

CITY WATER & LIGHT

JONESBORO, ARKANSAS



**2021 PROGRESS REPORT
CORRECTIVE ACTION PLAN**

SANITARY SEWER OVERFLOWS: SUMMARY OF ONGOING ACTIONS
AND PLAN FOR ADDITIONAL CORRECTIVE MEASURES

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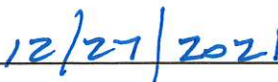
December 28, 2021

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Jake Rice III, Manager
City Water and Light
Jonesboro, AR



Date

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Acronyms

ADH – Arkansas Department of Health

BOD – Biochemical Oxygen Demand

CAP – Corrective Action Plan

CCTV – Closed Circuit Television Video

CES - Compliance Enviro Systems, LLC

CIPP – Cured-In-Place Pipe

CMAR – Construction Manager at Risk

CMMS – Computerized Maintenance Management System

CMOM - Capacity, Management, Operations, and Maintenance Program

COVID-19 or COVID – Coronavirus disease 2019

CWL - City Water and Light Plant of the City of Jonesboro, Arkansas

DEQ - Arkansas Department of Energy and Environment’s Division of Environmental Quality

Duke’s - Duke’s Root Control, Inc.

ESRI – Environmental Systems Research Institute, Inc.

FOG - Fats, Oils and Grease

FSE – Food Service Establishment

GIS – Geographic Information System

gpm – gallons per minute

I&I – Inflow and Infiltration

lb/day – pounds per day

LED – light-emitting diode

MGD – Million Gallons per Day

MW&Y - McGoodwin, Williams & Yates, Inc.

NPDES - National Pollutant Discharge Elimination System

Olsson – Olsson, Inc.

PACP® - Pipeline Assessment Certification Program

PVC – Polyvinyl Chloride

RAS – Return Activated Sludge

RFP – Request for Proposal

RJN - RJN Group, Inc.

SCADA – Supervisory Control and Data Acquisition

SL-Rat® - Sewer Line Rapid Assessment Tool by InfoSense, Inc.

SSES – Sanitary Sewer Evaluation Study
SSO – Sanitary Sewer Overflow
UV – Ultraviolet
Van Horn – Van Horn Construction, Inc.
WAS – Waste Activated Sludge
WWTP – Wastewater Treatment Plant

1. Executive Summary

CWL has maintained a longstanding effort in the effective and continuous management, operation, and maintenance of the collection system capacity and performance. This ongoing effort continued in 2021 through the corrective action activities that CWL committed to in both the CWL CAP submitted to the DEQ on March 28, 2016 and Addendum to CWL CAP submitted to the DEQ on April 14, 2016.

Like the rest of the world, CWL continues to encounter numerous challenges in 2021 as a result of the COVID-19 global pandemic. This unusual event has added complexity to CWL's SSO mitigation efforts that have ranged from staffing and communications to operational disruptions in 2020 and to the current supply chain impacts/disruptions of 2021. Despite these obstacles, CWL personnel continue to demonstrate adaptability and resilience to maintain corrective action activities.

Obviously, COVID-19 was not without its impacts. While not the only factor, COVID has certainly contributed to CWL's adjustment to some of the target completion dates for Phase I capital improvement projects. In addition and as stated in the CAP, CWL agrees with DEQ that mitigation efforts and associated capital improvement needs and timing are an iterative and ongoing process. With this fact in mind, CWL has adjusted the Phase I and Phase II Capital Improvements accordingly and as described within. However, CWL considers overall mitigation improvements ahead of schedule, particularly with the current status of Phase II capital improvement projects.

As of November 1, 2021, the corrective actions outlined in CWL's CAP and follow-up Addendum have been accomplished or are on schedule to be achieved by the respective initial or updated target completion date. For 2021, these activities included:

- i. Phase II Capital Improvements Identified – **Achieving Milestone #1 of Phase II**
- ii. Progress on Phase I & II Capital Improvements
- iii. Performed SSES of Approximately 32 Miles of the Collection System
- iv. Performed Resultant Repairs for Phase I & II SSES Basins
- v. Completion of Northwest (Main) Lift Station Replacement as a Phase I Capital Improvement
- vi. Progress on CMOM Software Solution/Sewer GIS Implementation
- vii. Progress on Lift Station & Force Main Evaluation Resultant Repairs
- viii. Continued FOG Management Program Expansion

In addition to the corrective actions performed this year, CWL continued ongoing comprehensive SSO mitigation efforts through the routine inspection and maintenance programs for the collection system and lift stations and the CMOM programs and processes currently in place and active. To enhance maintenance efforts, CWL contracted CCTV and cleaning of basin JB30; polyurea lining of targeted lift station discharge manholes; and CIPP lining of sewer mains identified as optimal candidates.

