LTCP Update due in March 2021.

Other Items of Interest

There are no other items to report..

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

Lake James to Fontenelle Park

CSOP.02.04.4M Lake James to Fontenelle Park

Project Description as stated in the 2009 LTCP:

50th & Sigwart - This project is located in the westerly portion of the Minne Lusa Basin and provides separation to an area bounded on the north by Boyd Street, on the east by 45th Street, on the south by NW Radial Highway Street, and on the west by 52nd Street. The conceptual plan for this project includes construction of both sanitary and storm sewer to allow for conversion of the existing combined sewer to either storm or sanitary sewer, as appropriate, and provides sewer separation in the entire sub-basin. This project discharges flows into the 105-13A Paxton Conveyance Sewer and would result in reduced flows in the downstream combined sewer system, which results in a reduction in size of downstream controls at CSO 105.

49th & Fowler - This project is located in the westerly portion of the Minne Lusa Basin and provides separation to an area bounded on the north by Fort Street, on the east by 48th Street, on the south by Sprague Street, and on the west by 50th Street. The conceptual plan for this project includes construction of both sanitary and storm sewer to allow for conversion of the existing combined sewer to either storm or sanitary sewer, as appropriate, and provides sewer separation in the entire sub-basin. This project discharges flows into the 105-13A Paxton Conveyance Sewer, and would result in reduced flows in the downstream combined sewer system, which results in a reduction in size of downstream controls at CSO 105.

46th & Grand - This project is located in the westerly portion of the Minne Lusa Basin and provides separation to an area bounded on the north by Camden Avenue, on the east by 42nd Street, on the south by Fontenelle Park, and on the west by 49th Street. The conceptual plan for this project includes construction of storm sewer to allow for conversion of the existing combined sewer to sanitary sewer and provides sewer separation in the entire sub-basin. This project discharges flows into the 105-13A Paxton Conveyance Sewer and would result in reduced flows in the downstream combined sewer system, which results in a reduction in size of downstream controls at CSO 105.

Project Description as stated in the LTCP Update

Change the sewer separation concept for the Paxton Area to an ‘inflow reduction’ approach for the CSS that will fully use the downstream Minne Lusa Conveyance Sewer in a cost effective manner. Priority will be given to separation of large areas with a minimal stormwater pipe system. For example, there may be areas where a single stormwater collector/main can be located along the basin valley and side stormwater connections can be eliminated. Flow slipping will be used where feasible to eliminate side connections and reduce pipe construction. Where storm sewers have already been constructed, it may not be cost effective to construct additional stormwater infrastructure to reach the upper reaches of the basin.

Sewer separation projects: 46th & Grand Street (ML 105-5); 49th Street & Fowler Street (ML 105-4); and 50th Street & Sigwart Street (ML 105-3). As part of the latter project, a project to make improvements to the Fontenelle Park/Lagoon has been identified and will be under construction. The sewer separation projects are located upstream of Fontenelle Park.

LTCP Phase: Phase 4 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2016, the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 4.

LTCP Schedule[1]:

Bid Year – Commence bidding of one project by December 31, 2016
Complete Construction of all projects by June 30, 2022

Compliance Report

This LTCP Milestone for Phase 4 Sewer Separation Projects was met by the bidding of the Lake James to Fontenelle Park - Fontenelle Park Lagoon Improvements project (OPW-52658) on October 5, 2016. The following table lists the project LTCP Schedule dates.

Activity	LTCP Schedule Date	Actual Date
Bidding	1/1/2017	10/5/2016
Complete Construction	12/31/2019	12/6/2019

Project Activities and Progress as of September 30, 2020

The Lake James to Fontenelle Park project included expansion of an existing stormwater detention lagoon in the Fontenelle Park and sewer separation in the surrounding neighborhoods that drain toward the park. The project design reduced the area of sewer separation and minimized the stormwater piping to cost-effectively and strategically reduce inflow to the CSS while making full use of the downstream stormwater conveyance sewer. This was accomplished by incorporating improvements to the Fontenelle Park/Lagoon to attenuate stormwater flows prior to discharging into the existing downstream CSS, which results in reduced flows in the downstream CSS, which then reduces the size of the downstream controls at CSO 105.

This project was broken into two construction contracts. The Fontenelle Park Lagoon Improvements Contract (OPW 52658) provided for the construction of the expanded and deepened lagoon and all improvements within Fontenelle Park. The second construction package, the Lake James to Fontenelle Park Sewer Separation (OPW 52659), included the sewer separation in the three separate areas, south, west, and north (49th & Fowler, 50th & Sigwart, and 46th & Grand West) of the park to direct separated stormwater to the improved lagoon.

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

- Sewer Separation construction was completed in December 2019.

[1] For Sewer Separation Projects, there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in the phase complete construction by the end date of the phase.

The following table lists project-specific dates.

City Project #	LTCP Project Name	Activity	Date
OPW 52658	Lake James to Fontenelle Park – Fontenelle Park Lagoon Improvements	Began Preliminary Design	8/29/2014
		Began Final Design	12/21/2015
		Advertised	10/5/2016
		Bid Opening	11/30/2016
		Began Construction	2/13/2017
		Substantial Completion	7/28/2018
OPW 52659	Lake James to Fontenelle Park –Sewer Separation	Began Preliminary Design	8/29/2014
		Began Final Design	12/21/2015
		Advertised	11/1/2017
		Bid Opening	12/13/2017
		Began Construction	4/16/2018
		Substantial Completion	12/6/2019

Anticipated Project Activity for Next Period

The project construction is complete for OPW 52658 and 52659; no additional work is anticipated for the next Annual Report period (2020-2021).

Costs

LTCP Update Estimated Construction Cost (December 2013[2]): $21,473,000 with contingency

Current Estimated Construction Cost: $12,345,021 (OPW-52658 final construction amount was $6,942,040 OPW-52659 final construction amount was $5,402,981)

Changes from the LTCP

There are no changes to the LTCP. Project is complete.

[2] Engineering News Record Construction Cost Index 9668

Other Items of Interest

Nebraska Game and Parks Commission public fishing event held October 2019.

Fishermen at the Nebraska Game and Parks Commission public fishing event held October 2019.

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Rain event in October 2019

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CSO 117 Missouri Avenue Sewer Separation Projects Phase 2 (Spring Lake Park)

CSOP.02.04.4N00 – 4N - Basin CSO 117-1 Missouri Avenue Ph 2

Project Description as stated in the 2009 LTCP:

This project is located in the southern part of the South Interceptor Basin and provides separation to an area bounded on the north by Interstate 80, on the east by the Missouri River levee, on the south by Missouri Avenue, and on the west by 24th Street. The conceptual plan for this project includes construction of both sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, and to provide sewer separation to this 416-acre sub-basin.

This project would also include construction of the Spring Lake Park Green Solutions project to remove creek flow from CSS, which allows for the reduction in size of the downstream separated system to be constructed.

Project Description as stated in the LTCP Update:

The Separation Phase 1 project (OPW 51997) is also known by its City project name of Missouri Avenue/Spring Lake Sewer Separation. This overall Phase 1 and Phase 2 project will provide sewer separation to the entire 416-acre Missouri Avenue sub-basin through a combination of new storm and new sanitary sewers. Sanitary flows will be directed to the existing Missouri Avenue Lift Station while storm flows will be conveyed to the Missouri River through the existing combined sewer, which will eventually be converted to a storm-only sewer following completion of the Missouri Avenue Phase 2 Sewer Separation project.

LTCP Phase:

Phase 4 Sewer Separation Projects

CSO Permit Requirement:

One of the Phase 4 Sewer Separation Projects shall commence bidding by December 31, 2016.

LTCP Schedule[1]:

Bid Year – Commence bidding of one project by December 31, 2016

Complete Construction of all projects by June 30, 2022

[1] For Sewer Separation Projects there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in the phase complete construction by the end date of the phase

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Compliance Report

The LTCP Milestone for commencing bids on one project by December 31, 2016, was met by the bidding of Lake James to Fontanelle Park – Fontenelle Park Lagoon Improvements on October 5, 2016.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual or Anticipated Date
Bidding	06/30/2017	01/18/2017 (Actual)
Complete Construction	12/31/2019	*9/30/2021*

[a] Anticipated dates are italicized

Project Activities and Progress as of September 30, 2020

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period. Construction continued throughout this period. Substantial completion was provided to the contractor on December 27, 2019, however construction work continued through the end of this reporting period. During construction it was determined that additional sewer separation work was necessary to meet the level of control needed to close the CSO 117 outfall. Therefore, a change order (#9) was added to the construction contract, the work for which is expected to be completed by the end of 2021.

Table 2. Actual dates or anticipated dates for completion of activities

City Project #	LTCP Project Name	Activity	Date
OPW 51997b	Missouri Avenue Sewer Separation Phase 2	Began Final Design	09/28/2015
		Advertised	01/18/2017
		Bid Opening	03/01/2017
		Began Construction	11/01/2017
		Complete Construction	*9/30/2021*[a]

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021).

Construction is ongoing and the project is expected to be completed in the third quarter of 2021.

Costs

LTCP Estimated Construction Cost (December 2013[2]): $4,778,000 with contingency

Current Estimated Construction Cost: Phase 2: $7,641,344 based on the new contract amount including the Change Order #9 for the additional sewer separation work ($738,602 addition).

[2] Engineering News Record Construction Cost Index 9668

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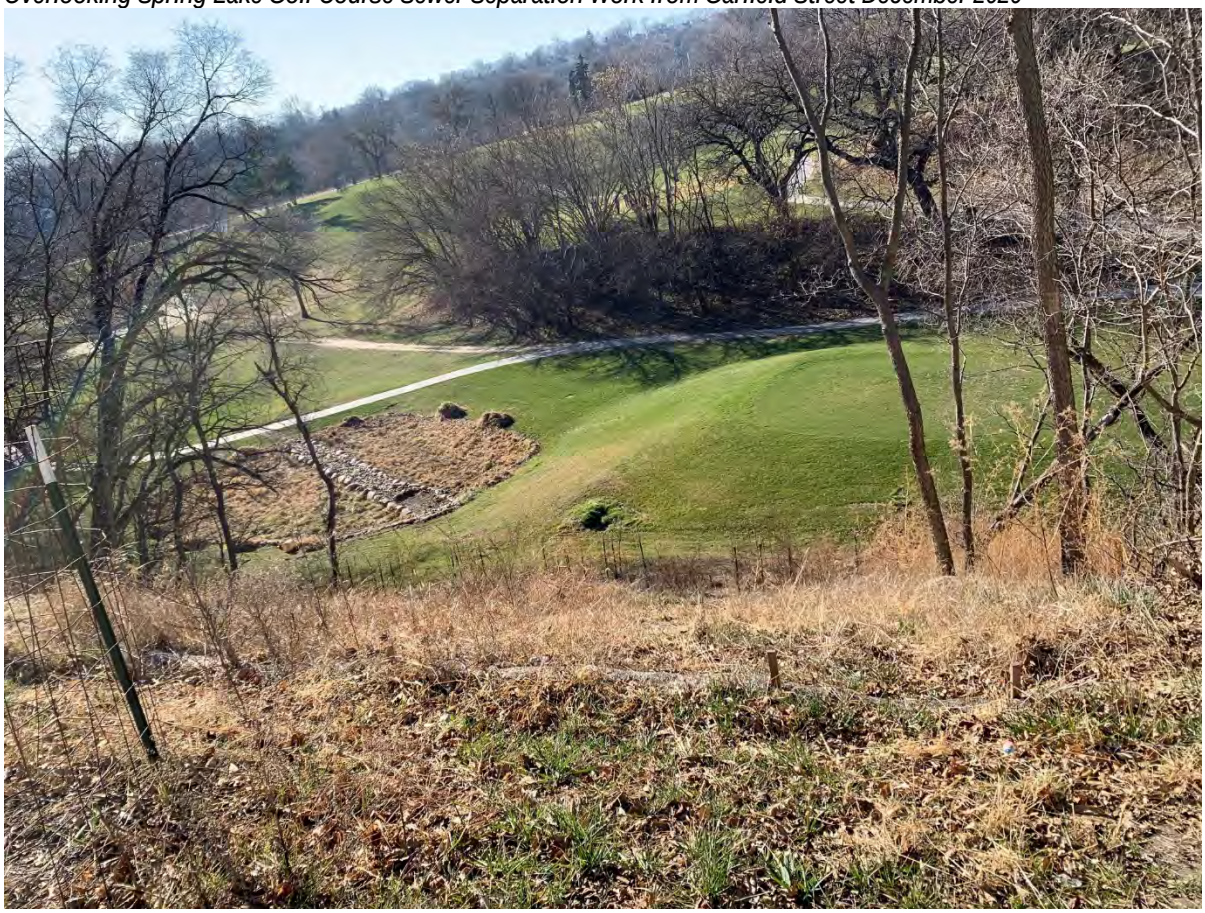
Changes from the LTCP

A change notification request (CNR) was developed (dated September 15, 2020) due to the schedule delay and cost increase associated with the additional sewer separation work needed to meet the level of control needed to close CSO 117. This schedule will be updated in the LTCP Update. The CNR is included in Attachment 3 CNRs of this Annual Report.

Other Items of Interest

The Spring Lake Golf Course Green Infrastructure work was finished with the Phase 2 sewer separation construction project this reporting period.

Overlooking Spring Lake Golf Course Sewer Separation Work from Garfield Street December 2020



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Storm Sewer Outfall into Constructed Wetland in Spring Lake Park, looking up toward 18th and G Streets October 2020

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Cole Creek CSO 204 Sewer Separation Phase 2

CSOP.02.04.4Q00 4Q – CC CSO 204 Ph 2

Project Description as stated in the 2009 LTCP:

This project is located in the Cole Creek Basin and provides separation to an area bounded on the north by Browne Street, on the east by 52nd Street, on the south by Northwest Radial Highway, and on the west by Cole Creek. The conceptual plan for this project includes construction of both sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, to provide sewer separation to this 522-acre sub-basin. This project will reduce flows in the collection system and will reduce the size of the storage tank at CSO 204, or eliminate the need for the storage tank. This project will be constructed in multiple phases.

Project Description as stated in the LTCP Update:

The City determined early in the preliminary design that an increase in the peak discharge of stormwater to Cole Creek would not be allowed by the City. The design of the CSO 204 area was modified from the conceptual plan in the 2009 LTCP, which called for new storm sewers sized for the 10-year design storm, to a design that would address sewer backups and localized street flooding without increasing the peak runoff from the area. This new concept relies more on a reuse of existing combined sewers converted to storm sewers.

LTCP Phase: Phase 4 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2016, the City of Omaha shall commence bidding on one of the Sewer Separation Projects Phase 4.

LTCP Schedule[1]:

Bid Year: Commenced bidding of one project by December 31, 2016.[a]

Complete Construction of all projects by December 31, 2023.[a]

[a] The project has been placed on hold pending evaluation of feasible alternatives. A new schedule will be provided in the updated LTCP, which is due to NDEE in 2021.

Compliance Report

The Sewer Separation Phase 4 milestone was met by the bidding of Lake James to Fontenelle Park - Fontenelle Park Lagoon Improvements project (OPW-52658) on October 5, 2016.

[1] For Sewer Separation Projects there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in the phase complete construction by the end date of the phase.

The Cole Creek CSO 204 Phase 2 area covers 131 acres. The project includes construction of a new sanitary sewer within the Cole Creek CSO 204 Basin. The project is currently on hold as a result of the higher-than-anticipated construction costs and the construction risks associated with the deep sewers included in the design. The City is evaluating alternative concepts for the CSO 204 Phase 2 service area that would reduce construction costs and risk associated with the construction of the project and have less impact to the neighborhood.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual or Anticipated Date
Bidding	6/30/2020	-[a]
Complete Construction	6/30/2022	-[a]

[a] The project is currently on hold pending evaluation of feasible alternatives. A new schedule will be developed at the conclusion of the evaluation and included in the updated LTCP.

Activities and Progress as of September 30, 2019

While this project is on hold, the City and PMT have been performing hydraulic and water-quality modeling evaluations and preparing cost estimates for potential alternatives in this area.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021):

- Determine the scope of redesign and schedule for the Phase 2 project path forward as part of the 2021 LTCP Update.

Costs

LTCP Estimated Construction Cost (December 2013[2]): $12,000,000 with contingency

Current Estimated Construction Cost: $16,780,000, as of 60% submittal for project that is on hold.

Changes from the LTCP

There are no other items to report..

[2] Engineering News Record Construction Cost Index 9668

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Cole Creek CSO 204 Sewer Separation Phase 3

CSOP.02.05.5B00 5C – CC CSO 204 Ph 3

Project Description, as stated in the 2009 LTCP:
(Addresses all phases of CSO 204)

This project is located in the Cole Creek Basin and provides separation to an area bounded on the north by Browne Street, on the east by 52nd Street, on the south by Northwest Radial Highway, and on the west by Cole Creek. The conceptual plan for this project includes construction of both sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, to provide sewer separation to this 522-acre sub-basin. This project will reduce flows in the collection system and will reduce the size of the storage tank at CSO 204 or eliminate the need for the storage tank.

This project will be constructed in multiple phases.

Project Description, as stated in the LTCP Update:

It was determined early in the preliminary design that an increase in the peak discharge of stormwater to Cole Creek would not be allowed by the City. The design of the CSO 204 area was modified from the conceptual plan in the 2009 LTCP, which called for new storm sewers sized for the 10-year design storm, to a design that would address sewer backups and localized street flooding without increasing the peak runoff from the area. This new concept relies more on a reuse of existing combined sewers converted to storm sewers. This change in concept, along with a determination that a portion of the area contributing to CSO 204 was already separated, allowed for the work schedule to be modified to be accomplished in six phases of work instead of the nine phases included in the 2009 LTCP.

LTCP Phase: Phase 5 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2019, the City of Omaha shall commence bidding on one of the Sewer Separation Projects Phase 5.

LTCP Schedule[1]:

Bid Year: Commence bidding of one project by December 31, 2019

Complete Construction of all projects by December 31, 2023

[1] For Sewer Separation Projects, there are two milestone dates in both the permit and the LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in a phase complete construction by the end date of the phase.

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Compliance Report

The Sewer Separation Phase 5 milestone was met by the bidding of Cole Creek CSO 202 Phase 1 Sewer Separation on November 28, 2018.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual or *Anticipated* Date[a]
Bidding	7/1/2020	5/27/2020
Complete Construction	6/30/2022	*6/30/2022*

[a] Anticipated dates are italicized.

Activities and Progress as of September 30, 2020

The Cole Creek CSO 204 Phase 3 area covers approximately 14 acres and is bounded by Sahler Street on the north, 56th Street on the east, Sprague Street on the south, and 60th Street on the west. Phase 3 consists of constructing a replacement sanitary sewer along Sahler Street between Sprague Street (about 56th Street) and 60th Avenue (west of 60th Street), and on 56th Street from Sprague Street to and including Ruggles Street. Sanitary flows are conveyed from the southeast from Ruggles Street to Sprague Street. The sanitary sewer will connect to a separated downstream sanitary sewer. The Phase 3 project includes design and construction of new storm and sanitary sewers between the area bounded by Sahler Street on the north, North 56th Street on the east, Sprague Street on the south, and North 60th Street on the west.

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

- Addendum #1 published on May 27, 2020
- Pre-bid meeting held on June 10, 2020
- Addendum #2 published on July 1, 2020
- Bid Opening held on July 8, 2020
- Bid Award Recommendation Letter sent to L.G Roloff Construction Company, Inc. on July 15, 2020
- City Council Approval on August 4, 2020

Table 2. Actual dates or anticipated dates for completion of activities

City Project #	City Project Name	Activity	Actual or *Anticipated* Date[a]
OPW 53206	Cole Creek CSO 204 Phase 3	Began Preliminary Design	1/18/2012
		Began Final Design	10/10/2017
		Advertise	5/27/2020
		Bid Opening	7/8/2020
		Begin Construction	*3/1/2021*
		Substantial Completion	*06/30/2022*

[a] Anticipated dates are italicized.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021):

Contractor will obtain all applicable permits needed prior to construction. Construction is anticipated to start March 2021.

Costs

LTCP Estimated Construction Costs (December 2013)[2]: $2,400,000 with contingency

Current Estimated Construction Cost: $4,728,662.68 as the final award amount

Changes from the LTCP

The project area was revised from the 2014 LTCP Update. In the Conceptual Basis of Design technical memorandum, a storm sewer project was proposed along Northwest Drive as part of the Phase 3 project. As a result of limitations arising from conflicts with existing utilities, pipe size restrictions, downstream capacity restrictions, and the inability to make significant improvements to the storm water drainage concerns along Northwest Drive, this portion of the project has been eliminated. .

[2] Engineering News Record Construction Cost Index 9668

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Cole Creek CSO 202 Sewer Separation Phase 1

CSOP.02.05.5D00 5D – CC CSO 202 Ph 1 (Cole Creek)

Project Description as stated in the 2009 LTCP:

This project is located in the Cole Creek Basin and provides separation to an area bounded on the north by Bedford Avenue, on the east by 67th Avenue, on the south by Binney Street, and on the west by Cole Creek. The conceptual plan for this project includes construction of both sanitary and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, to provide sewer separation to this 101-acre sub-basin. This project will reduce the flows in the collection system and allow for the future deactivation of CSO 202. This project will be constructed in multiple phases.

LTCP Phase: Phase 5 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2019, the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 5.

LTCP Schedule[1]:

Bid Year: Commenced bidding of one project by December 31, 2019

Complete Construction of all projects by December 31, 2023

Compliance Report

The LTCP Phase 5 Milestone of commencement of bidding for one project by December 31, 2019, was met by the bidding of Cole Creek CSO 202 Phase 1 Sewer Separation on November 28, 2018.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual Date
Bidding	7/1/2020	11/28/2018
End Construction	6/30/2022	1/14/2020

Project Activities and Progress as of September 30, 2020

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

[1] For Sewer Separation Projects, there are two milestone dates in both the permit and the LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in a phase complete construction by the end date of the phase.

The bid advertisement for CSO 202 Phase 1 occurred on November 28, 2018, with bid opening completed on January 16, 2019. The contract was awarded to Roloff Construction, and construction began on September 3, 2019. Construction progressed through the fall and winter 2019, with substantial completion achieved on January 14, 2020.

Table 2. Actual dates or anticipated dates for completion of activities

City Project #	LTCP Project Name	Activity	Date
OPW 53417	Cole Creek CSO 202 Phase 1	Began Preliminary Design	3/20/2017
		Began Final Design	7/10/2018
		Advertised	11/28/2018
		Bid Opening	1/16/2019
		Began Construction	9/3/2019
		Complete Construction	1/14/2020

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021).

The construction of CSO 202 Phase 1 project has been substantially completed. The contractor will install lateral seals on Maple Street by the end of 2020.

Costs

LTCP Estimated Construction Costs (December 2013)[2]: $5,423,000 with contingency

Current Estimated Construction Cost : $1,279,365 (construction contract amount).

Changes from the LTCP

The scope and schedules of the CSO 202 Phase 1 and 2 projects were modified to address the coordination with the City's 72nd and Maple Intersection Transportation Project schedule. However, the full CSO 202 (both phases) project remains unchanged.

[2] Engineering News Record Construction Cost Index 9668

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Cole Creek CSO 202 Sewer Separation Phase 2

CSOP.02.05.5E00 5E – CC CSO 202 Ph 2 (Cole Creek)

Project Description as stated in the 2009 LTCP:

This project is located in the Cole Creek Basin and provides separation to an area bounded on the north by Bedford Avenue, on the east by 67th Avenue, on the south by Binney Street, and on the west by Cole Creek. The conceptual plan for this project includes construction of both sanitary and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, to provide sewer separation to this 101-acre sub-basin. This project will reduce the flows in the collection system and allow for the future deactivation of CSO 202. This project will be constructed in multiple phases.

LTCP Phase: Phase 5 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2019, the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 5.

LTCP Schedule[1]:

Bid Year: Commence bidding of one project by December 31, 2019

Complete Construction of all projects by December 31, 2023

Compliance Report

The LTCP Phase 5 Milestone was met by the bidding of Cole Creek CSO 202 Phase 1 Sewer Separation on November 28, 2018.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual or *Anticipated* Date[a]
Bidding	1/6/2023	*9/7/2022*
Complete Construction	9/30/2025	*7/3/2025*

[a] Anticipated dates are italicized.

Project Activities and Progress as of September 30, 2020

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

[1] For Sewer Separation Projects there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in the phase complete construction by the end date of the phase.

A preliminary design (30%) was developed in conjunction with CSO 202 Phase 1. Final design of the project started on August 24, 2020.

Table 2. Actual dates or anticipated dates for completion of activities

City Project #	LTCP Project Name	Activity	Actual or *Anticipated* Date[a]
OPW 53869	Cole Creek CSO 202 Phase 2	Begin Preliminary Design	3/20/2017
		Begin Final Design	8/24/2020
		Advertise	*7/27/2022*
		Bid Opening	*9/7/2022*
		Begin Construction	*4/14/2023*
		Substantial Completion	*7/3/2025*

[a] Anticipated dates are italicized.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021).

Continue final design for CSO 202 Phase 2. It is anticipated that 60% design will be delivered in January 2021 and 90% design will be delivered in June 2021.

Costs

LTCP Estimated Construction Costs (December 2013)[2]: $5,162,000 with contingency

Current Estimated Construction Cost : $7,567,000 (source: 30% design for full CSO 202 project, subtracting CSO 202 Phase 1 bid). Note that because of the modification to the scope of CSO 202 Phase 1 and 2 projects, the current budgeted amount for CSO 202 Phase 2, escalated is $12,950,000.

Changes from the LTCP

The scope and schedules of the CSO 202 Phase 1 and 2 projects were modified to address the coordination with the City's 72nd and Maple Intersection Transportation project schedule. However, the original concept for the CSO 202 basin remains unchanged.

Other Items of Interest

There are no other items to report.

[2] Engineering News Record Construction Cost Index 9668

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Cole Creek CSO 203 Sewer Separation
CSOP.02.05.5C00 5C – CC CSO 203-1 Sewer Separation (Cole Creek)

Project Description, as stated in the 2009 LTCP:

This project is located in the Cole Creek Basin and provides separation to an area bounded on the north by Pratt Street, on the east by Military Avenue, on the south by Maple Street, and on the west by Cole Creek. This project includes construction of both sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, to provide sewer separation to this 125-acre sub-basin. This project will reduce the flows in the collection system and allow for the future deactivation of CSO 203. This project will be constructed in multiple phases.

LTCP Phase: Phase 5 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2019, the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 5.

LTCP Schedule[1]:

Bid Year: Commence bidding of one project by December 31, 2019

Complete Construction of all projects by December 31, 2023

Compliance Report

The LTCP Phase 5 Milestone was met with the bidding of CSO 202 Phase 1 Sewer Separation on November 28, 2018.

The following table lists the project-specific LTCP schedule dates.

Activity	LTCP Schedule Date	Actual or Anticipated Date[a]
Bidding	7/1/2020	9/9/2020
End Construction	6/30/2022	*4/27/2023*

[a] Anticipated dates are italicized.

Activities and Progress as of September 30, 2020

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

A preliminary design (30%) was completed in June 2018, however, final design did not move forward until CSO 202 Phase 1 design was completed. The final 90% design was received in October 2019 and was finalized in May 2020. Project was advertised on 9/9/20.

[1] For Sewer Separation Projects there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in the phase complete construction by the end date of the phase.

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A Change Notification Request (CNR) was submitted in September 2020 to make changes to the project schedule, in accordance with Metropolitan Utilities District's (M.U.D.) changes to their relocation of gas and water utilities. The following table lists the project-specific LTCP schedule dates proposed in the CNR completed in September 2020..

City Project #	LTCP Project Name	Activity	Date[a]
OPW 53059	Cole Creek CSO 203	Began Preliminary Design	3/20/2017
		Began Final Design	2/12/2019
		Advertise	9/9/2020
		Bid Opening	*10/21/2020*
		Begin Construction	*6/1/2021*
		Substantial Completion	*4/27/2023*

[a] Anticipated dates are italicized

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2019-2020).

Review bids in the Fall of 2020 and award the project to a contractor. Begin construction in June of 2021.

Costs

LTCP Estimated Construction Costs (December 2013)[2]: $4,539,000 with contingency

Current Estimated Construction Cost: $9,240,000 as of the 95% Final Design submittal

Changes from the LTCP

The increase in costs from the original LTCP Update was the result of 7 years of inflation, the addition of rehabilitation costs that were not quantified in the LTCP, the number of manholes and inlets to be installed to achieve sewer separation that were not in the LTCP, and the amount of pavement removal and replacement assumed between the LTCP Update and the current cost estimate. Between 60% design and 90% design, the decision was made to pursue full width pavement replacement rather than partial width, as originally assumed. This has had a large influence on estimated cost as concrete prices have outpaced inflation in the Omaha market in the last year. Also, the addition of sewer separation work on Manderson Street was not originally anticipated.

Changes in the M.U.D. water and gas utility relocation schedule postponed bidding and construction of the project. M.U.D. has indicated that relocation of gas and water utilities will require 65 weeks, with work beginning in July 2020.

Other Items of Interest

There are no other items to report.

[2] Engineering News Record Construction Cost Index 9668

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

Papillion Creek North 210-1 Separation
CSOP.02.05B.5G.01.01 PCN 210

Project Description as stated in the 2009 LTCP:

This project is located in the Papillion Creek North Basin and provides separation to an area bounded on the north by Maple Street, on the east by North 60th Street, on the south by Blondo Street, and on the west by North 66th Street. In conjunction with the PCN 210-2 Interceptor project, this project includes construction of both sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, to provide sewer separation to this sub-basin. The project will reduce flows in the collection system and allow for the abandonment of CSO 210.

Project Description as stated in the LTCP Update:

This sewer separation project includes construction of both sanitary and storm sewer to allow for conversion of the existing combined sewer to either storm or sanitary sewer. This project will reduce flows in the collection system and may allow for the abandonment of CSO 210. Deactivation of this CSO outfall is a goal pending monitoring results.

LTCP Phase: Phase 5 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2019, the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 5.

LTCP Schedule[1]:

Bid Year: Commence bidding of one project by December 31, 2019

Complete Construction of all projects by December 31, 2023

Compliance Report

The LTCP Phase 5 Milestone was met with the bidding of CSO 202 Phase 1 Sewer Separation on November 28, 2018. The PCN 210 Sewer Separation is on target to meet the LTCP Schedule and the LTCP Phase 5 Milestone for all projects to be complete by December 31, 2023.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual or Anticipated Date
Bidding	01/01/2022	*10/14/2020*
Complete Construction	06/30/2023	*7/8/2022*

[a] Anticipated dates are italicized

[1] For Sewer Separation Projects there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in the phase complete construction by the end date of the phase.

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

Project Activities and Progress as of September 30, 2020

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period. Development of the preliminary (30%) design was completed in June of 2019. The project was advertised for bid on October 14, 2020 and was bid on November 18, 2020.

Table 2. Actual dates or anticipated dates for completion of activities

City Project #	LTCP Project Name	Activity	Date[a]
OPW 53320	PCN 210 Sewer Separation	Began Preliminary Design	7/5/2018
		Began Final Design	9/6/2019
		Advertise	*10/14/2020*
		Bid Opening	*11/18/2020*
		Begin Construction	*6/28/2021*
		Complete Construction	*7/8/2022*

[a] Anticipated dates are italicized

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021).

The project will be advertised for bid and be awarded to a contractor. Construction is anticipate to start in June 2021.

Costs

LTCP Estimated Construction Cost (December 2013[2]): $1,799,000, with contingency

Current Estimated Construction Cost: $5,210,000 for OPW 53320 (9/18/2020)

Changes from the LTCP

An additional area of combined sewers was identified by the City in South 63rd Street between Blondo Street and Parker Street that flows into the CSO 210 service area. This area was included in the design.

Other Items of Interest

There are no other items of interest at this time.

[2] Engineering News Record Construction Cost Index 9668

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

OM CSO 119 5A/5B South Barrel Conversion

CSOP.02.05.6C00 OM CSO 119 5A South Barrel Conversion
CSOP.02.05.6D00 OM CSO 119 5B South Barrel Conversion

Project Description as stated in the 2009 LTCP:

OM 119-5A: South Barrel Diversion - This project is located in the southeast portion of the Ohern Monroe Basin and provides separation to an area bounded on the north by Madison Street, on the east by 13th Street, on the south by Harrison Street, and on the west by the railroad. In conjunction with OM-119-5B, the conceptual plan for this project includes construction of both sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to storm sewer or sanitary sewer, as appropriate, in this 108-acre area sub-basin. This project would result in reduced flows in the downstream combined sewer system, which results in a reduction in size of downstream controls.

OM 119-5B: South Barrel Diversion - This project is located in the southeast portion of the Ohern Monroe Basin and provides separation to an area bounded on the north by Y Street, on the east by 15th Street, on the south by Monroe Street, and on the west by 17th Street. In conjunction with OM-119-5A, the conceptual plan for this project includes construction of both sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to storm sewer or sanitary sewer, as appropriate, in this 108-acre area sub-basin. This project would result in reduced flows in the downstream combined sewer system, which results in a reduction in size of downstream controls.

Project Description as stated in the LTCP Update –

South Barrel Diversion - Isolate the North and South Barrels to convert the South Barrel to a storm sewer while leaving the North Barrel in place. Abandon three existing diversion structures that currently allow overflows to the South Barrel. Abandon the two sets of “windows” that currently exist to allow flows to pass from one barrel to the other. Stormwater flows to the South Barrel will be maximized through other projects.

LTCP Phase: Phase 6 Sewer Separation Projects

CSO Permit Requirement:

On or before December 31, 2021[1], the City of Omaha shall commence bidding on one of the Sewer Separation Projects in Phase 6.

LTCP Schedule[2]:

Bid Year – Commence bidding of one project by December 31, 2021[3]

Complete Construction of all projects by December 31, 2023

[1] Date was modified from June 30, 2020 to December 31, 2021 by the Permit Modification issued on November 1, 2019

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

Compliance Report

The LTCP Milestones for Phase 6 have been modified in a CNR in Attachment 3 and will be updated in the LTCP Update.

Table 1. Project-specific LTCP schedule dates for LTCP milestone activities

Activity	LTCP Schedule Date	Actual or Anticipated Date[c]
Bidding	6/30/2020	*2/11/2022*
Complete Construction	6/30/2023[b]	*12/31/2024*

[a] On November 1, 2019, a permit modification was issued changing the date to 12/31/2021.
[b] Anticipated dates are italicized..

Project Activities and Progress as of September 30, 2020

The following is a brief synopsis of project activities and progress that have occurred prior to and during this reporting period. The project team gathered additional field data about sewer connectivity, performed flow monitoring in the North and South Barrels, performed hydraulic modeling, and continued to work through project alternatives as part of completing the Conceptual Design. Project team developed scope of work and schedule through Final Design.

Table 2. Actual dates or anticipated dates for completion of activities

City Project #	LTCP Project Name	Activity	Date[a]
OPW 53149	CSO 119 South Barrel Conversion 5A and 5B	Began Preliminary Design	6/12/2018
		Begin Final Design	*11/1/2020*
		Advertise	*2/11/2022*
		Bid Opening	*3/15/2022*
		Begin Construction	*9/1/2022*
		Complete Construction	*12/31/2024*

[a] Anticipated dates are italicized.

Anticipated Project Activity for Next Period

The following is a brief synopsis of project activities for the next Annual Report period (2020-2021).

The project team will begin preliminary design and continue into final design during the next reporting period.

Costs

LTCP Estimated Construction Costs: (December 2013[4]): 5A = $7,470,000, 5B = $5,254,000 for a total of $12,724,000, with contingency

Current Estimated Construction Cost: Currently being evaluated.

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[2] For Sewer Separation Projects there are two milestone dates in both the permit and LTCP that must be met. This includes having one of the projects in a phase commence bidding and having all projects in the phase complete construction by the end date of the phase.

[3] Date was modified from June 30, 2020 to December 31, 2021 by a permit modification issued on November 1, 2019

[4] Engineering News Record Construction Cost Index 9668

ANNUAL PROJECT PROGRESS REPORT-
OCTOBER 1, 2019 THROUGH SEPTEMBER 30, 2020

Changes from the LTCP

A CNR dated November 5, 2019 modified the construction completion date to December 31, 2023. The reason for the CNR was that the completion of the Conceptual Design (10%) was delayed to perform additional modeling evaluations to better understand the potential impacts of several sewer separation alternative scenarios. The intent of the project is to separate the Monroe South Barrel to be stormwater only, and the North Barrel will remain a combined sewer. However, it has been determined that the initially proposed sewer separation projects would result in some increases to the hydraulic grade line (HGL) in the North Barrel that would be unacceptable to the City because the resulting HGLs would be too high. Therefore, the project team took some additional time to incorporate more detail into the hydraulic model based on the results of recent flow metering data in the North Barrel, and then developed and refined additional alternatives to mitigate the potential increases to HGLs until they met the City's design criteria.

The 2021 LTCP Update will reflect the updated design and construction schedules.

Other Items of Interest

There are no items to report at this time.

Attachment 3 – CSO Program: Change Notification and Request (CNR)

CSOP02.05.5C CSO 203 Sewer Separation

CSOP.02.05.5H00 CSO 211 Inflow Reduction

CSOP.02.04.4N SI 117-1 Missouri Ave/Spring Lake Park Phase 2

CSOP.02.04.4Q00 Cole Creek CSO 204 Phase 2

CSOP.02.06.6B00 Pierce St Sewer Separation

CSOP.02.07.7A00 Hickory St (CSO 111)

Change Documentation Tracking Form

REQUEST TITLE:	OPW 53059 CSO 203 Sewer Separation	DISCOVERY DATE:	6/3/2020
INITIATED BY:	PMT	REQUEST DATE:	8/21/2020
PREPARED BY:	Ben Fisher	DECISION DATE DUE:	
WBS NUMBER:	CSO 203: CSOP.02.05.5C		

Change Effects: (Check all that apply)

Scope ☐ Schedule ☒ Cost ☐

Rehabilitation project ☐ Other ☐

Brief Summary from Change Description and Justification TM

SCHEDULE:

The Long Term Control Plan (LTCP) lists advertisement of bid for CSO 203 to be completed by 7/1/2020 and construction to start on 12/31/2020 with construction completion by 6/30/2022. The Project Team was able to complete final design prior to the LTCP date; however, due to changes in the Metropolitan Utility District (M.U.D.) water and gas utility relocation schedule, the project will not be bid until 9/9/2020, and construction will not start until 6/1/2021. M.U.D. has indicated that relocation of gas and water utilities will require 65 weeks, with work beginning in July 2020.

The LTCP schedule identified for the Final Design, Bidding and Construction of the Cole Creek CSO 203 Sewer Separation Project are shown in the table below. The anticipated revised schedules are shown for comparison.

	Cole Creek 203 LTCP Schedule	New Cole Creek 203 LTCP Schedule
Completion of Final Design	7/1/2020	Completed 5/26/2020
Advertisement for Bid	7/1/2020	*Anticipated 9/9/2020*
Start of Construction	12/31/2020	*Anticipated 6/1/2021*
Substantial Completion	6/30/2022	*Anticipated 9/30/2023*

Program Coordinator Approval

Title	Name	Approved	Comments	Date and Initial
CSO Program Coordinator	Adam Wilmes	AW		AW 9-9-20

PMT Review/Recommendation:

Team	Name	Recommended	Comments/Attachments	Date and Initial
COMPLIANCE	Pat Nelson	Yes		10/7/2020
PROJECT DELIVERY	Scott Aurit	Yes	See Comments	09/29/2020
SEWER SEPARATION	Vince Genco	Yes	See Comments/Revisions	10/7/2020 VWG
PROGRAM CONTROLS	Jack Woo	Yes		9/26/20 JYW
CONSTRUCTION	Ron Sova	Yes	None	9/30/20
ASSURANCE	Kent Bienlien	Yes	None	9/10/20 kdb

Program Manager Approval/Disapproval:

Title	Name	Approved	Comments	Date and Initial
CSO PROGRAM MANAGER	Tom Heinemann	Yes		TH 10/8/20

The Approval Date is the date of the signature by the Program Managers.

Change Description and Justification TM

OPW 53059 – Cole Creek CSO 203 Sewer Separation Project

Introduction:

The purpose of this Technical Memorandum (TM) is to summarize a request for change to the scope, schedule, and cost for the CSO 203 Sewer Separation Project. The change description and justification were prepared by the Program Management Team (PMT) to document the changes.

Description of Changes

The Project Team completed final design prior to the LTCP scheduled final design completion date (7/1/2020); however, shortly after completing final design M.U.D. informed the Project Team and PMT that utility relocation of the CSO 203 project area would take approximately 65 weeks with work beginning in July 2020. The anticipated construction start date for CSO 203 is June 2021, and this will allow M.U.D. to complete their relocations within construction phases 1 through 6 and phase 14 prior to construction start for CSO 203. The proposed construction schedule has built-in a number of working days (ranging from 105 to 280 working days) between M.U.D. finish and CSO contractor start for each phase of construction, which will allow the CSO contractor to construct each phase without interruptions from M.U.D. relocations.

Schedule Changes

The proposed schedule changes for CSO 203 will accommodate the M.U.D. water and gas utility relocations in the project area. Due to the 65 week schedule for M.U.D. to relocate water and gas utilities within the CSO 203 project area, the advertisement of bid, construction start, and construction completion will not meet the LTCP schedule. The anticipated schedule is provided Table 1 below.

Table 1 – Revised LTCP Schedule Design Completion Through Substantial Completion

	Revised 203 LTCP Dates
Completion of Final Design	Completed 5/26/2020
Advertisement for Bid	9/9/2020
Start of Construction	6/1/2021
Substantial Completion	9/30/2023

ID		Task Mode	Task Name	Duration	Start	Finish
1						
2			**Cole Creek CSO 203**	**1105 days**	**Fri 2/1/19**	**Thu 4/27/23**
3			**Cole Creek CSO 203 Design**	**449 days**	**Fri 2/1/19**	**Wed 10/21/20**
4			Estimated Schedule	370 days	Fri 2/1/19	Thu 7/2/20
5			Advertisement	31 days	Wed 9/9/20	Wed 10/21/20
6			Bid	0 days	Wed 10/21/20	Wed 10/21/20
7			ROW Negotiations	60 days	Fri 7/3/20	Thu 9/24/20
8			MUD Relocations	373 days	Mon 7/27/20	Wed 12/29/21
9			MUD Contingency	66 days	Thu 12/30/21	Thu 3/31/22
10			**Cole Creek CSO 203 Construction**	498 days	Tue 6/1/21	Thu 4/27/23

CSO 211 Inflow Reduction Project - Change Documentation Tracking Form

REQUEST TITLE:	CSO 211 Inflow Reduction	DISCOVERY DATE:	2/25/2020
INITIATED BY:	PMT	REQUEST DATE:	3/27/2020
PREPARED BY:	Rachel Saunders	DECISION DATE DUE:	
WBS NUMBER:	CSOP.02.05.5H00		

Change Effects: (Check all that apply)

Scope ☐ **X** Schedule ☒ Cost ☐

Rehabilitation project ☐ Other ☐

Brief Summary from Change Description and Justification TM

SCHEDULE: The original LTCP schedule identified the start of preliminary design by May 4, 2020 and start of final design by January 1, 2021. It is currently anticipated that this project will be removed from the LTCP Update which will be submitted to the NDEE on March 31, 2021. Therefore, the dates are being modified to move the project start until after the issuance of the new CSO Permit which will reflect the changes to this project and others but to have it complete by the end of the Phase of 12/31/23.

	LTCP Schedule	New LTCP Schedule
Start Preliminary Design	5/4/2020	10/1/2021
Completion of Final Design	1/1/2022	8/31/2022
Advertisement for Bid	1/1/2022	9/1/2022
Start of Construction	7/1/2022	1/1/2023
Complete Construction	12/29/2023	12/31/2023

PMT Review/Recommendation:

Team	Name	Approved	Comments /Attachments	Date and Initial
COMPLIANCE	Pat Nelson	Yes		4/8/2020
SEWER SEPARATION	Roger Coffey	Yes	Per Changes Identified	4/2/2020 RLC

The Approval Date is the date of the last signature by the last Compliance Team Lead.

CSOP.02.05.5H00 – CSO 211 Inflow Reduction Change Description and Justification TM

Introduction:

The purpose of this TM is to summarize a request for change to the schedule for the CSO 211 Inflow Reduction Project. The change description and justification were prepared by the Program Management Team (PMT) to document the reasons for the delay in completion of the preliminary design and start of the final design.

Description of Changes

This project was originally called the CSO 211 Interceptor Improvements Project in the 2009 LTCP. It was renamed the CSO 211 Inflow Reduction Project in the LTCP Update. It is part of Phase 5 of Sewer Separation. This requires completion of the construction of all projects by December 31, 2023.

The project as proposed in Appendix T of the LTCP is:

" CSO 211 Interceptor
This project is located in the Papillion Creek North Basin and provides separation to an area along Pacific Street from 63rd Street to 66th Street. In conjunction with PCN 211-1 Separation project, this project includes construction of sanitary sewer and storm sewer to allow for conversion of the existing combined sewer to either storm sewer or sanitary sewer, as appropriate, to provide sewer separation to this 8-acre sub-basin.

The project will reduce flows in the collection system and allow for the abandonment of CSO 211."

The 2014 LTCP Update states, •
"CSO 211 Interceptor Improvements Project renamed to CSO 211 Inflow Reduction" Project.

The Long Term Control Plan (LTCP) schedule identified for design and construction of the CSO 211 Inflow is shown below. The actual schedule is shown for comparison.

	LTCP Schedule	New LTCP Schedule
Start Preliminary Design	5/4/2020	10/1/2021
Completion of Final Design	1/1/2022	8/31/2022
Advertisement for Bid	1/1/2022	9/1/2022
Start of Construction	7/1/2022	1/1/2023
Complete Construction	12/29/2023	12/31/2023

Description of Change

It is currently anticipated that this project will be removed from the LTCP Update due to the NDEE on March 31, 2021. The current concept for the area is for the identification of inflow and infiltration sources and removal of inflow a project or multiple rehabilitation projects to address the sources of I/I in the basin which is not consistent with the LTCP project. Therefore, the dates are being modified to move the project start until after the issuance of the new CSO Permit which will reflect the changes to this project and others but to have it complete by the end of the Phase of 12/31/23.

Cost Changes

None at this time.

Change Documentation Tracking Form

REQUEST TITLE:	SI 117-1 Missouri Avenue/ Spring Lake Park, Phase 2	DISCOVERY DATE:	July, 2019
INITIATED BY:	PMT	REQUEST DATE:	July 2019
PREPARED BY:	Emily Holtzclaw	DECISION DATE DUE:	December 2019
WBS NUMBER:	CSOP.02.04.4N		

Change Effects: (Check all that apply)

Scope ☐ Schedule ☒ Cost ☒

Rehabilitation project ☐ Other ☐

Brief Summary from Change Description and Justification TM

Program Coordinator Approval

Title	Name	Approved	Comments	Date and Initial
CSO Program Coordinator	Adam Wilmes			AW 8/10/2020

PMT Review/Recommendation:

Team	Name	Recommended	Comments/Attachments	Date and Initial
COMPLIANCE	Pat Nelson	Yes		PAN 8/30/2020
PROJECT DELIVERY	Scott Aurit	YES	Minor comments in the text need to be addressed.	SAA 08/11/2020
SEWER SEPARATION	Vince Genco	YES	N/A	VWG 8/12/2020
PROGRAM CONTROLS	Jack Woo	YES		JYW 8/13/2020
CONSTRUCTION	Ron Sova	yes		RJS 8/29/20
ASSURANCE	Kent Bienlien	Yes		kdb 8/25/20

Program Manager Approval/Disapproval:

Title	Name	Approved	Comments	Date and Initial
CSO PROGRAM MANAGER	Tom Heinemann			TJH 9/15/20

The Approval Date is the date of the signature by the Program Managers.