CWL, for many years, has demonstrated a culture of compliance and a commitment to SSO mitigation and, as outlined in this progress report, 2021 was no exception. For the period of November 1, 2020 thru October 31, 2021, CWL has documented CMOM expenses totaling over **\$2.7 million** and capital costs totaling over **\$12.6 million**.

Also, CWL has made significant progress on the approximately **\$30.5 million** Phase I capital improvements (as newly defined) to-date in 2021 and, based on updated figures, estimates additional capital expenditures over **\$2.8 million** to achieve the Phase I goals. In addition, CWL has already invested over **\$5.6 million** toward the updated Phase II capital improvement projects, and estimates additional capital expenditures of approximately **\$55.7 million** to complete these Phase II efforts.

Formally presented as a Phase II Capital Improvement in 2020, the now estimated **\$60 million** Westside WWTP replacement's design was enhanced in 2021 to include **advanced nutrient removal**. Preliminary plant construction began in 2021. As previously reported, the company's commitment to this project further materialized in CWL's July 2020 issuance of **\$26 million in Public Utility System Revenue Bonds**. While earmarked in-part for then-current wastewater capital projects, the issue of these bonds allows CWL reserve funds to be utilized for other projects, like the Westside WWTP.

The uncommon circumstances surrounding the COVID-19 pandemic are a testament to the dynamic nature of any endeavor, including SSO mitigation. The DEQ understands that SSO mitigation is an iterative and ongoing activity even under normalized conditions. Therefore, CWL is pleased to present the activities outlined in this report as evidence of CWL's ongoing efforts in SSO mitigation despite the ongoing challenges of 2021. CWL firmly believes that these proactive efforts and associated capital expenses, as well as the future corrective actions identified in CWL's CAP Addendum, demonstrate CWL's dedication to collection system improvements.

This CAP report represents CWL's fulfillment of DEQ's request for an annual progress report and constitutes CWL's sincere interest in ongoing and transparent communication with the DEQ beyond the fulfillment of our voluntary commitment of a Progress Report every two years, as presented in item IV of the Addendum to CWL CAP.

2. Corrective Action Plan Activities – 2021

CWL is pleased to report the corrective actions, as presented in the following sections, achieved in 2021 toward efforts to further mitigate SSOs in the collection system. To-date, the milestones outlined in CWL’s CAP submitted to the DEQ on March 28, 2016 and Addendum to CWL CAP submitted to the DEQ on April 14, 2016 have been achieved or are on schedule to be achieved by the respective target completion date, with the exception of the Phase I Capital Improvements (Section 9). For the period of November 1, 2020 thru October 31, 2021, CWL has documented CMOM expenses totaling over **\$2.7 million** and capital costs totaling over **\$12.6 million**.

3. Phase II Corrective Action Plan Activities – Status

As identified in CWL’s CAP, Phase II milestones are actions targeted for completion from the 1st Quarter of 2021 thru the 4th Quarter of 2025. The following Sections 4 thru 7 provide a summary of CWL’s Phase II accomplishments as of November 1, 2021.

4. 2021 CAP Milestone – Phase II Capital Improvements Identified

CWL is pleased to report that the Phase II Capital Improvements were identified well before the December 31, 2021 targeted milestone. The following Sections 4.1 thru 4.3 summarize the corrective action progress accomplished both prior to and in 2021 toward efforts to complete Phase II Capital Improvements and thus achieve a portion of Milestone #2 of Phase II, targeted for completion by December 31, 2025.

As stated in the CAP, CWL agrees with DEQ that mitigation efforts and associated capital improvement needs and timing are an iterative and ongoing process. With this fact in mind, CWL has adjusted the Phase I (Section 9) and Phase II Capital Improvements accordingly and as described in each project’s respective section. Table 4-1 summarizes the updated Phase II improvements.

Additionally, it is important to recognize the continuing challenges of the COVID-19 pandemic and acknowledge its potential effect on capital improvement progress due to current supply chain impacts/disruptions.