Change Description and Justification TM

OPW 51997b – Missouri Avenue/Spring Lake Park Phase 2

DATE: July 30, 2020

TO: City of Omaha

FROM: CSO PMT

RE: Change Description and Justification for Missouri Avenue/Spring Lake Park Phase 2

Introduction:

The purpose of this Technical Memorandum (TM) is to summarize a request for change to the scope, schedule, and cost for the CSO 117 Missouri Avenue/Spring Lake Park Phase 2 Project. The change description and justification were prepared by the Program Management Team (PMT) with concurrences of William A. Ratekin, P.E., Design Project Manager, to document the changes.

Description of Changes

Scope Changes

In July 2019, during construction it was determined that the design of the project failed to identify four existing sanitary sewer service laterals, three (3) house services and one (1) business service, connecting to an existing combined sewer on the west side of South 13th Street, north of I Street. This combined sewer was intended to be converted to a storm sewer as part of the project. A separate sanitary sewer is located on the east side of South 13th Street and existing utility conflicts with Metropolitan Utilities District (MUD) water and gas lines made reconnections of these sanitary sewer service laterals across South 13th Street (from the west to the east side) cost prohibitive and unpractical. The low-pressure MUD gas line in South 13th Street is cast iron and MUD discouraged the City from crossing the cast iron gas main. Therefore, the City's design team evaluated alternatives for how to provide service to these four (4) customers while also fully separating the sewers in South 13th Street.

The alternative selected was to reuse a portion of the existing combined sewer as a sanitary sewer in South 13th Street and to construct approximately 175-feet of new 8-inch to 10-inch diameter VCP and PVC sanitary sewer to the west down an existing steep slope (from the west side of South 13th and I Streets through a wooded area) to tie into the existing separate sanitary sewer near the intersection of Spring Lake Drive and I Street.

The City and the design team reviewed many options to place this line west from South 13th Street. Additional alignments were considered; however, the proposed alignment was determined to be the best option available to the City. Of the alternatives evaluated, directing new sanitary sewer to the east side of South 13th Street was not considered due to conflicts with existing utilities as mentioned above. This pipe was originally planned to be

separated to convey stormwater only as part of the project. However, as mentioned above, this additional work includes changing the original design to instead convert the existing combined pipe in South 13th Street to sanitary only to maintain the existing sanitary service connections.

In addition, this existing combined sewer was surcharging above the ground near the intersection of Spring Lake Drive and I Street during storm events. This portion of the existing combined sewer pipe is to be separated to storm only as part of the project. The City's design team developed alternatives to address potential stormwater surcharging issue and the resolution was to provide about 830-feet of new 12-inch to 18-inch reinforced concrete pipe (RCP) storm sewer in South 13th Street to tie into a segment of the existing 24-inch combined pipe (converted to storm) as it passes through the wooded area from South 13th St to Spring Lake Drive near I street. This segment of existing sewer was reused to avoid additional disturbance to the steep, wooded area. In addition, 262-feet of new 30-inch diameter RCP is included to convey the stormwater west of Spring Lake Park Drive (under the parking lot just south of I Street), connecting downstream to the 66-inch diameter existing trunk sewer (to become a storm sewer as part of this project) at a large 96-inch 45-foot drop structure previously constructed as part of the original project. This new system provides more stormwater conveyance capacity for South 13th Street to where the storm sewer connects to the storm trunk sewer near the parking lot for the baseball field south on I Street, west of Spring Lake Drive.

Schedule Changes

Construction was originally scheduled to be Substantially Complete by October 31, 2019. Construction related change orders prior to the items described above in the Scope section of this CNR changed this date to November 8, 2019. The current LTCP date for Substantial Completion of construction for Phase 4 was December 31, 2019, which was not met.

The work described above in the Scope section required extensive time to develop and evaluate alternatives, coordinate with other utilities, and construct. The final plans have been provided by the design team and approved by the City. The contractor has provided a price and schedule for the additional work. The additional work has been reviewed and approved by Nebraska Department of Environment and Energy (NDEE) as part of an amendment to the current Wastewater Works permit. The construction started on July 23, 2020 and should be completed by December 2020, pending weather and working conditions. Completion of the originally scoped project work such as repaving the baseball field parking lot and substantial completion of Missouri Avenue Phase 2 is expected by December 31, 2020. A review of the basin is taking place to ensure that the diversion can be closed without environmental impacts.

The CSO 117 Missouri Ave/Spring Lake Park Phase 2 project is part of the LTCP Phase 4 projects group. The LTCP requires that all Phase 4 projects will be complete by June 30, 2022, which will be met. The Lake James to Fontenelle Park project will meet the milestone date of December 31, 2019.

Cost Changes

The cost of this additional work is $738,601.76 for both the sanitary sewer work and the storm sewer work.

Change Documentation Tracking Form

REQUEST TITLE:	Cole Creek CSO 204 Sewer Separation Phase 2 (OPW 52814), Construction Delay Revision	DISCOVERY DATE:	2/12/2020
INITIATED BY:	PMT	REQUEST DATE:	2/12/2020
PREPARED BY:	Emily Holtzclaw	DECISION DATE DUE:	
WBS NUMBER:	Phase 4: CSOP.02.04.4Q00		

Change Effects: (Check all that apply)

Scope ☐ Schedule ☒ Cost ☐

Change Description and Justification TM

SCHEDULE CHANGE:

The completion of the Final Design was put on hold while additional analyses were performed by the CSO Program Management Team (PMT) and City. The PMT and City are working on developing a Business Case to determine if and when this project will move forward. The Cole Creek CSO 204 Phase 2 Final Design Long Term Control Plan (LTCP) Completion date will not be met. These dates will be adjusted to be later in the LTCP schedule, in consultation with the Nebraska Department of Environment and Energy (NDEE). The LTCP schedule for the Bidding and Construction for Phase 2 will also not be met. Subsequent CSO 204 phases are not dependent upon construction of the Phase 2 project.

The LTCP schedule identified for the Final Design, Bidding and Construction of the Cole Creek CSO 204 Sewer Separation Phase 2 Project is shown in the table below. The anticipated schedule is shown for comparison.

	LTCP Schedule	12-7-2017 CNR Schedule	Anticipated Schedule*
Completion of Final Design	12/23/2016	*Anticipated 6/30/2020*	*Anticipated 11/1/2027*
Advertisement for Bid	7/2/2018	*Anticipated 6/30/2020*	*Anticipated 12/31/2027*
Start of Construction	1/1/2019	*Anticipated 10/1/2020*	*Anticipated 4/1/2028*

Substantial Completion	6/30/2021	*Anticipated 6/30/2022*	*Anticipated 5/31/2030*

* The anticipated schedule the CSO 204 Phase 2 project, if constructed, is unknown at this time and will be determined based on the results of the Business Case and other analyses described below for inclusion in the LTCP Update in 2021.

Title	Name	Approved	Comments	Date and Initial
CITY PROGRAM COORDINATOR	Adam Wilmes	AW		AW 03/27/2020

PMT Review/Recommendation:

Team	Name	Recommended	Comments /Attachments	Date and Initial
COMPLIANCE	Pat Nelson	Yes		PAN 04/16/2020
PROJECT DELIVERY	Scott Aurit	SAA		**SAA 04/04/2020**
SEWER SEPARATION	Roger Coffey	Yes		RLC 04/02/2020
PROGRAM CONTROLS	Jack Woo	Yes		JYW 04/07/2020
CONSTRUCTION	Ron Sova	YES		RJS 04/16/2020
ASSURANCE	Kent Bienlien	Yes		kdb 4/6/20

Program Manager Approval/Disapproval:

Title	Name	Approved	Comments	Date and Initial
CSO PROGRAM MANAGER	Tom Heinemann	Yes		TJH 4/18/20

The Approval Date is the date of the signature by the CSO Program Manager.

Change Description and Justification TM

Cole Creek CSO 204 Sewer Separation, Phase 2 (OPW 52814), Construction Delay Revision

Introduction:

The purpose of this Technical Memorandum (TM) is to summarize a request for change to the schedule of the CSO 204 Phase 2 Sewer Separation Project. The change description and justification were prepared by the Program Management Team (PMT) to document the changes.

Description of Changes

Schedule Changes

Due to escalating estimated construction costs, assessment of risks associated with the construction of the deep sewers and use of trenchless technologies in a confined residential area construction corridor, and the potential need for purchasing a large number of residential properties, the completion of the Final Design was put on hold while additional analysis was performed by the PMT and City. After a Value/Alternative Engineering evaluation was conducted in 2018 and 2019 (as documented in the Change Notification Request approved on 12/7/2017 for this project), additional analysis is being conducted by the City and PMT to develop a Business Case for this project to determine if this project will move forward, and if it does, what the project scope will include.

Should the Phase 2 project move forward, it could include the acquisition of several residential properties that are adjacent to the existing combined sewer alignment. This property acquisition may be needed because, if the existing combined sewer is reused, it may not be practical to perform construction in such close proximity to houses and other structures. If property acquisition is necessary, construction would likely be delayed due to the time needed for the property acquisition process. In addition, the CSO 204 Phase 3 and 4 projects need to be built and monitored to ensure that they are operating as designed and to help guide the direction of the Phase 2 project.

Therefore, due to the amount of time required to complete the additional analyses for Phase 2, the need to construct and monitor Phases 3 and 4, and depending on what the recommended Phase 2 project includes, the Cole Creek CSO 204 Phase 2 Final Design Long Term Control Plan (LTCP) Completion date will not be met. These dates will be adjusted to be later in the LTCP schedule, in consultation with the Nebraska Department of Environment and Energy (NDEE) as part of the 2021 LTCP Update.

Construction was originally scheduled to be Substantially Complete by June 30, 2021 and the LTCP schedule for Bidding and Construction for Phase 2 will also not be met. If the Business Case concludes that this project should move forward, an updated scope and schedule will be developed for inclusion in the 2021 LTCP Update. Subsequent CSO 204 phases are not dependent upon construction of the Phase 2 project.

The CSO 204 Phase 2 Sewer Separation Project is part of the LTCP Phase 4 projects group. The LTCP requires that all Phase 4 projects will be complete by June 30, 2022. Because this requirement will not be met by this project, this schedule will be adjusted as part of the 2021 LTCP Update. Other CSO Program projects have already met the LTCP Phase 4 projects group milestone date of December 31, 2019.

Scope and Cost Changes

The scope and cost of the CSO 204 Phase 2 project, if constructed, is unknown at this time and will be determined based on the results of the Business Case and other analyses described above for inclusion in the 2021 LTCP Update.

Pierce St Sewer Separation - Change Documentation Tracking Form

REQUEST TITLE:	Pierce St Sewer Separation	**DISCOVERY DATE:**	2/25/2020
INITIATED BY:	PMT	**REQUEST DATE:**	3/25/2020
PREPARED BY:	Rachel Saunders	**DECISION DATE DUE:**	
WBS NUMBER:	CSOP.02.06.6B00		

Change Effects: (Check all that apply)

Scope ☐ **X** Schedule ☒ Cost ☐

Rehabilitation project ☐ Other ☐

Brief Summary from Change Description and Justification TM

SCOPE: No scope changes proposed at this time.

SCHEDULE: As noted in the attached memorandum, the LTCP Schedule dates for the referenced project are being modified as noted below. Evaluations are ongoing to determine whether this project will be necessary as part of implementing the LTCP. It is anticipated that this project as originally envisioned, will not be implemented. The Complete Construction Date will not meet the Phase 6 milestone date of December 31, 2023, which is outside of the term of the current CSO permit and will be modified in the LTCP Update to be submitted to NDEE on March 31, 2021.

	LTCP Schedule based on 2018 CNR	Updated LTCP Schedule
Start Preliminary Design	1/1/2020	1/1/2032
Completion of Final Design	6/30/2022	6/30/2034
Advertisement for Bid	7/1/2022	7/1/2034
Start of Construction	1/1/2023	1/1/2035
Complete Construction	12/31/2024	10/1/2037

COST: No cost changes proposed at this time, though delaying project would result in higher construction costs due to inflation.

OTHER: No other changes proposed.

Program Coordinator Approval

Title	Name	Approved	Comments	Date and Initial
CSO Program Coordinator	Adam Wilmes	YES		2020-04-16 AW

PMT Review/Recommendation:

Team	Name	Recommended	Comments /Attachments	Date and Initial
COMPLIANCE	Pat Nelson	Yes		4/27/2020
PROJECT DELIVERY	Scott Aurit	YES		2020-04-18 SAA
SEWER SEPARATION	Roger Coffey	YES		2020-04-16 RLC
PROGRAM CONTROLS	Jack Woo	YES		2020-04-20 JYW
CONSTRUCTION	Ron Sova	YES		2020-04-27 RJS
ASSURANCE	Kent D Bienlien	Yes		kdb 04/27/20

Program Managers Approval/Disapproval:

Title	Name	Approved	Comments	Date and Initial
PROGRAM MANAGER	Tom Heinemann	YES		5/11/20 TJH

The Approval Date is the date of the last signature by the Program Manager.

CSOP.02.06.6B00 - SI Pierce Street Sewer Separation (CSO 110) Change Description and Justification TM

Introduction:

As part of continual adaptive management practices of the CSO Program, an update to the Long Term Control Plan (LTCP) was prepared in 2014. The schedules for many LTCP projects were adjusted based on this update. In addition, in 2016-2017, the CSO Program performed various Technical Assessments for Cost Savings (TACS), including a review of alternatives to reach 85% wet weather volume capture in the representative year within the Missouri River Watershed while minimizing costs. As part of the LTCP Update on March 31, 2021, the City and PMT are again evaluating changes to the approach for the Missouri River Watershed. This project is currently included in that evaluation.

Description of Changes

Additional analyses and modeling of the City's combined sewer system were performed as part of updating the CSO LTCP, and as part of the TACS. The project is currently being evaluated as part of the City's Optimization evaluation to develop a cost-effective approach for achieving 85% wet weather volume capture in the Missouri River Watershed. The goal of these additional analyses was to determine the water quality benefits already achieved through implementation of CSO LTCP projects to date, and to reassess the remaining LTCP projects.

As a result of these analyses, the Pierce Street Sewer Separation project will be deferred until approximately the end of the CSO Program. This will allow for further evaluations on whether the project as originally conceived is appropriate. The project was identified for completion of construction by the end of 2023.

Scope Changes

Scope changes have not been identified for this project at this time.

Schedule Changes

As a result of the LTCP Update and Optimization Evaluation, the following dates will be included in the LTCP deadline & milestone tracking schedule as a placeholder, until the LTCP Updated is submitted in March 2021.

	New LTCP Schedule based on 2018 CNR	Updated LTCP Schedule
Start Preliminary Design	1/1/2020	1/1/2032
Completion of Final Design	6/30/2022	6/30/2034

Advertisement for Bid	7/1/2022	7/1/2034
Start of Construction	1/1/2023	1/1/2035
Complete Construction	12/31/2024	10/1/2037

The above schedule will not meet the current Phase 6 due date for all projects to be substantively complete by December 31, 2023. This will be addressed as part of the future CSO permit renewal and LTCP Update.

Cost Changes

Cost changes have not been determined at this time, though due to inflation, if the project is constructed at the later date, costs would be higher than originally anticipated in the LTCP.

Hickory St Sewer Separation - Change Documentation Tracking Form

REQUEST TITLE:	Hickory St Sewer Separation (CSO 111)	DISCOVERY DATE:	2/25/2020
INITIATED BY:	PMT	REQUEST DATE:	3/25/2020
PREPARED BY:	Rachel Saunders	DECISION DATE DUE:	
WBS NUMBER:	CSOP.02.07.7A00		

Change Effects: (Check all that apply)

Scope ☐ Schedule ☒ Cost ☐

Rehabilitation project ☐ Other ☐

Brief Summary from Change Description and Justification TM

SCOPE: No scope changes proposed at this time.

SCHEDULE: As noted in the attached memorandum, the LTCP Schedule dates for the referenced project are being modified as noted below. Evaluations are ongoing to determine whether this project will be necessary as part of implementing the LTCP. The Complete Construction Date will not meet the Phase 7 milestone date of September 30, 2027, which is outside of the term of the current CSO permit and will be modified in the LTCP Update to be submitted to NDEE on March 31, 2021.

	LTCP Schedule	Updated LTCP Schedule
Start Preliminary Design	12/1/2020	1/1/2032
Completion of Final Design	6/30/2022	6/30/2034
Advertisement for Bid	7/1/2022	7/1/2034
Start of Construction	12/31/2022	1/1/2035
Complete Construction	12/31/2024	10/1/2037

COST: No cost changes proposed at this time, though delaying project would result in higher construction costs due to inflation.

OTHER: No other changes proposed.

Program Coordinator Approval

Title	Name	Approved	Comments	Date and Initial
CSO Program Coordinator	Adam Wilmes	YES		2020-04-16 AW

PMT Review/Recommendation:

Team	Name	Recommended	Comments /Attachments	Date and Initial
COMPLIANCE	Pat Nelson	Yes		4/27/2020
PROJECT DELIVERY	Scott Aurit	YES		2020-04-18 SAA
SEWER SEPARATION	Roger Coffey	YES		2020-4-16 RLC
PROGRAM CONTROLS	Jack Woo	YES		2020-.4-20 JYW
CONSTRUCTION	Ron Sova	YES		2020-04-27 RJS
ASSURANCE	Kent D Bienlien	YES		kdb 4/27/20

Program Managers Approval/Disapproval:

Title	Name	Approved	Comments	Date and Initial
PROGRAM MANAGER	Tom Heinemann	YES		2020-05-11 TJH

The Approval Date is the date of the last signature by the Program Manager.

CSOP.02.07.7A00 - SI Hickory Street Sewer Separation (CSO 111) Change Description and Justification TM

Introduction:

As part of continual adaptive management practices of the CSO Program, an update to the Long Term Control Plan (LTCP) was prepared in 2014. The schedules for many LTCP projects were adjusted based on this update. In addition, in 2016-2017, the CSO Program performed various Technical Assessments for Cost Savings (TACS), including a review of alternatives to reach 85% wet weather volume capture in the representative year within the Missouri River Watershed while minimizing costs. As part of the LTCP Update due on March 31, 2021, the City and PMT are again evaluating changes to the approach for the Missouri River Watershed. This project is currently included in that evaluation.

Description of Changes

Additional analyses and modeling of the City's combined sewer system were performed as part of updating the CSO LTCP, and as part of the TACS. The project is currently being evaluated as part of the City's Optimization evaluation to develop a cost-effective approach for achieving 85% wet weather volume capture in the Missouri River Watershed. The goal of these additional analyses was to determine the water quality benefits already achieved through implementation of CSO LTCP projects to date, and to reassess the remaining LTCP projects.

As a result of these analyses, the Hickory Street Sewer Separation project will be deferred until approximately the end of the CSO Program. This will allow for further evaluations on whether the project as originally conceived is appropriate. The project was identified for completion of construction by the end of June 2024.

Scope Changes

Scope changes have not been identified for this project at this time.

Schedule Changes

As a result of the LTCP Update and Optimization Evaluation, the following dates will be included in the LTCP deadline & milestone tracking schedule as a placeholder, until the LTCP Update is submitted in March 2021.

	LTCP Schedule	Updated LTCP Schedule
Start Preliminary Design	12/1/2020	1/1/2032
Completion of Final Design	6/30/2022	6/30/2034
Advertisement for Bid	7/1/2022	7/1/2034

Start of Construction	12/31/2022	1/1/2035
Complete Construction	6/30/2024	10/1/2037

The above schedule will not meet the current Phase 7 due date for all projects to be substantively complete by September 30, 2027. This will be addressed as part of the future CSO permit renewal and LTCP Update.

Cost Changes

Cost changes have not been determined at this time, though due to inflation, if the project is constructed at the later date, costs would be higher than originally anticipated in the LTCP.

Attachment 4 – Wet Weather CSO Occurrences 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)
10/11/2019	16:18	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019	Email from Don Smith: Pump replaced during rain event contributed to overflow	1.77

CSO Inspection Report

CSO Number 105 **Total Wet Weather Overflows:** 14

CSO Name Minne Lusa Avenue

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
3/29/2020	9:45	Frolio, Brandon	Rain	Yes	No	3/28/2020		0.16
5/17/2020	8:55	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/23/2020	8:55	Frolio, Brandon	Rain	Yes	No	5/22/2020		0.27
5/24/2020	13:50	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	8:55	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
5/31/2020	8:55	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	11:25	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	8:55	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
7/1/2020	9:30	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/21/2020	9:50	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
8/2/2020	7:20	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	9:35	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	12:10	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
9/11/2020	12:55	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 106 **Total Wet Weather Overflows:** 5

CSO Name North Interceptor

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
1/23/2020	13:00	Birdsall, Jeremiah	Snow Melt	Yes	No	1/22/2020		0.54
4/18/2020	9:45	Birdsall, Jeremiah	Snow Melt	Yes	No	4/17/2020		0.01
7/30/2020	11:00	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	7:30	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
9/11/2020	13:00	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 107 **Total Wet Weather Overflows:** 1

CSO Name Grace Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
9/11/2020	13:10	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 108 **Total Wet Weather Overflows:** 1

CSO Name Burt Izard Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/30/2020	11:20	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36

CSO Inspection Report

CSO Number 109 **Total Wet Weather Overflows:** 33

CSO Name 1st and Leavenworth Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	13:50	Wieland, H. Curtis	Rain	Yes	No	10/1/2019	Level data indicated overflow	2.12
10/3/2019	7:26	Birdsall, Jeremiah	Rain	Yes	No	10/2/2019	Level data indicated overflow	0.1
10/5/2019	9:55	Fagerquist, Dylan	Rain	Yes	No	10/5/2019	No SCADA Email	1.33
10/11/2019	16:21	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019	Overflow verified by SCADA email notification	1.77
11/21/2019	15:10	Frolio, Brandon	Rain	Yes	No	11/21/2019	Overflow verified by SCADA	0.13
12/30/2019	14:15	Frolio, Brandon	Rain	Yes	No	12/28/2019	Overflow verified by SCADA email notification	1.76
3/10/2020	12:50	Frolio, Brandon	Rain	Yes	No	3/9/2020	Overflow verified by SCADA email notification	0.29
3/18/2020	12:50	Frolio, Brandon	Rain	Yes	No	3/18/2020	Overflow verified by SCADA email notification	0.39
3/20/2020	11:00	Frolio, Brandon	Rain	Yes	No	3/19/2020	Verified by SCADA	0.54
3/29/2020	10:30	Frolio, Brandon	Rain	Yes	No	3/28/2020	Received a Email	0.16
4/25/2020	10:20	Frolio, Brandon	Rain	Yes	No	4/24/2020	Verified by SCADA	0.09
4/26/2020	9:50	Frolio, Brandon	Rain	Yes	No	4/25/2020	Verified by SCADA	0.34
4/27/2020	9:50	Frolio, Brandon	Rain	Yes	No	4/27/2020	Overflow verified by SCADA email notification	0.12
5/5/2020	8:50	Frolio, Brandon	Rain	Yes	No	5/4/2020	Verified by SCADA	0.14
5/8/2020	8:50	Frolio, Brandon	Rain	Yes	No	5/7/2020	Verified by SCADA	0.31
5/15/2020	9:10	Frolio, Brandon	Rain	Yes	No	5/14/2020	Verified by SCADA	0.26
5/17/2020	9:50	Frolio, Brandon	Rain	Yes	No	5/16/2020	Verified by SCADA	0.43
5/24/2020	14:40	Frolio, Brandon	Rain	Yes	No	5/24/2020	Overflow verified by SCADA email notification	0.73
5/28/2020	9:50	Frolio, Brandon	Rain	Yes	No	5/27/2020	Overflow verified by SCADA email notification	0.09
5/31/2020	9:50	Frolio, Brandon	Rain	Yes	No	5/30/2020	Verified by SCADA; For rain on 5/30-5/31	0.65
6/10/2020	13:20	Frolio, Brandon	Rain	Yes	No	6/9/2020	Overflow verified by SCADA email notification For rain on 6/9-6/10	1.15
6/19/2020	9:50	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
6/29/2020	8:15	Frolio, Brandon	Rain	Yes	No	6/28/2020	Overflow verified by SCADA email notification	0.13

CSO Inspection Report

CSO Number 109 **Total Wet Weather Overflows:** 33

CSO Name 1st and Leavenworth Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/1/2020	10:35	Frolio, Brandon	Rain	Yes	No	7/1/2020	Verified by SCADA	0.47
7/9/2020	10:30	Frolio, Brandon	Rain	Yes	No	7/9/2020	Verified by SCADA	0.11
7/21/2020	10:45	Frolio, Brandon	Rain	Yes	No	7/20/2020	Verified by SCADA; For rain 7/20-7/21	0.72
7/27/2020	10:45	Woods, Patrick	Rain	Yes	No	7/26/2020	Overflow verified by SCADA email notification	0.15
7/30/2020	11:45	Woods, Patrick	Rain	Yes	No	7/30/2020	Overflow verified by SCADA email notification; For rain on 7/29-7/30	1.36
8/2/2020	8:15	Woods, Patrick	Rain	Yes	No	8/1/2020	Overflow verified by SCADA email notification	0.19
8/7/2020	10:40	Woods, Patrick	Rain	Yes	No	8/6/2020	Overflow verified by SCADA email notification	0.85
8/10/2020	12:40	Frolio, Brandon	Rain	Yes	No	8/9/2020	Verified by SCADA	0.18
8/17/2020	10:45	Frolio, Brandon	Rain	Yes	No	8/16/2020	Verified by SCADA	0.15
9/11/2020	13:40	Woods, Patrick	Rain	Yes	No	9/10/2020	Verified by SCADA	0.41

CSO Inspection Report

CSO Number 110 **Total Wet Weather Overflows:** 15

CSO Name Pierce Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
4/25/2020	10:30	Birdsall, Jeremiah	Rain	Yes	No	4/24/2020		0.09
4/27/2020	10:10	Frolio, Brandon	Rain	Yes	No	4/27/2020		0.12
5/8/2020	9:05	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/24/2020	15:00	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	10:10	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
5/31/2020	10:10	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/19/2020	10:10	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
7/1/2020	10:50	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/21/2020	11:20	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	11:20	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	12:20	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	8:50	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	11:10	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/17/2020	11:20	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	14:00	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 111 **Total Wet Weather Overflows:** 7

CSO Name Hickory Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
5/24/2020	15:10	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
7/21/2020	11:10	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	11:10	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	12:10	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	8:40	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	11:00	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
9/11/2020	14:15	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 112 **Total Wet Weather Overflows:** 22

CSO Name Martha Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	14:00	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	10:05	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:22	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
12/30/2019	14:30	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
3/18/2020	13:00	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	12:00	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
4/25/2020	10:40	Birdsall, Jeremiah	Rain	Yes	No	4/24/2020		0.09
4/27/2020	10:00	Frolio, Brandon	Rain	Yes	No	4/27/2020		0.12
5/8/2020	9:00	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/15/2020	9:20	Frolio, Brandon	Rain	Yes	No	5/14/2020		0.26
5/24/2020	14:50	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	10:00	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
5/31/2020	10:00	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	13:30	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	10:00	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
7/21/2020	11:00	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	11:00	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	12:00	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/7/2020	10:50	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	12:50	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	11:00	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	13:50	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 114 **Total Wet Weather Overflows:** 8

CSO Name Grover Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
1/23/2020	13:55	Birdsall, Jeremiah	Snow Melt	Yes	No	1/22/2020		0.54
4/26/2020	10:20	Birdsall, Jeremiah	Rain	Yes	No	4/25/2020		0.34
6/10/2020	14:00	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
7/30/2020	12:30	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	9:00	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	11:20	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	13:00	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
9/11/2020	14:25	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 115 **Total Wet Weather Overflows:** 18

CSO Name Riverview Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
3/15/2020	7:50	Frolio, Brandon	Snow Melt	Yes	No	3/14/2020		0.36
4/26/2020	10:25	Birdsall, Jeremiah	Rain	Yes	No	4/25/2020		0.34
4/27/2020	10:25	Frolio, Brandon	Rain	Yes	No	4/27/2020		0.12
5/5/2020	9:25	Frolio, Brandon	Rain	Yes	No	5/4/2020		0.14
5/15/2020	10:10	Frolio, Brandon	Rain	Yes	No	5/14/2020		0.26
5/17/2020	10:26	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/23/2020	10:25	Frolio, Brandon	Rain	Yes	No	5/22/2020		0.27
5/24/2020	15:30	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	10:25	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
6/29/2020	7:50	Frolio, Brandon	Rain	Yes	No	6/28/2020		0.13
7/21/2020	11:40	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	11:40	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	12:40	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	9:10	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	11:30	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	13:05	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/31/2020	10:50	Frolio, Brandon	Rain	Yes	No	8/31/2020		0.01
9/11/2020	14:40	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 117 **Total Wet Weather Overflows:** 17

CSO Name Missouri Avenue Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
4/25/2020	11:00	Birdsall, Jeremiah	Rain	Yes	No	4/24/2020		0.09
4/26/2020	10:30	Birdsall, Jeremiah	Rain	Yes	No	4/25/2020		0.34
4/27/2020	10:30	Frolio, Brandon	Rain	Yes	No	4/27/2020		0.12
5/5/2020	9:30	Frolio, Brandon	Rain	Yes	No	5/4/2020		0.14
5/17/2020	10:30	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/24/2020	15:40	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
6/10/2020	14:20	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/29/2020	7:45	Frolio, Brandon	Rain	Yes	No	6/28/2020		0.13
7/1/2020	11:15	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/11/2020	10:40	Frolio, Brandon	Rain	Yes	No	7/11/2020		0.08
7/21/2020	11:50	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	11:50	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	12:50	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	9:20	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	11:40	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	13:10	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
9/11/2020	14:50	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

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)
10/2/2019	15:15	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	10:40	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:25	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019	River Intruded	1.77
11/21/2019	15:12	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
11/27/2019	15:59	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
12/30/2019	15:30	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
3/10/2020	14:25	Frolio, Brandon	Rain	Yes	No	3/9/2020		0.29
3/15/2020	7:30	Frolio, Brandon	Snow Melt	Yes	No	3/14/2020		0.36
3/18/2020	14:30	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	13:00	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
4/18/2020	10:50	Birdsall, Jeremiah	Snow Melt	Yes	No	4/17/2020		0.01
4/25/2020	11:05	Birdsall, Jeremiah	Rain	Yes	No	4/24/2020		0.09
4/26/2020	10:35	Birdsall, Jeremiah	Rain	Yes	No	4/25/2020		0.34
4/27/2020	11:15	Frolio, Brandon	Rain	Yes	No	4/27/2020		0.12
5/5/2020	9:45	Frolio, Brandon	Rain	Yes	No	5/4/2020		0.14
5/8/2020	9:45	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/15/2020	10:30	Frolio, Brandon	Rain	Yes	No	5/14/2020		0.26
5/17/2020	10:35	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/23/2020	10:35	Frolio, Brandon	Rain	Yes	No	5/22/2020		0.27
5/24/2020	15:50	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	10:35	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
6/10/2020	14:30	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	11:00	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93

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)
6/29/2020	7:40	Frolio, Brandon	Rain	Yes	No	6/28/2020		0.13
7/1/2020	11:25	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/11/2020	10:50	Frolio, Brandon	Rain	Yes	No	7/11/2020		0.08
7/16/2020	10:50	Woods, Patrick	Rain	Yes	No	7/15/2020		0.1
7/21/2020	12:00	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	12:00	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	13:00	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	9:30	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	11:50	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	13:30	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	12:00	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	15:00	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 119 **Total Wet Weather Overflows:** 37

CSO Name Monroe Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	15:30	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	11:00	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:25	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/21/2019	15:13	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
11/27/2019	16:00	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
12/30/2019	15:40	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
1/23/2020	15:00	Birdsall, Jeremiah	Snow Melt	Yes	No	1/22/2020		0.54
3/10/2020	14:45	Frolio, Brandon	Rain	Yes	No	3/9/2020		0.29
3/15/2020	7:20	Frolio, Brandon	Snow Melt	Yes	No	3/14/2020		0.36
3/18/2020	14:25	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/29/2020	11:30	Frolio, Brandon	Rain	Yes	No	3/28/2020		0.16
4/4/2020	11:00	Frolio, Brandon	Snow Melt	Yes	No	4/3/2020		0.15
4/25/2020	11:35	Birdsall, Jeremiah	Rain	Yes	No	4/24/2020		0.09
4/26/2020	10:45	Birdsall, Jeremiah	Rain	Yes	No	4/25/2020		0.34
4/27/2020	11:30	Frolio, Brandon	Rain	Yes	No	4/27/2020		0.12
5/5/2020	9:50	Frolio, Brandon	Rain	Yes	No	5/4/2020		0.14
5/8/2020	10:30	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/14/2020	11:00	Frolio, Brandon	Rain	Yes	No	5/13/2020		0.12
5/15/2020	10:45	Frolio, Brandon	Rain	Yes	No	5/14/2020		0.26
5/17/2020	10:45	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/23/2020	10:45	Frolio, Brandon	Rain	Yes	No	5/22/2020		0.27
5/24/2020	16:00	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	11:00	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09

CSO Inspection Report

CSO Number 119 **Total Wet Weather Overflows:** 37

CSO Name Monroe Street Lift Station

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
5/31/2020	11:00	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	14:40	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	11:15	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
6/29/2020	7:30	Frolio, Brandon	Rain	Yes	No	6/28/2020		0.13
7/1/2020	11:40	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/16/2020	11:05	Woods, Patrick	Rain	Yes	No	7/15/2020		0.1
7/21/2020	12:15	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	12:15	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	13:10	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/5/2020	15:10	Frolio, Brandon	Rain	Yes	No	8/5/2020		0.12
8/7/2020	12:05	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	13:45	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	12:20	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	15:15	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 121 **Total Wet Weather Overflows:** 23

CSO Name Jones Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	13:40	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	9:45	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:21	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/21/2019	15:10	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
12/30/2019	14:00	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
3/18/2020	12:40	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	10:50	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
4/27/2020	9:40	Frolio, Brandon	Rain	Yes	No	4/27/2020		0.12
5/8/2020	8:40	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/15/2020	9:00	Frolio, Brandon	Rain	Yes	No	5/14/2020		0.26
5/24/2020	14:30	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	9:40	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
5/31/2020	9:40	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	13:10	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	9:40	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
7/1/2020	10:30	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/21/2020	10:35	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	10:35	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	11:35	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	8:05	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	10:30	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/17/2020	10:35	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	13:30	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 202 **Total Wet Weather Overflows:** 35

CSO Name 72nd & Bedford

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	11:40	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/3/2019	7:14	Birdsall, Jeremiah	Rain	Yes	No	10/2/2019		0.1
10/5/2019	8:30	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:17	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/21/2019	15:07	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
11/27/2019	15:52	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
11/30/2019	7:10	Fagerquist, Dylan	Rain	Yes	No	11/29/2019		0.05
12/30/2019	11:30	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
1/26/2020	9:40	Frolio, Brandon	Snow Melt	Yes	No	1/25/2020		0
3/10/2020	10:00	Frolio, Brandon	Rain	Yes	No	3/9/2020		0.29
3/15/2020	10:10	Frolio, Brandon	Snow Melt	Yes	No	3/14/2020		0.36
3/18/2020	10:10	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	9:15	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
3/29/2020	9:10	Frolio, Brandon	Rain	Yes	No	3/28/2020		0.16
4/4/2020	8:30	Frolio, Brandon	Snow Melt	Yes	No	4/3/2020		0.15
4/18/2020	9:10	Birdsall, Jeremiah	Snow Melt	Yes	No	4/17/2020		0.01
4/26/2020	8:20	Frolio, Brandon	Rain	Yes	No	4/25/2020		0.34
5/5/2020	7:10	Frolio, Brandon	Rain	Yes	No	5/4/2020		0.14
5/8/2020	7:10	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/14/2020	7:10	Frolio, Brandon	Rain	Yes	No	5/13/2020		0.12
5/17/2020	8:10	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/24/2020	13:10	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	8:10	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09

CSO Inspection Report

CSO Number 202 **Total Wet Weather Overflows:** 35

CSO Name 72nd & Bedford

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
5/31/2020	8:10	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	10:45	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	8:10	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
6/23/2020	10:10	Frolio, Brandon	Rain	Yes	No	6/22/2020		0.01
7/1/2020	8:30	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/27/2020	9:10	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	10:10	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	6:40	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/10/2020	9:45	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	8:10	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
8/31/2020	8:10	Frolio, Brandon	Rain	Yes	No	8/31/2020		0.01
9/11/2020	12:15	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 203 **Total Wet Weather Overflows:** 33

CSO Name 69th & Evans

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	12:10	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	8:35	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:18	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/2/2019	7:40	Fagerquist, Dylan	Rain	Yes	No	11/1/2019		0.1
11/21/2019	15:07	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
11/27/2019	15:52	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
11/30/2019	7:40	Fagerquist, Dylan	Rain	Yes	No	11/29/2019		0.05
12/30/2019	11:45	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
1/23/2020	11:10	Birdsall, Jeremiah	Snow Melt	Yes	No	1/22/2020		0.54
1/26/2020	9:50	Frolio, Brandon	Snow Melt	Yes	No	1/25/2020		0
3/18/2020	10:20	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	9:25	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
4/4/2020	8:35	Frolio, Brandon	Snow Melt	Yes	No	4/3/2020		0.15
4/26/2020	8:30	Frolio, Brandon	Rain	Yes	No	4/25/2020		0.34
5/8/2020	7:20	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/17/2020	8:20	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/24/2020	13:20	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	8:20	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
5/31/2020	8:20	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	10:55	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	8:20	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
6/23/2020	10:20	Frolio, Brandon	Rain	Yes	No	6/22/2020		0.01
7/1/2020	8:45	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47

CSO Inspection Report

CSO Number 203 **Total Wet Weather Overflows:** 33

CSO Name 69th & Evans

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
7/16/2020	8:20	Woods, Patrick	Rain	Yes	No	7/15/2020		0.1
7/21/2020	9:20	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	9:20	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	10:20	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	6:50	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	9:00	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	10:00	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	8:20	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
8/31/2020	8:20	Frolio, Brandon	Rain	Yes	No	8/31/2020		0.01
9/11/2020	12:25	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 204 **Total Wet Weather Overflows:** 45

CSO Name 63rd & Ames

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	12:20	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/3/2019	7:17	Birdsall, Jeremiah	Rain	Yes	No	10/2/2019		0.1
10/5/2019	8:40	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:18	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
10/19/2019	11:20	Fagerquist, Dylan	Rain	Yes	No	10/19/2019		0.08
10/21/2019	10:20	Fagerquist, Dylan	Rain	Yes	No	10/20/2019		0.08
11/21/2019	15:08	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
11/27/2019	15:53	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
11/30/2019	7:50	Fagerquist, Dylan	Rain	Yes	No	11/29/2019		0.05
12/2/2019	6:36	Frolio, Brandon	Rain	Yes	No	12/1/2019		0.02
12/30/2019	12:00	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
1/23/2020	11:15	Birdsall, Jeremiah	Snow Melt	Yes	No	1/22/2020		0.54
1/26/2020	10:10	Frolio, Brandon	Snow Melt	Yes	No	1/25/2020		0
3/10/2020	10:30	Frolio, Brandon	Rain	Yes	No	3/9/2020		0.29
3/15/2020	9:50	Frolio, Brandon	Snow Melt	Yes	No	3/14/2020		0.36
3/18/2020	10:30	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	9:35	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
3/29/2020	9:20	Frolio, Brandon	Rain	Yes	No	3/28/2020		0.16
4/4/2020	8:40	Frolio, Brandon	Snow Melt	Yes	No	4/3/2020		0.15
4/18/2020	9:25	Birdsall, Jeremiah	Snow Melt	Yes	No	4/17/2020		0.01
4/26/2020	8:45	Frolio, Brandon	Rain	Yes	No	4/25/2020		0.34
5/8/2020	7:30	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/14/2020	7:50	Frolio, Brandon	Rain	Yes	No	5/13/2020		0.12

CSO Inspection Report

CSO Number 204 **Total Wet Weather Overflows:** 45

CSO Name 63rd & Ames

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
5/17/2020	8:30	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/19/2020	10:00	Frolio, Brandon	Rain	Yes	No	5/19/2020		0
5/23/2020	8:30	Frolio, Brandon	Rain	Yes	No	5/22/2020		0.27
5/24/2020	13:30	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	8:30	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
5/31/2020	8:30	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	11:05	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	8:30	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
6/23/2020	10:30	Frolio, Brandon	Rain	Yes	No	6/22/2020		0.01
6/29/2020	7:00	Frolio, Brandon	Rain	Yes	No	6/28/2020		0.13
7/1/2020	9:00	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/9/2020	9:00	Frolio, Brandon	Rain	Yes	No	7/9/2020		0.11
7/16/2020	8:30	Woods, Patrick	Rain	Yes	No	7/15/2020		0.1
7/21/2020	9:30	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	9:30	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	10:30	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	7:00	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/5/2020	10:30	Frolio, Brandon	Rain	Yes	No	8/5/2020		0.12
8/7/2020	9:10	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	10:10	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	8:30	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	12:35	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 205 **Total Wet Weather Overflows:** 43

CSO Name 64th & Dupont

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	11:00	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/3/2019	7:11	Birdsall, Jeremiah	Rain	Yes	No	10/2/2019		0.1
10/5/2019	7:45	Fagerquist, Dylan	Rain	Yes	No	10/5/2019	Rain 10/4-10/5	1.33
10/11/2019	16:15	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019	Rain 10/9-10	1.77
10/19/2019	10:00	Fagerquist, Dylan	Rain	Yes	No	10/19/2019		0.08
10/22/2019	9:00	Fagerquist, Dylan	Rain	Yes	No	10/21/2019		0.08
11/21/2019	14:39	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
11/27/2019	15:48	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
11/30/2019	6:30	Fagerquist, Dylan	Rain	Yes	No	11/29/2019		0.05
12/2/2019	6:25	Frolio, Brandon	Rain	Yes	No	12/1/2019	Mission sensor indicates overflow, confirmed by chalk line.	0.02
12/30/2019	10:30	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
1/24/2020	10:45	Birdsall, Jeremiah	Snow Melt	Yes	No	1/22/2020	Rain 1/21-24	0.54
2/3/2020	9:50	Frolio, Brandon	Snow Melt	Yes	No	2/1/2020		0
3/10/2020	9:15	Frolio, Brandon	Rain	Yes	No	3/9/2020		0.29
3/15/2020	11:00	Frolio, Brandon	Snow Melt	Yes	No	3/14/2020	Mission sensor indicates overflow, confirmed by chalk line.	0.36
3/18/2020	9:25	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	8:30	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
3/29/2020	8:30	Frolio, Brandon	Rain	Yes	No	3/28/2020		0.16
4/25/2020	7:30	Frolio, Brandon	Rain	Yes	No	4/24/2020		0.09
4/26/2020	7:30	Frolio, Brandon	Rain	Yes	No	4/25/2020		0.34
4/27/2020	7:30	Frolio, Brandon	Rain	Yes	No	4/27/2020	Mission sensor indicates overflow, confirmed by chalk line.	0.12
5/5/2020	6:30	Frolio, Brandon	Rain	Yes	No	5/4/2020		0.14
5/8/2020	6:30	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31

CSO Inspection Report

CSO Number 205 **Total Wet Weather Overflows:** 43

CSO Name 64th & Dupont

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
5/15/2020	6:30	Frolio, Brandon	Rain	Yes	No	5/13/2020		0.12
5/17/2020	7:30	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/23/2020	7:30	Frolio, Brandon	Rain	Yes	No	5/22/2020		0.27
5/24/2020	12:30	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	7:30	Frolio, Brandon	Rain	Yes	No	5/26/2020	Rain 5/25-27	0.5
5/31/2020	7:30	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	10:00	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	7:30	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
6/29/2020	6:00	Frolio, Brandon	Rain	Yes	No	6/28/2020		0.13
7/1/2020	7:30	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/9/2020	7:30	Frolio, Brandon	Rain	Yes	No	7/9/2020		0.11
7/11/2020	7:30	Frolio, Brandon	Rain	Yes	No	7/11/2020		0.08
7/21/2020	8:30	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/30/2020	9:30	Woods, Patrick	Rain	Yes	No	7/29/2020	Rain 7/29-30	0.27
8/2/2020	6:00	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/5/2020	9:30	Frolio, Brandon	Rain	Yes	No	8/5/2020		0.12
8/7/2020	8:00	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85
8/10/2020	7:30	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	7:30	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	11:30	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11; Level sensor shows overflow 8th,9th,10th	0.41

CSO Inspection Report

CSO Number 208 **Total Wet Weather Overflows:** 4

CSO Name 45th & T Street

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	16:00	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	11:30	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:25	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/21/2019	15:13	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13

CSO Inspection Report

CSO Number 210 **Total Wet Weather Overflows:** 26

CSO Name 72nd and Mayberry

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	16:15	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	8:20	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:17	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/21/2019	15:06	Frolio, Brandon	Rain	Yes	No	11/21/2019		0.13
12/30/2019	11:15	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
1/23/2020	9:15	Birdsall, Jeremiah	Snow Melt	Yes	No	1/22/2020		0.54
3/18/2020	10:00	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
3/20/2020	9:05	Frolio, Brandon	Rain	Yes	No	3/19/2020		0.54
3/29/2020	9:00	Frolio, Brandon	Rain	Yes	No	3/28/2020		0.16
4/26/2020	8:10	Frolio, Brandon	Rain	Yes	No	4/25/2020		0.34
5/8/2020	7:00	Frolio, Brandon	Rain	Yes	No	5/7/2020		0.31
5/17/2020	8:00	Frolio, Brandon	Rain	Yes	No	5/16/2020		0.43
5/24/2020	13:00	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	8:00	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
5/31/2020	8:00	Frolio, Brandon	Rain	Yes	No	5/30/2020	For rain on 5/30-5/31	0.65
6/10/2020	10:35	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	8:00	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
7/1/2020	8:15	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/21/2020	9:00	Frolio, Brandon	Rain	Yes	No	7/20/2020	Rain 7/20-21	0.72
7/27/2020	9:00	Woods, Patrick	Rain	Yes	No	7/26/2020		0.15
7/30/2020	10:00	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	6:30	Williams, David	Rain	Yes	No	8/1/2020		0.19
8/5/2020	10:00	Frolio, Brandon	Rain	Yes	No	8/5/2020		0.12

CSO Inspection Report

CSO Number 210 **Total Wet Weather Overflows:** 26

CSO Name 72nd and Mayberry

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
8/10/2020	9:30	Frolio, Brandon	Rain	Yes	No	8/9/2020		0.18
8/17/2020	8:00	Frolio, Brandon	Rain	Yes	No	8/16/2020		0.15
9/11/2020	12:05	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

CSO Inspection Report

CSO Number 211 **Total Wet Weather Overflows:** 12

CSO Name 69th & Pierce

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	11:30	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/5/2019	8:10	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:17	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/27/2019	15:51	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
4/26/2020	8:00	Frolio, Brandon	Rain	Yes	No	4/25/2020		0.34
5/28/2020	7:50	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
6/10/2020	10:25	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	7:50	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
7/1/2020	8:00	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/30/2020	9:50	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	6:20	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
8/7/2020	8:25	Woods, Patrick	Rain	Yes	No	8/6/2020		0.85

CSO Inspection Report

CSO Number 212 **Total Wet Weather Overflows:** 16

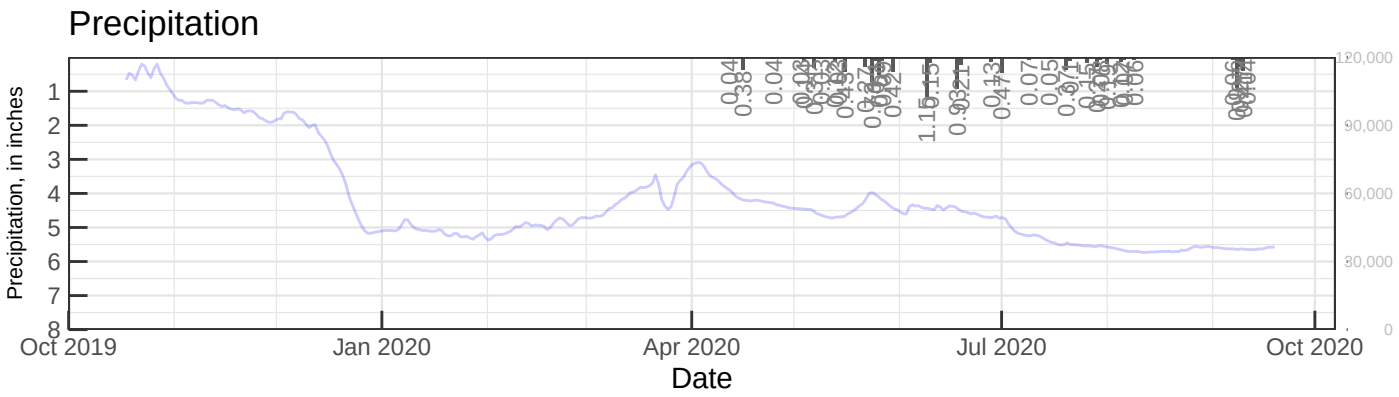
CSO Name 69th & Woolworth

Inspection Date	Time	Inspected by	Reason	Overflow	Overflow at inspection?	Date of Precipitation	Comments	Rain (in)
10/2/2019	11:15	Fagerquist, Dylan	Rain	Yes	No	10/1/2019		2.12
10/3/2019	7:12	Birdsall, Jeremiah	Rain	Yes	No	10/2/2019		0.1
10/5/2019	8:00	Fagerquist, Dylan	Rain	Yes	No	10/5/2019		1.33
10/11/2019	16:16	Birdsall, Jeremiah	Rain	Yes	No	10/10/2019		1.77
11/27/2019	15:51	Birdsall, Jeremiah	Rain	Yes	No	11/26/2019		0.24
12/30/2019	10:45	Frolio, Brandon	Rain	Yes	No	12/28/2019		1.76
3/18/2020	9:40	Frolio, Brandon	Rain	Yes	No	3/18/2020	Light rain 3/16-18	0.39
4/26/2020	7:45	Frolio, Brandon	Rain	Yes	No	4/25/2020		0.34
5/24/2020	12:40	Frolio, Brandon	Rain	Yes	No	5/24/2020		0.73
5/28/2020	7:45	Frolio, Brandon	Rain	Yes	No	5/27/2020		0.09
6/10/2020	10:15	Frolio, Brandon	Rain	Yes	No	6/9/2020	For rain on 6/9-6/10	1.15
6/19/2020	7:45	Frolio, Brandon	Rain	Yes	No	6/18/2020	For rain on 6/18- 6/19	0.93
7/1/2020	7:45	Frolio, Brandon	Rain	Yes	No	7/1/2020		0.47
7/30/2020	9:40	Woods, Patrick	Rain	Yes	No	7/30/2020		1.36
8/2/2020	6:10	Woods, Patrick	Rain	Yes	No	8/1/2020		0.19
9/11/2020	11:40	Woods, Patrick	Rain	Yes	No	9/10/2020	Rain on 9/7-9/11	0.41

Attachment 5 – USGS Missouri River Monitoring Provisional Data

Table 1. Recent precipitation in Omaha exceeding 0.1 inch

Date	Precipitation, inches
06/18/2020	0.93
06/19/2020	0.21
06/28/2020	0.13
07/01/2020	0.47
07/20/2020	0.37
07/26/2020	0.15
07/29/2020	0.27
08/01/2020	0.19
08/05/2020	0.12
09/08/2020	0.90
09/09/2020	0.27
09/10/2020	0.41



−−PRELIMINARY DATA SUBJECT TO REVISION−−

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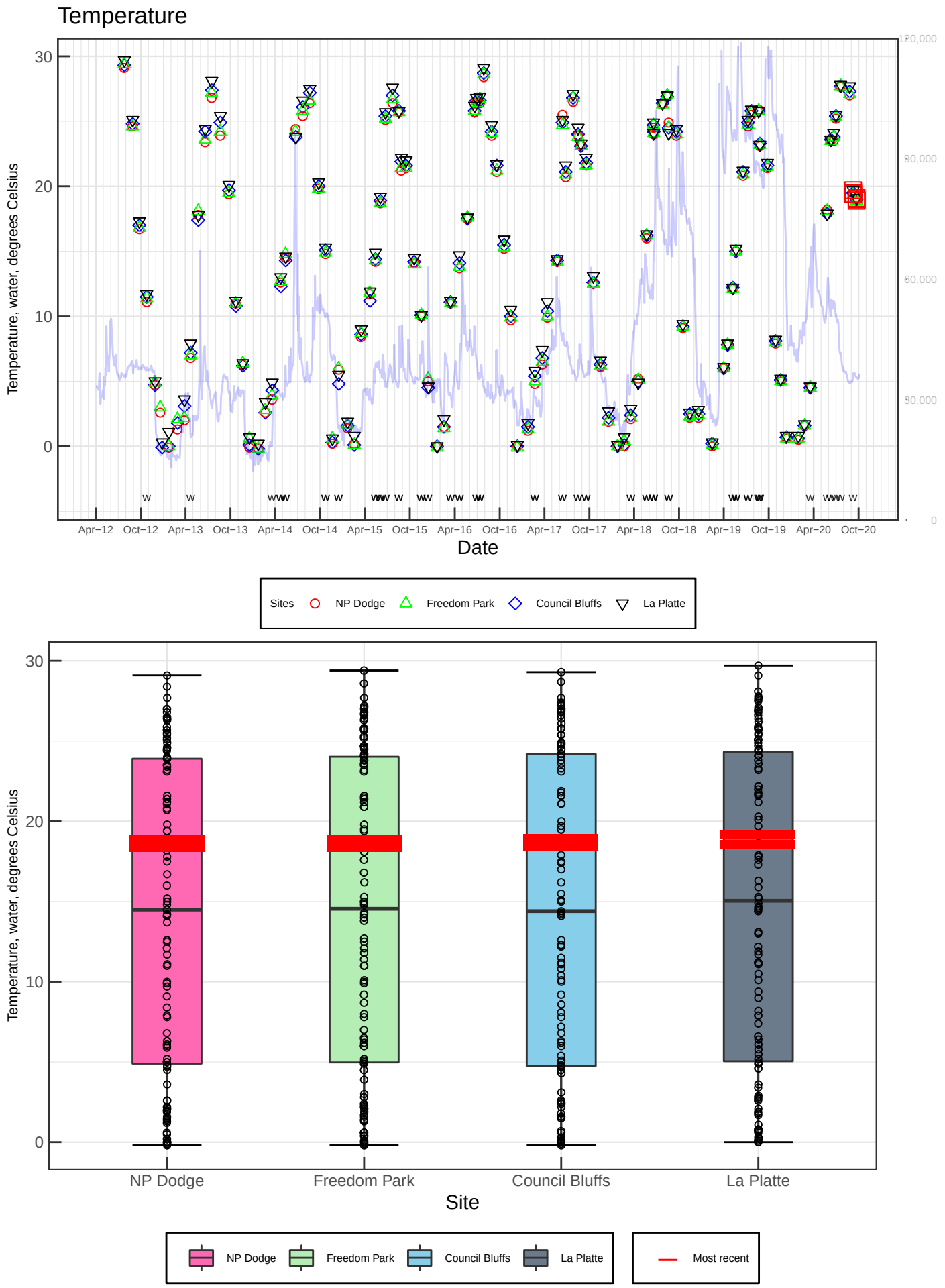

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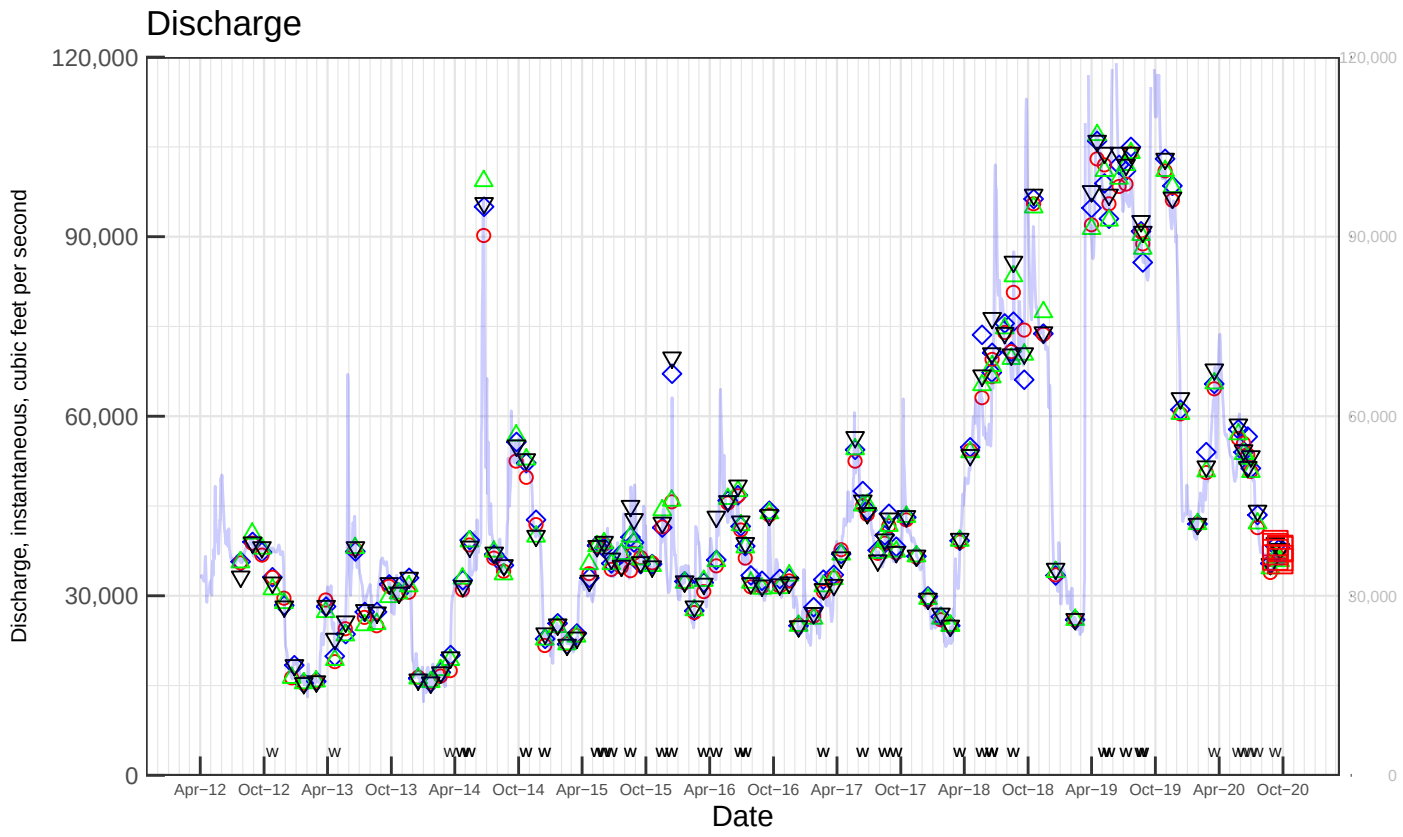

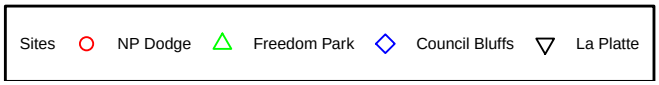

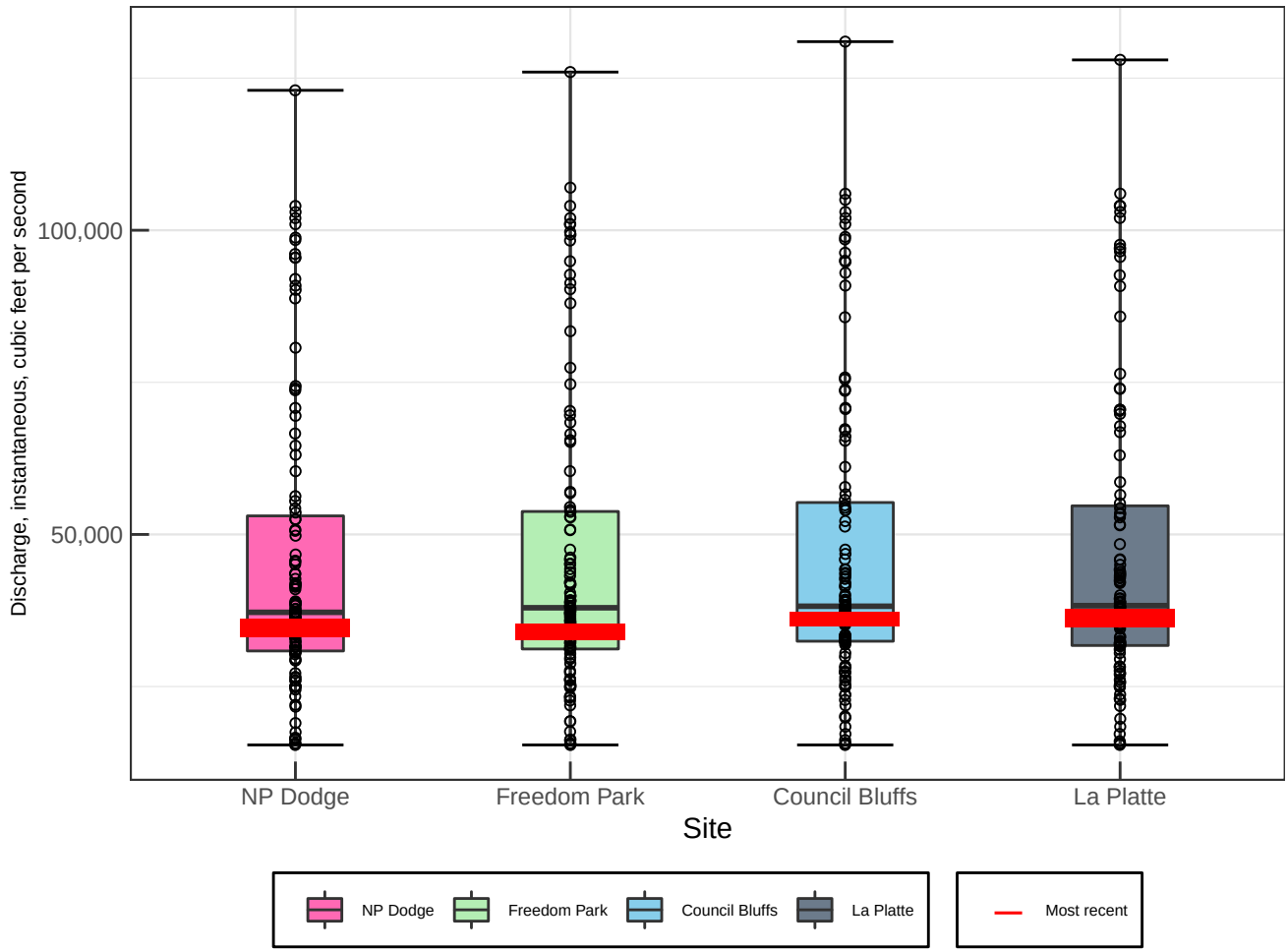

−−PRELIMINARY DATA SUBJECT TO REVISION−−

data retrieved 10/07/2020

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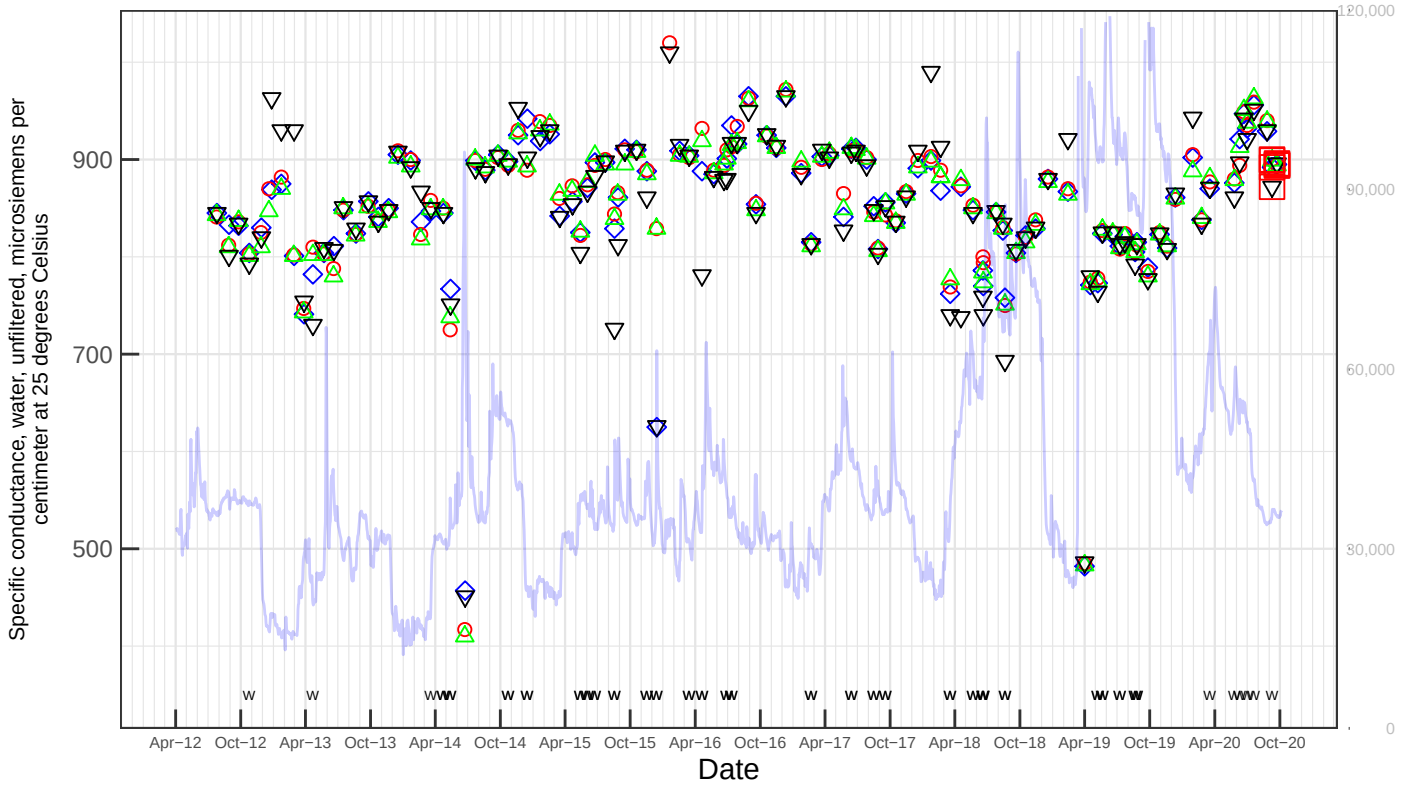

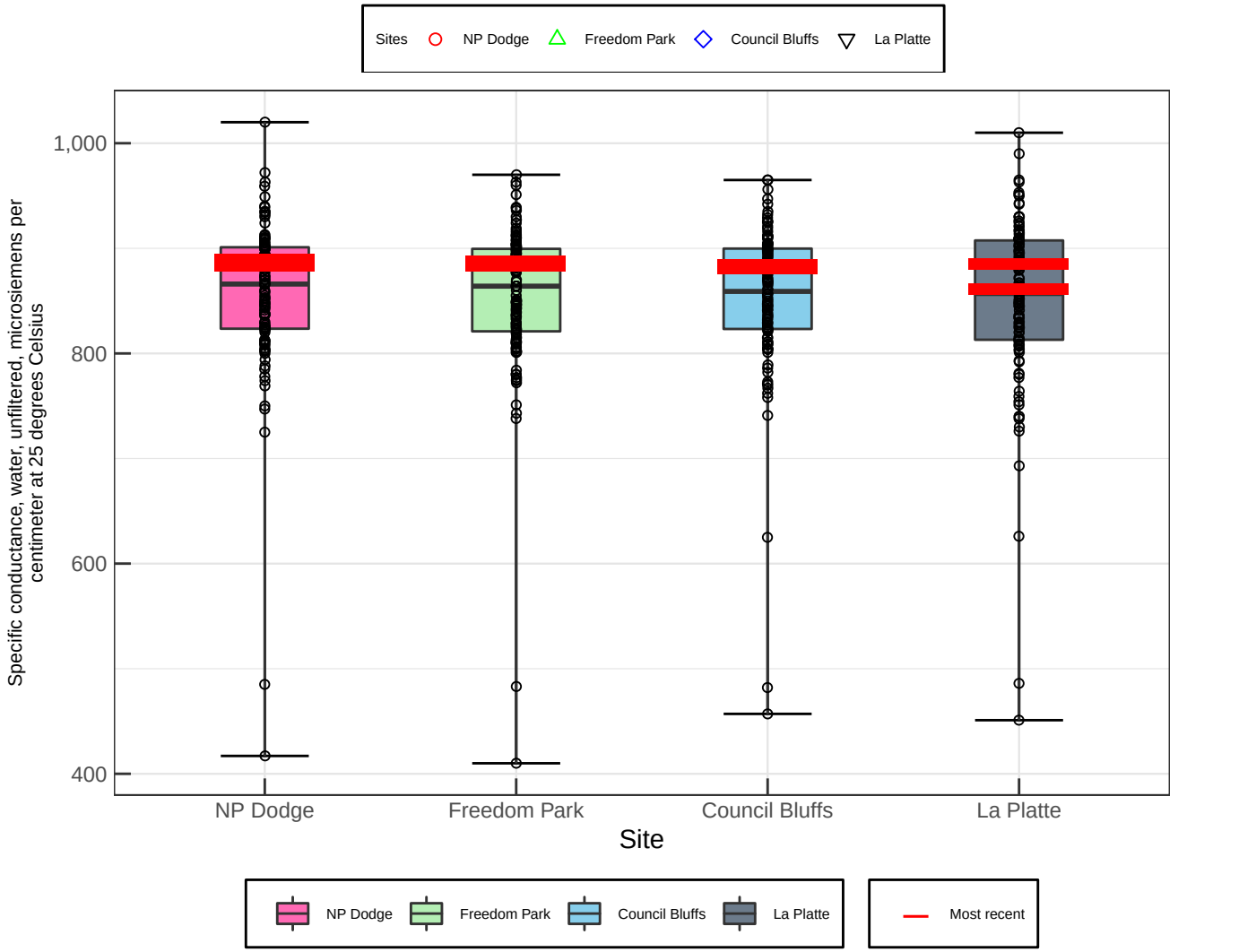

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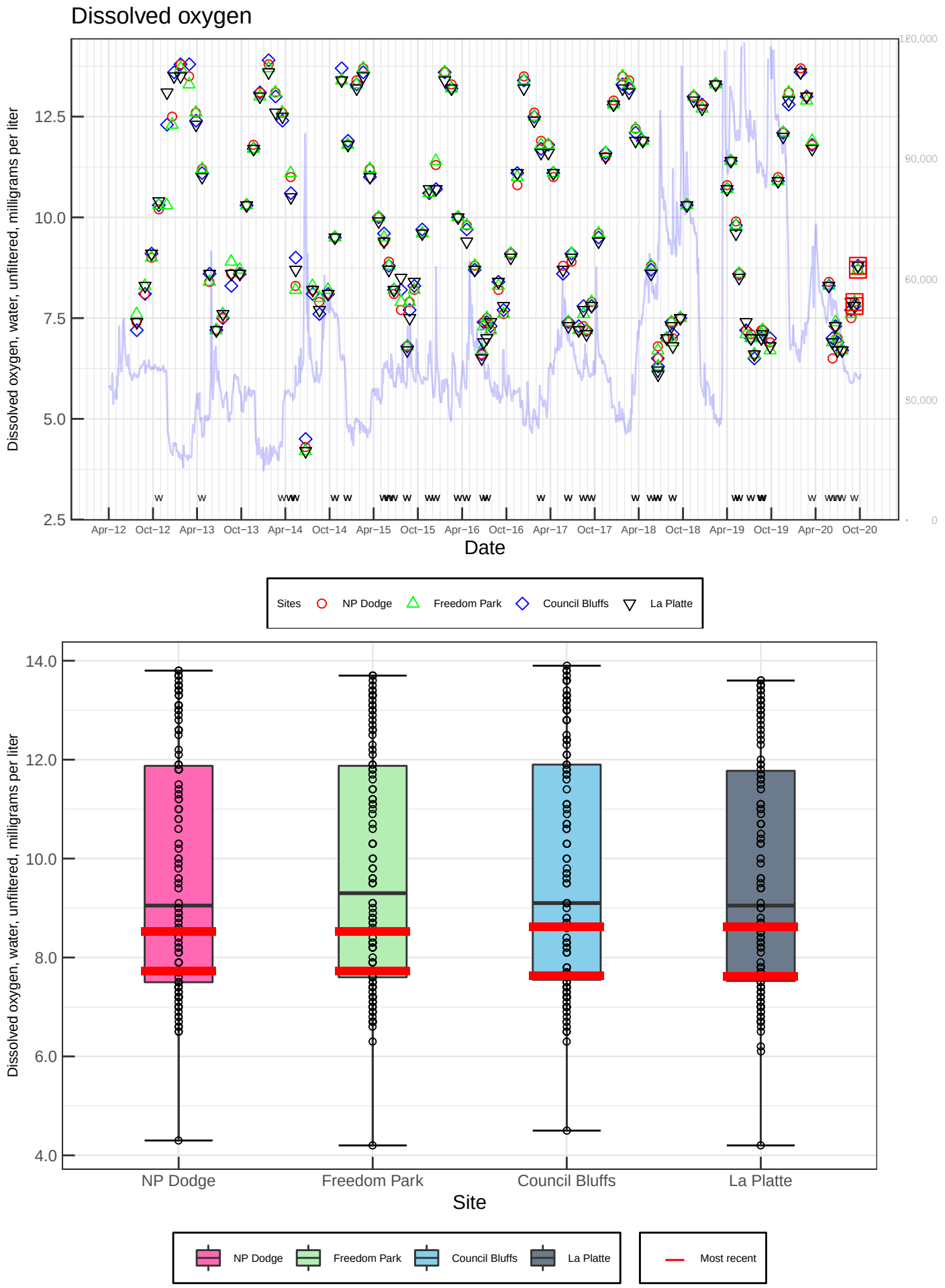

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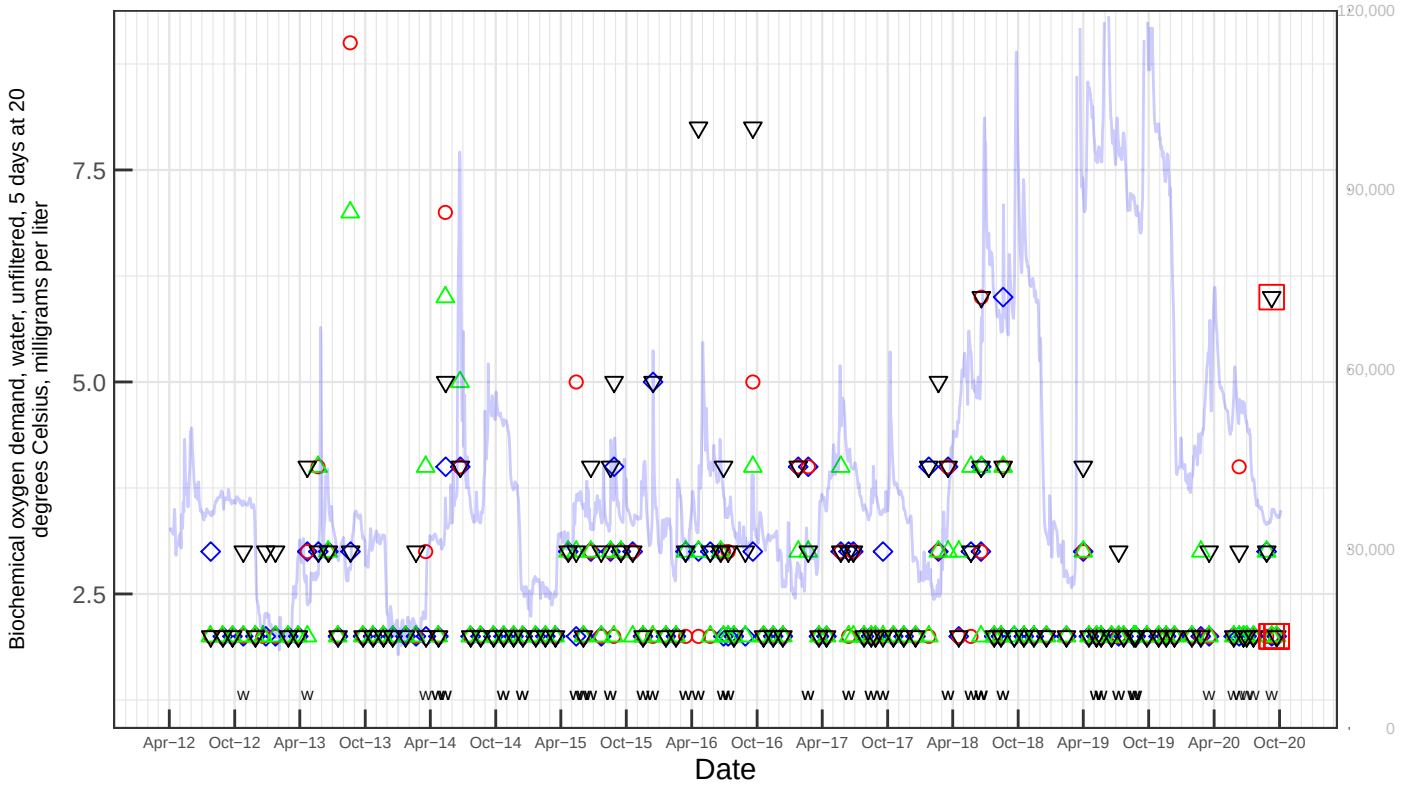
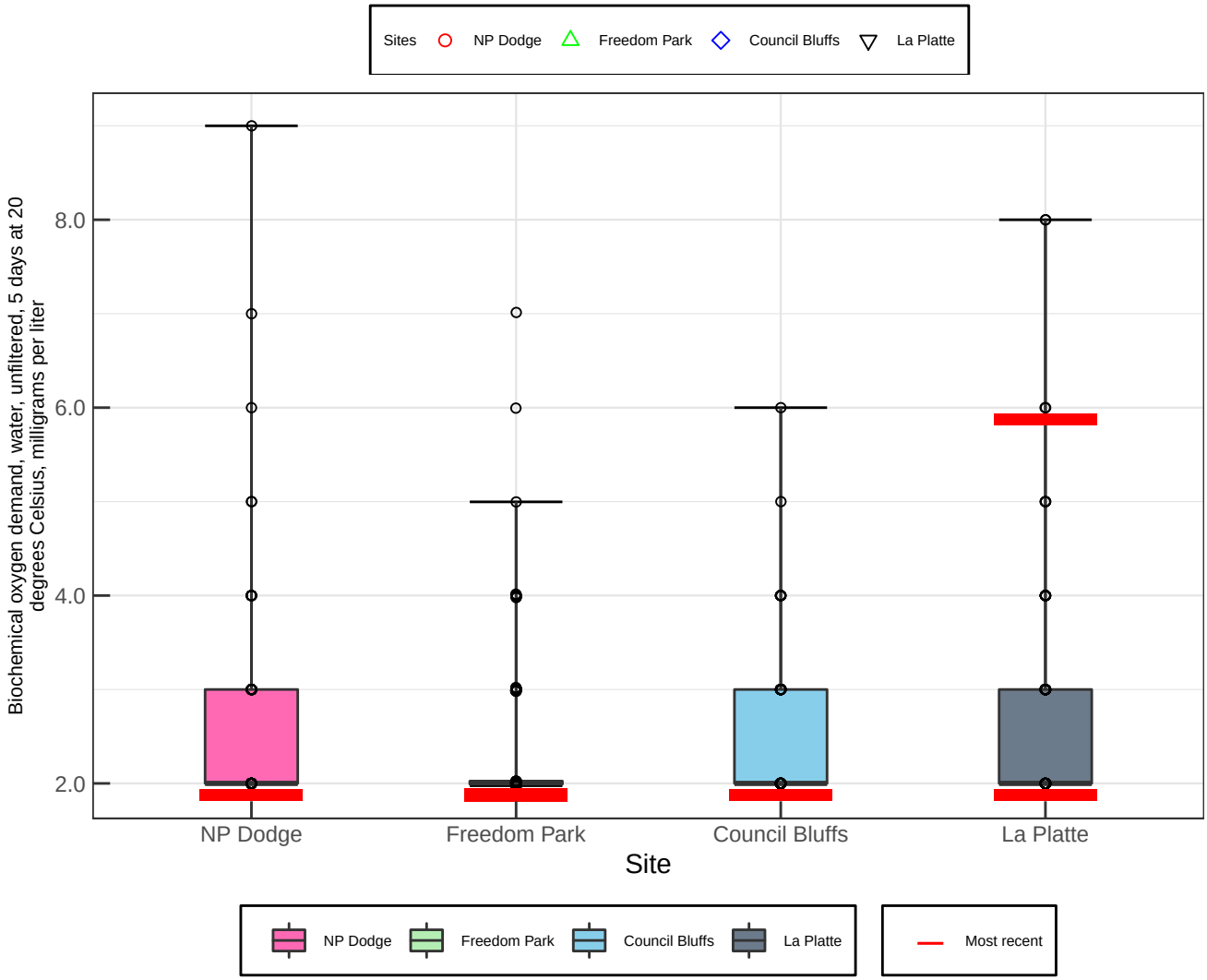
data retrieved 10/07/2020

Biochemical oxygen demand





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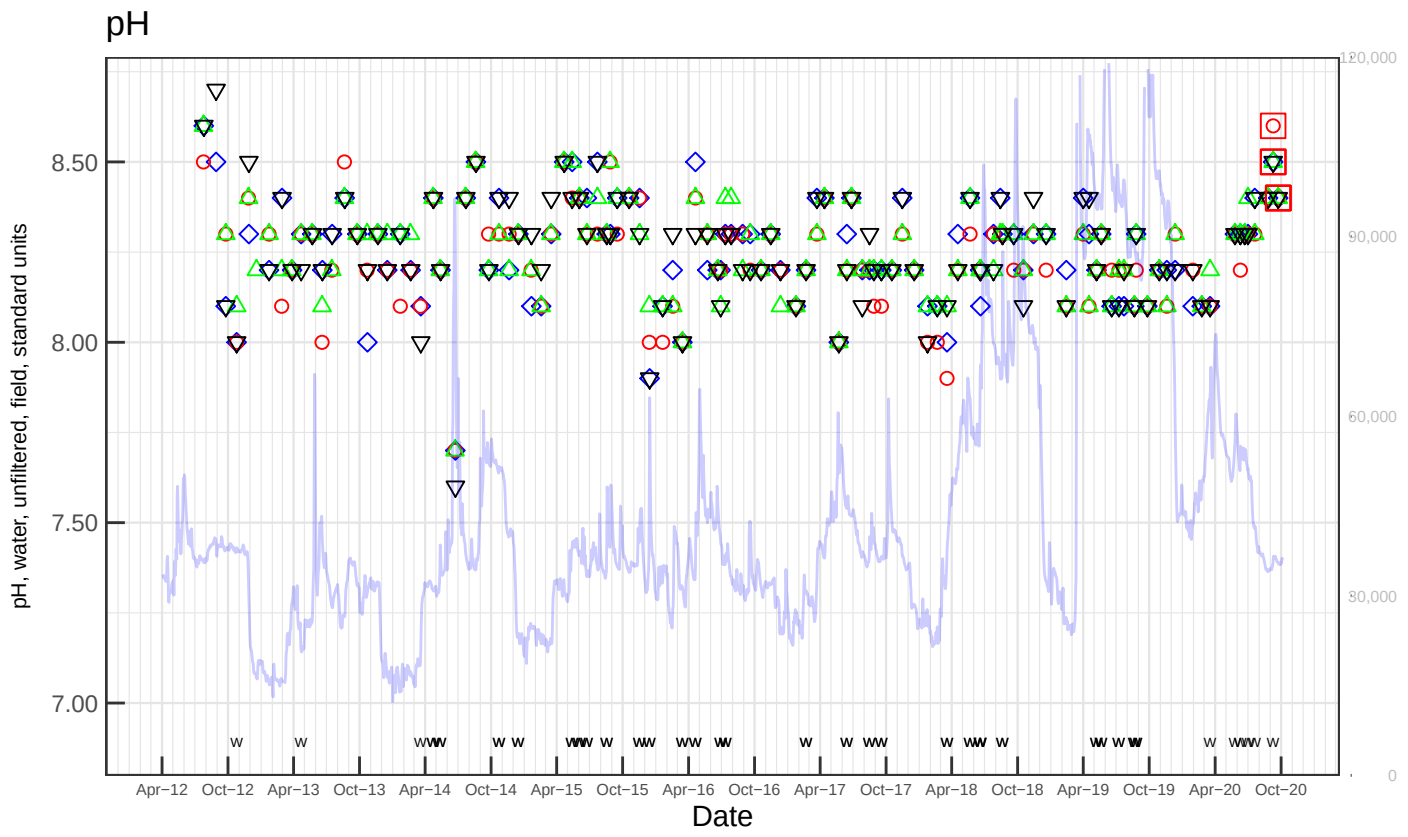

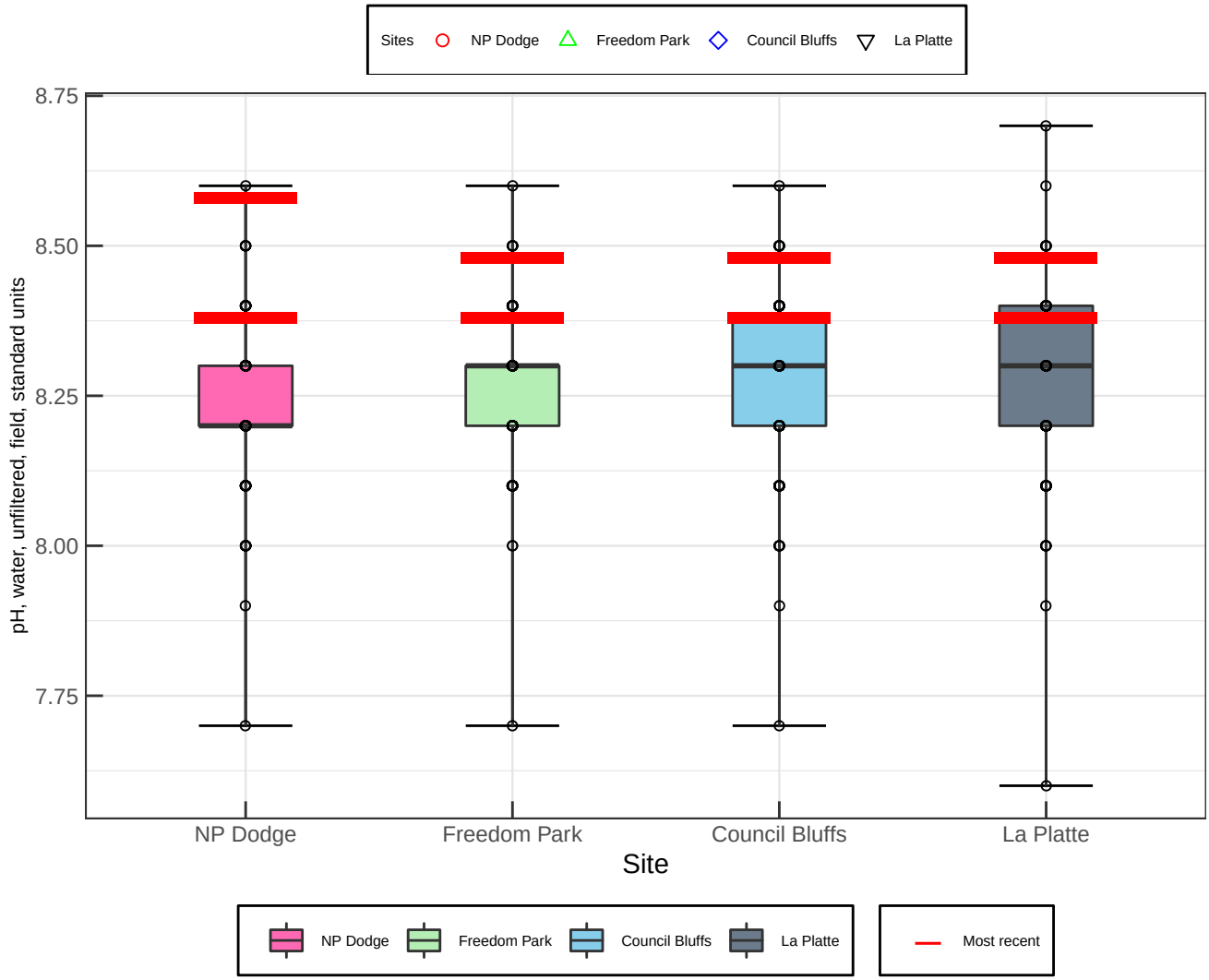

−−PRELIMINARY DATA SUBJECT TO REVISION−−

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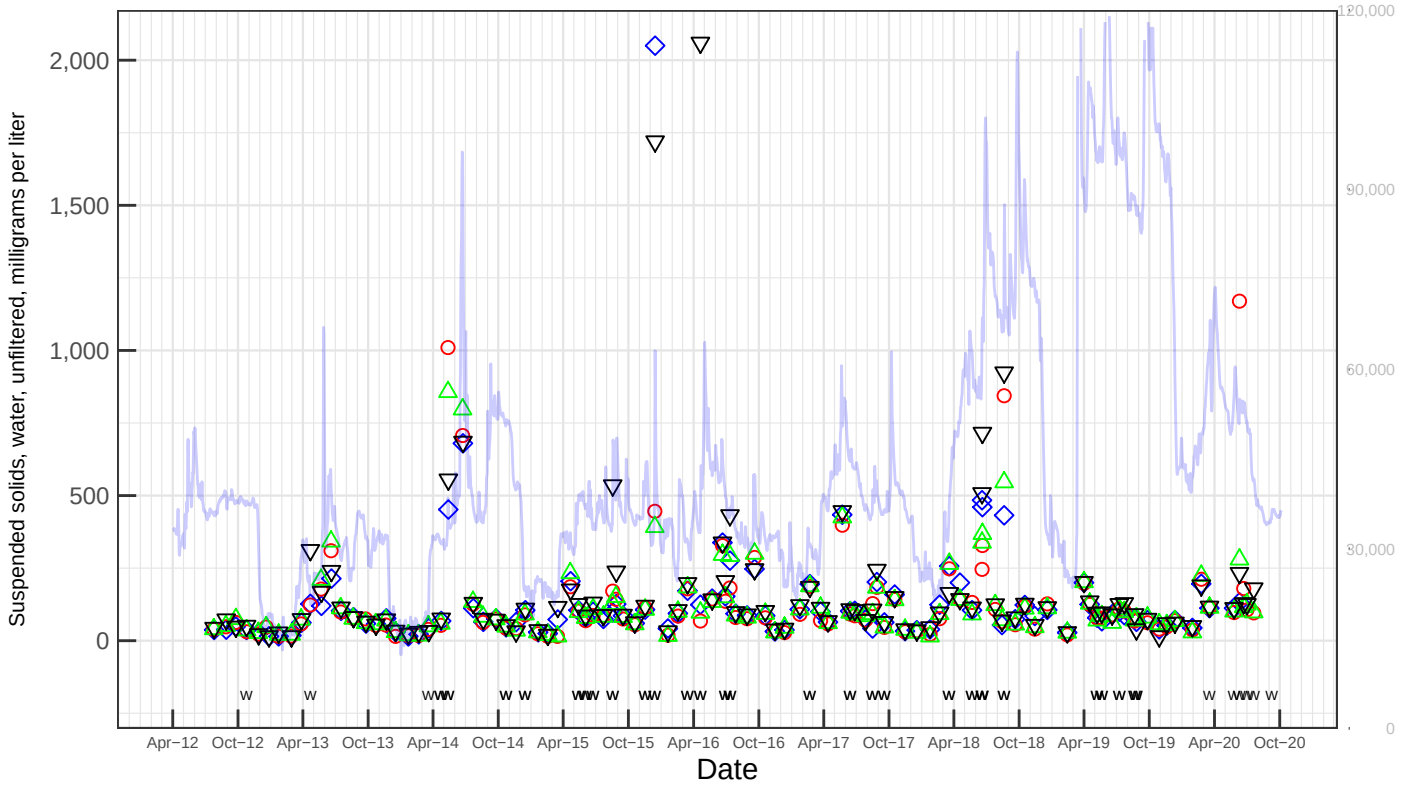
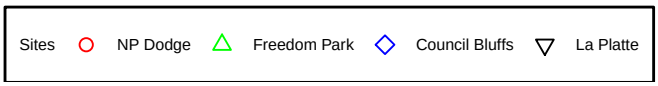
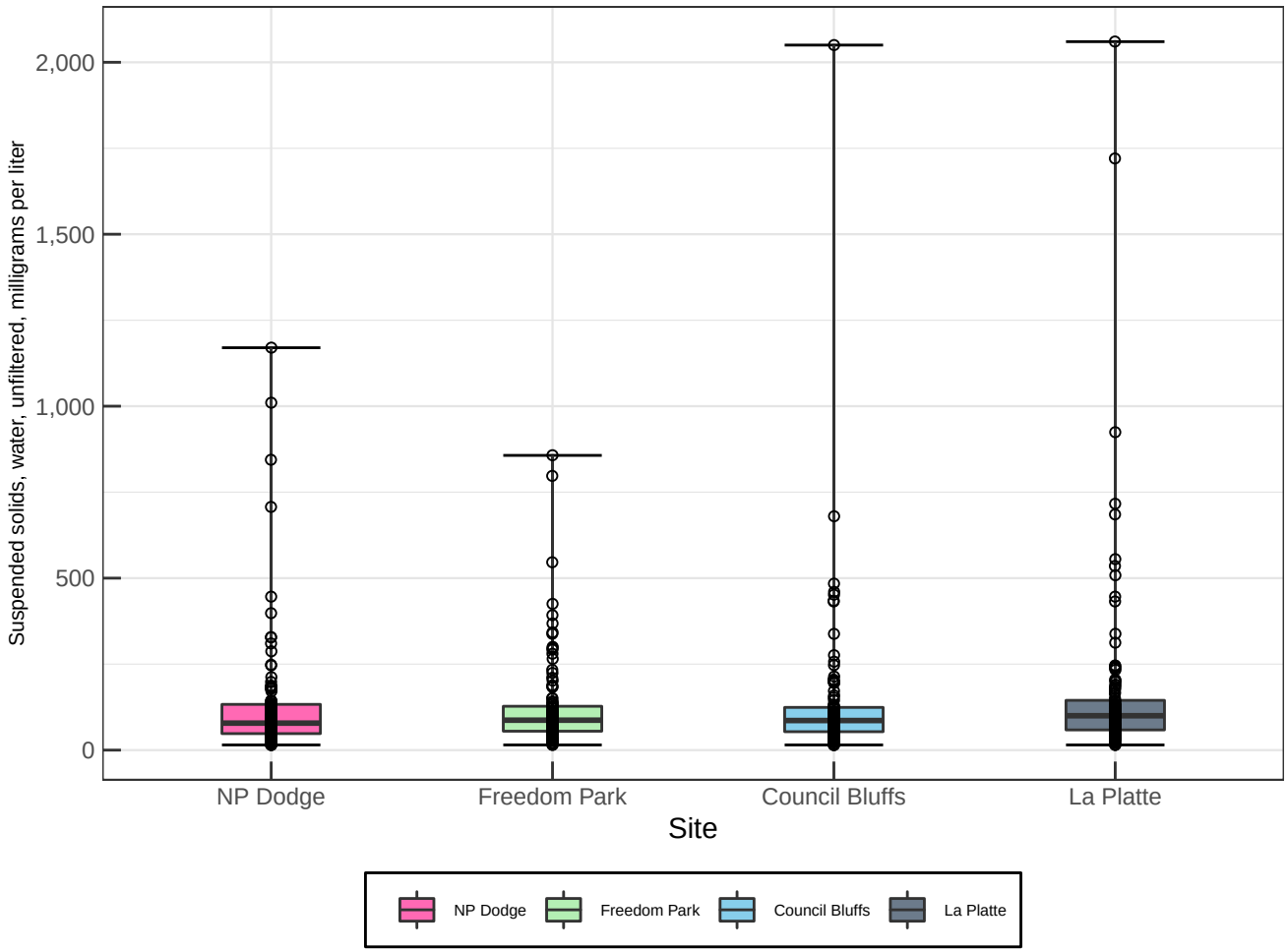
Suspended solids