Table 4-1: Phase II Capital Improvements (As of November 1, 2021)

Capital Improvement	Updated Cost Est.	Current Status
Westside WWTP Replacement	\$60 million	Construction in Progress

Table 4-1: Phase II Capital Improvements (As of November 1, 2021)

Capital Improvement	Updated Cost Est.	Current Status
Kitchen Interceptor – Phase I	\$800,000	Contingent on Midtown Interceptor Completion
Sports Complex Lift Station & Force Main Upgrades	\$500,000	In Planning

4.1. Westside WWTP Replacement

As previously reported, CWL began preliminary efforts toward an in-depth study of the Westside WWTP regarding the adequacy of the 1977 trickling filter Plant’s biological and hydraulic capacity for the long term system needs with MW&Y (now Olsson) in the first quarter of 2015. In 2019, CWL contracted Olsson as the engineering firm and Van Horn as the CMAR for the replacement of the WWTP to accommodate estimated flow requirements with system growth and potentially more stringent regulatory requirements in the future. CWL officially identified the Westside WWTP as a Phase II Capital Improvement project in 2020. The status and current schedule of the project, including preliminary site work is summarized in Table 4.2.

Table 4-2: Westside WWTP Contract Section Statuses (As of November 2021)

Contract Section	Cost to Date	Estimated Cost	Current Status
Tree Clearing	\$74,000	\$82,000	Completed July 2021
Road Work	\$752,000	\$890,000	Completed November 2021
Force Main Relocation & Mass Grading Site Work	\$2.77 million	\$5.64 million	Force Main Relocation anticipated completion date is March 2022. Mass Grading Site Work anticipated completion date is January 2022.
Process & Structures	\$0	\$54 million	Updated construction permit sent to DEQ November 2021. Anticipated completion date is July 2024.

The final design of the WWTP, along with the Main Lift Station replacement, will increase the Westside hydraulic capacity from approximately 7 MGD to 17 MGD and the biological treatment capacity from approximately 6,880 lb/day BOD to 9,950 lb/day BOD. This increased capacity will not only provide for future growth needs but will also optimize operation during wet weather flows and thus significantly enhance SSO mitigation efforts in west Jonesboro. In addition and as with the Main Lift Station, replacing the over 40-year-old WWTP will address maintenance issues and provide a more reliable, efficient and resilient plant.

Based on preliminary conversations with DEQ, the Plant design was expanded this Fall to include anaerobic selector and fermentation basins for enhanced nutrient treatment. Olsson resubmitted the construction permit, with these additions, to DEQ on November 19, 2021.

Contingent on design approval by ADH and appropriate DEQ and City of Jonesboro permits, CWL anticipates a construction start of the Process & Structures section of the contract in June 2022, with a projected completion of mid 2024. CWL has invested over **\$5.5 million**, including engineering and in-house costs, on this important project to-date. As stated in Section 9.1, CWL's commitment to this project was further demonstrated in the freeing of additional reserve funds for this project through the issuance of **\$26 million in Public Utility System Revenue Bonds** in July 2020 for in-part funding of the Main Lift Station and Midtown Interceptor. Current total cost projections are estimated at **\$60 million**. See Appendix A for a conceptual map summarizing the planned replacement.

4.2. Kitchen Interceptor – Phase I

Originally identified as a Phase I Capital Improvement, the Kitchen Street project involves a gravity system upstream of the Midtown Interceptor and was, therefore, always contingent on the completion of that project. As the Midtown Interceptor is now scheduled for completion in the first half of 2022, this important companion project has been appropriately adjusted to a CAP Phase II improvement.

The Kitchen improvements were originally defined as various upgrades to the existing gravity sewer network in the midtown area bordered by E. Nettleton Ave, Kitchen St, Osler Dr, and E. Washington Ave (JB19 and JB20; App B, Basin Delineation). This Phase I scope of work is proposed as 2750' of an 18"-diameter gravity sewer interceptor extending upstream from the west end of the Midtown Interceptor south to Matthews Ave. CWL plans to continue evaluation of the area's needs and design additional phased improvements as may be warranted.

CWL has worked with RJN and the CWL sewer hydraulic model to determine the optimal upgraded pipe size and Fisher Arnold to determine the route for these initial improvements. Phase I plans are scheduled for submission to ADH in January 2022. CWL has estimated a total

cost for these upgrades of **\$800,000** and has invested over **\$39,000** on project design to-date. Since the Kitchen sewer improvement’s projected start date is contingent on the completion of the Midtown construction, the project is planned to begin installation in mid-2022. See Appendix A for a map summarizing the proposed Phase I improvements.