−−PRELIMINARY DATA SUBJECT TO REVISION−−

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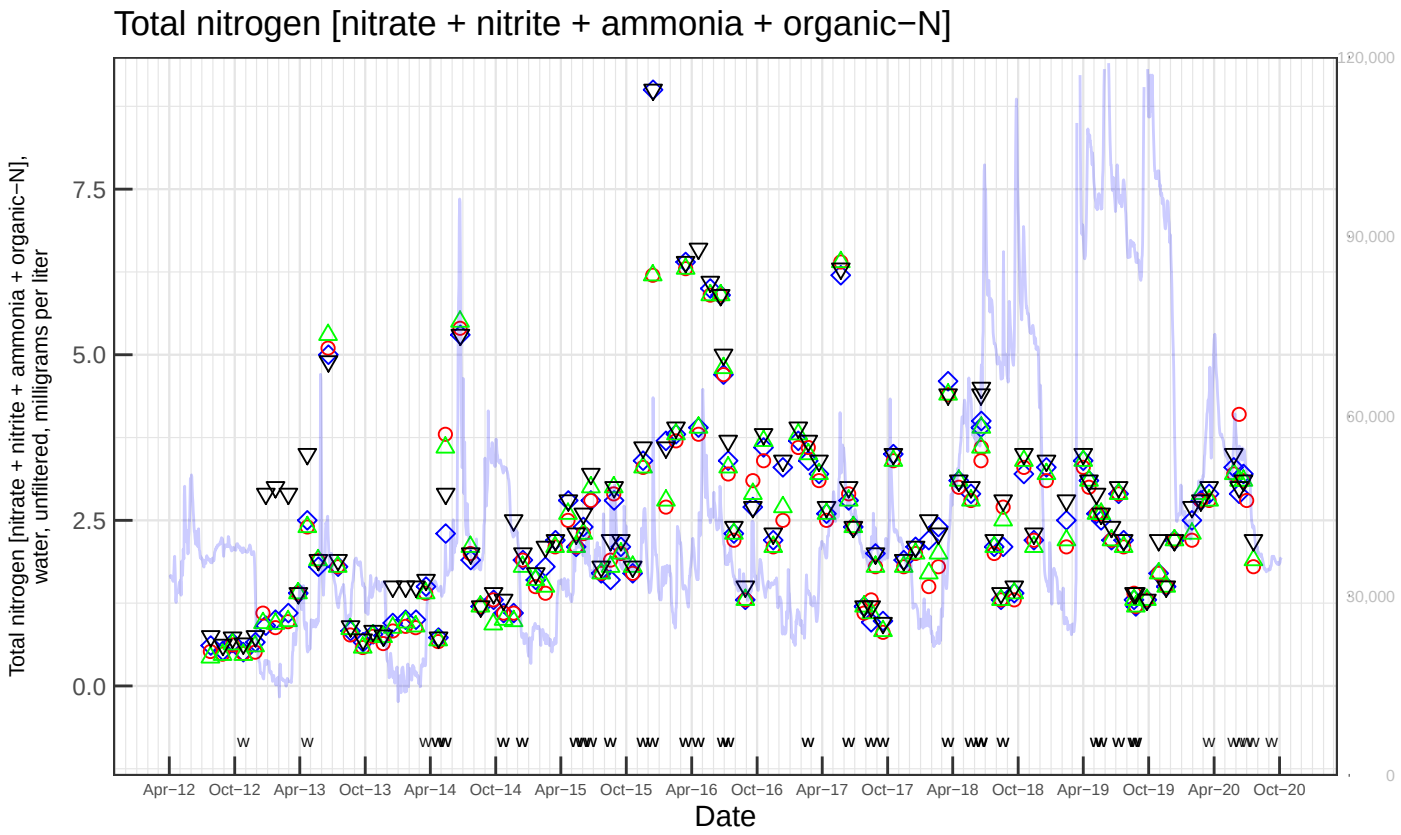
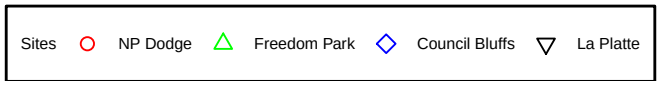
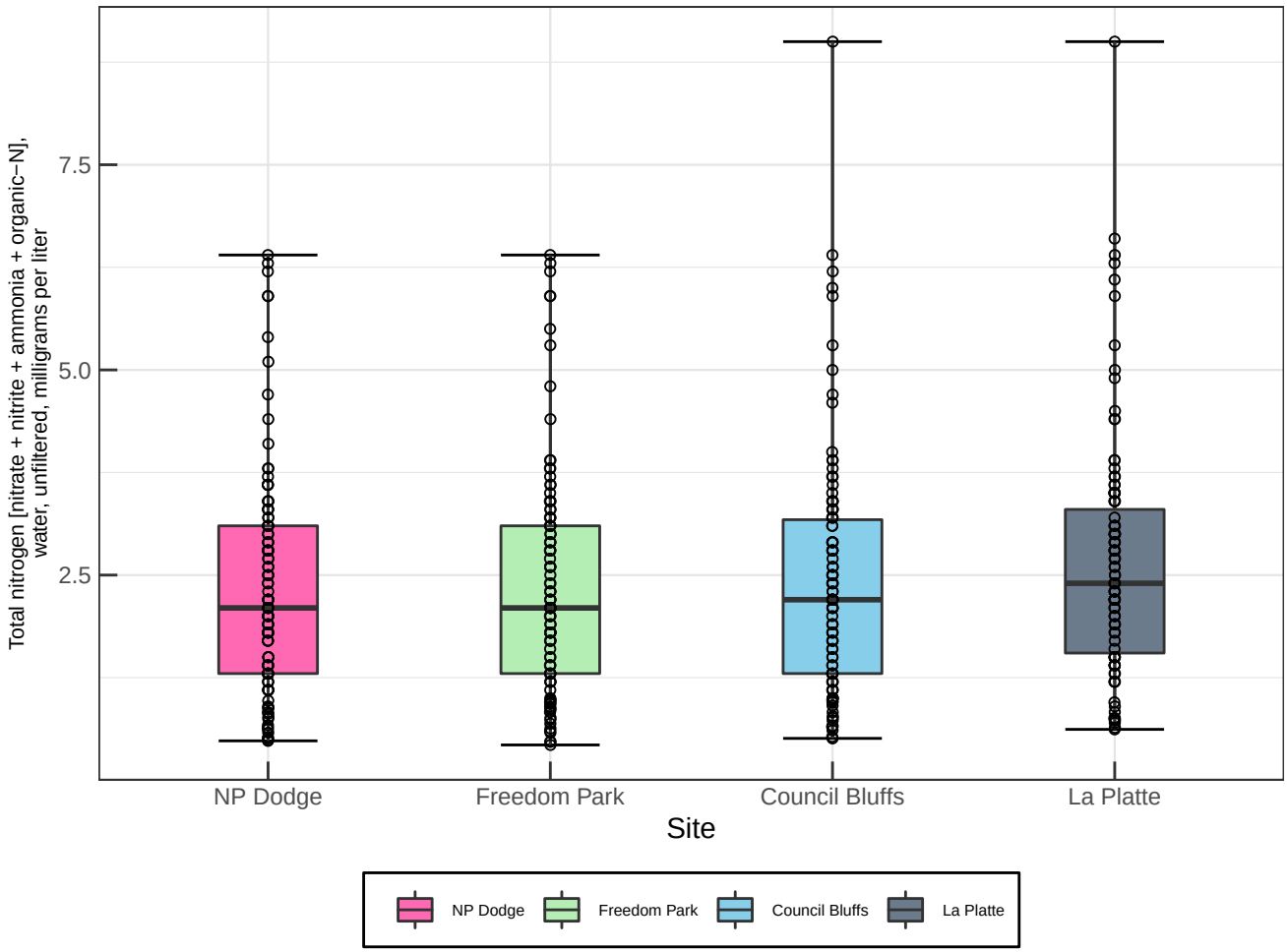


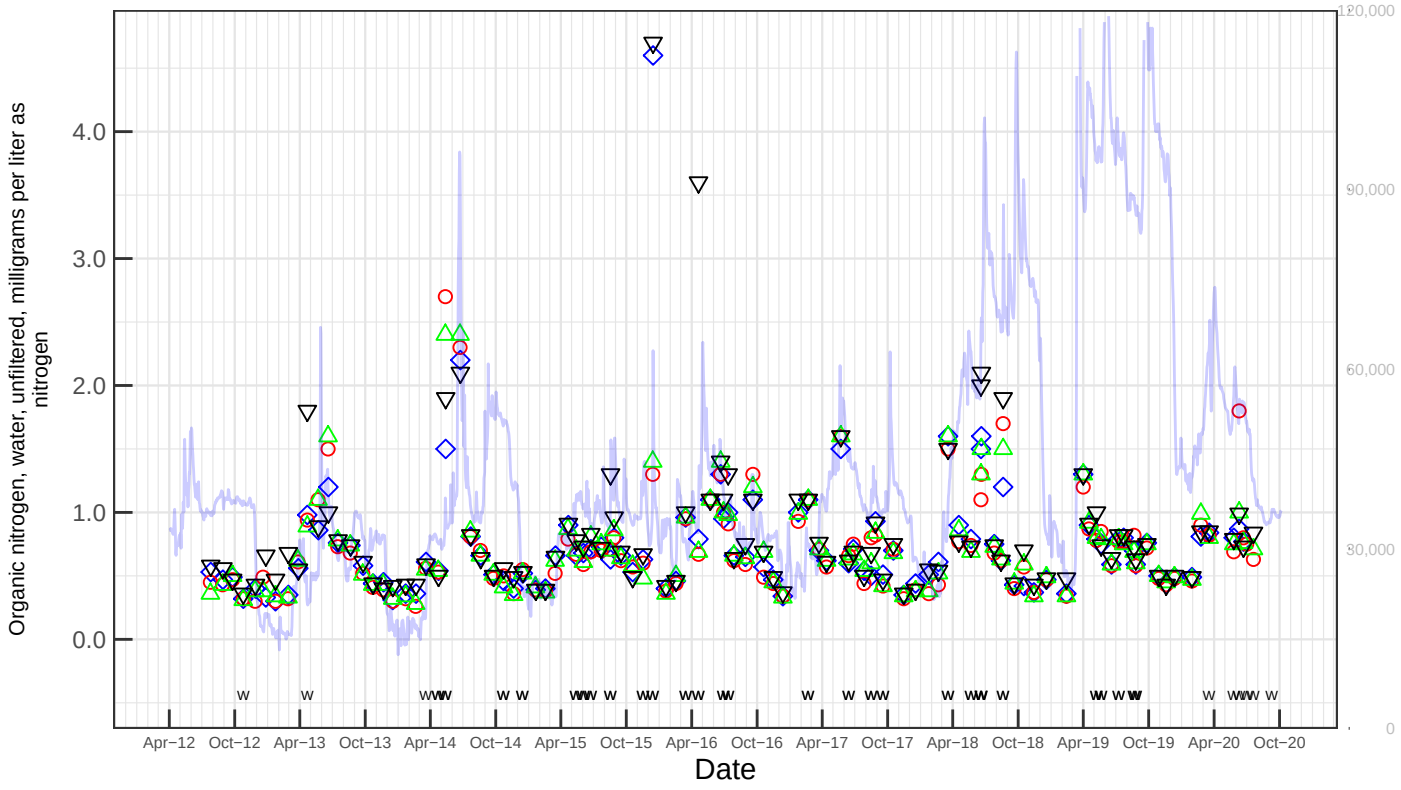


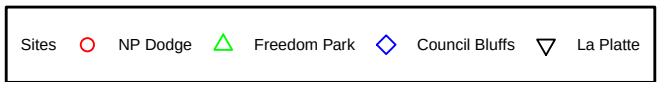


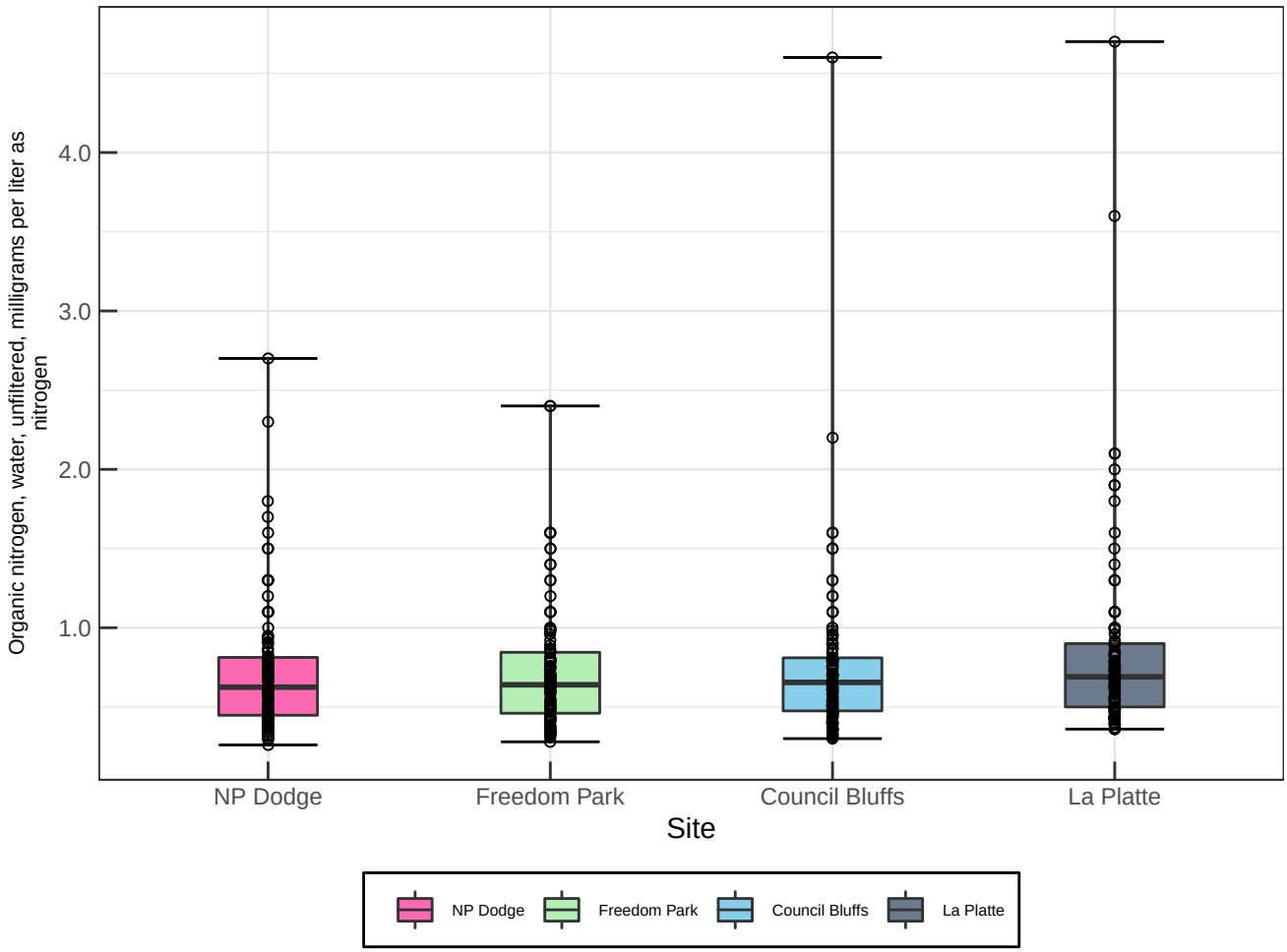
−−PRELIMINARY DATA SUBJECT TO REVISION−−

data retrieved 10/07/2020

Organic nitrogen







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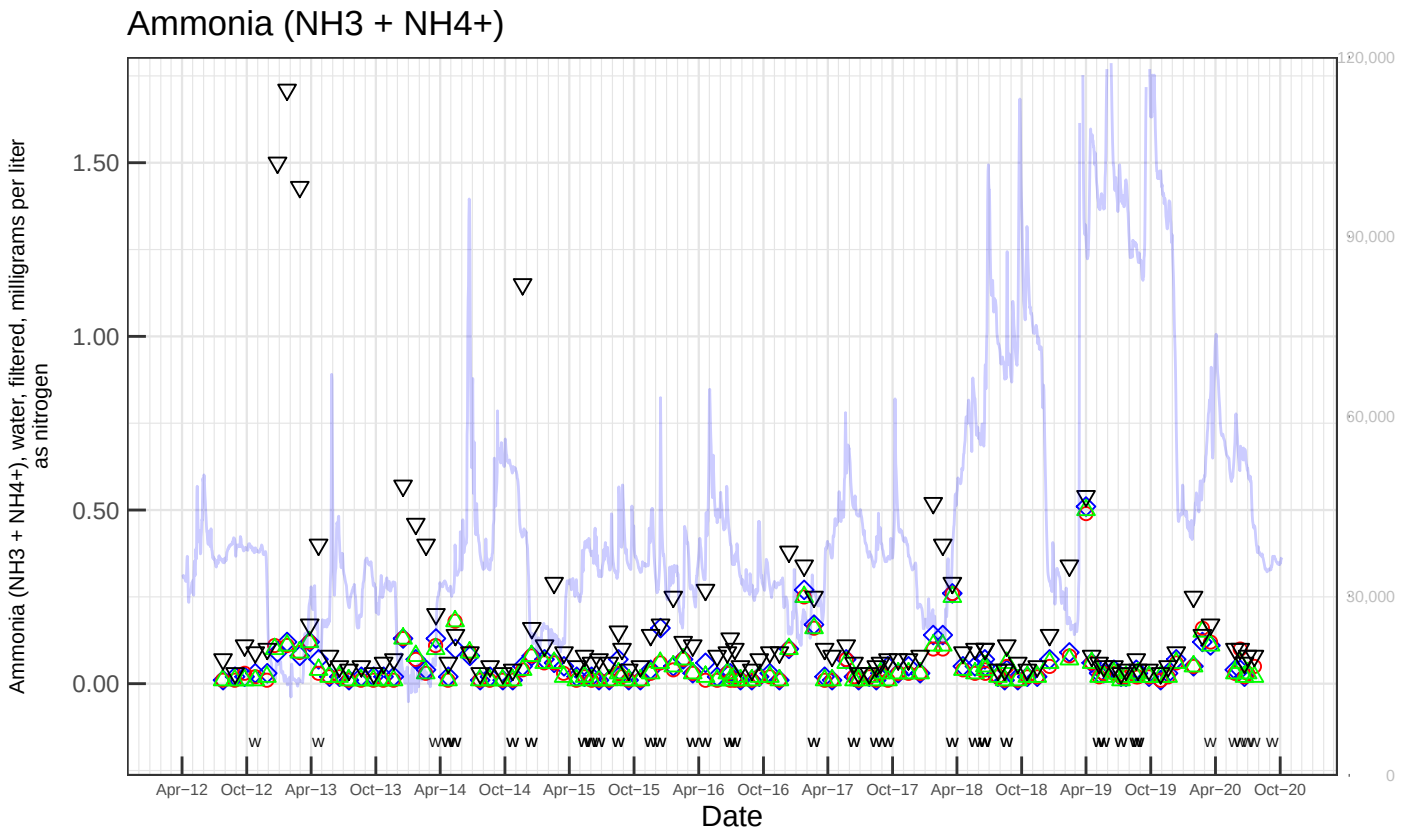

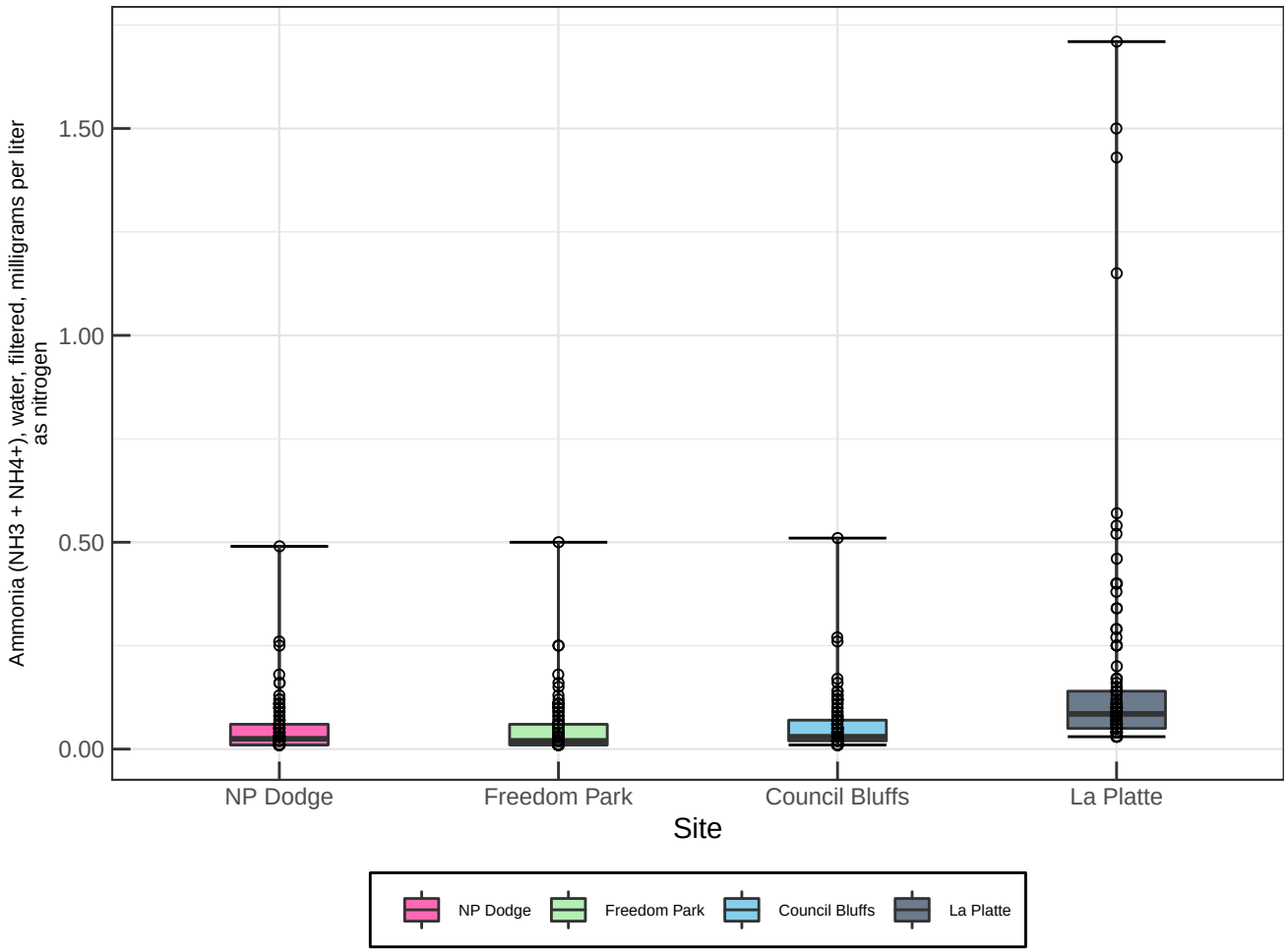

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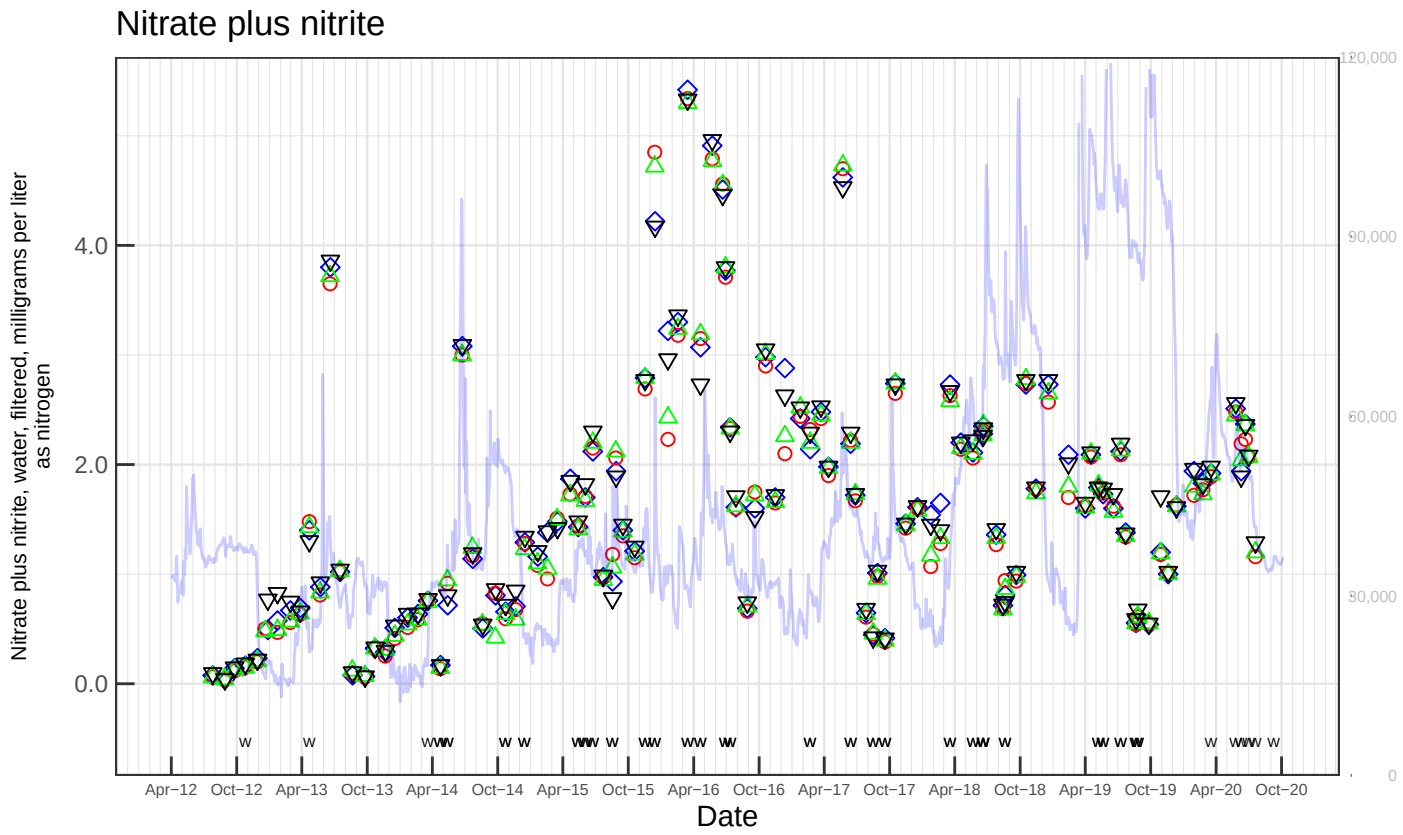

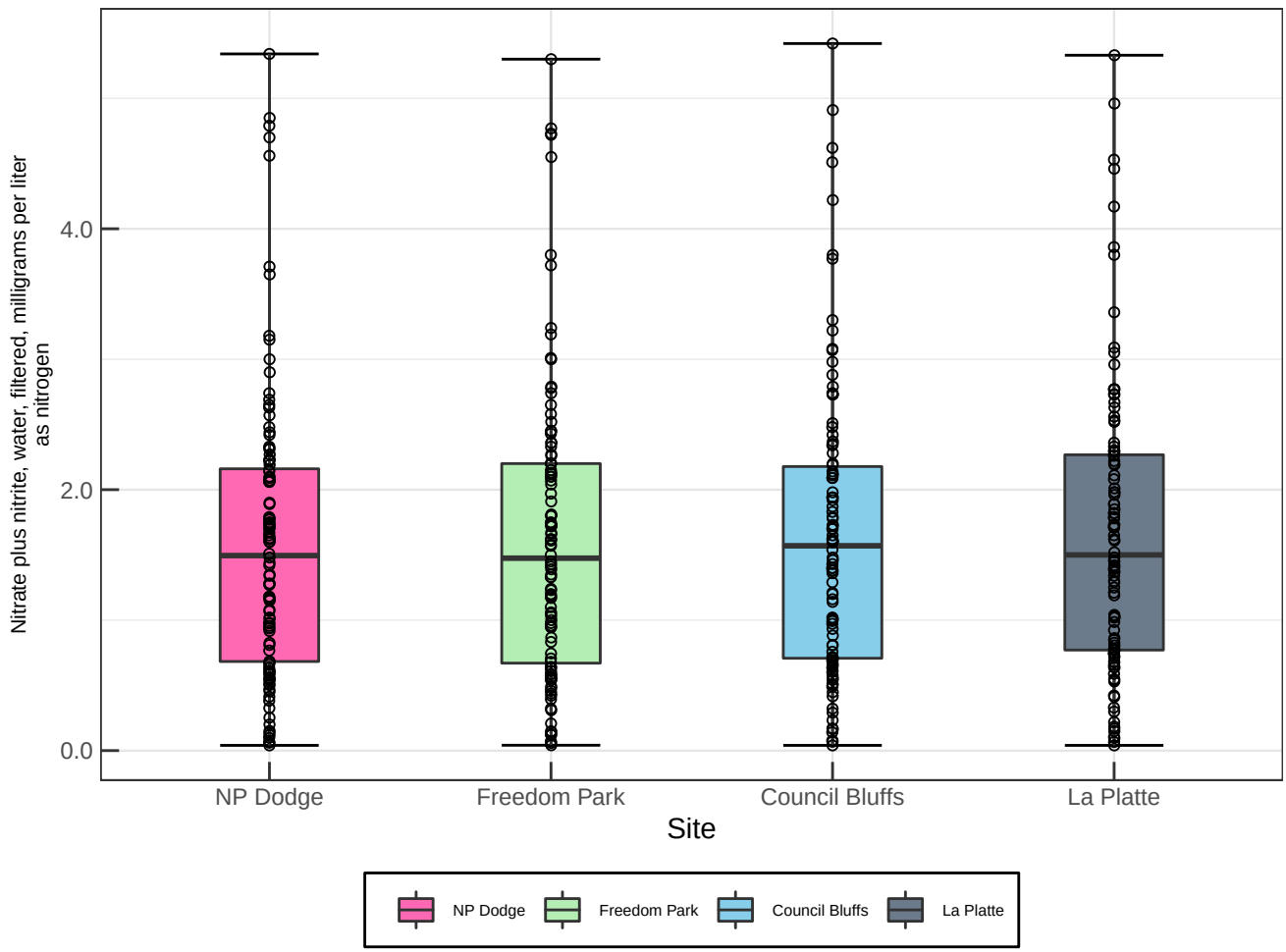

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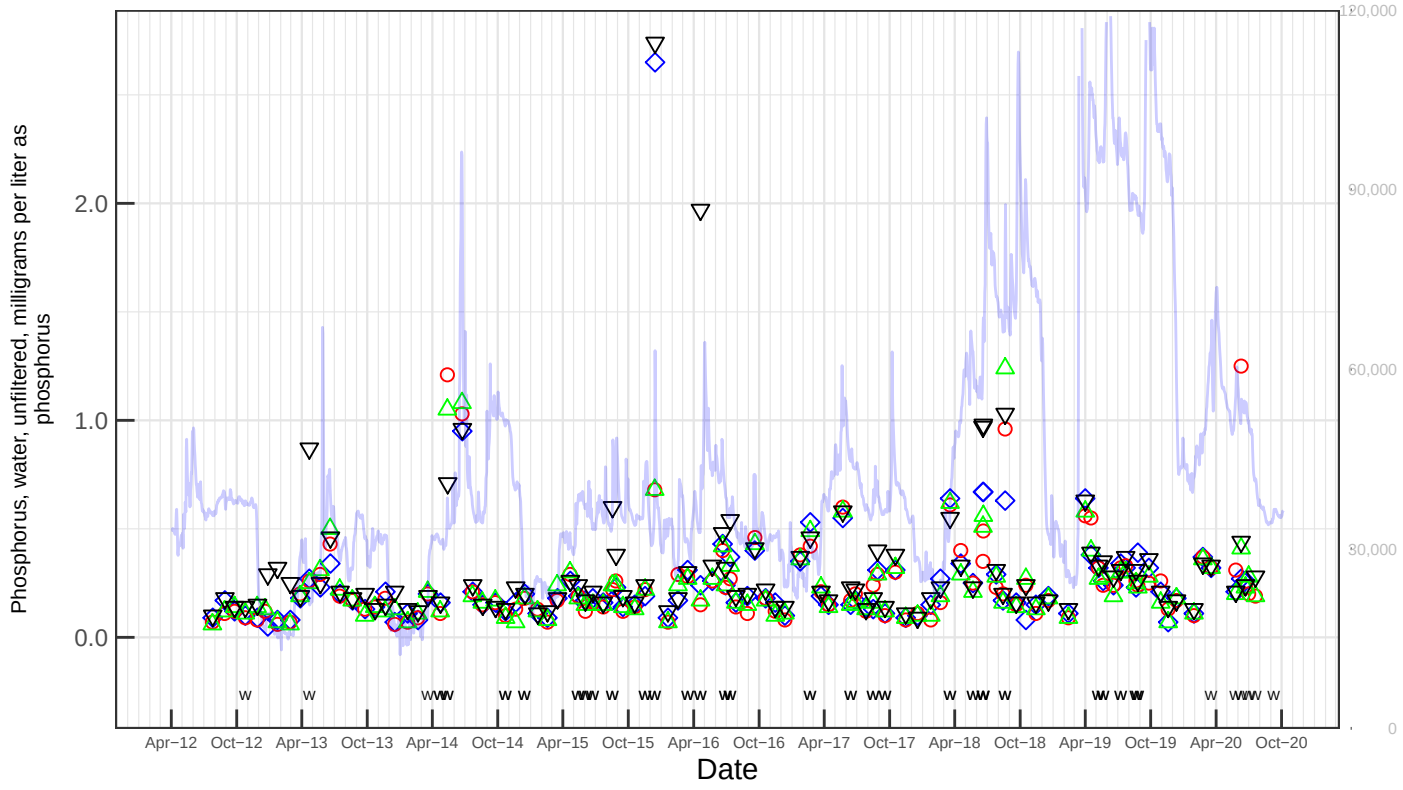

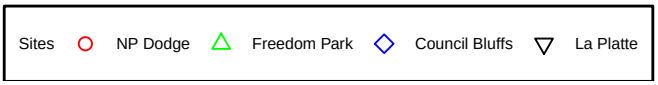

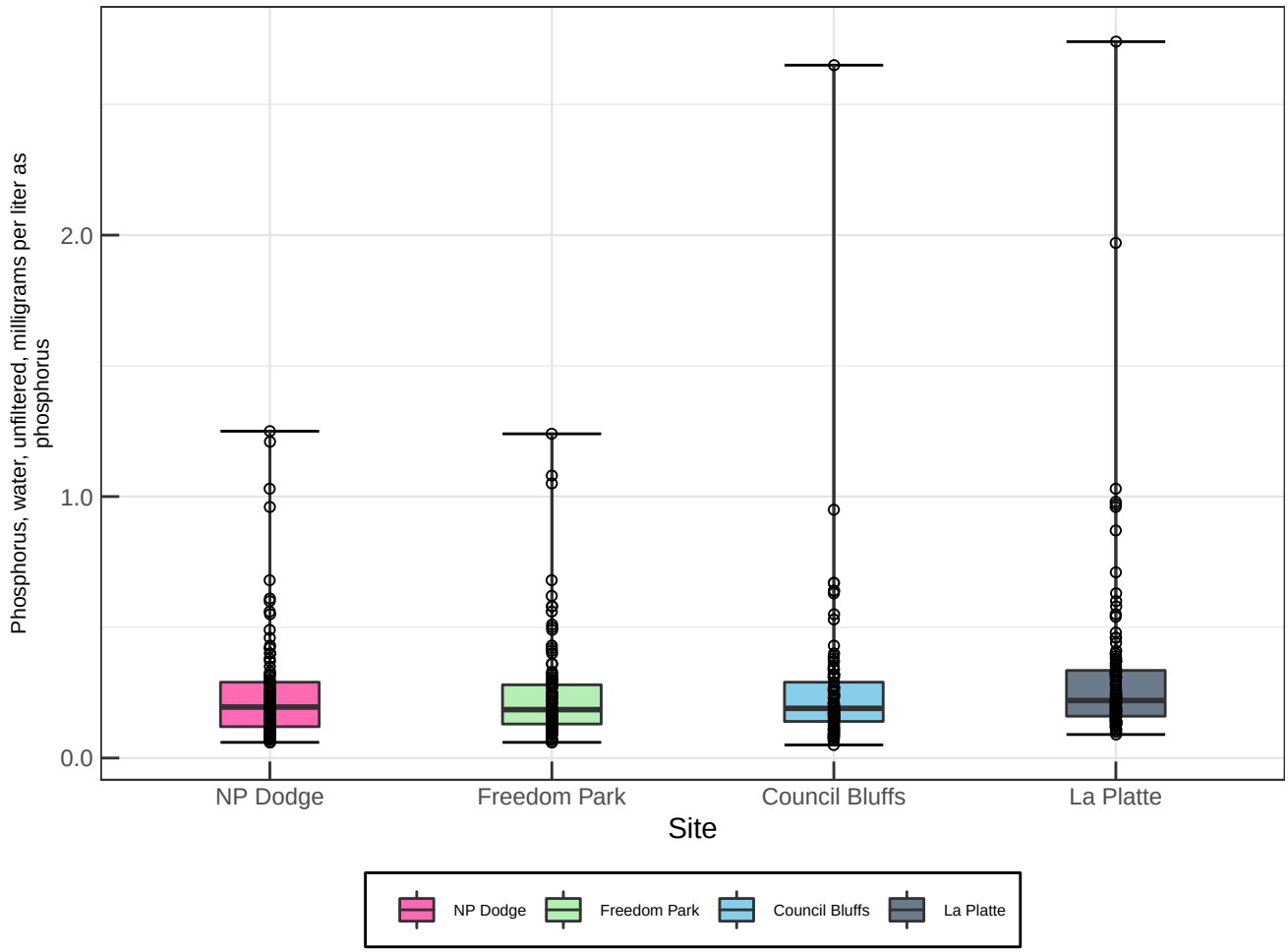

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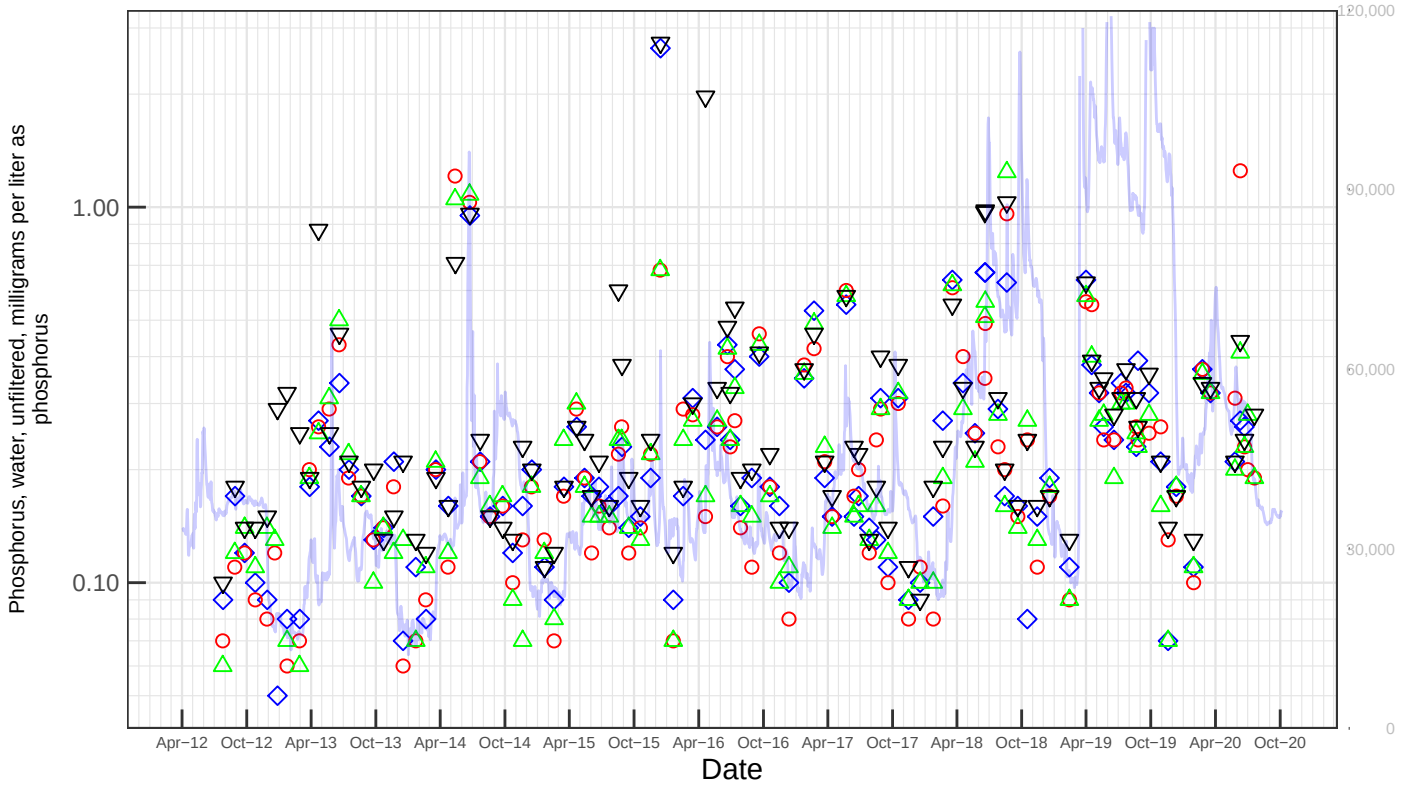

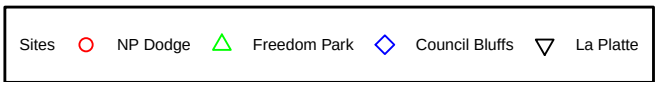

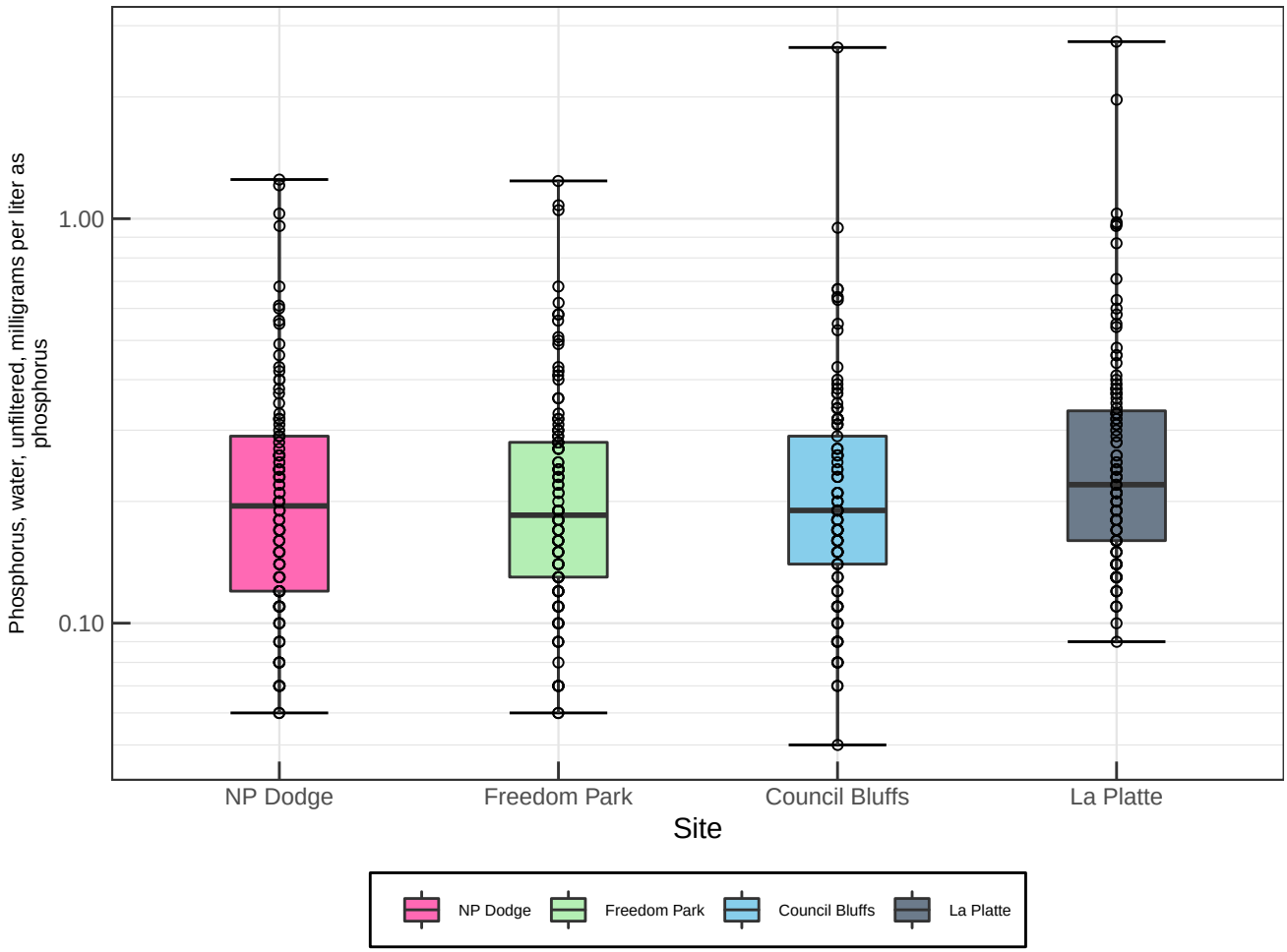

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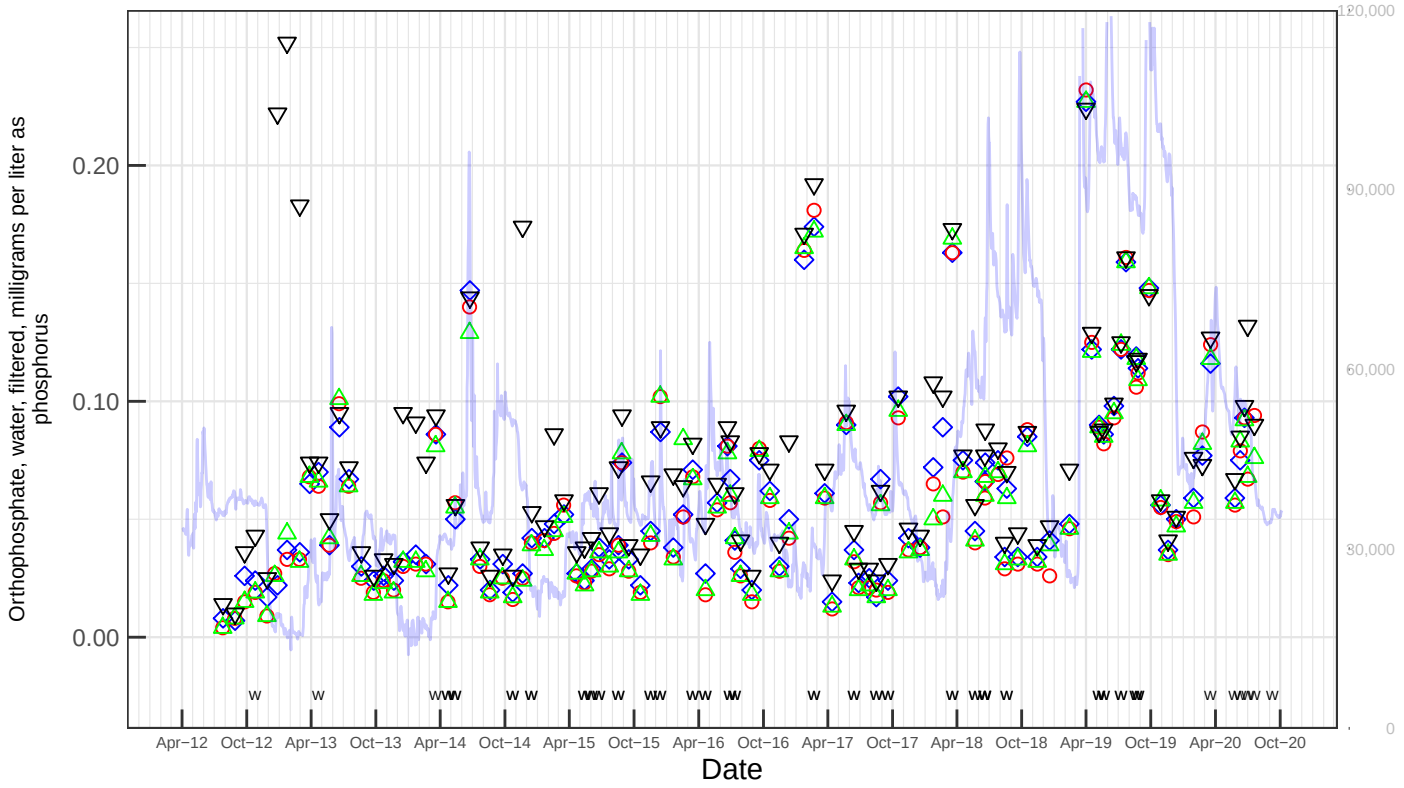
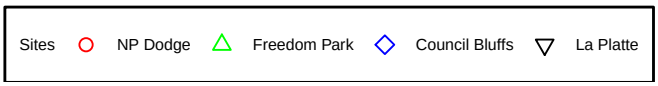
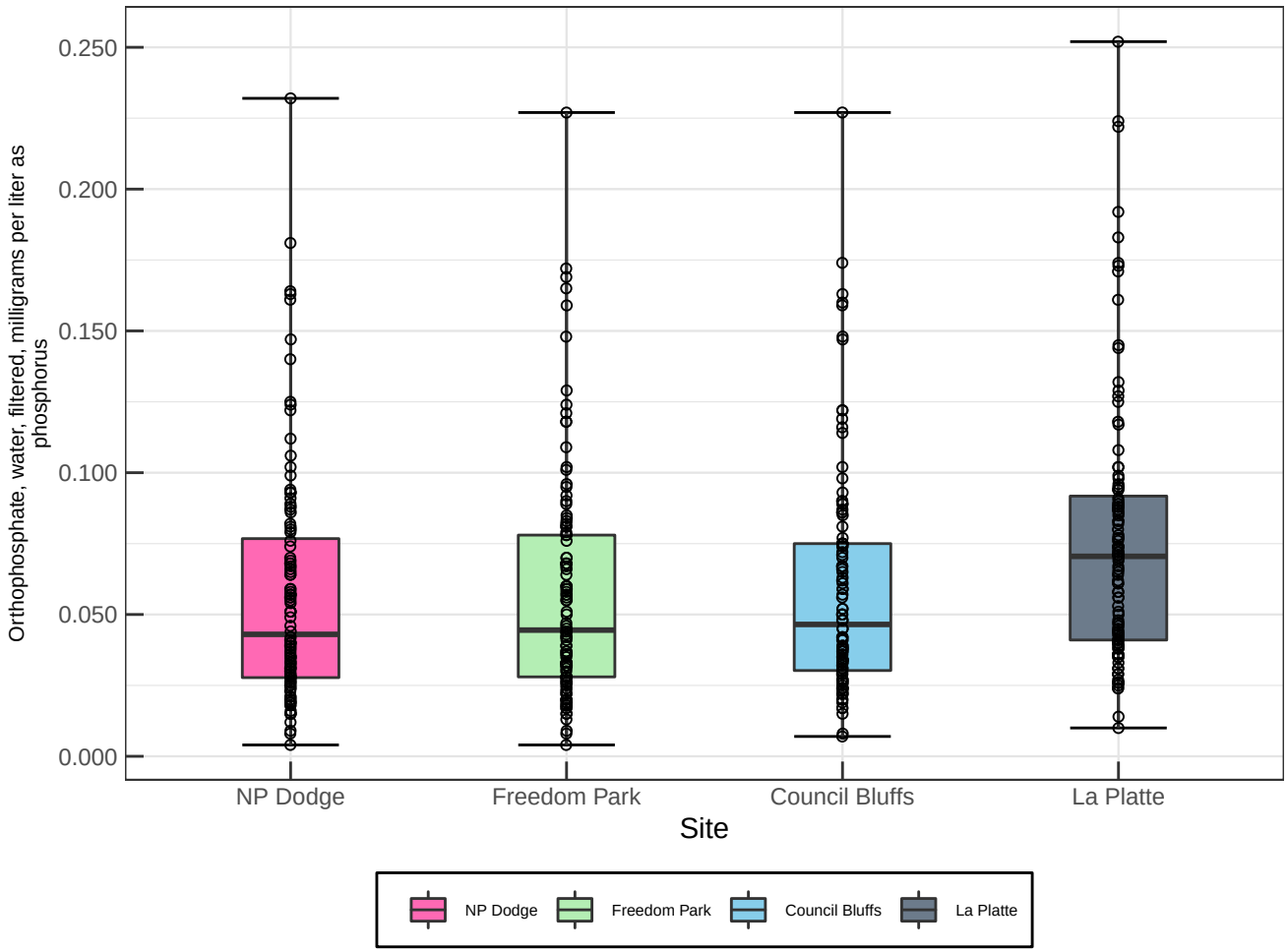
Orthophosphate







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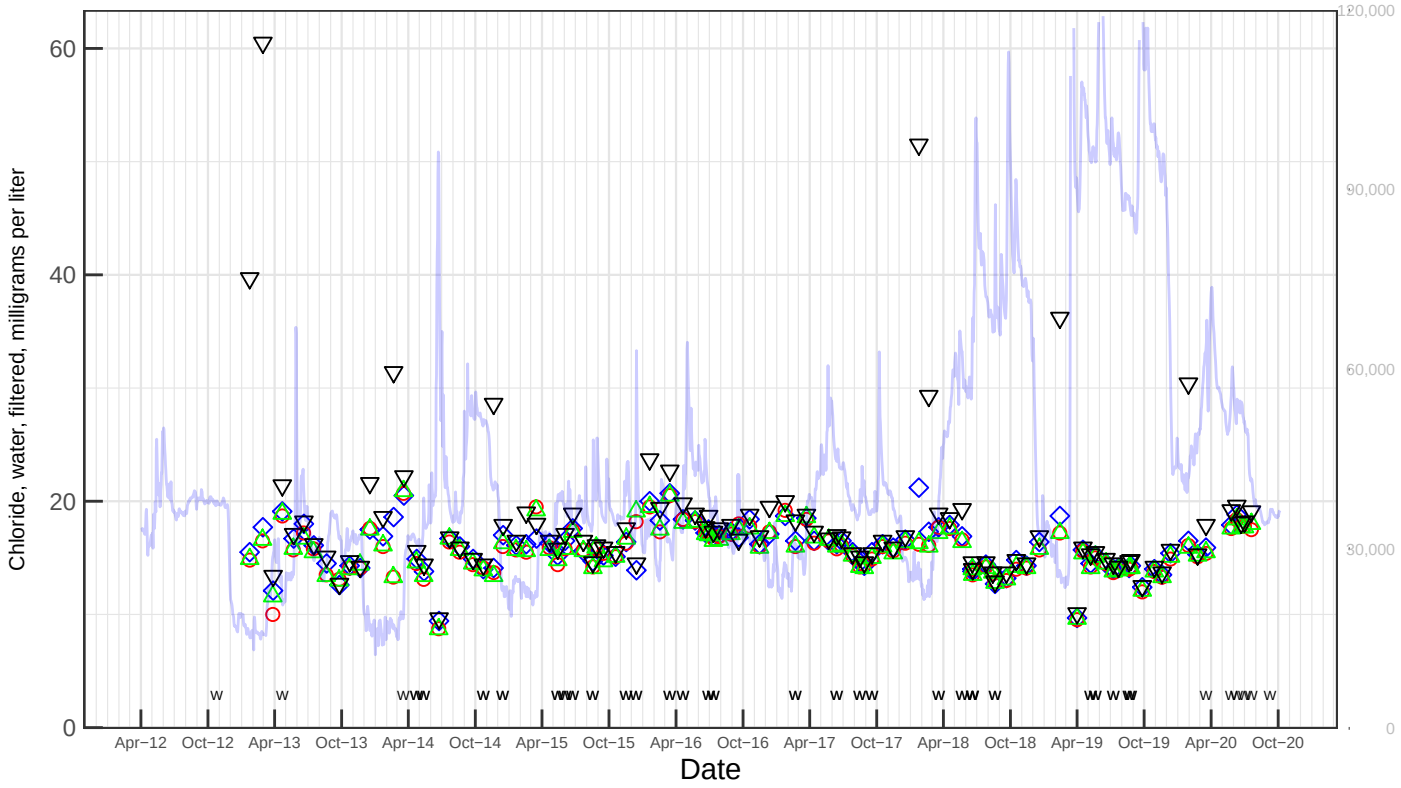
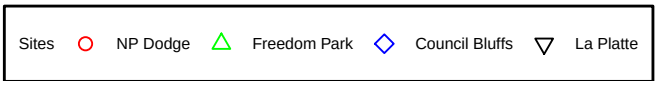
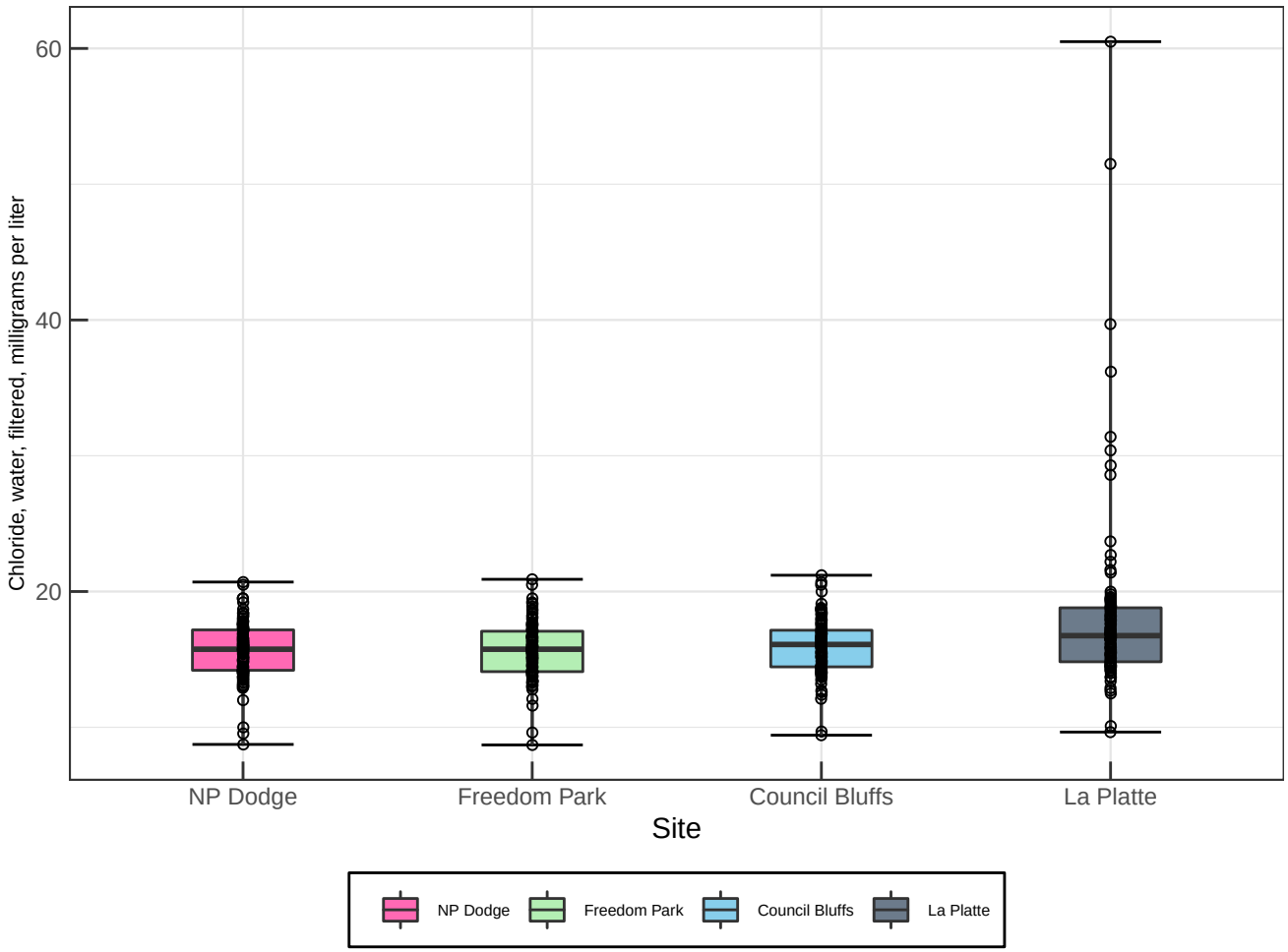
Chloride







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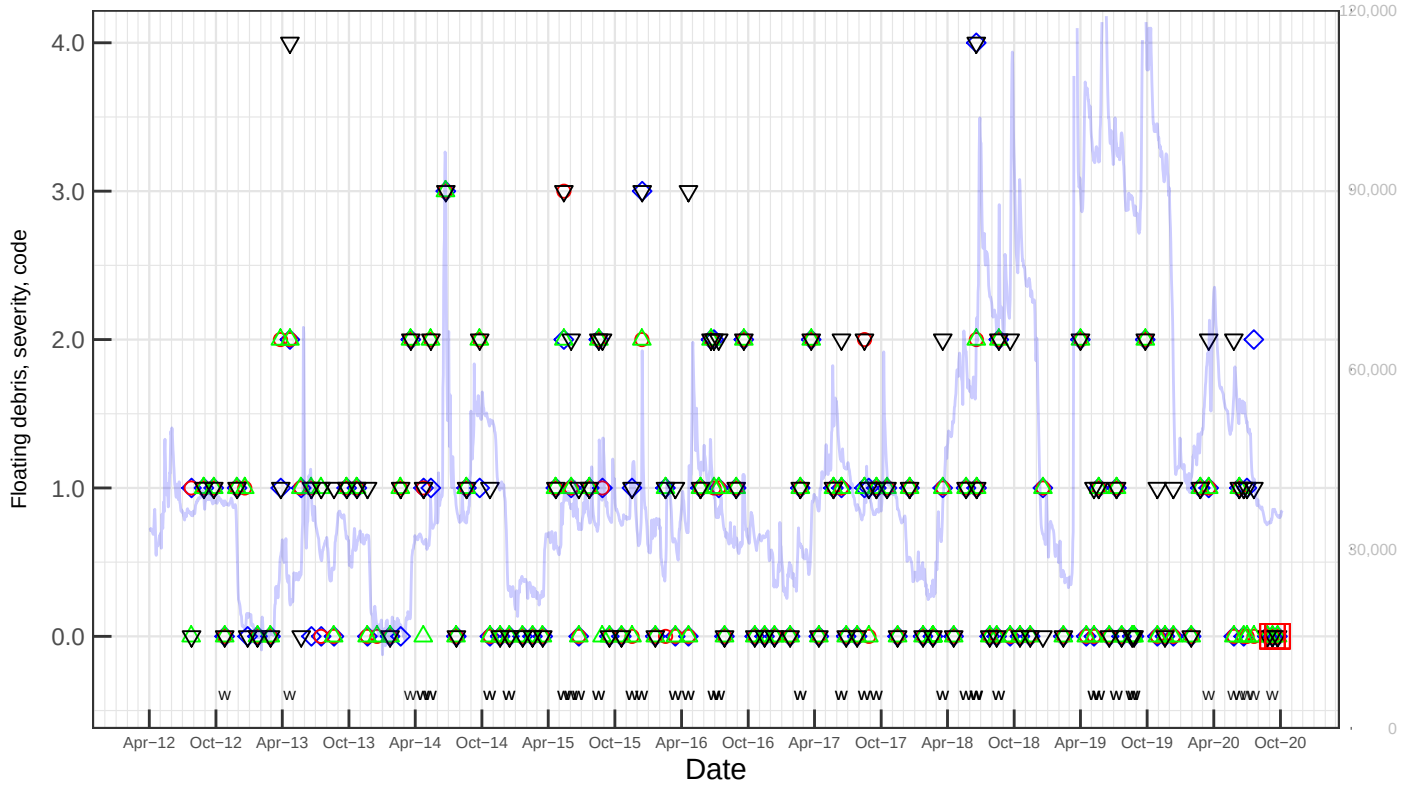
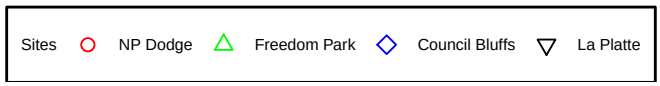
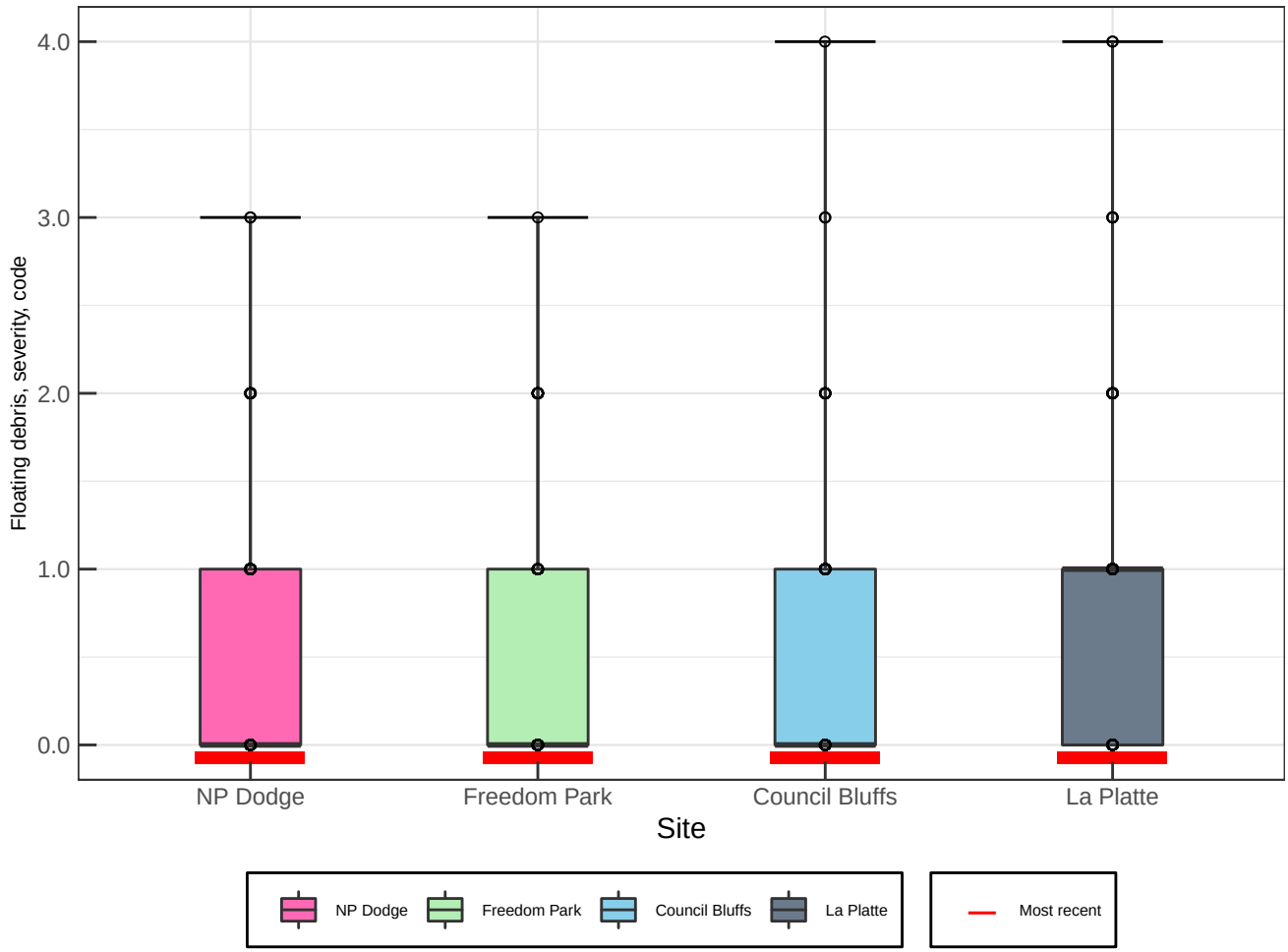
Floating debris







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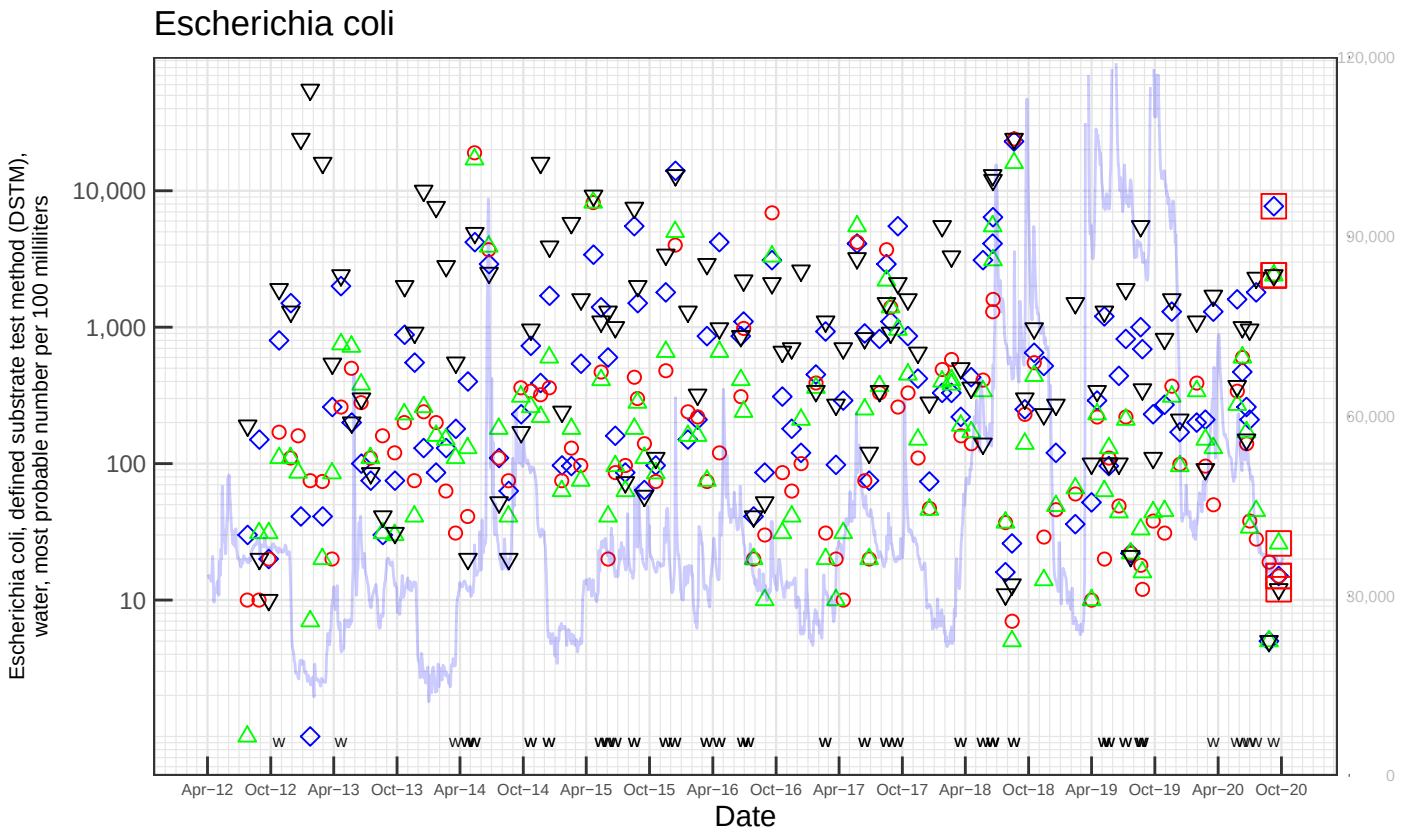

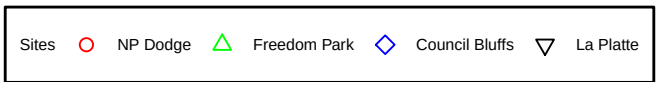

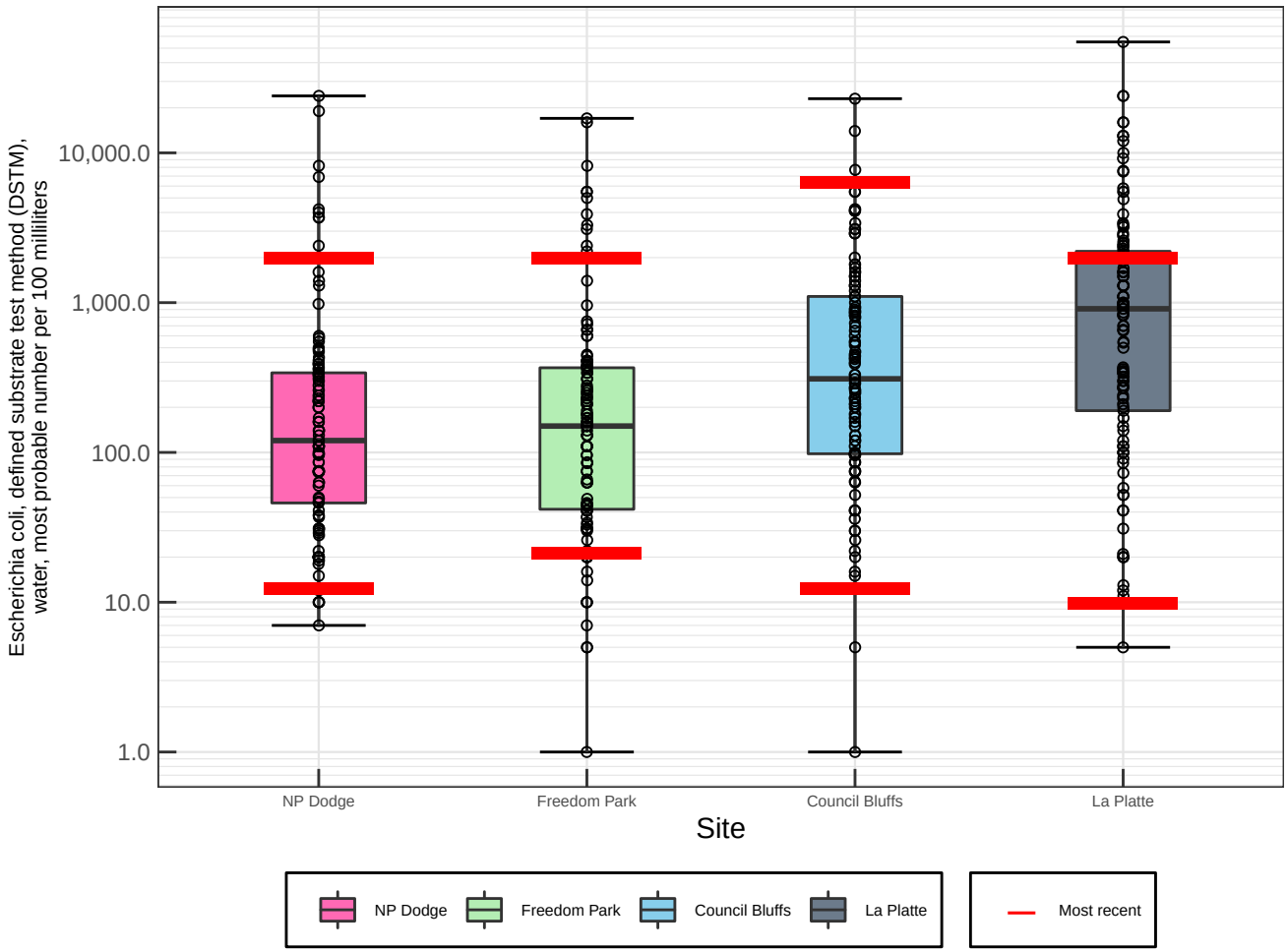

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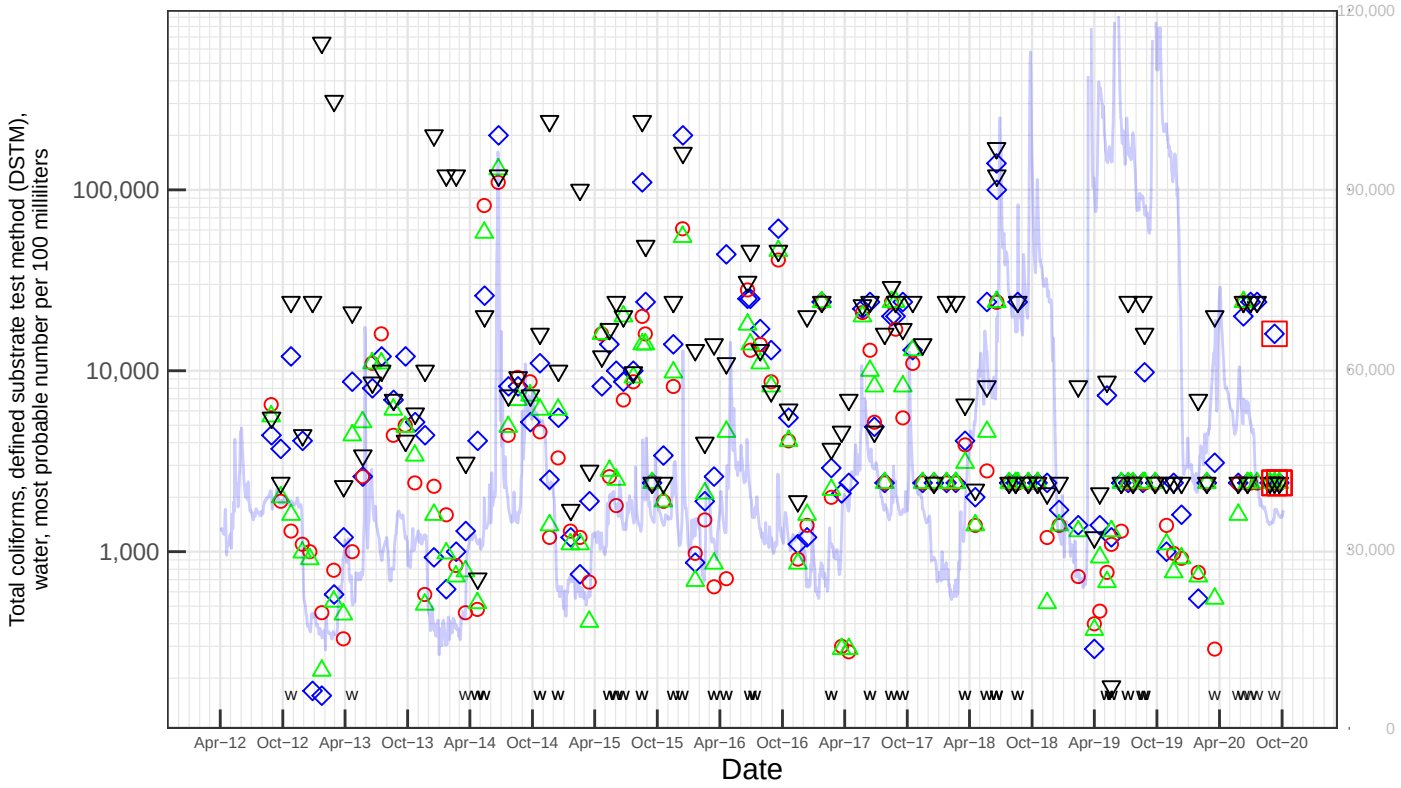
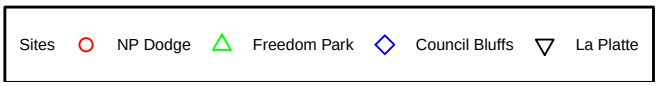
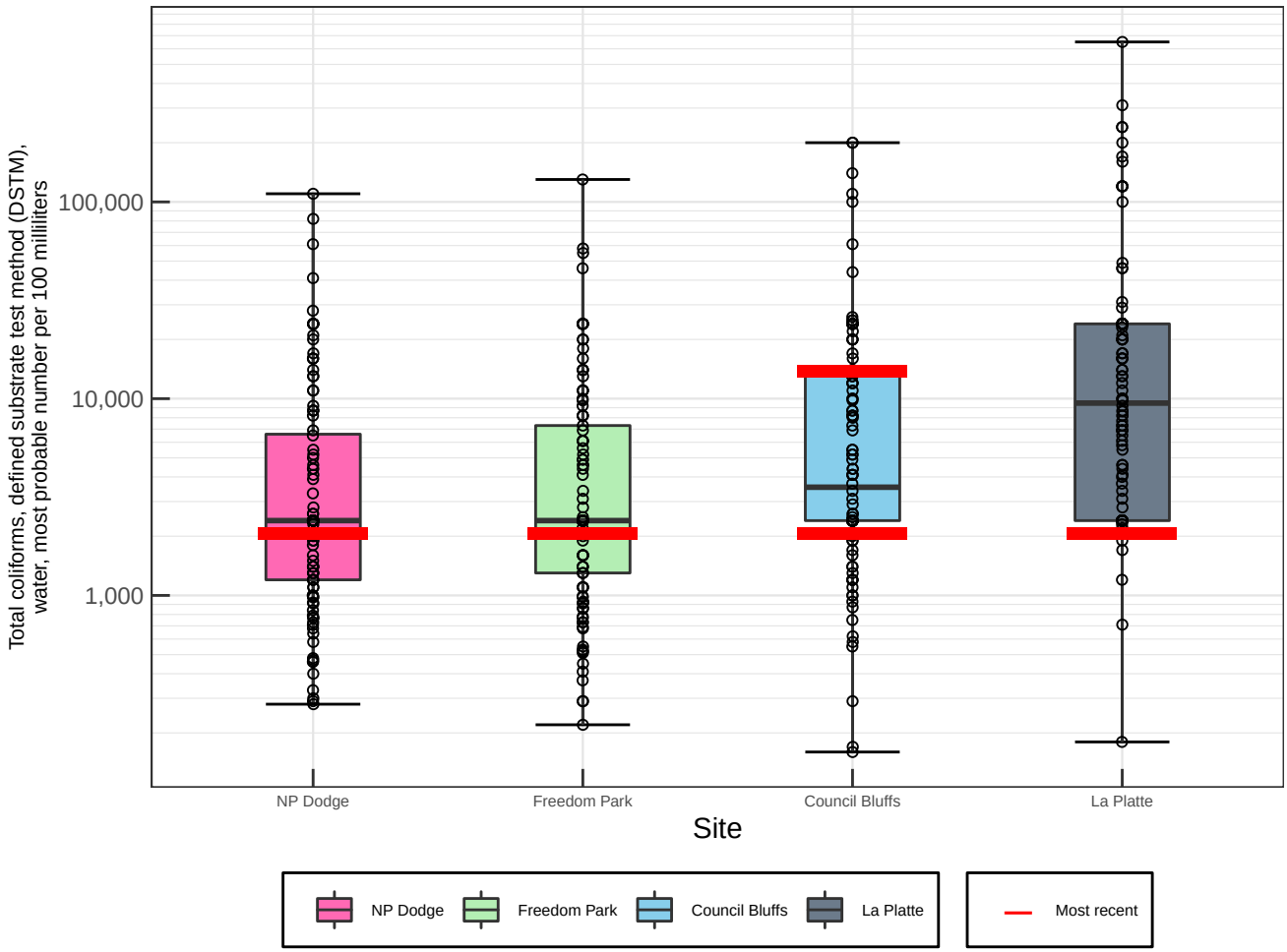
Total coliforms







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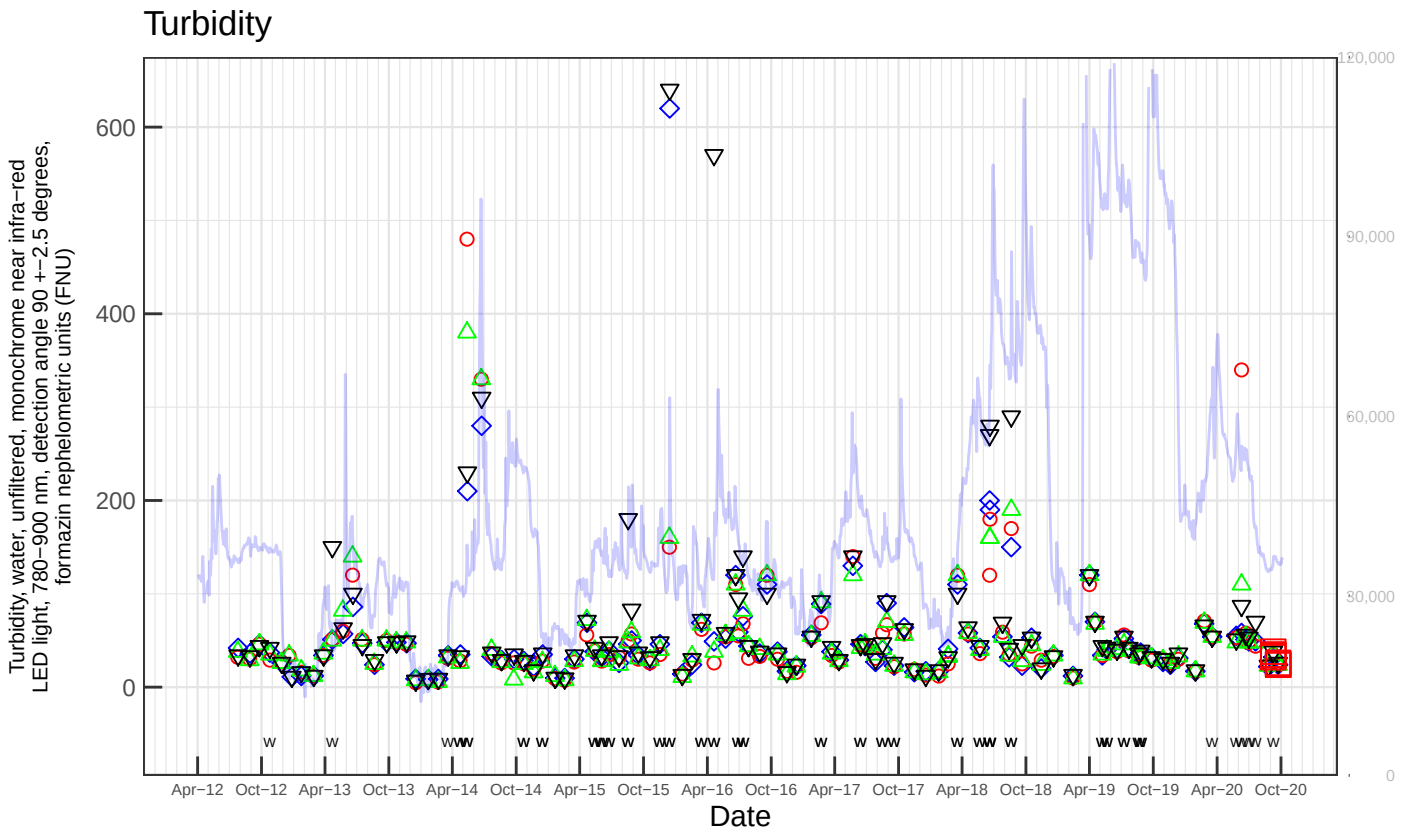

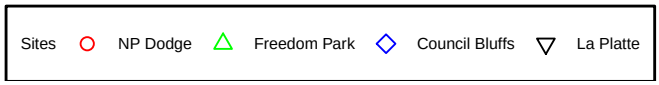

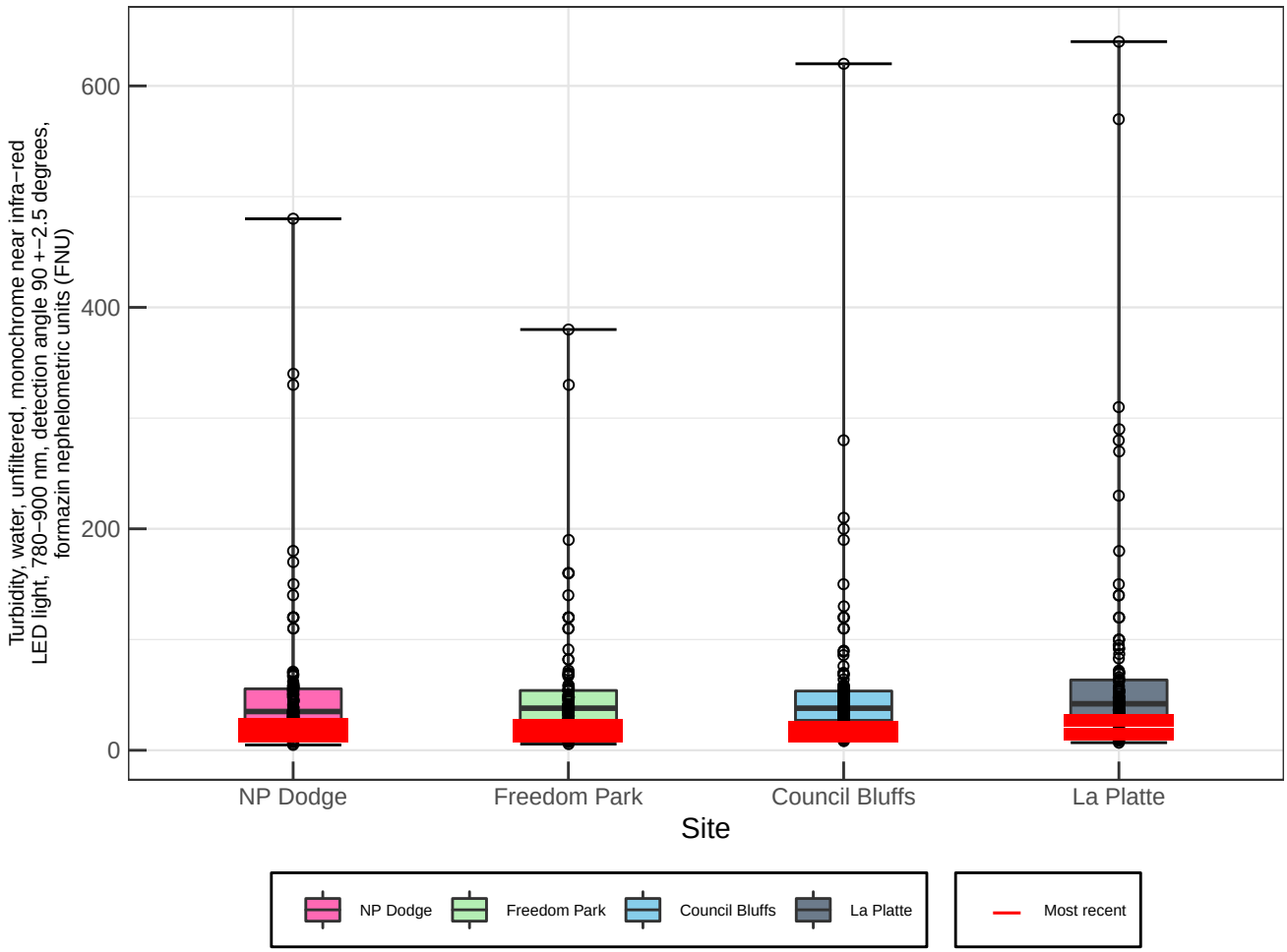

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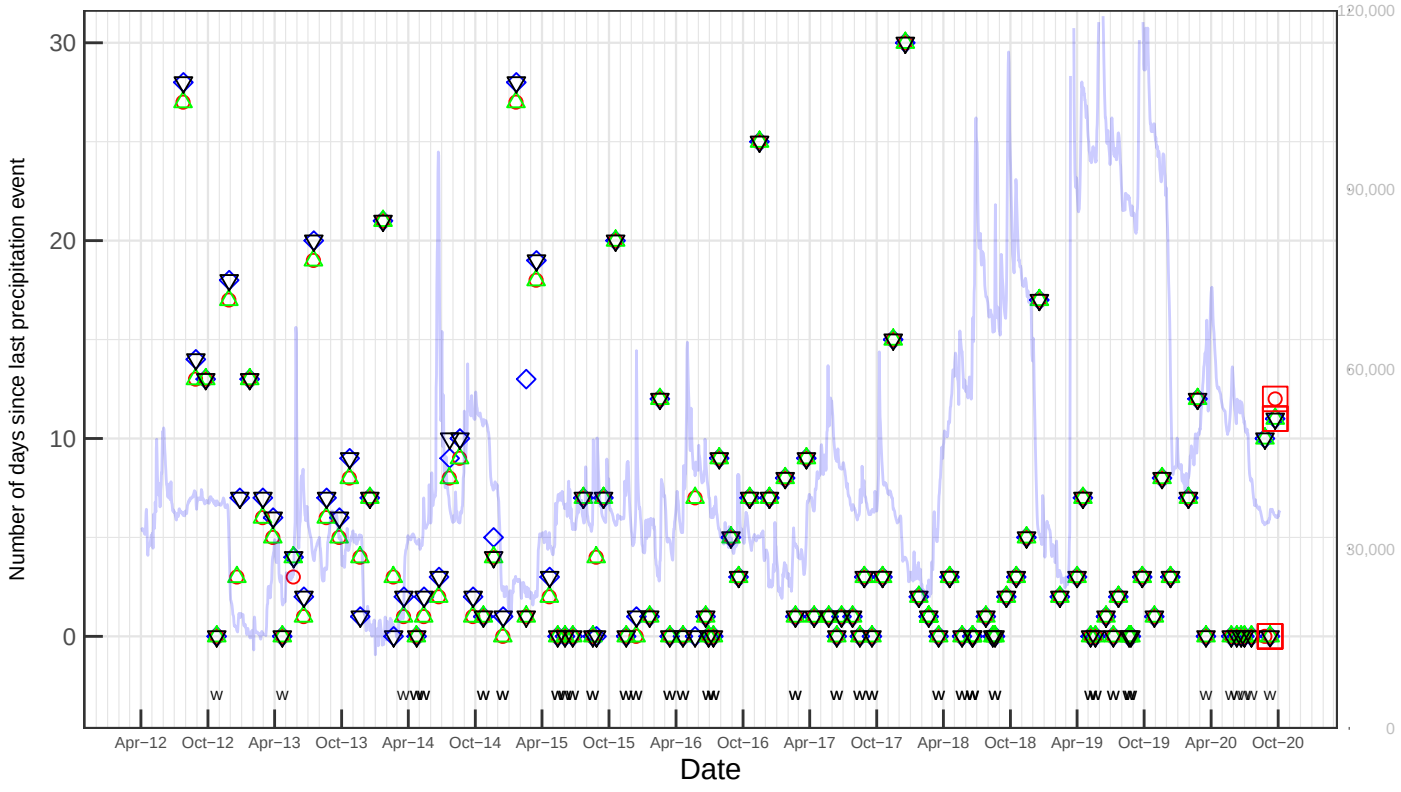
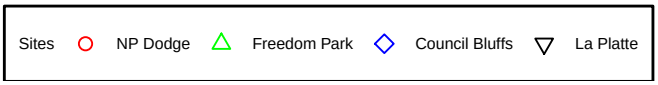
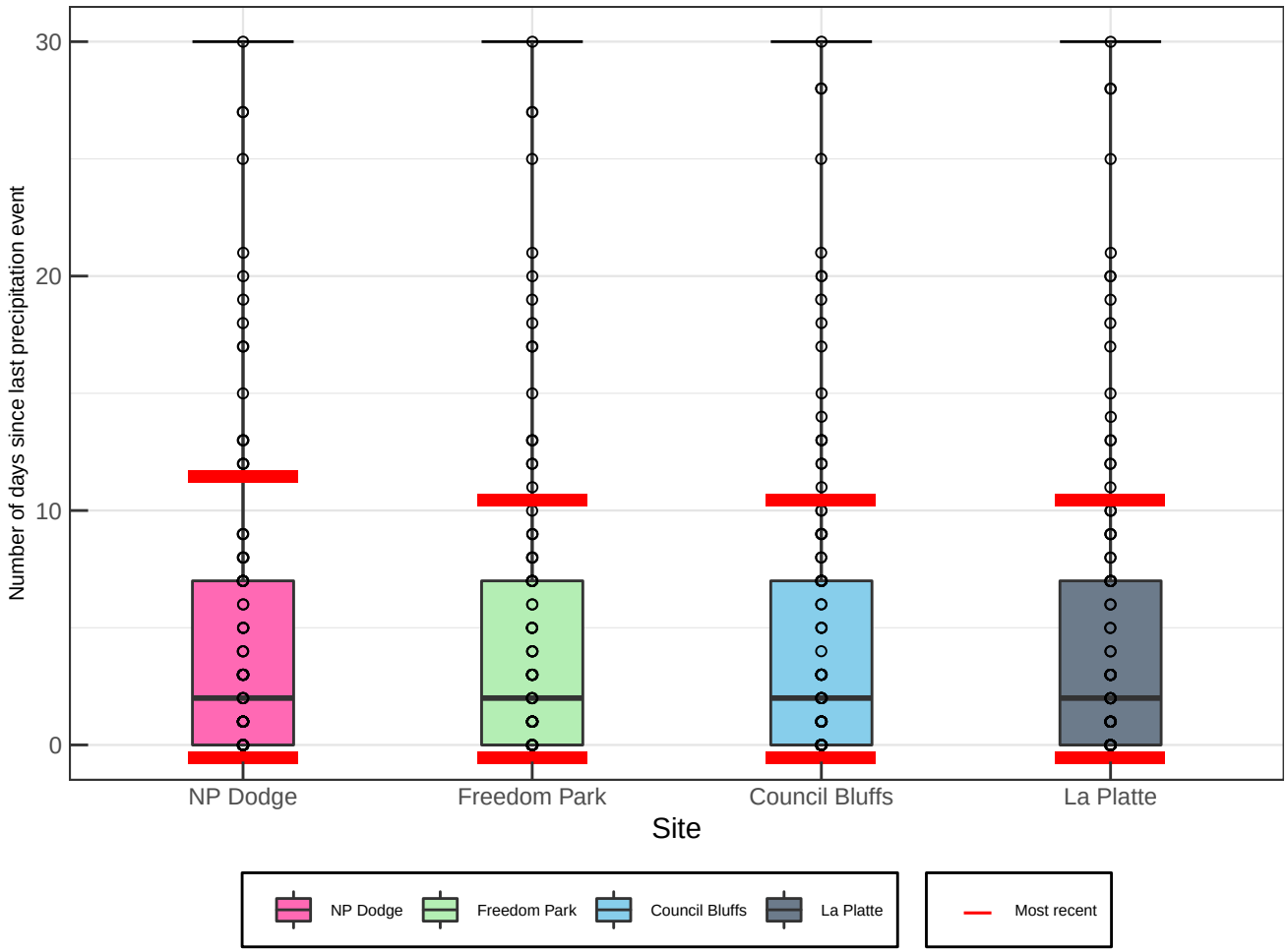
Number of days since last precipitation event