4.3. Sports Complex Lift Station & Force Main Upgrades

Targeted in part through the recent Lift Station and Force Main Evaluation findings (Section 12), the Sports Complex Lift Station and respective force main was identified in 2021 for improvements due to identified capacity constraints and operational issues. Current efforts on the station include evaluation of station performance versus design performance and application and evaluation of the ongoing adequacy of the force main size. Therefore, the complete project scope of work is yet to be determined. However, CWL has estimated a preliminary budgeted cost of **\$500,000**. See Appendix A for a map of the lift station and force main locations.

5. Phase II SSES Status

As a portion of Milestone #2 of Phase II of CAP Addendum, CWL provided a target completion date of December 31, 2025 for achieving an SSES of an additional 1/3 of the CWL collection system, with an average of approximately 27 miles per year. CWL prioritized basins JB05, JB09, and JB20 to study in 2021 (App B, Basin Delineation) for an estimated total of approximately 32 miles of the sewer system. The status and results of the 2021 activities under this milestone, as of November 1, 2021, are briefly outlined in the following section. CWL has now completed inspection, evaluation, and resultant repair identification of approximately 189 miles of the collection system under the CAP in the last 5 ½ years. See Appendix C, Basin SSES Status, for a summary of the SSES activities for CWL basins, designating years worked and CAP Phase.

5.1. Phase II SSES Activities - Status & Results

The following Table 5-1 provides a summary for SSES activities and current results for JB05, JB09, and JB20.

Table 5-1: 2021 SSES Activities (As of November 1, 2021)

Service	Quantity			
	JB 05	JB 09	JB 20	2021 Basins Total
Manhole Inspections (1)	214	273	289	776
Manhole Resultant Repairs Identified/Repaired	154/0	224/0	236/0	614/0
Line Testing and Repairs				
Smoke Test (ft) (2)	51,504	57,318	62,326	171,148

Service	Quantity			
	JB 05	JB 09	JB 20	2021 Basins Total
Dye Test	21	19	64	104
CCTV (ft) (3)	8,852	5,522	25,925	40,299
Main Cleaned (ft)	7,695	13,671	19,623	40,989
Roots Cut (ft) (6)	350	0	453	803
SL-Rat® (ft) (4)	47,178	51,575	66,826	165,579
Replaced/Repaired Clean Out Caps	51	52	37	140
Laterals Identified/Repaired (5)	26/11	42/10	40/8	108/29
Resultant Main Repairs Identified/Repaired	5/1	8/0	15/1	28/2

Notes:

- (1) Manhole inspections are 100% complete.
- (2) 100% of each JB was smoke tested.
- (3) CCTV footage shown from SL-Rat® assessments and smoke test defects identified.
- (4) SL-Rat® assessments of 12" lines and smaller.
Footage includes line segments that were re-assessed due to SL-Rat® score following cleaning of lines.
- (5) Customers notified of lateral defects / Laterals repaired by customers and inspected by CWL or abandoned lateral capped by CWL.
- (6) Chemical root treatment footage for 2021 basins included in maintenance totals reported in Table 13-1.

As in past years, CWL began the 2021 SSES activities with 100% inspection of the manholes in each of the three basins selected. As of November 1, 2021, manhole inspections are complete. Detailed inspection results are available upon request.

In addition to the manhole inspections, CWL crews cleaned main lines within each basin. The segments cleaned were identified as having potential obstructions based on SL-Rat® evaluations and CCTV inspections. See Section 13.2 for further SL-Rat® information.

Smoke testing is also complete in each basin. Through this process, CWL replaced clean out caps and identified potential main line and additional manhole defects. Crews completed the review of possible defects identified from smoke testing through CCTV inspection, with the aid of dye testing, on September 26, 2021. All lateral defects are being coordinated through CWL's Sewer Lateral Repair Program (Section 14). Detailed smoke testing and CCTV inspection results are available upon request.

6. Phase II SSES Resultant Repairs

As a portion of Milestone #2 of Phase III of CAP Addendum, CWL provided a target completion date of December 31, 2030 for achieving Phase II SSES Resultant Repairs. The following Sections 6.1 thru 6.4 briefly describe the status of CAP Phase II resultant repairs, as of November 1, 2021.

6.1. Manhole SSES Resultant Repairs

As described in Section 5.1, CWL identified 614 manhole repairs in 2021. CWL plans to begin these manhole resultant repairs in early 2022. Detailed spreadsheets regarding the repairs identified in 2021 are available upon request and the current status of repairs will be updated as applicable.

6.2. Brick Manhole Cementitious Lining Rehabilitation

As stated in previous reports, CWL conducted an evaluation of the brick manholes previously rehabbed in the late 1980s and early 1990s for updated rehab needs. CWL determined that the optimum course of action at this time, considering the current available information, is to contract out a complete rehabilitation of all brick manholes, both previously rehabbed and untouched, within each year's studied basins. This decision was based on the evaluation and consultation with other utilities and engineering consultants.

For the 2021 basins, CWL has identified 384 brick manholes for rehabilitation. Detailed spreadsheets regarding the manholes identified are available upon request. CWL plans to let a contract for the cementitious lining of the 2020 and 2021 SSES brick manholes in 2022, contingent on the completion of any complimentary sewer main CIPP lining (Section 13.7) at the brick manholes.

6.3. Manhole Heavy Ring & Lid Replacements

As previously reported, CWL also determined that replacing the older-style, heavy ring and lids under the influence of sheet flow in rain events had the potential to significantly reduce I&I. As of November 1, 2021, CWL has utilized in-house personnel to replace 144 of the 173 heavy ring and lids identified in the 2021 basins. Detailed spreadsheets regarding these repairs are available upon request.

6.4. Main Line SSES Resultant Repairs

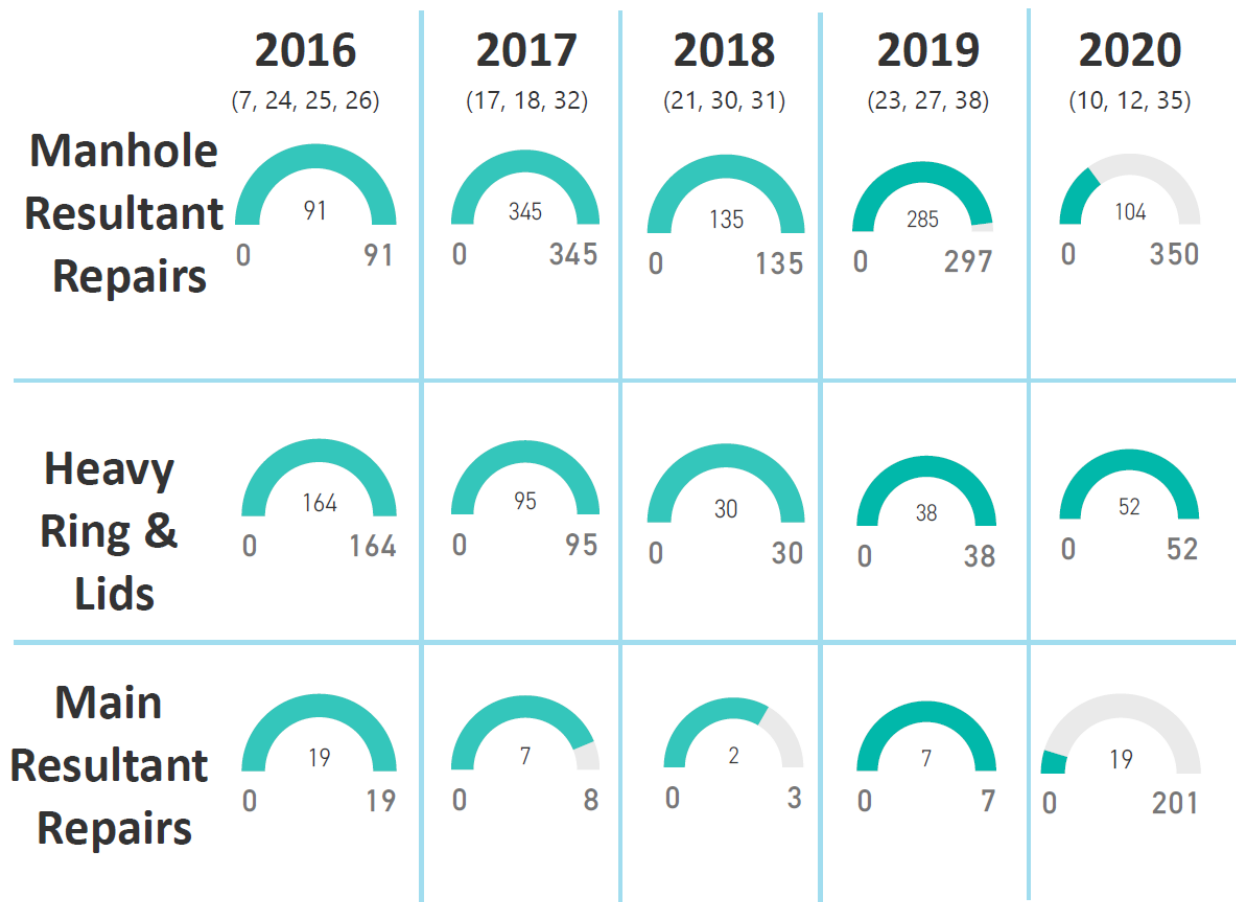
As shown in Table 5.1, CWL identified 28 main line defects in the 2021 SSES basins. As of November 1, 2021, 2 of the 28 defects have been repaired, with appropriate repairs on the others identified under evaluation or in progress. Detailed spreadsheets regarding these repairs are available upon request.