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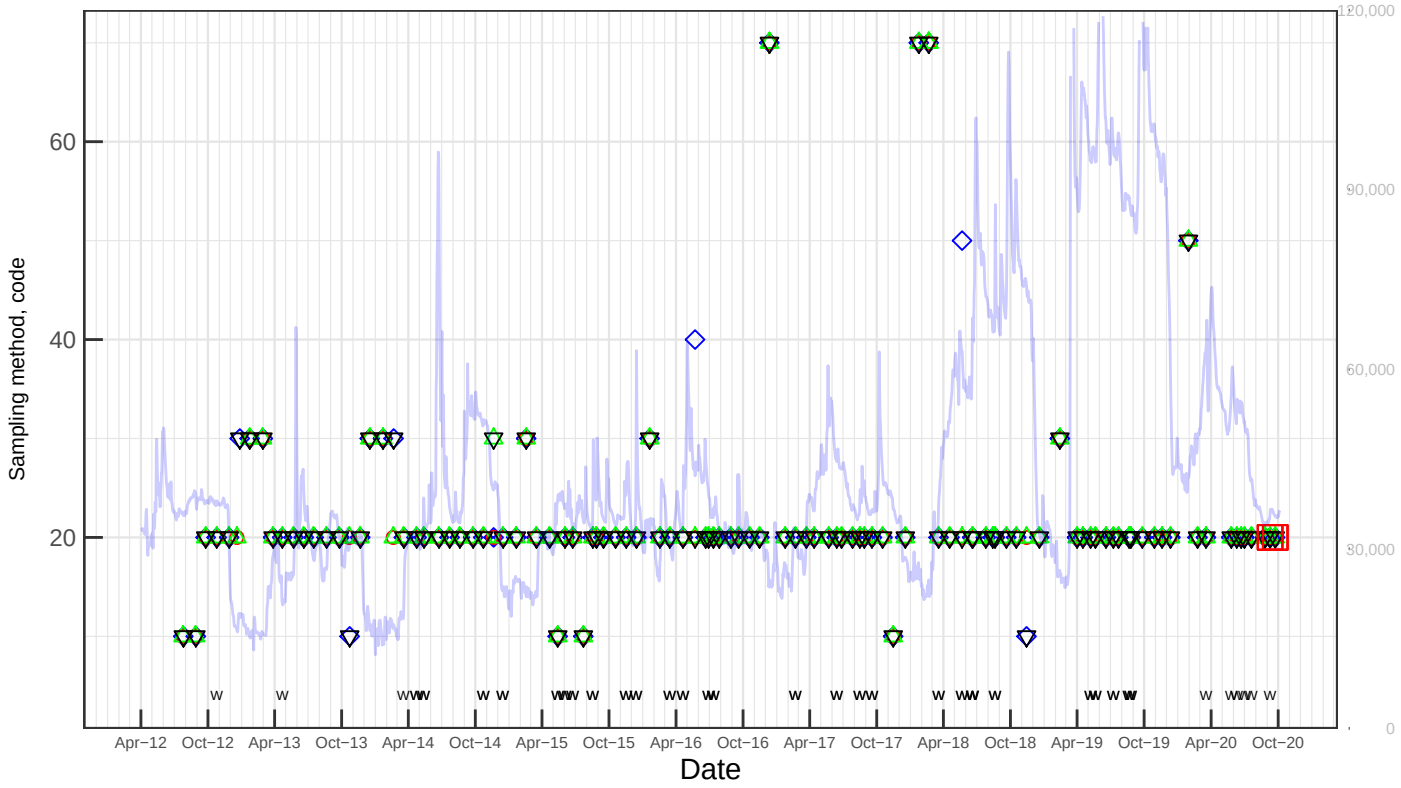
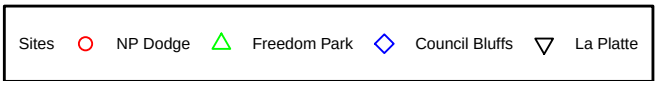
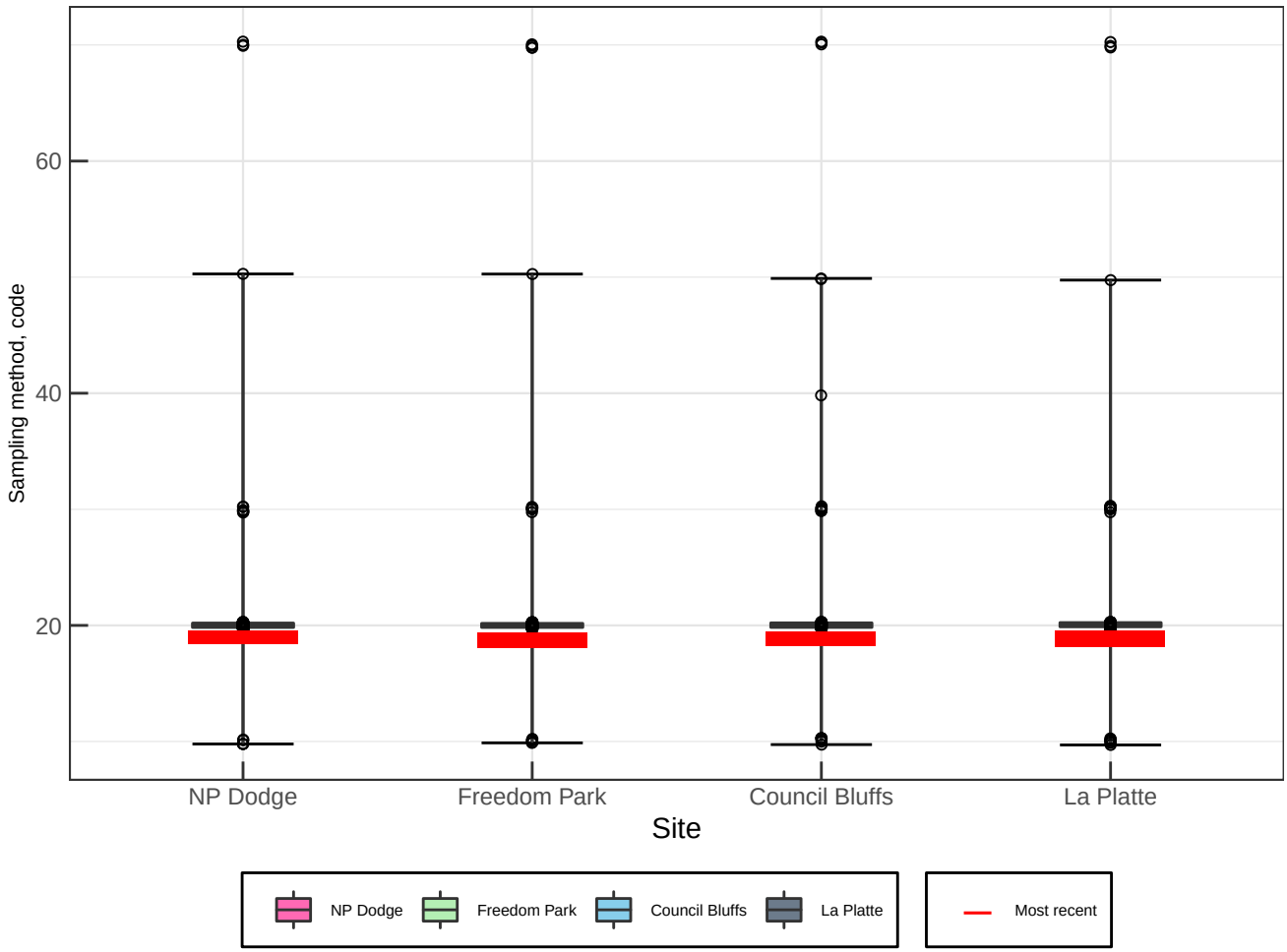
Sampling method







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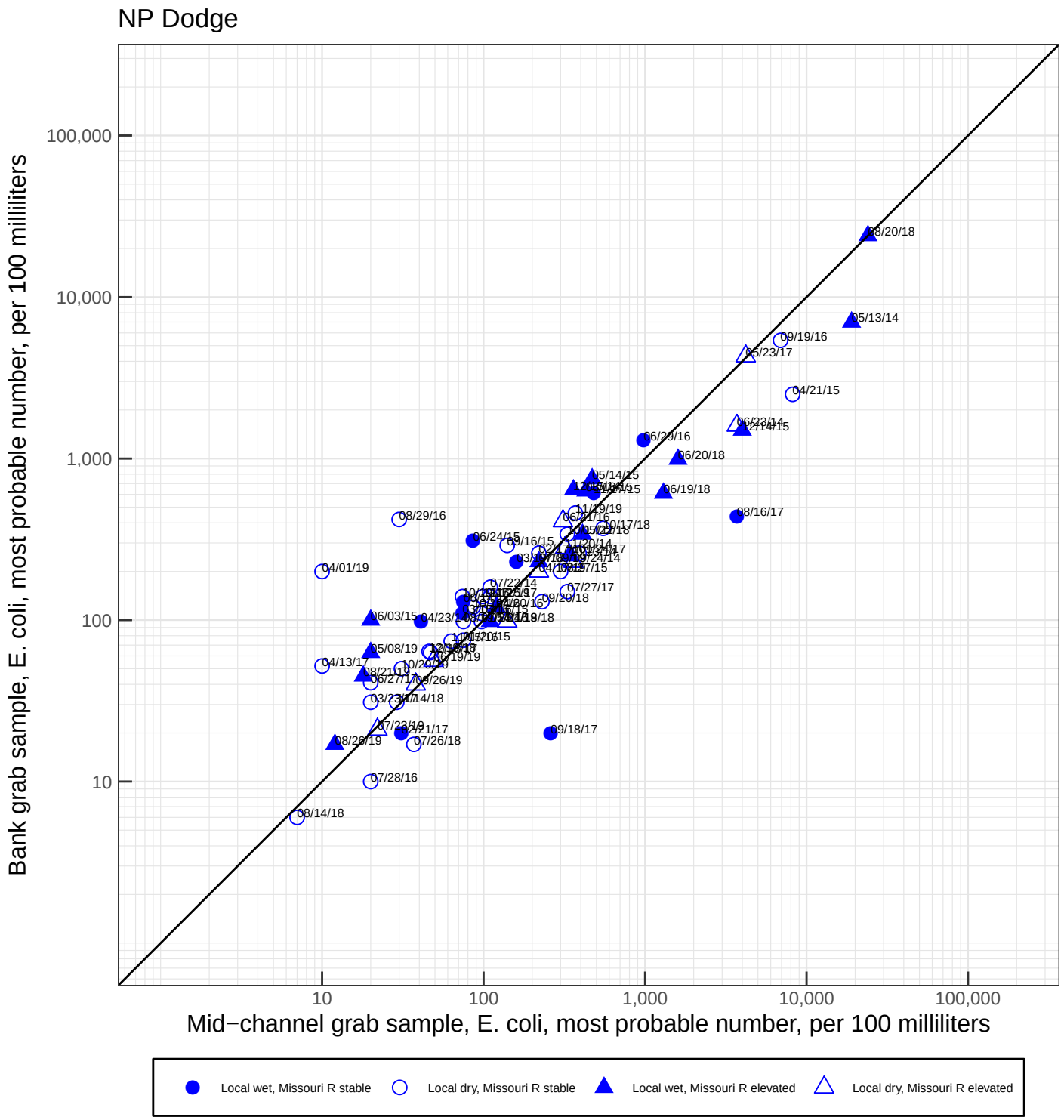

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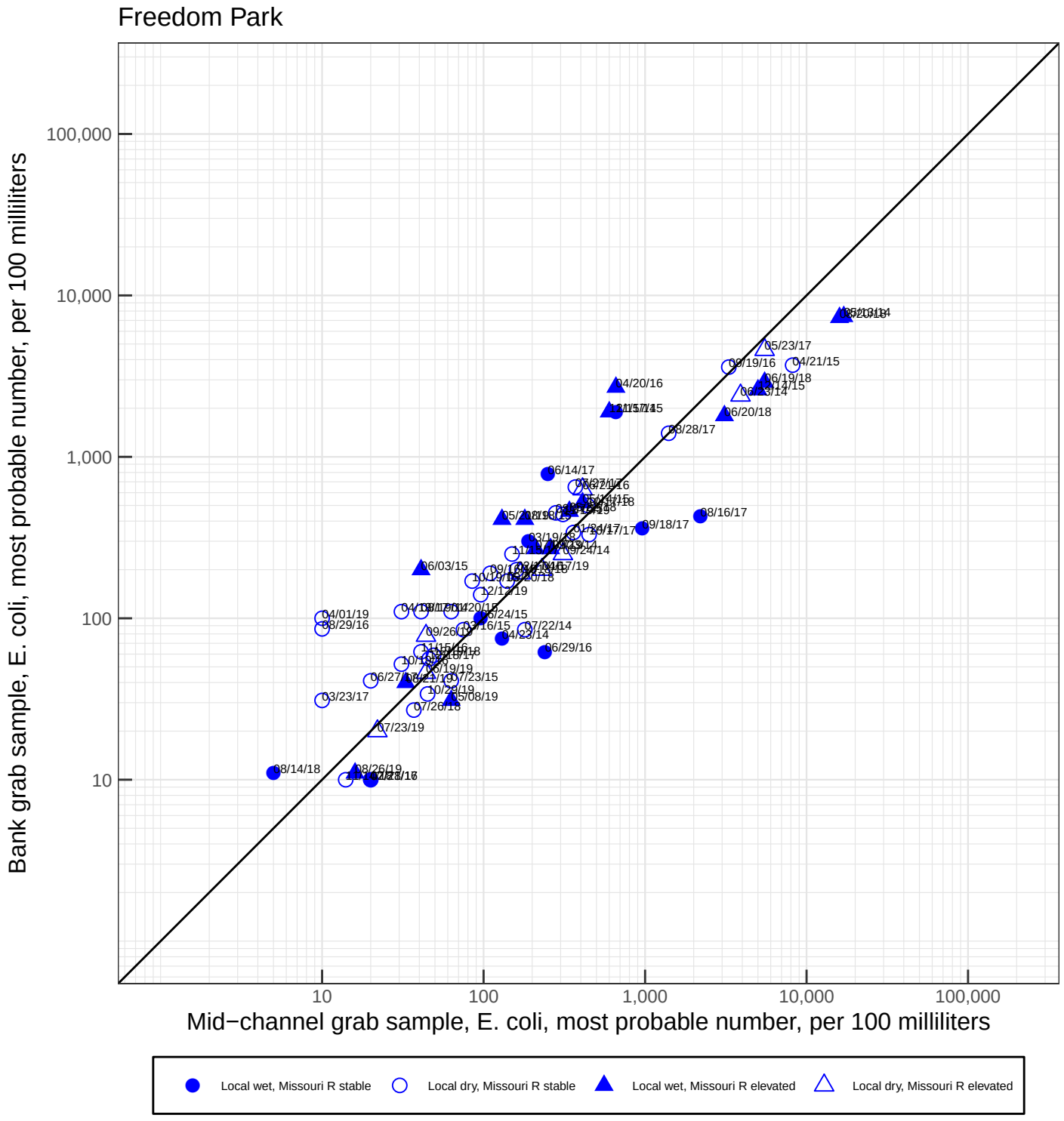

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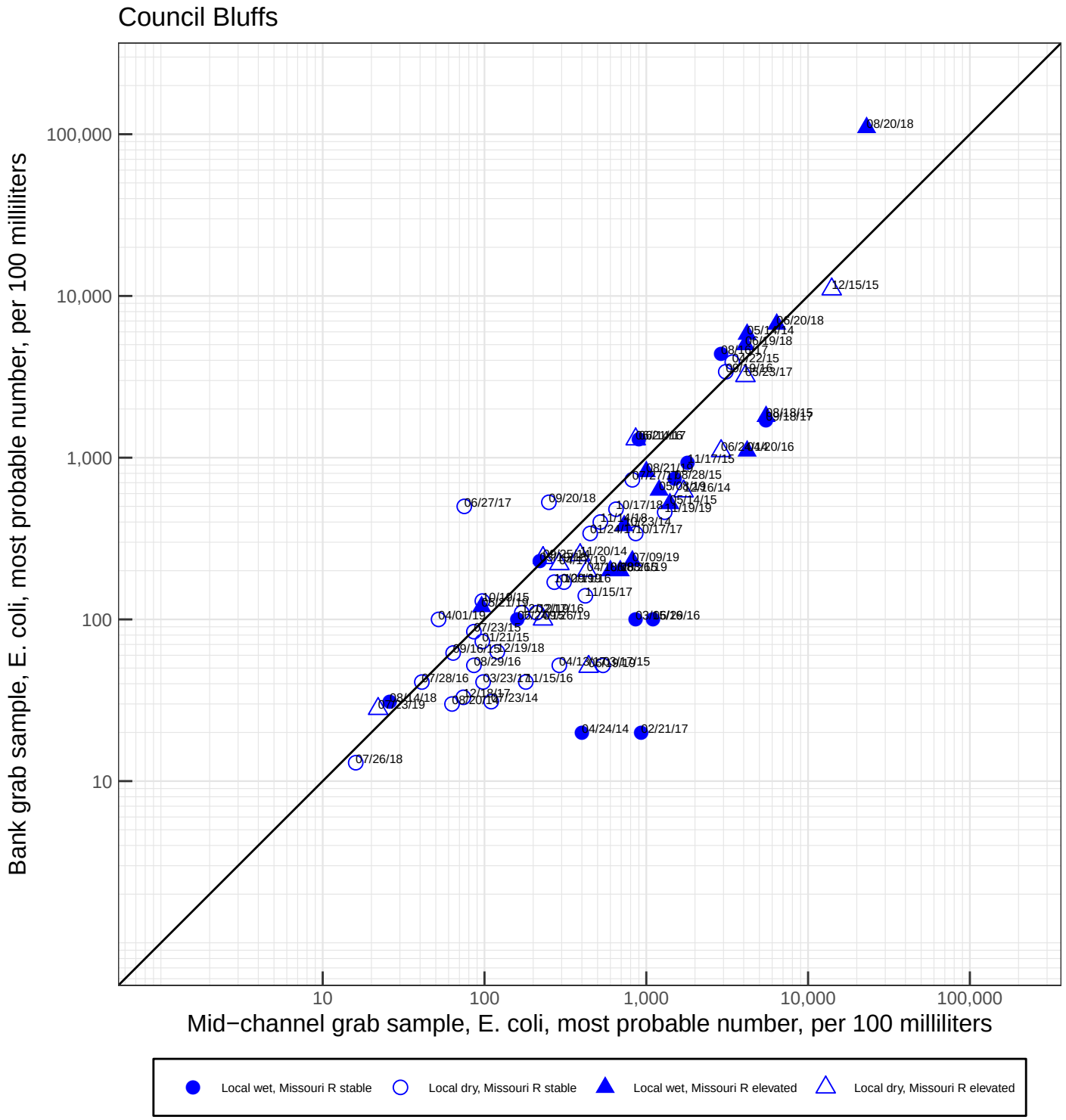

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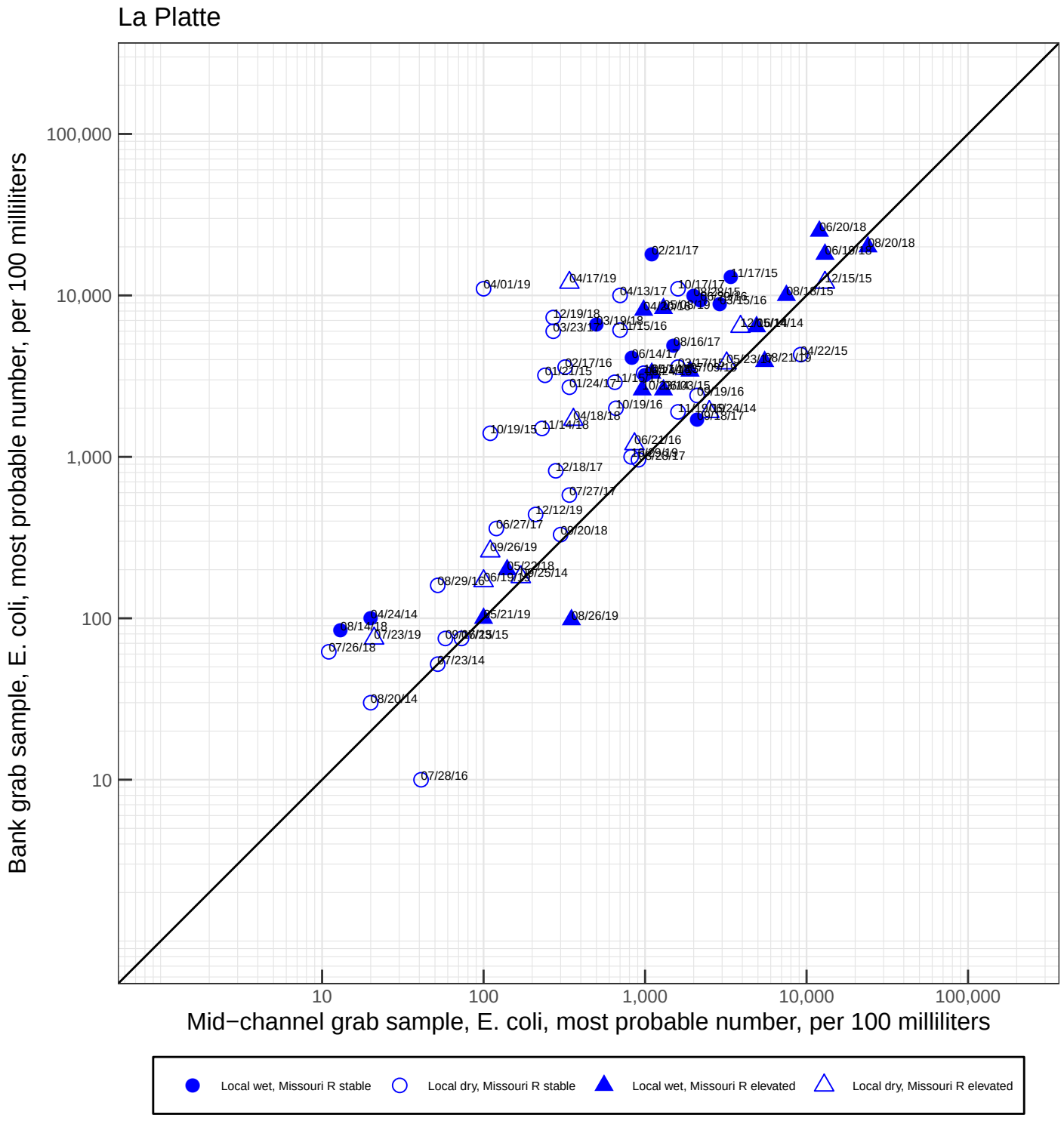

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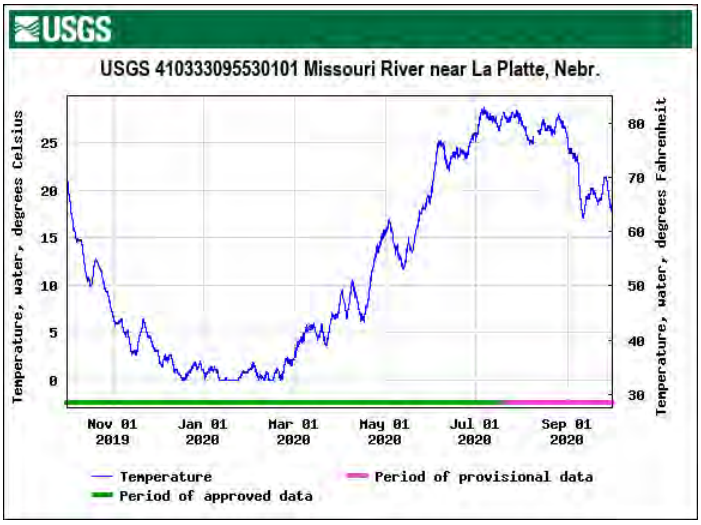
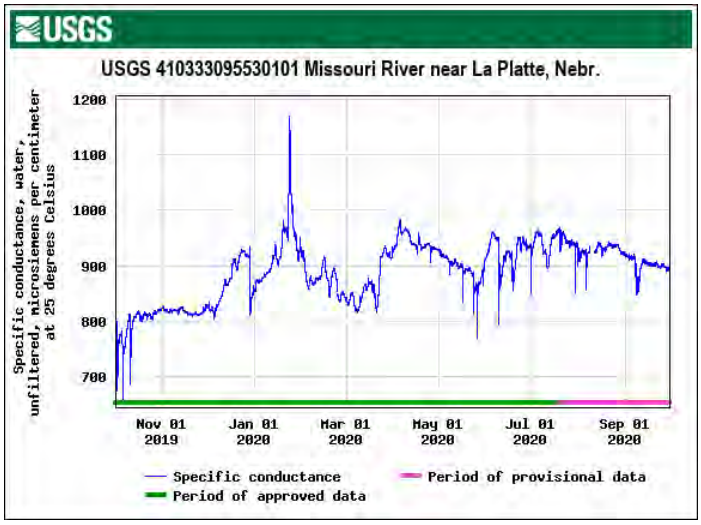
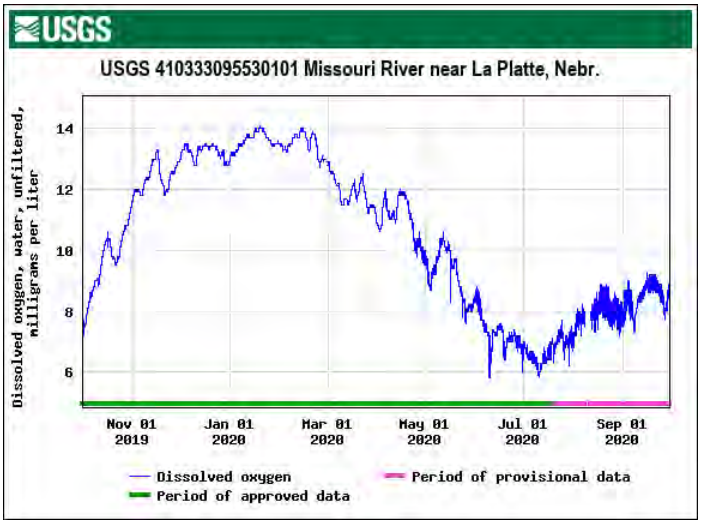
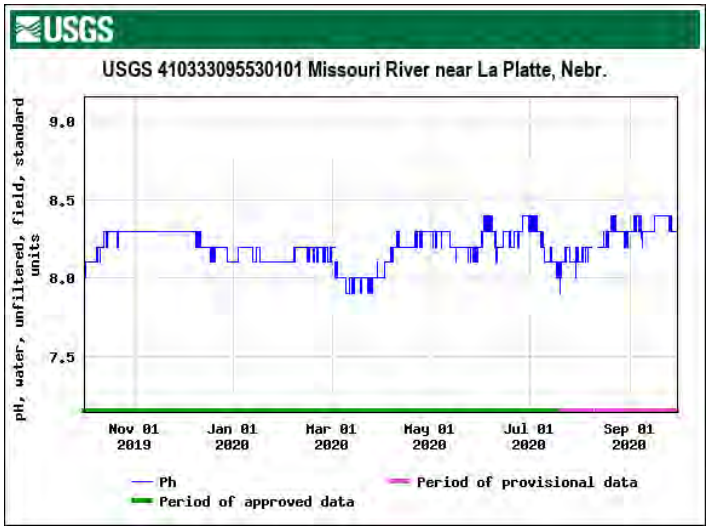
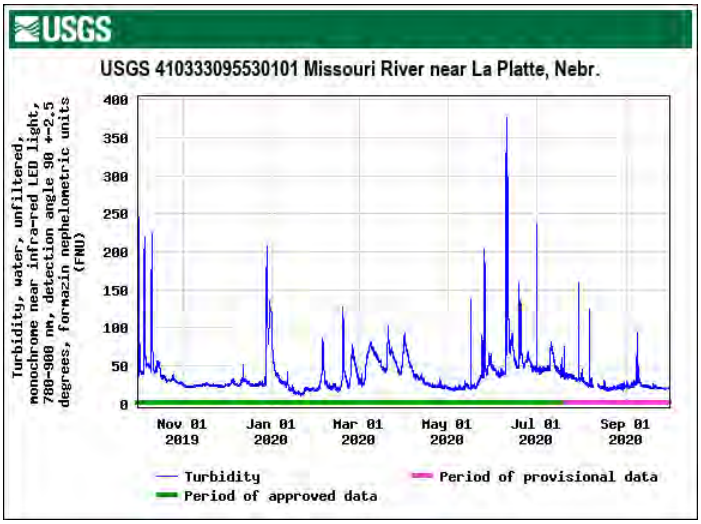
Continuous Water Quality Monitoring Graphs - Site MR-1



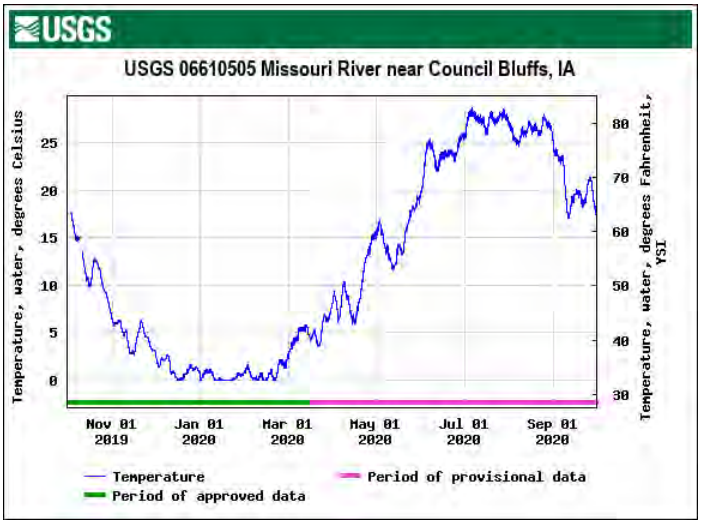


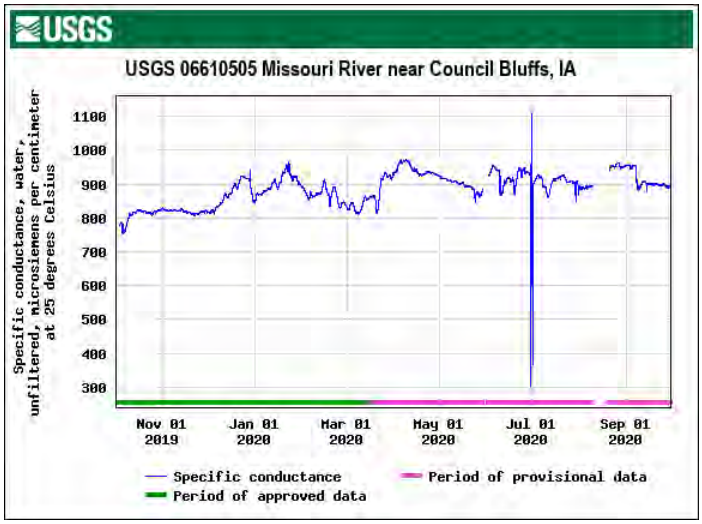


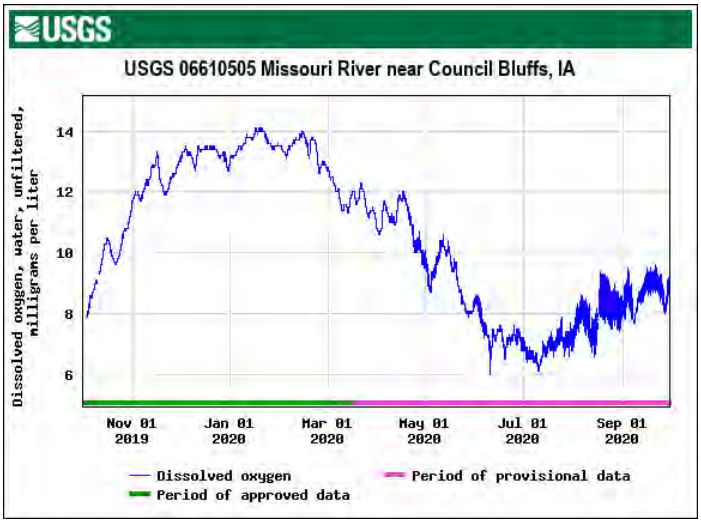


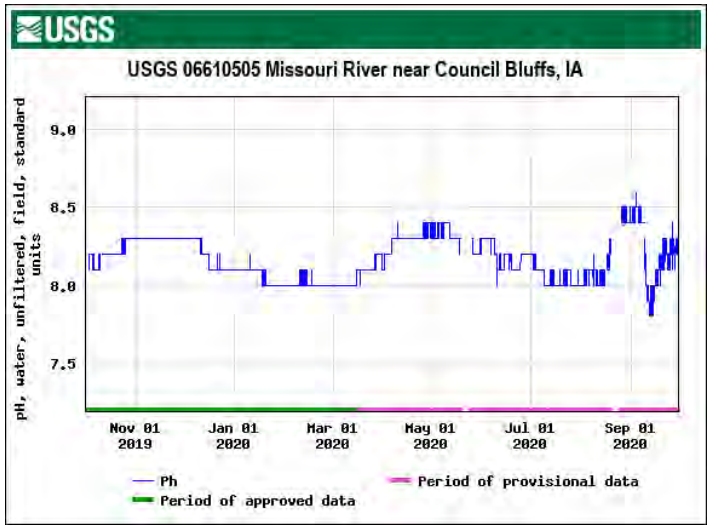


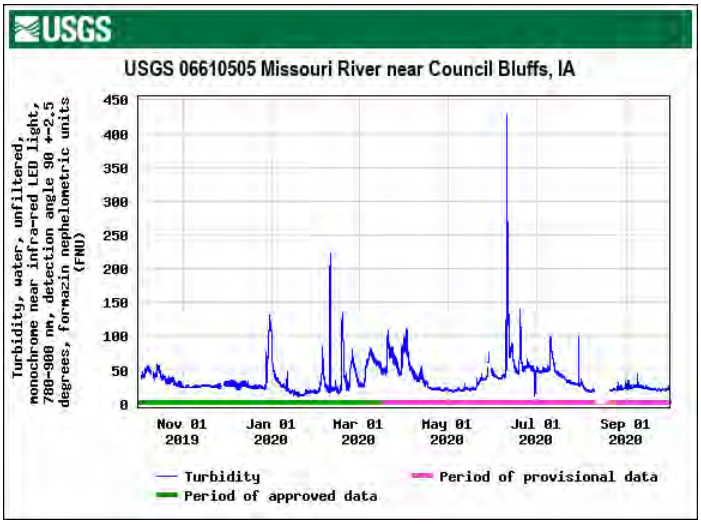
Continuous Water Quality Monitoring Graphs - Site MR-CB











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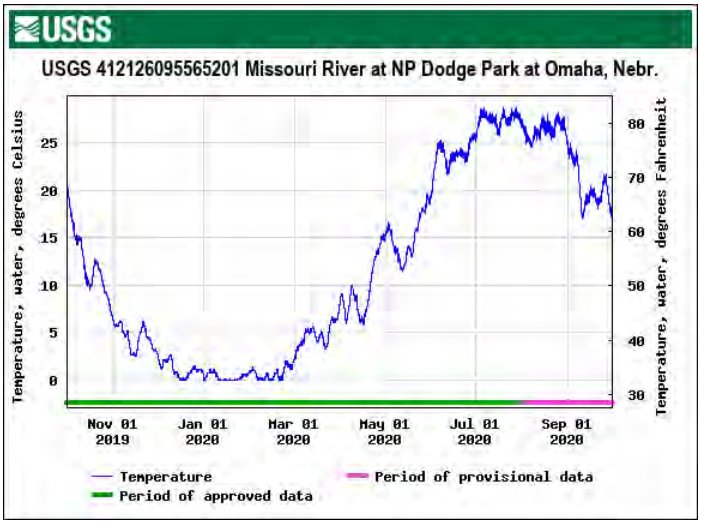
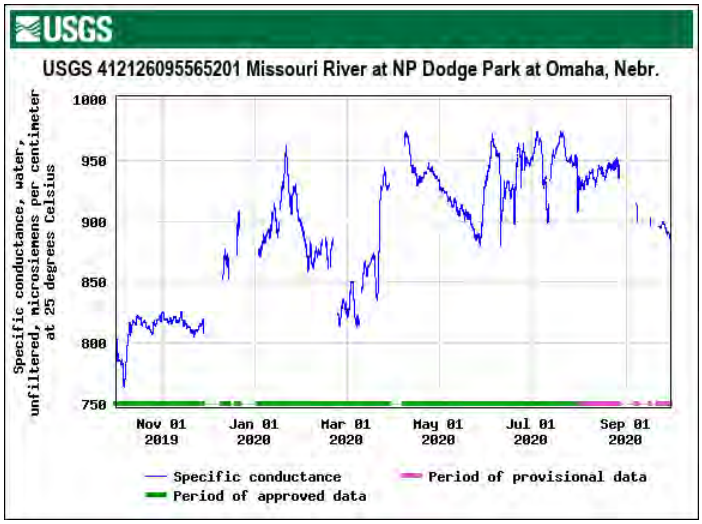
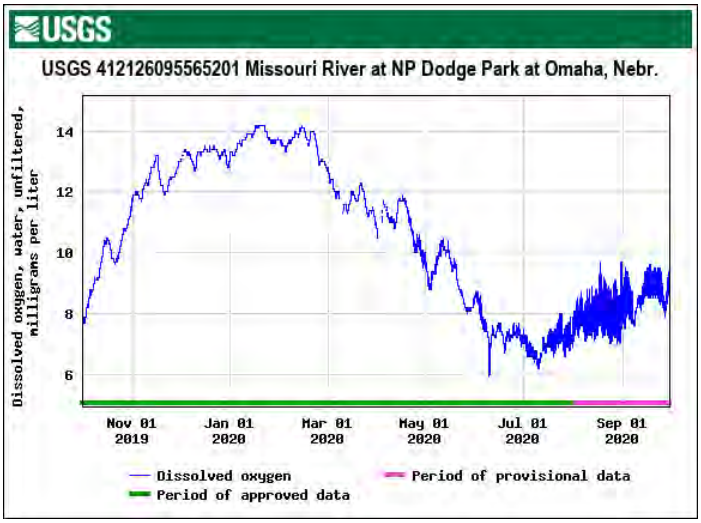
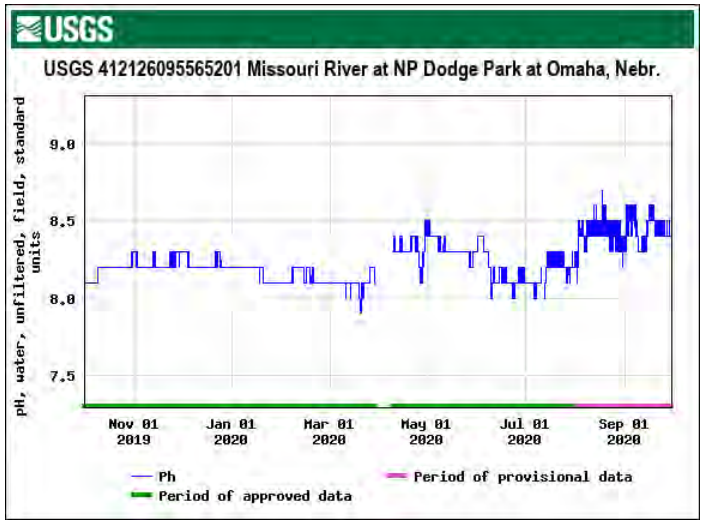
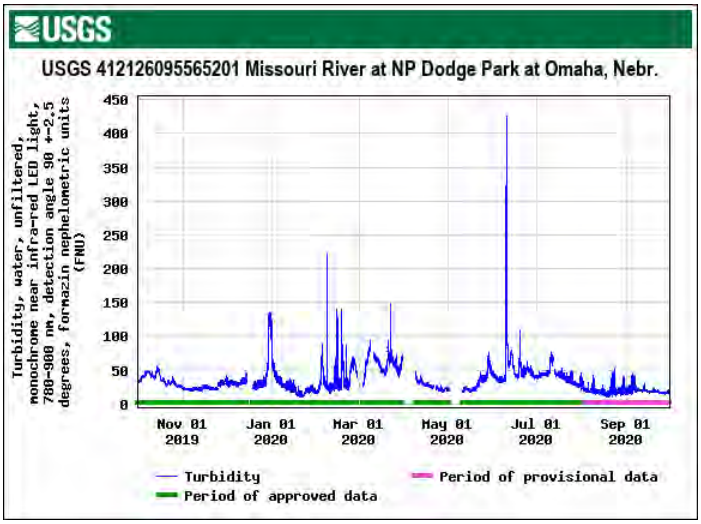


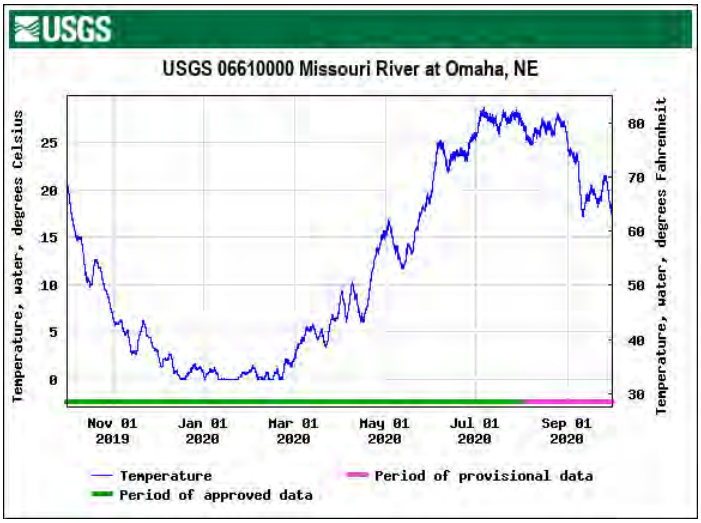


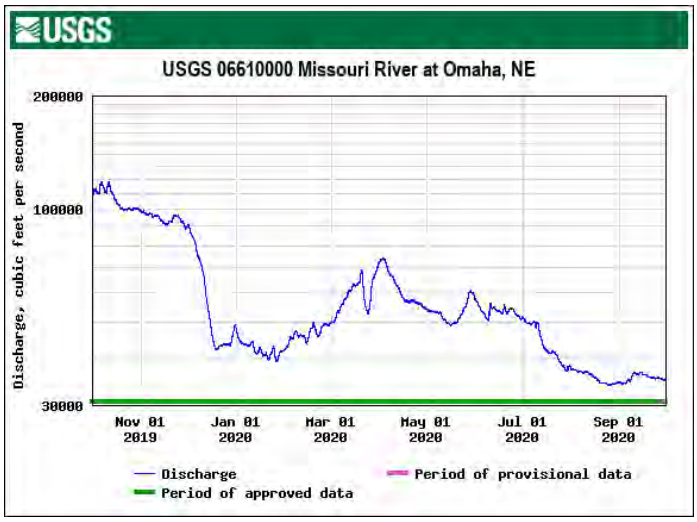


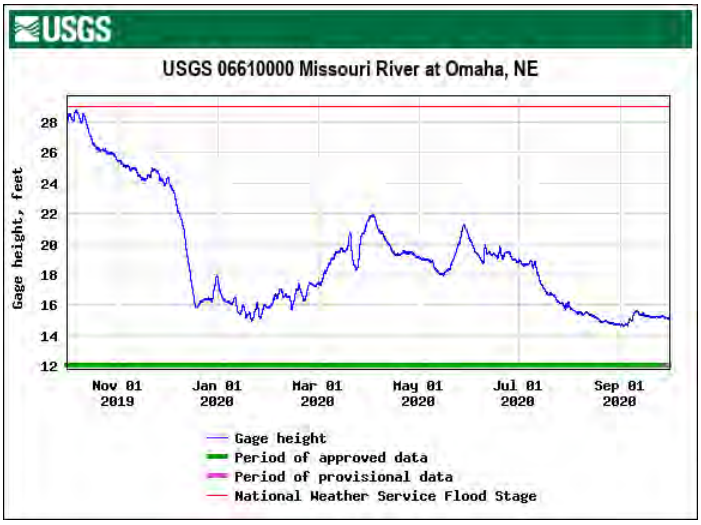




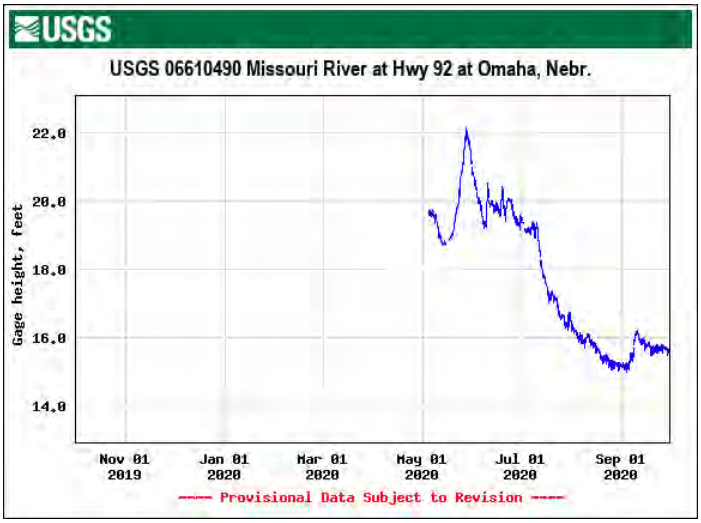
Continuous Water Quality Monitoring Graphs - Site I-480

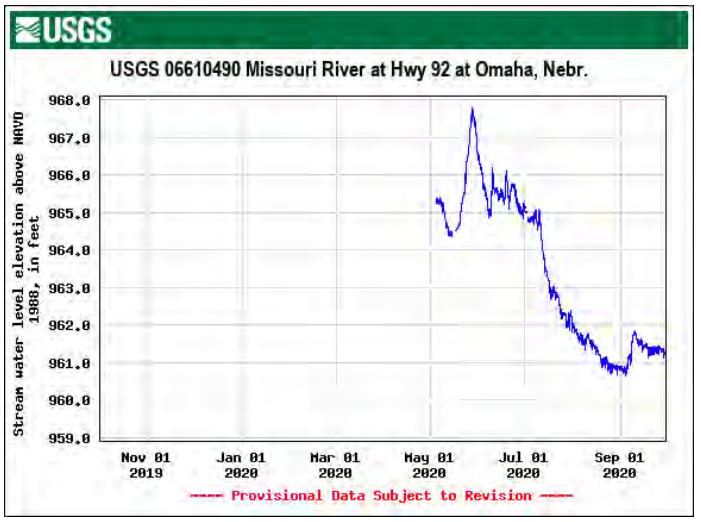






Continuous Water Quality Monitoring Graphs - Site Highway 275





Attachment 6 – Public Information

Postcard Invitation Example from the Saddle Creek Retention Treatment Basin Project

CSO!
Clean Solutions for Omaha

Public Meeting to Discuss Construction Coming to Your Neighborhood

The Saddle Creek Retention Treatment Basin (RTB) is an important part of the Clean Solutions for Omaha program addressing combined sewer overflows. During a wet weather event, this facility will capture as much storm and sanitary water as possible for treatment before it is released into the Little Papillion Creek. This project began planning and design activities in April of 2011 and will be constructed just west of South 64th Avenue.

Map Legend

Project Boundaries and Location of Facility

This meeting will provide an overview of the project, the planned construction and schedule, and introduce the team who will be working at the site. Please join us on Tuesday, May 7 to learn more. Representatives from the City of Omaha, the engineering firm and contractor will be on hand to answer any questions.

CSO! Program Office
1819 Farnam St. Suite 707
Omaha, NE 68183

Construction Update on the CSO **Saddle Creek Retention Treatment Basin**

Tuesday, May 7, 2019

Peter Kiewit Institute
1110 S 67th St., Room 158
6:30 - 7:30 p.m.

Open (free) parking is available in Lot 2, Lot 4 or in the Pacific Street Garage on this date. However, please continue to observe all "Reserved" spaces.

For questions regarding the CSO Program, call the CSO hotline at:
402-341-0235

City of Omaha, Nebraska
Jean Stothert, Mayor

www.omahacso.com

Project Sheet Example from the Saddle Creek Retention Treatment Basin Project

Saddle Creek RTB
Construction Update: May 2019

CSO!
Clean Solutions for Omaha

Rendering of Saddle Creek Retention Treatment Facility

The Saddle Creek Retention Treatment Basin (RTB) facility will provide improved water quality for the Little Papillion Creek.

The Saddle Creek RTB is an important project for Omaha's water quality program called Clean Solutions For Omaha. More than 65 times a year, untreated combined sewage overflows into the Little Papillion Creek from the sewer outfall at the project location. The purpose of the RTB facility is to capture this water and treat it during wet weather. This project began planning and design activities in April of 2011 and will be constructed at 64th and Dupont Streets in Omaha.

The facility will operate during rain events. If it is a small rain event, the combined sewage may be retained and sent to the Papillion Creek Water Resource Recovery Facility (PCWRRF) for treatment. When the rain event exceeds the capacity of the RTB, the combined sewage will be treated, disinfected and then discharged to the creek.

Combined sewage will be diverted from an existing outlet channel to the facility headworks where large materials like cans, rocks, tree branches and floatable solids are removed using a grit pit and mechanical screens. At this point in the process, a disinfectant is added. If the tank fills up, an overflow channel is provided for discharge of treated flow back to the creek.

The RTB will use pumps to empty the facility after a rain event has ended. The dewatering pumps will convey captured combined sewage volume into the downstream Papillion Creek Interceptor sewer for additional treatment at the PCWRRF.

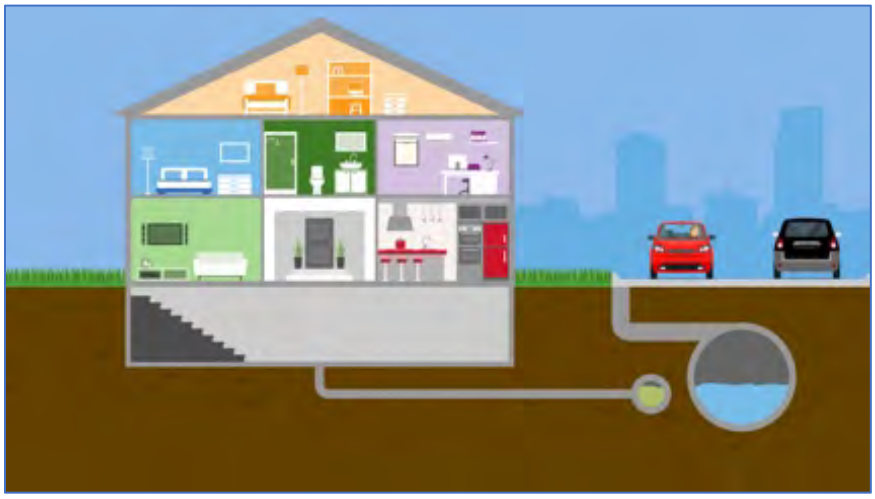
Above ground improvements include a building to house controls, grit and screening equipment, and chemicals. The building, illustrated above, will provide office space for full-time staff, some additional city offices and maintenance access to the facility.

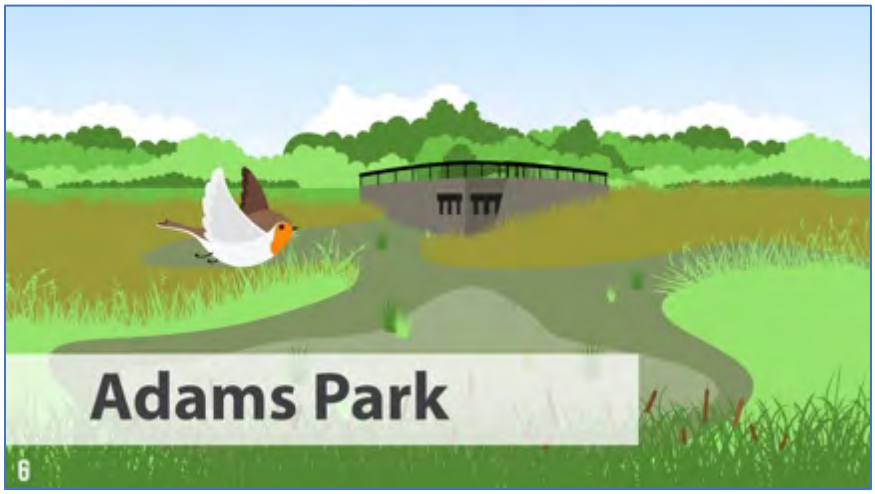
An odor control system will be installed to address the risk of odors being released to the surrounding area. The site will include fencing and lighting for security purposes. Deliveries will occur regularly, but are not expected outside of typical business hours.

This project was originally bid in 2015, and the City elected not to proceed with construction of the facility at that time. To keep the project moving, a site preparation project was identified to remove buried construction and demolition (C&D) debris. This work was completed in June 2016 and reduces the amount of site preparation required for the larger facility project.

OPW 52049-CDMS 05-2019

Animations Created for Public Meetings





CSO! Program Coloring Book Handouts

CSO! Shower Timers

Activity Guide

CSO!
Clean Solutions for Omaha

Cleaning Up Omaha's River and Streams

CSO!

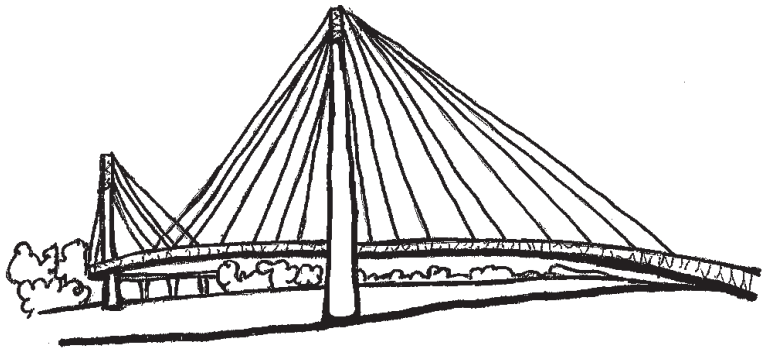
Clean Solutions for Omaha

Fontenelle Park

Fontenelle Park is more than a nature area with trails, fishing and picnic space. The park's lagoon collects stormwater to keep our sewer system from overflowing polluted water into the Missouri River.

Adams Park

Adams Park helps improve our water quality. It collects stormwater when it rains a lot and creates a temporary water pond. Special plants filter the water before it goes into the ground and a man-made structure catches the bottles and trash to keep them out of the sewer system.



Where Does Water Go?

Where do you think water goes when it rains and when you wash your hands or brush your teeth? Whether it spirals down the drain or falls on the street in a rainstorm, water collects in sewer pipes under the ground. Then, it travels through pipes to Omaha's Waste Water Recovery Facility where it is cleaned before it ends up in the Missouri River or the Papillion Creek.

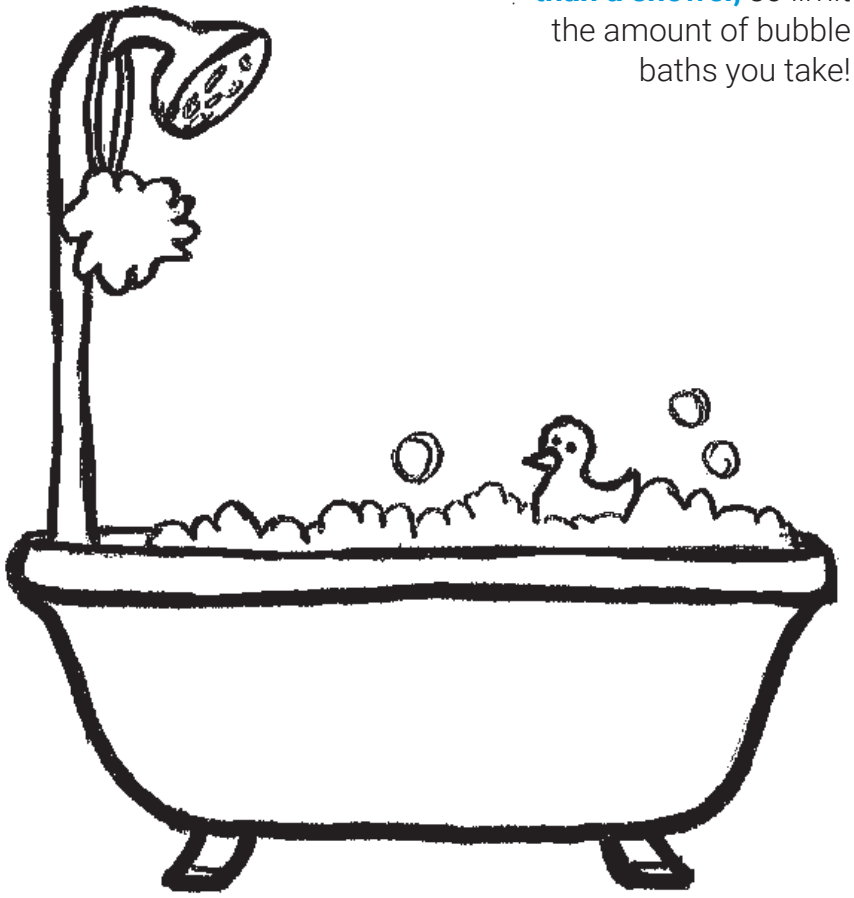
Sometimes it rains so hard that the sewer treatment facility can't keep up. About 50 times each year when this happens, polluted water from bathrooms, laundry, street dirt and other places ends up in the river and creeks. Depending on where you live, some can go into the smaller creeks, too. Some combines with water from inlets (drains) in the street and can't be treated fast enough, so it overflows to the river. Yuck!

The Clean Solutions for Omaha (CSO!) Program is working very hard to prevent this from happening by cleaning the dirty water before it is released back into the river.

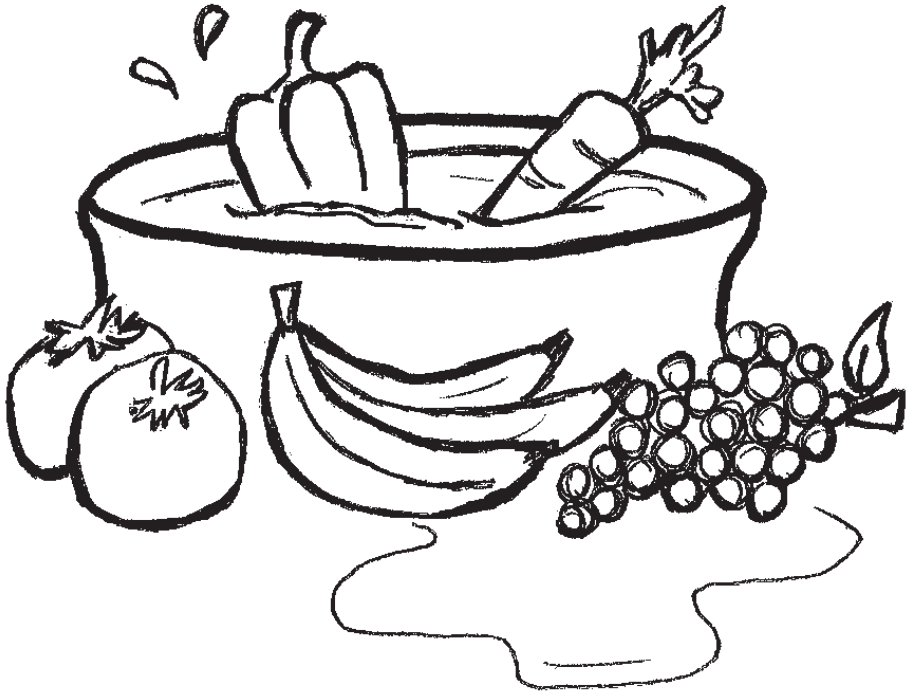
This activity guide will help you discover ways to help keep water out of our sewer system and keep the Missouri River and Papillion Creek as clean as possible.

When you brush your teeth, remember to turn off the sink! Try not to waste water when you're not using it.

A bath uses more water than a shower, so limit the amount of bubble baths you take!



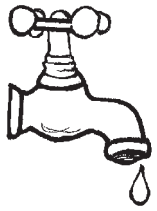
Keep trash out of the sewer systems by using a reusable water bottle. This helps prevent empty plastic water bottles from littering our environment.



Rinse fruits and vegetables in a full sink or a pan of water to reduce the amount of water you use when grabbing a snack to eat.

Water Hunt

Record how many times/how many minutes a day you and your family use these water resources at home!



Restroom (trips)	_____	x 3.5 Gallons (1 flush) = _____
Bath/Shower (minutes)	_____	x 4 Gallons (1 minute) = _____
Brushing Teeth (minutes)	_____	x 1.5 Gallons (1 minute) = _____
Dishwasher (cycles)	_____	x 6 Gallons (1 cycle) = _____
Laundry (loads)	_____	x 40 Gallons (1 load) = _____

Add up the numbers in the right-hand column above to find out how many gallons of water your family uses in a day!

We use _____ gallons of water every day.

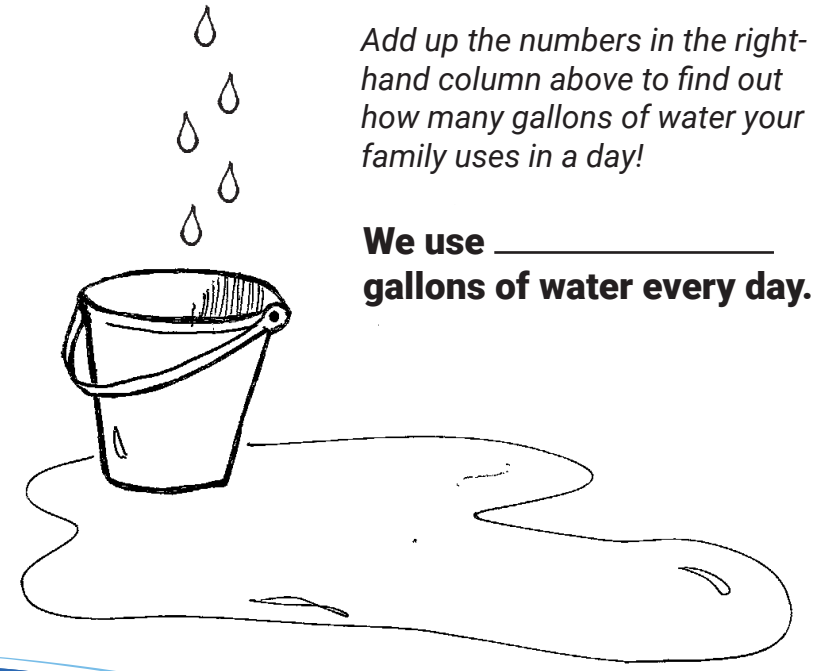
Now let's find out how many gallons of water your family uses in a week, month, or year!

_____ **gallons/day**

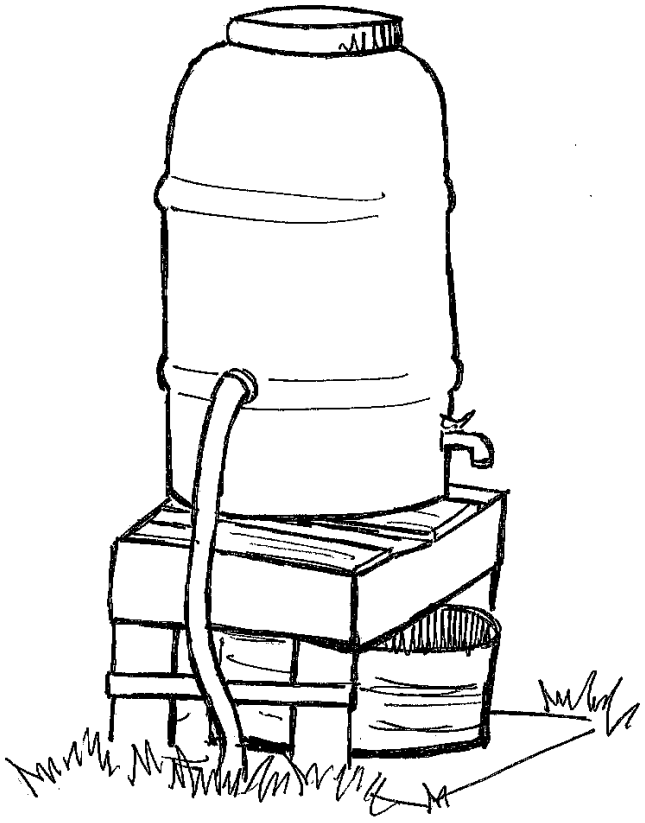
x 7 days = _____ **gallons/week**

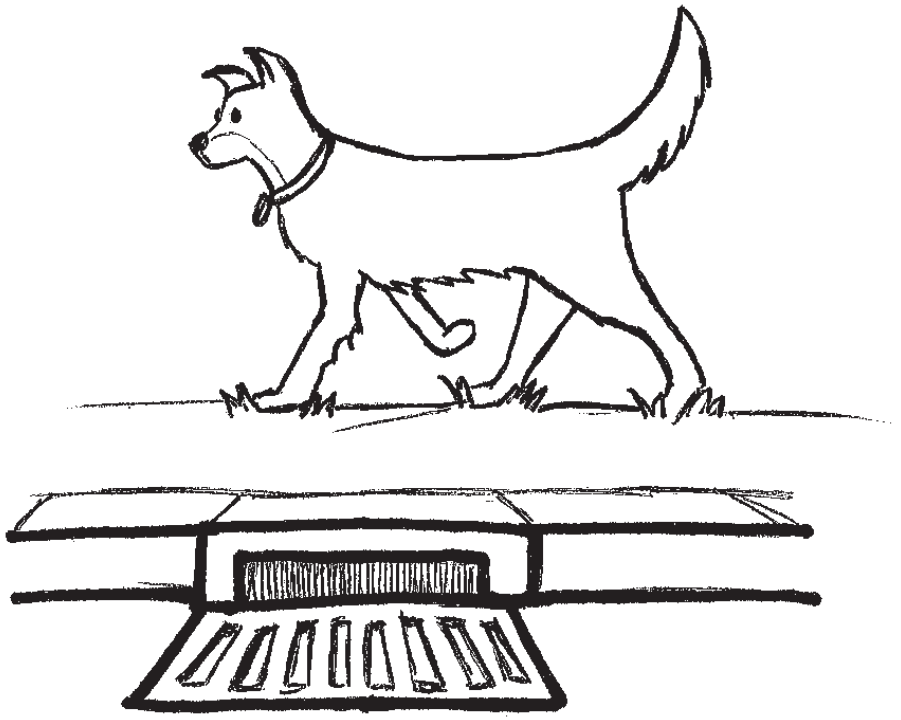
x 30 days = _____ **gallons/month**

x 365 days = _____ **gallons/year**



A rain barrel captures runoff from your roof, helping to spread rainfall over longer periods of time.





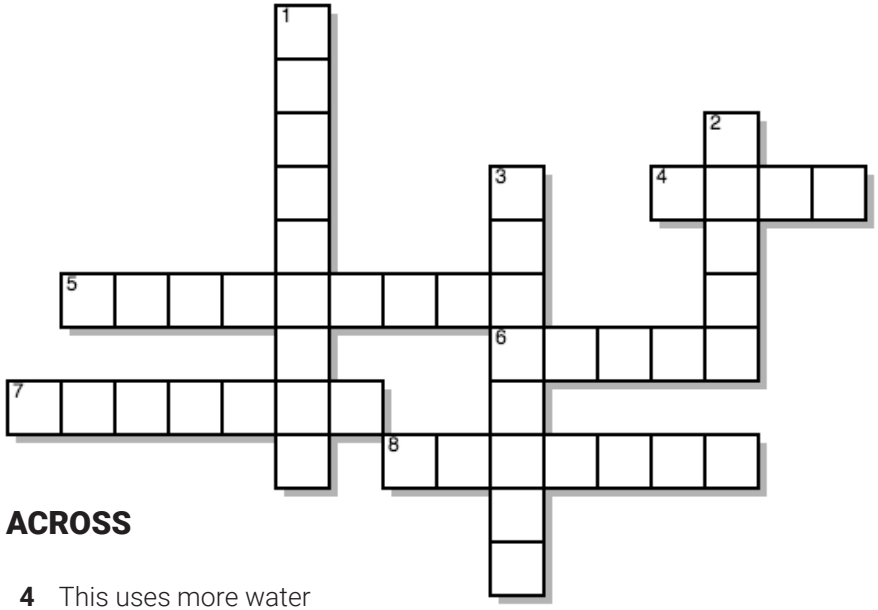
Pick up after your pets! When it rains, it's not just water that goes into the sewer. Along the way, rain picks up pet waste and other items that do not disintegrate. Ick! Now what happens?

Bad things can wash into sewers like trash and lawn chemicals. Clean up after yourself and dispose of chemicals properly so everyone can enjoy Omaha's parks.

Can you draw some people, animals and plants enjoying the clean water at the park?

Put your water-saving knowledge to the test!

Use the clues below to complete this crossword puzzle about CSO! and improving water quality in Omaha's river and streams.



ACROSS

4 This uses more water than a shower.

5 Bad things can wash into sewers like trash, pet waste and ____.

6 This is where water goes after it spirals down the drain.

7 Plants should be watered in the ____ so the plants get the most water before heat causes evaporation.

8 One load of ____ uses 40 gallons of water.

DOWN

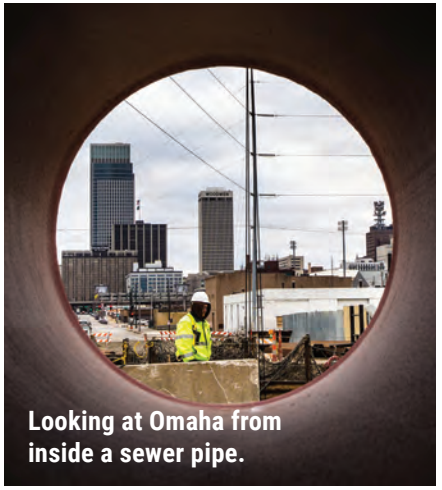
1 CSO! stands for Clean ____ for Omaha.

2 The CSO! program works to improve the ____ quality in our local river and streams.

3 About 50 times a year, dirty wastewater flows into this river.

How can YOU help keep Omaha's water clean?

Draw a picture of one way you've learned to save water.



Looking at Omaha from inside a sewer pipe.

A big sewer pipe to be put in the ground.

Pipes in a treatment facility.

A construction trench to bury the sewer pipe.

CSO!
Clean Solutions for Omaha

OmahaCSO.com

September, 2019

Green Infrastructure Brochure

CSO!
Clean Solutions for Omaha

CSO!
Clean Solutions for Omaha

Green Infrastructure

Reducing combined sewer overflows by restoring and mirroring the natural water cycle

Pictured: The revitalized lake at Spring Lake Park.

City of Omaha, Nebraska
Jean Stothert, Mayor

OmahaCSO.com

02-2020

In Omaha and many other cities, combined sewer overflows are a major cause of water pollution.

When it rains, stormwater drains from roofs, street inlets, storm sewers and other engineered collection systems. Eventually, it finds its way into the combined sewer system, which collects both stormwater and sewage. When the flows into the combined system become more than the pipes or the treatment system can handle, it overflows into the Missouri River and other nearby streams. These overflows contain raw sewage, trash, bacteria, heavy metals and other pollutants that impact water quality.

The City of Omaha is committed to reducing combined sewer overflows and their impact on the Missouri River and area streams. The City has a Long Term Control Plan (LTCP) that carefully lays out a series of Clean Solutions for Omaha (CSO) projects to address water quality concerns. All CSO projects are required to evaluate the inclusion of green infrastructure elements where possible.

Green infrastructure helps reduce overflows, often reduces cost and provides neighborhood amenities. Green infrastructure is a water management approach that protects, restores or mimics the natural water cycle. Green infrastructure is often soil- or vegetation-based and can include tree planting and preservation, installing porous pavements, and restoring natural landscapes.

These examples show how Omaha has effectively implemented green infrastructure projects in the CSO Program.

Fontenelle Park

As part of the Lake James to Fontenelle Project, what used to be a little-used golf course is now a sprawling park with walking trails and picnic areas. The park's **lagoon** was expanded and deepened, creating changes that naturally collect stormwater, keeping it from getting into the combined sewer and causing overflows to the river. **Native vegetation** was planted to increase filtration of rainfall into the ground.

Pictured below: Aerial view of the expanded lagoon.

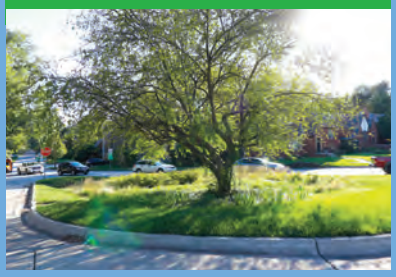
Photo courtesy Ryan L. Baker/Black and Veatch

Elmwood Park

Elmwood Park provided an excellent location for structures called **slotted weirs**, which were built through the park's ravine to reduce stormwater velocity and erosion. The weirs act like terracing, with bioretention gardens located between the vertical drops, to slow the stormwater. Native grasses were planted in the gardens to provide superior natural water absorption.

This strategy took stormwater out of the combined sewer system and diverted it to a natural stream. Not only did it improve water quality, it avoided additional costly sewer separation and neighborhood disturbance in the Aksarben Village CSO Project. This green infrastructure project saved more than $500,000 in overall cost.

Country Club Ave.



Working closely with the neighborhood to address its beautification concerns, the Country Club Sewer Separation project team developed a simple, yet effective, solution to waterflow. A **rain garden** was planted along Country Club Avenue. This garden contains a variety of plants designed to collect runoff, maximize filtration and exit water slowly to the nearest outlet. This reduces peak flows at manageable levels for the combined system. The garden has provided an effective solution, adding beauty and function to the neighborhood.

24th & Lake St.

Bioswales, which are shallow channels with sloping sides, were installed along 24th Street. Bioswales mimic natural water flows to more effectively manage water runoff so it infiltrates rather than entering the combined sewer system. Part of the 26th and Corby Sewer Street Separation project, these bioswales are both functional and attractive.

Spring Lake Park

In the late 1800s, Spring Lake Park was a thriving urban park. In the early 1900s, the lake was drained and became a dumping ground for trash, old appliances and tires. A vocal group of community advocates tried for years to bring the "lake" back to Spring Lake Park.

The CSO Program, which had included construction of a lake in the original 2009 LTCP, collaborated with the neighborhood to address its aspirations. As planning and design for the Missouri Avenue/ Spring Lake Park CSO project developed, the beautification of a neighborhood evolved along with a major water quality improvement project. Through the CSO Program, grants from Nebraska Environmental trust and collaboration with Omaha's Park Department, the **lake, wetlands and a broad range of green elements** transformed the area.

The incorporation of green infrastructure elements expanded the park's habitat, fishing and enjoyment, while leading to improved water quality. The project reduced the amount of gray infrastructure and resulted in a savings of $5 million.

Adams Park

An outgrowth of the North Omaha Villages Revitalization Plan, this project renewed focus on Adams Park and other areas in the community as a catalyst for urban growth and revitalization. The park's **wetlands and detention area** were designed to provide maximum practical stormwater storage to reduce combined sewer overflows, while adding community benefits and beautification elements to the park.

Pictured here: Adams Park wetlands and stormwater detention.

Green Infrastructure Word Match Activity

CSO!
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CSO!
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Green Infrastructure Word Match

Draw lines to connect the CSO term on the left with the correct description on the right. All of the answers can be found in the attached Green Infrastructure brochure.

LEGEND

Part 1: Controls

Green Infrastructure	A water management approach that protects, restores or mimics the natural water cycle.
Slotted Weirs	Structures that act like terracing, with bioretention gardens located between the vertical drops, to slow the stormwater.
Rain Garden	Contains a variety of plants designed to collect runoff, maximize filtration and exit water slowly to the nearest outlet.
Bioswales	Shallow channels with sloping sides, that mimic natural water flows to more effectively manage water runoff so it infiltrates rather than entering the combined sewer system.
Native Vegetation	Plants indigenous to a given area in geologic time.
Wetlands and Detention Areas	Are designed to provide maximum practical stormwater storage to reduce combined sewer overflows, while adding community benefits and beautification to parks.

Part 2: Locations

Fontenelle Park	Has a lagoon that was expanded and deepened, creating changes that naturally collect stormwater, reducing the rate of flow that gets into the combined sewer, thereby reducing the rate of overflow at at the downstream diversions to the river.
Elmwood Park	Slotted weirs were built through this park's ravine to reduce stormwater velocity and erosion.
Country Club Avenue	The CSO Program worked with this neighborhood and added a rain garden to reduce peak flows.
Spring Lake Park	Through the CSO Program, grants from Nebraska Environmental trust and collaboration with Omaha's Park Department, the lake, wetlands and a broad range of green elements transformed this area.
24th and Lake	Bioswales were installed in this area.
Adams Park	This North Omaha Park project acted as a catalyst for urban growth and revitalization and includes wetlands and detention areas.

CSO!
Clean Solutions for Omaha

Green Infrastructure Word Match

Draw lines to connect the CSO term on the left with the correct description on the right. All of the answers can be found in the attached Green Infrastructure brochure.

Part 1: Controls

Green Infrastructure	Shallow channels with sloping sides, that mimic natural water flows to more effectively manage water runoff so it infiltrates rather than entering the combined sewer system.
Slotted Weirs	Plants indigenous to a given area in geologic time.
Rain Garden	Are designed to provide maximum practical stormwater storage to reduce combined sewer overflows, while adding community benefits and beautification to parks.
Bioswales	Contains a variety of plants designed to collect runoff, maximize filtration and exit water slowly to the nearest outlet.
Native Vegetation	A water management approach that protects, restores or mimics the natural water cycle.
Wetlands and Detention Areas	Structures that act like terracing, with bioretention gardens located between the vertical drops, to slow the stormwater.

Part 2: Locations

Fontenelle Park	Through the CSO Program, grants from Nebraska Environmental trust and collaboration with Omaha's Park Department, the lake, wetlands and a broad range of green elements transformed this area.
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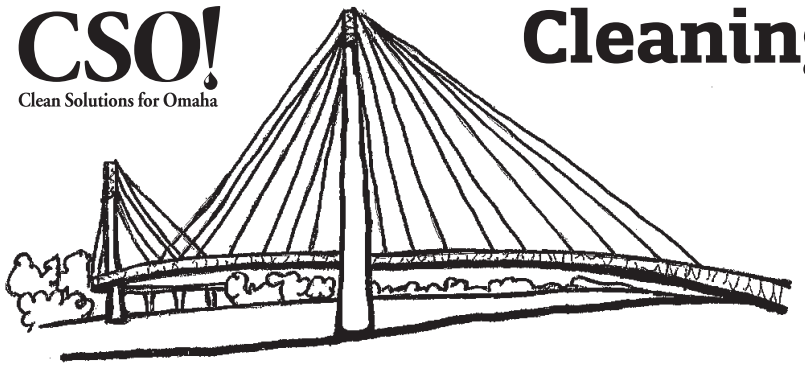
24th and Lake	The CSO Program worked with this neighborhood and added a rain garden to reduce peak flows.
Elmwood Park	Bioswales were installed in this area.

Activity Sheet

CSO!
Clean Solutions for Omaha

CSO!
Clean Solutions for Omaha

Cleaning Up Omaha's River and Streams

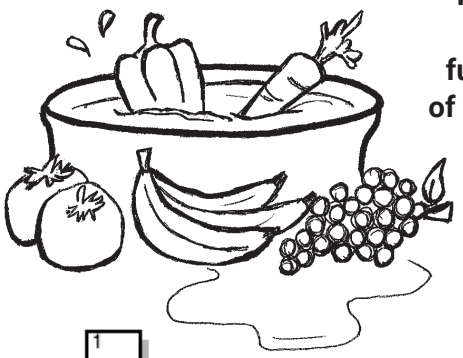


Where Does Water Go?

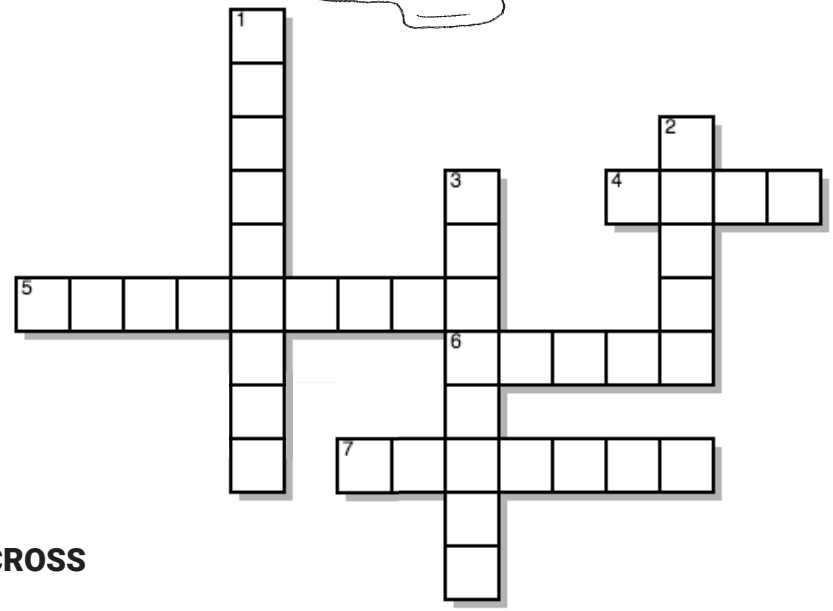
Where do you think water goes when it rains and when you wash your hands or brush your teeth? Whether it spirals down the drain or falls on the street in a rainstorm, water collects in sewer pipes under the ground. Then, it travels through pipes to Omaha's Waste Water Recovery Facility where it is cleaned before it ends up in the Missouri River or the Papillion Creek.

Sometimes it rains so hard that the sewer treatment facility can't keep up. About 50 times each year when this happens, polluted water from bathrooms, laundry, street dirt and other places ends up in the river and creeks. Depending on where you live, some can go into the smaller creeks, too. Some combines with water from inlets (drains) in the street and can't be treated fast enough, so it overflows to the river. Yuck!

The Clean Solutions for Omaha (CSO!) Program is working very hard to prevent this from happening by cleaning the dirty water before it is released back into the river.



Rinse fruits and vegetables in a full sink or a pan of water to reduce the amount of water you use when grabbing a snack to eat.



ACROSS

4 This uses more water than a shower.

5 Bad things can wash into sewers like trash, pet waste and ____.

6 This is where water goes after it spirals down the drain.

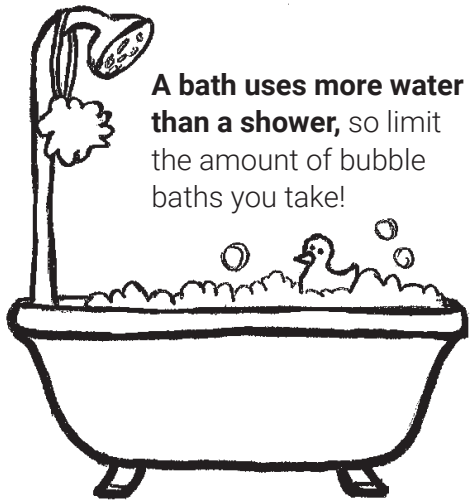
7 One load of ____ uses 40 gallons of water.

DOWN

1 CSO! stands for Clean ____ for Omaha.

2 The CSO! program works to improve the ____ quality in our local river and streams.

3 About 50 times a year, dirty wastewater flows into this river.



A bath uses more water than a shower, so limit the amount of bubble baths you take!

A rain barrel captures runoff from your roof, helping to spread rainfall over longer periods of time.

When you brush your teeth, remember to turn off the sink! Try not to waste water when you're not using it.

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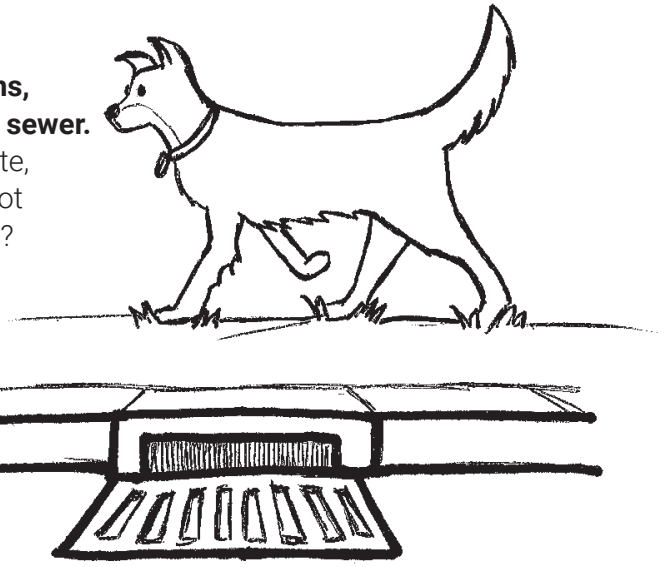
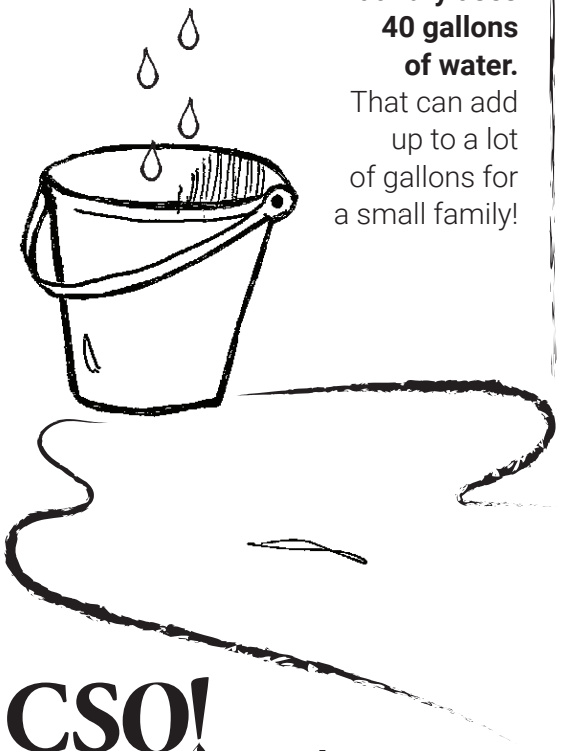


How can YOU help keep Omaha's water clean?

Draw a picture of one way you've learned to save water.

One load of laundry uses 40 gallons of water. That can add up to a lot of gallons for a small family!



Keep trash out of the sewer systems by using a reusable water bottle. This helps prevent empty plastic water bottles from littering our environment.

CSO!
Clean Solutions for Omaha

OmahaCSO.com

March, 2020

Library Poster

CSO!
Clean Solutions for Omaha

CSO!
Clean Solutions for Omaha

Hotline: 402-341-0235
OmahaCSO.com

Improving Water Quality in Our River and Streams

Green Infrastructure

Natural and engineered systems mimic nature to manage urban stormwater and improve water quality to rivers and streams.

Weirs at Elmwood Park

Fontenelle Park

Spring Lake Park

Cost-Effective Solutions

The CSO program implements multiple technologies to maximize affordable effectiveness. Some solutions create beauty and recreation as a benefit to improving water quality.

Treatment Facilities

Lift Stations

Targeted Sewer Separations

New pipes are installed to separate the stormwater from sanitary sewer pipes, releasing stormwater to the waterways and directing sanitary waste to the treatment plants.

Pictured: Adams Park wetlands and stormwater detention.

Fontenelle Park
Student Tour Activity Sheet

CSO!
Clean Solutions for Omaha

Fontenelle Park Tour

Write the purpose of each feature of the park in the space provided next to the photos.

Name _____

Class Period _____

Overlook

Trail / Maintenance Path

Fishing Overlook

Retaining Walls

Sediment Forebay

Screening Structure

CSO!
Clean Solutions for Omaha

Imprinted Drive

Fishing Landing

Energy Dissipation Bay

Wetland Bay

Ducks

Outlet Structure

CSO!
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E-Newsletters

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E-mail Campaign Issues

Fall E-Newsletter 2020 *Delivered 11-11-20*
https://cso.createsend1.com/t/ViewEmail/r/7125506A058813502540EF23F30FEDED

Summer E-Newsletter 2020 *Delivered 7-14-20*
https://cso.createsend1.com/t/ViewEmail/r/3AC3B068149B2DA52540EF23F30FEDED

Spring E-Newsletter 2020 *Delivered 4-30-20*
https://cso.createsend1.com/t/ViewEmail/r/504DEBA485089F872540EF23F30FEDED

Fall/Winter E-Newsletter 2019 *Delivered 12-2-19*
https://cso.createsend1.com/t/ViewEmail/r/5362478A36A473B02540EF23F30FEDED

Youth E-Learning

Youth E-Learning 1 *Delivered 6-23-20*
https://cso.createsend1.com/t/ViewEmail/r/A2FB0CF24DC2522A2540EF23F30FEDED

Youth E-Learning 2 *Delivered 9-24-20*
https://cso.createsend1.com/t/ViewEmail/r/43567E0636AA36A62540EF23F30FEDED

Storm Water Solutions Magazine Cover Story

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FEBRUARY 2020 | WWW.ESTORMWATER.COM

SWS

STORM WATER SOLUTIONS

THE STORM WATER AND EROSION CONTROL RESOURCE

RESTRICTING RUNOFF

The renovation of a local park helps reduce sewage overflow 18

IN THIS ISSUE:

SCRANTON GILLETTE COMMUNICATIONS

RUNOFF RESTORATION

A local park was restored in Nebraska to aid in reducing the overflow of raw sewage

In Omaha, Nebraska, and in many cities across the country, storm water runoff is a major cause of water pollution. The storm water runoff carries trash, bacteria, sediment, heavy metals and other pollutants. Higher flows, resulting from heavy rains, can also cause erosion and flooding, damaging habitat and property. Raw sewage ending up in local bodies of water is also a concern.

The U.S. EPA, in accordance with the Combined Sewer Overflow Policy of the Clean Water Act, requires more than 700 cities across the U.S., –who like Omaha have combined sewer systems –to develop plans to reduce the impacts of the discharges from these systems into nearby rivers and streams. More than 40 square miles of the eastern part of Omaha is served by an underground storm and sanitary sewer system that includes combined sewers, which during periods of heavy rain, leads to waste ending up in local bodies of water. In fact, in a typical year with average precipitation, raw sewage mixed with storm water from the combined sewer system flows into the Missouri River and Papillion Creek more than 50 times.

In 2006, the city of Omaha launched a comprehensive program, called Clean Solutions for Omaha (CSO). The program's goal is to capture and/or treat a minimum of 85% of the combined sewage volume generated from the combined sewer system. At this time the program includes about 84 construction projects, all required to be completed by 2037.

Similar to other communities, the city has included various forms of green infrastructure to help reduce the peaks and volume of storm water into the combined sewer system. This water management approach mimics some instances of the natural system by encouraging infiltration of the storm water.

Green infrastructure, when implemented as a part of a larger program, can be effective, economical and provide enhancements that improve quality of life. It is important to manage storm water at its source to make sure everything possible is done to maintain the natural flow of storm water the way nature intended.

As planning began for sewer separation in the southern part of the city, it also collaborated with other agencies to revitalize a historic Omaha park. Established in the 1870s, Spring Lake Park was a thriving, beautiful park in South Omaha for many years. The park originally contained three small ponds, but in the 1930s, the ponds were drained. In 1939, a plan was developed to renovate the park, but the work was not fully implemented due to World War II.




Prior to its renovation, the park was a dumping ground for trash and yard waste. The pond now holds storm water runoff from areas where sewer separation has already been completed and has specially designed filters at inflow points.

In the 1990s, another grassroots community effort was made to renovate the park. The project included restoring the ponds, developing trails through the park and creating a nature learning center. Unfortunately, the plan was never carried forward due to the lack of funding.

Over time, the park became a dumping ground for appliances, trash and yard waste. It was unsightly and not a safe place for the community and neighbors to enjoy what was once a beautiful park.

In 2007, the city of Omaha was looking for ways to reduce the overflow of raw sewage to area rivers and streams with minimal disruption to homes and businesses in the area surrounding Spring Lake Park. Neighbors were also passionate about revitalizing the park. For years, Janet Bonet has been a strong neighborhood and park advocate and also president of the Spring Lake Park team community group.

"We wanted to put the lake back in the Spring Lake Park as part of the CSO planning for the project," Bonet said.

CSO project stakeholders carefully planned, prioritized and modified a construction plan that honored Spring Lake Park's history. Several meetings were held, a hotline was established, a website was launched and many conversations were conducted.

CSO Program Compliance Coordinator Emily Holtzclaw worked on the project from the conceptual planning stage through the design and construction stage, which included a number of public outreach events.

"We took input from the neighbors and area experts to come up with a design that supported both the hydraulic functions of the project and made the park a place people could enjoy," Holtzclaw said. "Continued coordination was required with stakeholders from the public, regulators, various departments in the city, engineers and contractors."

The lake portion of the Spring Lake Park project was completed in the spring of 2017. Ensuring that the water quality of the lake could support fish was an important aspect of the project, as the pond is now stocked with bluegill, bass and catfish. The wildlife habitat is diverse and plentiful, pollinator zones bloom, and residents have reclaimed the park.

"The water draws mallards and wood ducks, turtles and frogs, and the dragonflies and butterflies make my heart sing," Bonet said. "The park also includes two beautiful fountains donated by a neighbor of the park. Now families, dog walkers, joggers and moms like me will be able to enjoy the park for years to come."

The city is currently working to separate the combined sewers in the nearby neighborhoods downstream of the pond. The new pond holds the storm water runoff from areas where sewer separation has already been completed and has specially designed filters at inflow points, which allow pollutants and sediment to be removed before entering the lake. This project is an important element of the city's plan to reduce the impact of waste ending up in the Missouri River.

"Thanks to this project, overall water quality in the area has improved," Nelson said.

The uniqueness of the project saved the city money. The green infrastructure reduced the need for the construction of a new, larger diameter pipe system downstream, which saved the city approximately $5 million.

Green infrastructure elements reduced the need for construction of a new pipe system downstream, which saved the city money.

The Spring Lake Park project, which included the construction of the lake and amenities, cost $10 million, with a large portion coming from bonds through sewer user fees charged to all residents in the Omaha metro area. The Nebraska Environmental Trust also provided $1.3 million in grant money.

Representatives from the Nebraska Environmental Trust; the city of Omaha; Omaha Parks, Recreation and Public Property Department; Papio-Missouri River Natural Resources District; Keep Omaha Beautiful; Spring Lake Park Neighborhood Association; Spring Lake Park team community group, and the CSO Program management team all played an integral part in restoring the park.

"I was born and raised across the street from this park. Every time I think of the transformation of this park, I get teary-eyed," Bonet said. "The collaborative and innovative way this project was brought to fruition is a model for other communities addressing similar water issues. We have our park back, and we are being good stewards of the environment. It is a win-win situation for all."

Jim Theiler is assistant director of Environmental Services for the City of Omaha Public Works. Theiler can be reached at james.theiler@cityofomaha.org.

Project Team Public Outreach Guidelines

CSO!
Clean Solutions for Omaha

Project Team Public Outreach Guidelines

FOR CSO PROJECTS

AS OF SEPTEMBER 4, 2020

CSO!
Clean Solutions for Omaha

Overview

Community acceptance is one of the three primary goals of Clean Solutions for Omaha (CSO!) Long Term Control Plan (LTCP) implementation, along with Regulatory Compliance and Affordability. Public outreach is a key process for gaining community acceptance.

The Long Term Control Plan includes a variety of CSO control projects, ranging from sewer separation to high-rate treatment facilities, all implemented under the oversight of the City and Program Management Team. The public outreach element, also termed public involvement or public engagement, is aligned with CSO Program's communications strategies and its community enhancement efforts. Public outreach is also required by the CSO permit.

The goal is to ensure consistent communication and strategies across both the Program and Projects. This guidance document will assist Project Teams with the implementation of their public outreach responsibilities as well as clarify the Program Public Outreach Facilitator's interaction with the Projects.

Table of Contents

Program Public Outreach Facilitator (PPOF)

Points of Contact for the PPOF and Team:

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The PPOF and team for Clean Solutions for Omaha (CSO!) help ensure that the Program is meeting the goal of Community Acceptance. They are a key resource for Projects and Project Team Outreach Facilitators.

The PPOF will:

- Manage the CSO! brand
- Review and offer input on each Project's public outreach plan
- Review and approve public-facing communications
- Monitor consistent implementation of public information
- Review and monitor implementation of public and stakeholder meetings
- Manage all news media interaction
- Provide resources to complete public outreach
- Provide access and assistance on the **CSO Brand Board**

This guidance document provides a "playbook" for effective outreach during the Project's design and construction phases.

Guidance for CSO
Project Team Outreach Facilitator (PTOF)

Public outreach is an important aspect of the CSO Program. As a long-term infrastructure initiative by the City of Omaha, the impact of the Program will be felt directly or indirectly by every resident who uses the regional sewer system. Local, elected officials, as well as state and federal regulators, are highly involved.

As the Project Team Outreach Facilitator (PTOF), it is your responsibility to proactively plan, communicate to and engage the community in the specific area impacted by your project.

The outreach goals are to educate stakeholders, build confidence in the Project work, promote Project benefits, listen and respond to questions and proactively anticipate and respond to issues.

Each project is unique. It has unique goals, geography, target audiences, solution strategies, timeline and budget. This guidance is intended to outline actions necessary to consider based on the Project and its characteristics. The PTOF should be considered a key member of the Project's team and have planned briefings with the Project Manager and/or attend Project progress meetings as appropriate in order to proactively identify outreach needs and public information.

The Program Public Outreach Facilitator (PPOF) provides guidance, resources and reviews and approves all public-facing communications. The PTOF focuses on the goals and communication needs of the Project.

Project Points of Contact

Provide Project Team contacts to PPOF
Provide Project Outreach Facilitator Contact to PPOF

Guidelines for Selecting a **Public Outreach Facilitator**

Community acceptance is one of the three CSO Program goals. Public outreach is the strategy for reaching the community acceptance goal. Just organizing a public meeting is not enough to meet the expectations of public outreach for the CSO Program. This public outreach guidance document will assist you with developing and executing a plan that fits your CSO Project and meets the needs of the Program.

To accomplish effective public outreach, you should also consider the qualifications of the individual or team who will be responsible. The person or team proposed for this role is subject to approval by the Program Management Team. Your public outreach facilitator should have as many of these attributes/skills as possible:

- Be experienced and good at communicating with external audiences
- Seeking the most value from stakeholders input, have experience organizing and facilitating public meetings, managing disruptive, dominating or upset individuals, understanding how to include differing opinions
- Demonstrate strong verbal communications to articulate project benefits and information in one-on-one meetings or in public situations
- Have strong writing skills for responding to email messages and for developing handouts, website content and other materials
- Be a patient listener
- Enjoy building trusted relationships with neighbors, community members, and the project team
- Understand how to explain complicated ideas or information without using technical language or relying on acronyms

You may also need your facilitator or team to have access to a graphics specialist to help develop meeting handouts, community information, and visuals (Posters, PowerPoint) to create interest at the public meetings.

Planning Phase

Planning Guidance

Planning for the public outreach effort during the various phases of the project

SCOPE AND FEE PLANNING

- Meet with the PPOF to discuss the project and the plan phases as part of the scope and fee development.
- Identify public outreach activities to be included in the scope of work

THE PROJECT PUBLIC OUTREACH PLAN

- Develop a public outreach plan, which includes but is not limited to:
  - Project background
  - Public outreach objectives
  - Type of public outreach

    *(Use the **iap2 spectrum in the appendix** to determine if you want to Inform, Consult, Involve, Collaborate or Empower at your meeting)*
  - Public outreach tactics
  - Stakeholder list to include: neighborhoods, businesses, elected officials and other stakeholders based on the project boundaries
  - Coordinate stakeholder lists with the PPOF to identify lists that might overlap with other Projects to avoid confusion or duplication
  - Proposed public meetings
  - Proposed stakeholder meetings
  - Proposed project materials
  - Implementation timelines
- When neighborhoods and stakeholders overlap, coordinate with other projects to avoid meeting fatigue or conflict

Action Items

- Submit the Public Outreach Plan to the Project Manager and Program Public Outreach Facilitator, City Project Manager, and PMT Project Manager
- Develop a project database spreadsheet representative of the neighborhoods, key neighborhood leaders, businesses and other stakeholders that includes, names, addresses, phone numbers and emails
- Build a calendar/timeline of anticipated public interaction based on the Projects' proposed timeline
- Request a new GIS* database prior to each use if more than a year has transpired since its last use
- Sort the database for duplicate addresses/owners and revise as appropriate
- A complete meeting plan guide can be found on pages 16-19

**Geographic Information System (GIS) which can provide name and address information for land parcels*

Resources

- Purchase a mail or email list by the Project Team
- **https://dogis.org/omahana** has a free list of all neighborhood associations and alliances and their leadership, as well as a downloadable parcel database
- Program Public Outreach Team is available for assistance
- A list of business addresses and business owners is available through the GIS program and the Secretary of State's office
- Branding and templates for materials available **on the CSO Brand Board:** PowerPoint templates, mailers, newsletters and project sheets

Public Meeting Milestones/Formats

Public meetings are more formal events for larger audiences that include a presentation, while open houses are informal events for smaller groups designed for one-on-one interaction.

Coordinating meetings with neighborhood association meetings is often a good approach.

REQUIRED:

- Project Kickoff Public Meeting after notice to proceed (NTP)
- Design public meetings or open house-style meetings at these milestones based on the size and detail of the Project:
  - 30% milestone
  - 60% milestone*
  - 90% milestone *(if needed)*
  - Pre-construction

* 60% Milestone Action Items

- Project team notifies the PPOF of an interested person for community enhancements, and the PPOF, along with Project Team and PMT/City, develops a plan to engage the community champion
- The PM, PTOF and PPOF utilize the Community Enhancements process to help the neighborhood create a plan.

If community enhancements are appropriate, the Project Team would identify, by the 60% meeting, interested parties who would champion community enhancement neighborhood coordination.

Design Phase

Design Phase Guidance

During project scope development, use this list as a guide for developing a public outreach plan

- Determine appropriate number and timing for public meetings *(see specific guidance for public meetings)*
- Determine need and timing for special stakeholder outreach *(small groups or one-on-one interaction)*
- Develop touchpoints with the PPOF for Project updates
- Request the project description and project boundary map from the PMT and PPOF
- Communicate with the public prior to field investigations and use Program signage
- Determine if a sewer backup questionnaire is appropriate and should be mailed
- Prepare public meeting presentations and materials with the PPOF
- Develop any media notifications or story opportunities and provide to the PPOF
- Implement the plan actions approved by the PPOF, and designated PMT and City contacts
- Update the Public Outreach Plan semi-annually or as appropriate
- Update the Public Outreach Facilitator of any public meetings or activities
- Assist the Project Team to identify and establish key advocate relationships in the Project area

Action Items

- Complete the public meeting information form and submit to the PPOF, Project Manager, PMT, and City Project Manager
- Create a doorhanger or area yard signs to notify neighborhoods of meetings or field investigations as needed
- Notify stakeholders in advance if you will be on their property or if there is an impact to their property
- Request the project description and map from the PMT and PPOF. These will be posted to the website. These are typically available for project design kick-off and updated as appropriate at 30%, 60%, 90% (before bid) and pre-construction
- Adapt the template for the cover letter on the sewer backup questionnaire
- Review the public meeting guidance for preparation of all meetings
- Review the Program Crisis Communications Protocol on the Portal
- Identify community champions for the Project area
- PTOF will maintain the contact list for attendees at public and stakeholder meetings and provide copies to the Project Team for distribution

Resources

- Templates for doorhangers and signs available **on the CSO Brand Board**
- Templates for project descriptions, brand/logo usage, Program slides and slide templates available **on the CSO Brand Board**
- Neighborhood resources/names available at **https://dogis.org/omahana**
- Business contact information assistance through the Omaha Chamber of Commerce

Project Kickoff Public Meeting

Meeting Description

- Project Team will conduct a public meeting with the stakeholders in/near the project boundaries
  - Open houses with or without a presentation
  - Inform and educate about the need and benefits of the project
  - Encourage feedback from the stakeholders
- The Project Team will identify key stakeholders
- The PTOF will assist with coordinating meeting attendee schedules
- Number of Project and Program attendees should be limited to those necessary to effectively carry out the meeting
- The PTOF will coordinate all logistics, handouts, agenda, sign-in sheets or materials necessary for a successful meeting
- The Project Team will provide comment forms and responses to questions

Key Invitees

REQUIRED

- Project Team Manager
- Project Team Outreach Facilitator
- Key Project Team Members
- Program Public Outreach Facilitator
- City Project Manager
- PMT Coordinator
- PMT Compliance Coordinator

OPTIONAL

- City Council Member
- City Right-of-way Representative *(if applicable)*
- City Traffic Representative *(if applicable)*
- Utility Company Representatives *(if appropriate)*
- City or PMT person to present any Program specific information or presentation (CSO 101)
- Meeting invites should also be extended to additional individuals identified by the Project Team

Meeting Content

Representatives of the City, Project Team and PMT will be introduced. During the meeting, the following will be discussed:

- Project purpose and scope, including the project's role as part of the CSO Program or RNC Program
- Key Program/Project contacts *(provide contact list)*
- Tentative Project design and construction timelines
- The meeting should be general with diplomatic responses (i.e. no firm promises made at this stage)
- The Project Team will provide, at minimum, a map of the project area, boundaries and location of facilities (if applicable).
- Pending field investigations *(as required for Project)*
  - Surveys
  - Geotechnical investigations
  - CCTV inspections
  - Smoke and dye testing
  - Manhole inspections
  - Private property investigations
  - Potential water and gas main replacements
  - Miscellaneous potential disturbances
- A questionnaire (typically sewer backup & drainage issues) may be included with this mailing if needed (to save postage and/or second mailing).

** Disclaimer: "The information shown herein is conceptual in nature. All proposed facilities, including sewer pipe sizes and specific locations, are subject to change during more detailed planning and design."*

30% Milestone Public Meeting

Meeting Description

- The Project Team will plan an informational public meeting with neighborhoods, businesses and others affected by the project and with any volunteers identified at the preliminary design meeting who expressed interest
- The Project Team will provide all necessary updates of maps and exhibits for the meeting
- Held when design is completed to the 30% stage
- Number of Project and Program attendees should be limited to those necessary to effectively carry out the meeting
- The PTOF will coordinate all logistics, handouts, agenda, sign-in sheets or materials necessary for a successful meeting
- The PTOF will assist in coordinating the attendance of those required for the meeting and their role in the meeting

Key Invitees

REQUIRED

- Project Team Manager
- Project Team Outreach Facilitator
- City Project Manager
- PMT Coordinator
- Program Public Outreach Facilitator (PPOF)
- PMT Compliance Coordinator
- Others as needed

OPTIONAL

- City Right-of-way Representative *(if applicable)*
- Utility Company Representatives *(if appropriate)*
- City Traffic Representative
- Parks, Recreation and Public Facility Representative *(if appropriate)*
- City or PMT person to present any Program specific information or presentation (CSO 101)
- Meeting invites should also be extended to additional individuals identified by the Project Team

Meeting Content

City and PMT Project Representatives will be introduced. During the meeting, discuss:

- Project purpose and progress
- Key project contacts *(provide list)*
- Overview of the project, including proposed facilities, sewer separation, green solutions and ideas proposed by stakeholders
- Updated design and construction timeline
- Any required reconstruction, including potential street enhancements if necessary to comply with Complete Streets requirements
- Summary of green infrastructure being considered and their benefit to the Program
- Where residents can find more information on the CSO! website

60% Milestone Public Meeting

Meeting Description

- The Project Team will conduct a meeting with affected neighborhoods and stakeholders. An "open house" format is recommended since this is not the first time the public has been engaged on the project. Generally, this includes a few minutes of presentation at the start to give the meeting context
- Number of Project and Program attendees should be limited to those necessary to effectively carry out the meeting
- Held when design completed to the 60-85% stage (main alignment and location set and enough plan detail to discuss items listed)
- The PTOF will coordinate all logistics, handouts, agenda, sign-in sheets or materials necessary for a successful meeting
- The PTOF will assist in coordinating the attendance of those required for the meeting and their role in the meeting

Key Invitees

REQUIRED

- Project Team Manager
- Project Team Outreach Facilitator
- Key Project Team Members
- City Project Manager
- Program Public Outreach Facilitator
- PMT Coordinator
- PMT Compliance Coordinator

OPTIONAL

- City Right-of-way Representative *(if applicable)*
- City Traffic Representative *(if applicable)*
- Utility Company Representatives *(if appropriate)*
- City or PMT person to present any Program specific information or presentation
- City Construction Manager
- Meeting invites should also be extended to additional individuals identified by the Project Team

Meeting Content

During the meeting, discuss:

- Proposed facilities, sewer separation or green infrastructure and their impact on adjacent property owners
- Road closure and detour routes, impacts to driveways and sidewalks
- Potential impacts to school bus routes, Metro bus routes, etc.
- Updated plans for project design and construction timeline
- The potential for community enhancements applicable to the project
- Identified enhancements that can be funded by the City, if any
- Identified potential outside funding sources for other opportunities
- Community enhancements, beyond necessary replacement of infrastructure, are not funded through the RNC or CSO Programs
- Potential outside funding sources for community enhancements that are compatible with the Project
- Community enhancements incorporated, if applicable
- Anything else that needs to be considered in the design and construction planning, such as neighbors with disabilities who may need special access during construction, etc.

The Project Team shall provide all necessary project maps, exhibits, plan/profile sheets and contact information for the meeting.

90% Milestone Public Meeting

Meeting Description

- The Project Team will conduct a meeting with affected neighborhoods and stakeholders. An "open house" format is recommended since this is not the first time the public has been engaged on the project. Generally, this includes a few minutes of presentation at the start to give the meeting context
- Number of Project and Program attendees should be limited to those necessary to effectively carry out the meeting
- Held when design completed to the 60-85% stage (main alignment and location set and enough plan detail to discuss items listed)
- The PTOF will coordinate all logistics, handouts, agenda, sign-in sheets or materials necessary for a successful meeting
- The PTOF will assist in coordinating the attendance of those required for the meeting and their role in the meeting

Key Invitees

REQUIRED

- Project Team Manager
- Project Team Outreach Facilitator
- Key Project Team Members
- City Project Manager
- Program Public Outreach Facilitator
- PMT Coordinator
- PMT Compliance Coordinator

OPTIONAL

- City Right-of-way Representative *(if applicable)*
- City Traffic Representative *(if applicable)*
- Utility Company Representatives *(if appropriate)*
- City or PMT person to present any Program specific information or presentation
- City Construction Manager
- Meeting invites should also be extended to additional individuals identified by the Project Team

Meeting Content

During the meeting, discuss:

- Proposed facilities, sewer separation or green infrastructure and their impact on adjacent property owners
- Road closure and detour routes, impacts to driveways and sidewalks
- Potential impacts to school bus routes, Metro bus routes, etc.
- Updated plans for project design and construction timeline
- The potential for community enhancements applicable to the project
- Identified enhancements that can be funded by the City, if any
- Identified potential outside funding sources for other opportunities
- Community enhancements, beyond necessary replacement of infrastructure, are not funded through the RNC or CSO Programs
- Potential outside funding sources for community enhancements that are compatible with the Project
- Community enhancements incorporated, if applicable
- Anything else that needs to be considered in the design and construction planning, such as neighbors with disabilities who may need special access during construction, etc.

The Project Team shall provide all necessary project maps, exhibits, plan/profile sheets and contact information for the meeting.

Pre-Construction Public Meeting

Meeting Description

- The Project Construction Management Team will conduct a meeting with affected stakeholders
  - Includes a brief project update and overview through either an "Open House" style format or formal presentation
- Held after the Project is bid, but before construction starts, and often incorporates the community enhancements
- Number of Project and Program attendees should be limited to those necessary to effectively carry out the meeting
- The PTOF will coordinate all logistics, handouts, agenda, sign-in sheets or materials necessary for a successful meeting
- The PTOF will assist in coordinating the attendance of those required for the meeting and their role in the meeting

Key Invitees

REQUIRED

- Project Team Manager and PTOF
- Contractor Representatives
- Program Public Outreach Facilitator
- City Project Manager *(design)*
- Construction Manager *(City or Consultant, as applicable)*
- PMT Compliance Coordinator
- PMT Coordinator
- CM Contact
- Utility Company Representatives *(if doing relocation or new facility work)*

OPTIONAL

- City Right-of-way Representative *(if applicable)*
- City Traffic Representative *(if applicable)*
- City or PMT person to present any Program specific information or presentation
- Parks, Recreation and Public Property Representative *(if applicable)*
- Meeting invites should also be extended to additional individuals identified by the Project Team

Meeting Content

During the meeting:

- Contractor, Utilities and City Construction representatives will be introduced
- Public contact information for these representatives will be provided in handout form and updated on the public website
- The final project will be explained
- The proposed construction schedule and phasing/sequencing will be reviewed, including utility work and construction impacts on neighbors
- Stations with the plans and maps will be available for the public to reference and ask questions

Construction Phase

Construction Phase Guidance

- Follow the public meeting protocol
- Develop communication strategies as necessary to enhance public outreach during the Construction phase
- Provide an updated public outreach plan to the PPOF, PMT and Project Management for approval
- Provide notification of street closures, or other neighborhood disruptions in coordination with the Construction Manager
- Provide regular progress updates to neighborhoods, businesses and organizations (usually quarterly unless construction is moving quickly, time as appropriate)
- Coordinate elected official communication with and through the City of Omaha Public Works Assistant Director - Environmental Services
- Attend project construction update meetings on an as-needed basis (usually monthly is enough)
- Coordinate a regularly scheduled update with the Construction Manager

Action Items

- Provide a project update to the PPOF monthly for use in multiple communications, such as the quarterly reports and the website
- When appropriate, develop and get approval from the PPOF and City for e-mail updates to key project area stakeholders using an e-mail service with an opt-out feature
- Plan and budget updated newsletters and meetings with approvals by the PPOF, PMT and City
- Refer to the public meeting guidelines if a public meeting is necessary

Timeline/Resources

- Over project duration as dictated by the project schedule
- Timeline is dependent on project development and complexity
- Templates are available on **CSO Brand Board**

Stakeholder One-On-One Meetings

Meeting Description

- The Project Team will conduct one-on-one meetings (with City and PMT approval) with key stakeholders affected by the project, when applicable
- These meetings can be held throughout project design and construction as necessary
- Meetings are intended to proactively communicate with stakeholders who have specific concerns or will be impacted individually or in smaller groups
- Meetings should be held at the stakeholders place of business whenever possible
- PTOF will coordinate logistics and schedules as requested
- PTOF will keep a database of stakeholders contacted and a summary of the conversations
- PTOF will help develop relationships with stakeholders to build advocacy for the project

Key Invitees

CONSIDER

Potential Attendees
(Limit to 4 or fewer if possible)

- Project Team Manager
- Project Team Outreach Facilitator
- Key Project Team Members to address specific issues
- City Construction Manager
- City Project Manager
- PMT Coordinator
- PMT Compliance Coordinator
- City Right-of-Way *(if applicable)*

STAKEHOLDER EXAMPLES

- Businesses
- Churches
- Leadership of large organizations
- Neighborhood Alliances
- Residents impacted
- Institutions
- A specific demographic or geographic segment

Meeting Content

- Priority content appropriate to the subject matter
- Project plan that might have larger coordination concerns than the average resident
- Proactive engagement of potentially difficult stakeholders or stakeholders who need longer lead time to prepare for construction activities

Stakeholder Meeting Guidance

- Meet as necessary to keep dialogue open with the community during design and construction

Stakeholder Group Meeting (5-10 attendees)

- Follow the procedure for design and construction meetings
- Adapt the level of work and notification to the situation

One-On-One or Small Meetings (5 or fewer attendees)

- Follow the procedure for notifications and approvals outlined in the design and construction procedure. Adapt to level of situation

Action Items

- Send meeting notices per the Design Meeting Process (Page 6)
- Plan these meetings/discussions based on need
- Notify the PPOF to post the meeting notice, handouts, and/or PowerPoint on the CSO public website *(if appropriate)*
- Mail or email meeting notices to group
- Prepare meeting information and provide to affected stakeholders, if applicable
- Coordinate the meeting with the PM, PMT and City as needed to handle the meeting
- Project Team will develop project-specific meeting communication materials such as plans, timeline illustrations, PowerPoint, handouts and follow approval procedure
- Document the meeting and provide the update to the PMT, City and PPOF as appropriate
- The Project Manager and PTOF should determine responses to inquiries and comments and respond within 24 hours

Timeline/Resources

- Request website notification posts for meetings
- Templates are available on the **CSO Brand Board**
- Meeting materials, outlines and agendas should be shared with the PPOF, PM, PMT and City as needed 1 week in advance of the meetings
- Template for meeting summary is available on the CSO Portal

Public Meeting Checklist

Public Meeting Steps

Timeline/Resources

- [ ] **STEP 1:** Determine a potential date for the meeting and consider availability of an existing neighborhood association or community meeting already occurring for the outreach

- [ ] **STEP 2:** Check the availability of Project Team, PMT Representatives, City Project Representatives and PPOF

- Schedules must be coordinated with designated City, PMT, Project contacts, PPOF and presenters before finalizing a date 4-6 weeks in advance

- [ ] **STEP 3:** Secure a location with parking and handicap accessibility

- Date and place should be confirmed at least 4-6 weeks in advance

- [ ] **STEP 4:** Complete the meeting information form and submit it to the PPOF, PMT and Project Team

- [ ] **STEP 5:** Acquire the necessary mailing or emailing list(s) and contact area neighborhood associations, neighborhood alliances and stakeholder organizations to provide meeting notifications

- Establish a budget for printing, postage and mailing expenses when submitting your facilitator budget if you plan to mail meeting notices or use other strategies that require budget money
- This process should start at least 4-6 weeks in advance of the meeting
- Contact the PPOF if you need assistance with locating neighborhoods or organizations
  - These groups will often send your electronic notification to their members on your behalf

Public Meeting Steps

STEP 7: Develop a meeting notice. Typical notification would be mailing a postcard. Other effective options are listed below with approval of the PPOF. Determine if this notice needs to be bilingual based on the stakeholder population. Allow 3-5 working days for review by:

- PROJECT Manager
- PPOF
- PMT Coordinator
- PMT Compliance Coordinator
- CITY Project Manager

Must get final approval of public-facing materials from the PPOF.

- Additional and alternative notification options:
  - Posters
  - Door hangers
  - Flyers
  - Message boards
  - Email blasts
  - Facebook posts
  - Yard signs

STEP 8: The Program Public Outreach Facilitator will contact the area City Council Member, other elected officials as needed and the officials' staff assistant.

Timeline/Resources

- A mailing should be approved 3-4 weeks in advance and mailed 2 ½ weeks in advance
  - Printing takes about 1 week
  - Bulk mail takes about 3-5 days for delivery
  - It is recommended you use a printer/mail house for larger quantities
  - Printco is a recommended printer experienced with the CSO Program (Contact Pam Tourek: 402.593.1080 or pam@printcographics.com)
- Templates for the meeting notice letters, and other notification options, are on the **CSO Brand Board**
- The PPOF can assist with acquiring multi-lingual translation services
- The PPOF will provide the meeting notice to the PMT Two Week Look-Ahead
- Post the meeting on the CSO Portal Project Calendar
- The PPOF or City Project Manager can coordinate with the City Construction Manager for use of message boards

- City Council information is available at **CityCouncil.CityofOmaha.org**
  - Consider asking if the council member wants to make any comments during the meeting

Public Meeting Steps

Timeline/Resources

☐ **STEP 7:** Assist Project Team with content for agendas, PowerPoint, handouts and sign-in sheets using templates provided in the Program brand document, which meet both regulatory and brand requirements. The Program overview slides, which are required, are also on the brand pages	• **Templates for agendas, PPT, meeting notices, sign-in sheets and meeting summary are here** • The PPOF has the following items for Project Team use: CSO Program brochures, CSO Program display (8'X10') or (3'X4'), CSO magnets, CSO shower timers, CSO activity books with crayons appropriate for children under 10 • Design assistance for meeting materials can be requested from the PPOF team but will be paid for by the Project budget • These materials must be reviewed by the City, PMT and PPOF at least 1 week in advance
☐ **STEP 8:** Request a City, PPOF or PMT member to present the CSO Program Overview at the meeting	• Determine this presenter at least 2 weeks in advance • Finalize this preparation 1 week in advance
☐ **STEP 9:** Contact the City Construction Division to request electronic signs be displayed for a week in advance of the meeting to reinforce the meeting date, time and location	• Make this request 2-3 weeks in advance • Provide the preferred intersection location(s)

Public Meeting Steps	Timeline/Resources
☐ **STEP 10:** Write a media alert for review and distribution by the PPOF	• Provide the media release to the PPOF **2 weeks** in advance • The PPOF will distribute the release **1 week** in advance • The PPOF will provide the release to the website team
☐ **STEP 11:** Confirm with the meeting location to arrange for audio/visual equipment availability	• Finalize this preparation **2 weeks** in advance
☐ **STEP 12:** Acquire directional signage for the meeting location	• The PPOF team has directional yard signs that can be borrowed for use at your public meeting. Request 1 week in advance to pick them up and schedule a return
☐ **STEP 13:** Attend the public meeting and assist with sign-in, greeting, meeting set-up, presentation and photos	• The PPOF team can help with these tasks by request 2 weeks in advance
☐ **STEP 14:** Send the PowerPoint and handouts to the PPOF for the website, and return directional signage	• Materials should be provided and/or returned within 2-3 days to the PPOF
☐ **STEP 15:** Follow up with responses to comment forms or questions from the meeting	• Send the follow up within 3-5 days • A summary of the Q&A's should be compiled • A list of contact information from comment forms should be documented

News Media
Guidelines

Guidance

- **Advise the PPOF of any news media interview requests or on-site visits – these require approval at the Program level**
- Provide the Program Public Outreach Facilitator with newsworthy ideas for the Project
- Provide a release for meeting notifications
- Provide a release or advisory regarding construction issues
- Advise the PPOF of any crisis situations with the Project

Action Items

- Prepare news releases as appropriate for:
  - Public meeting notifications
  - Construction notifications
  - Project highlights or information
- Route the release/alert to the PPOF, PM, PMT and City Project Manager
- PPOF will provide information to CSO website team
- PPOF will approve and distribute all news releases to the media outlets
- **Releases or ANY media contact are to be approved and distributed by the PPOF**

Resources

- A format for full news releases and for media alerts are included in the online CSO Brand Board
- The Program Public Outreach Facilitator will assist with talking points or strategy for any news interviews conducted by the Project

Contacts at the **City of Omaha and Program Leads**

Points of Contact

Jim Theiler
City of Omaha Public Works — Assistant Director Environmental Services
402-444-5225
James.theiler@cityofomaha.org

Adam Wilmes
City of Omaha Public Works — City CSO Coordinator
402-444-3819
adam.wilmes@cityofomaha.org

Tom Heinemann
CSO Program Manager
402-444-5455
tom.heinemann@jacobs.com

Pat Nelson
CSO Program Management Team — Compliance and Green Infrastructure
402-444-5456
pat.nelson@jacobs.com

Scott Aurit
CSO Program Management Team — Major/Facility Projects
402-444-5461
scott.aurit@hdrinc.com

Vince Genco
CSO Program Management Team — Sewer Separation Projects
402-742-2934
vincent.genco@hdrinc.com

John Joiner
Communications Specialist
402-444-5220
john.joiner@cityofomaha.org

Addendum:
Pandemic Outreach Opportunities

Whether our community is pivoting through a pandemic or managing through a weather crisis, the public still expects transparent engagement and decision-making processes.

The CSO Program has multiple projects in all stages of design and construction. Public outreach should not stop, in fact, it should expand. We need to consider how to execute public education and interaction that is thorough, interesting, inclusive and nimble.

Virtual Meetings

- This is a good meeting alternative, as many people have computers, tablets or mobile phones. For best results:
  - Utilize publicly available tools, such as Zoom
  - Provide multiple opportunities/channels to contribute (monitored email, a chat room or surveys within the application)
  - If you want to record the session, be sure you have participant permission (you can do this by asking them to accept recording in the chat room)
  - Provide notice and instructions for accessing the meeting through multiple channels
  - Instruct participants on how to identify themselves
  - Increase participation through creative content and interaction options (there are some fun survey tools that can be used on the shared screen with participants)
  - Consider a recorded presentation to provide a project status with graphics. Provide it through email lists, request it to be pushed out through neighborhood associations/alliances, area community organizations. Provide contacts for Q & A.

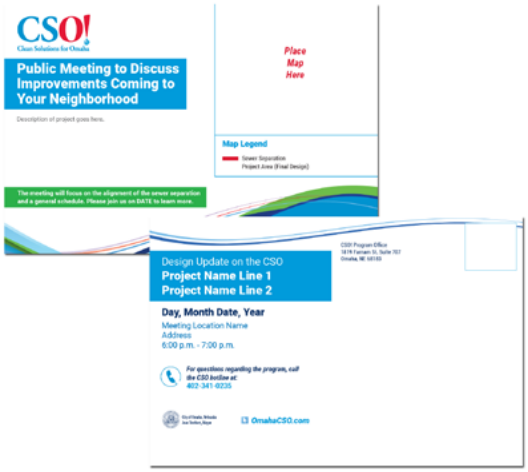
Other Opportunities

- **Utilize neighborhood websites and neighborhood alliance websites** if the project is residential in nature
- **Postcards and mail can also be effective** to explain a project and point the community to ways they can interact and get information
- **Provide posters with key information** and distribute to area businesses where foot traffic is allowed (grocery stores, salons, dental/physician locations)
- If it is an area with businesses, **contact the business by phone and follow-up with email details** or schedule a virtual meeting with the Project Team
  - Create a mini-video presentation of the project to share the information on virtual formats or through email
  - Email readable PowerPoint presentations. Be careful to keep the files small so they can be opened on multiple devices
- **Post-meeting follow up is critical** and can be done through:
  - Website postings to the project page
  - An email survey of participants
  - Providing the video or slide deck for review
  - Always provide feedback mechanisms through email or phone access
- **Project summary or project page information can be turned into a handout** for the Construction Manager or Contractor if someone would come onsite and need information or additional contacts for the project

Addendum:
Public Outreach Template Examples

Here are some examples of templates that can be used during public outreach. Please note that all these tactics are not necessary for every project, and it's best to analyze and customize what would make the most sense for any given situation. Consider these a flexible template to implement consistent, professional public outreach efforts.

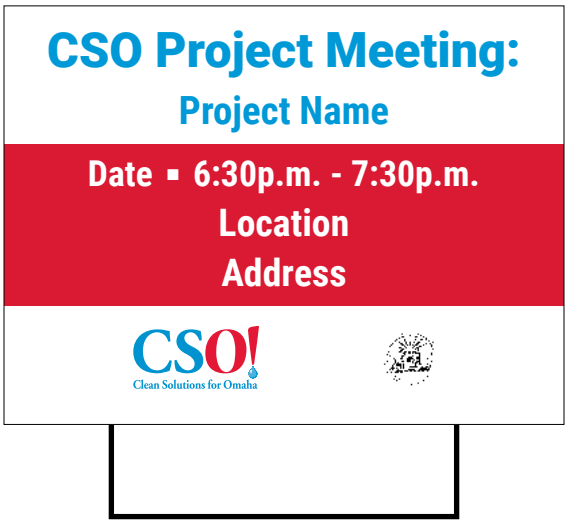
Oversized Postcard Template: Use these to notify stakeholders who live or work in a project area. They can be used as invites to public meetings or updates on construction as needed



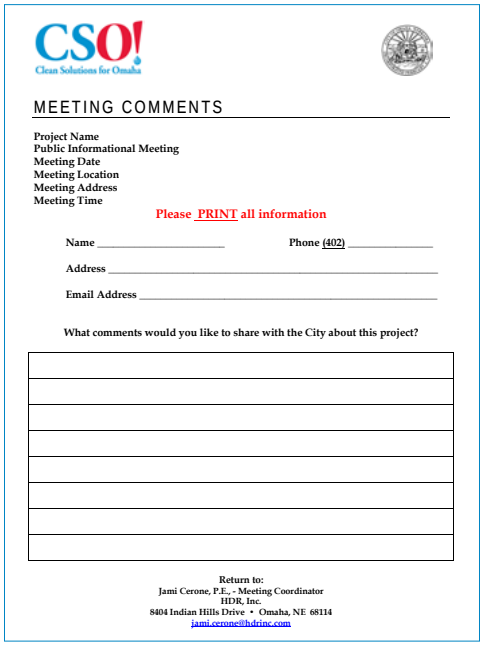
Directional Signs: The PMT has an inventory of directional signs that can be borrowed for public meetings or events. Arrange sign pick up by contacting brian@emspacegroup.com

You can also print additional 11 x 17 directional signs to hang up in large facilities to provide guidance from the entrance to your room

Yard Sign Template: These signs are a great way to disseminate specific information in a given area. They can be used to advertise an upcoming public meeting or announce a time frame when crews will be in the area



Comment Card Template: It is mandatory to provide comment forms for attendees to leave optional feedback after public meetings or events



CSO!
Clean Solutions for Omaha

MEETING COMMENTS

Project Name
Public Informational Meeting
Meeting Date
Meeting Location
Meeting Address
Meeting Time

Please PRINT all information

Name _____ Phone (402) _____

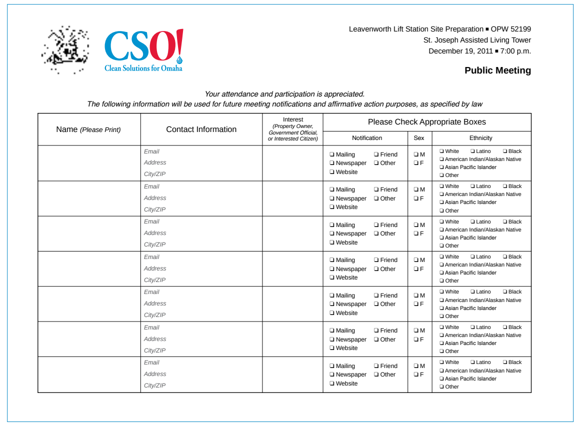
Address _____

Email Address _____

What comments would you like to share with the City about this project?

Return to:
Jami Cerone, P.E. - Meeting Coordinator
HDR, Inc.
8404 Indian Hills Drive • Omaha, NE 68114
jami.cerone@hdrinc.com

Sign-in Sheet Template: It is mandatory to provide a sign-in sheet at public meetings and events. Although it is not mandatory for attendees to sign, it's highly recommended



CSO! Clean Solutions for Omaha

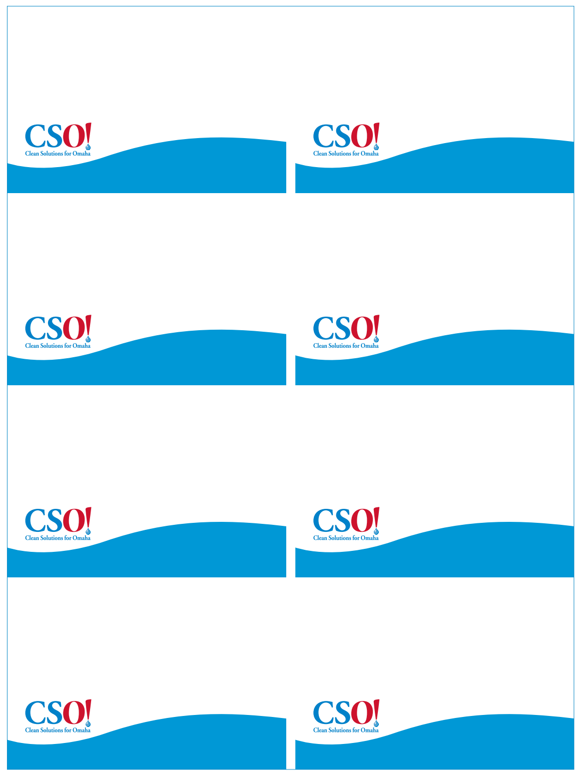
Leavenworth Lift Station Site Preparation ■ OPW 52199
St. Joseph Assisted Living Tower
December 19, 2011 ■ 7:00 p.m.

Public Meeting

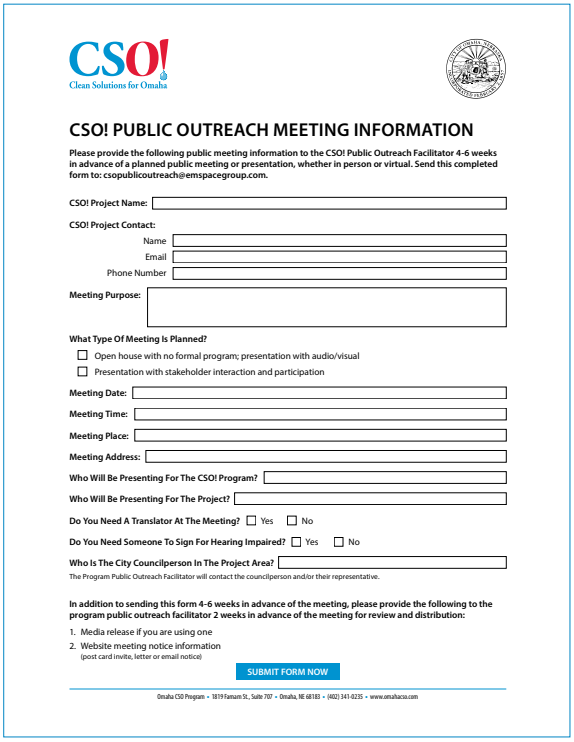
Your attendance and participation is appreciated.
The following information will be used for future meeting notifications and affirmative action purposes, as specified by law

Name *(Please Print)*	Contact Information	Interest *(Property Owner, Government Official, or Interested Citizen)*	Please Check Appropriate Boxes		
			Notification	Sex	Ethnicity
	Email *Address* *City/ZIP*		❑ Mailing ❑ Friend ❑ Newspaper ❑ Other ❑ Website	❑ M ❑ F	❑ White ❑ Latino ❑ Black ❑ American Indian/Alaskan Native ❑ Asian Pacific Islander ❑ Other
	Email *Address* *City/ZIP*		❑ Mailing ❑ Friend ❑ Newspaper ❑ Other ❑ Website	❑ M ❑ F	❑ White ❑ Latino ❑ Black ❑ American Indian/Alaskan Native ❑ Asian Pacific Islander ❑ Other
	Email *Address* *City/ZIP*		❑ Mailing ❑ Friend ❑ Newspaper ❑ Other ❑ Website	❑ M ❑ F	❑ White ❑ Latino ❑ Black ❑ American Indian/Alaskan Native ❑ Asian Pacific Islander ❑ Other
	Email *Address* *City/ZIP*		❑ Mailing ❑ Friend ❑ Newspaper ❑ Other ❑ Website	❑ M ❑ F	❑ White ❑ Latino ❑ Black ❑ American Indian/Alaskan Native ❑ Asian Pacific Islander ❑ Other
	Email *Address* *City/ZIP*		❑ Mailing ❑ Friend ❑ Newspaper ❑ Other ❑ Website	❑ M ❑ F	❑ White ❑ Latino ❑ Black ❑ American Indian/Alaskan Native ❑ Asian Pacific Islander ❑ Other
	Email *Address* *City/ZIP*		❑ Mailing ❑ Friend ❑ Newspaper ❑ Other ❑ Website	❑ M ❑ F	❑ White ❑ Latino ❑ Black ❑ American Indian/Alaskan Native ❑ Asian Pacific Islander ❑ Other
	Email *Address* *City/ZIP*		❑ Mailing ❑ Friend ❑ Newspaper ❑ Other ❑ Website	❑ M ❑ F	❑ White ❑ Latino ❑ Black ❑ American Indian/Alaskan Native ❑ Asian Pacific Islander ❑ Other

Name Tag Template: All of the CSO! team members and participants should wear a name tag during public outreach events



Public Outreach Meeting Information Form: TBD



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CSO! PUBLIC OUTREACH MEETING INFORMATION

Please provide the following public meeting information to the CSO! Public Outreach Facilitator 4-6 weeks in advance of a planned public meeting or presentation, whether in person or virtual. Send this completed form to: csopublicoutreach@emspacegroup.com.

CSO! Project Name:

CSO! Project Contact:

Name
Email
Phone Number

Meeting Purpose:

What Type Of Meeting Is Planned?

- ☐ Open house with no formal program; presentation with audio/visual
- ☐ Presentation with stakeholder interaction and participation

Meeting Date:

Meeting Time:

Meeting Place:

Meeting Address:

Who Will Be Presenting For The CSO! Program?

Who Will Be Presenting For The Project?

Do You Need A Translator At The Meeting? ☐ Yes ☐ No

Do You Need Someone To Sign For Hearing Impaired? ☐ Yes ☐ No

Who Is The City Councilperson In The Project Area?

The Program Public Outreach Facilitator will contact the councilperson and/or their representative.

In addition to sending this form 4-6 weeks in advance of the meeting, please provide the following to the program public outreach facilitator 2 weeks in advance of the meeting for review and distribution:

1. Media release if you are using one
2. Website meeting notice information
   (post card invite, letter or email notice)

SUBMIT FORM NOW

Omaha CSO Program • 1819 Farnam St., Suite 707 • Omaha, NE 68183 • (402) 341-0235 • www.omahacso.com

Addendum:
iap2 Spectrum

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.