In conjunction with these repair efforts, CWL continues to evaluate main line repairs for potential candidates for CIPP lining. CWL keeps an ongoing list of prospective mains, which includes SSES basins' resultant main line repairs as well as additional mains outside of the SSES basins. See Section 13.7 for additional information.

7. Phase I SSES Resultant Repairs – Phase II Milestone

As a portion of Milestone #2 of Phase II of CAP Addendum, CWL provided a target completion date of December 31, 2025 for achieving Phase I SSES Resultant Repairs. The following graph summarizes the status of Phase I resultant repairs, as of November 1, 2021. Detailed spreadsheets regarding this information are available upon request.

Graph 7-1: Phase I SSES Resultant Repairs Status (As of November 1, 2021)



8. Phase I Corrective Action Plan Activities – Status

As identified in CWL’s CAP, Phase I milestones were actions targeted for completion from the 1st Quarter of 2016 thru the 4th Quarter of 2020. The following Sections 9 and 10 provide a summary of CWL’s continued efforts, as of November 1, 2021, to finalize Phase I milestones.

9. Phase I Capital Improvements Status

In the 2017 CAP Progress Report, CWL summarized four capital improvement projects as part of Phase 1 of the CAP. CWL provided the completion of Phase I Capital Improvements as Milestone

#5 of Phase I in the Addendum to CWL CAP. These projects were originally targeted for completion by December 31, 2020. As already stated, the iterative and ongoing process of these projects has prompted CWL to redefine Phase I and Phase II (Section 4) Capital Improvements accordingly and as described in each project’s respective section.

Although adjustments were warranted, CWL is pleased to report again this year that significant progress has been achieved toward this Phase I goal. As reported in 2020, the over **\$15.5 million** Eastside WWTP upgrade is complete and the over **\$7.7 million** Northwest (Main) Lift Station Replacement (redefined as a Phase I project) was completed in 2021. The remaining Phase I improvements are on schedule to be achieved by a revised target completion date of December 31, 2022.

The current supply chain impacts/disruptions resulting from the COVID-19 pandemic were certainly a contributing factor to the need for adjustment of a few Phase I projects’ target completion dates. Even in normalized conditions and as previously discussed with the DEQ and stated in this report, these mitigation efforts are dynamic in nature and, as such, target completion date adjustments were anticipated. With this said however, CWL considers overall mitigation improvements ahead of schedule, especially considering the status of Phase II Capital Improvement projects (Section 4).

Table 9-1 provides the updated final, current or estimated cost and the current project status for each improvement. The following sections also briefly describe each project’s current status, as well as restating the 2020 financial strategies to achieve ongoing capital improvements. In addition, see Appendix D for conceptual maps summarizing the completed, in-progress, or planned improvements.

Table 9-1: Phase I Capital Improvements (As of November 1, 2021)

Capital Improvement	Updated Cost Current or Est.	Current Status
Eastside WWTP Wet Weather Hydraulic Upgrade	\$15.539 million (current)	Construction Complete
Midtown Interceptor	\$5.2 million (estimated)	Construction Approximately 99% Complete
Ridgecrest Lift Station & Force Main/Gravity Sewer Upgrades	\$2.25 million (estimated)	Construction Approximately 50% Complete
Northwest (Main) Lift Station Replacement	\$7.748 million (final)	Construction Complete

9.1. 2020 Public Utility System Revenue Bonds – Wastewater

As reported in 2020, CWL issued **\$26 million** in Public Utility System Revenue Bonds during July 2020 for the acquisition, construction and improvement of CWL sewer and electric facilities. A portion of these funds were used toward the Main Lift Station replacement (Section 9.5) and four-mile Midtown Interceptor construction (Section 9.3). The issuance of these bonds has freed up CWL reserve funds to be utilized for other sewer system improvements, particularly the Westside WWTP replacement (Section 4.1). CWL feels these actions further demonstrated the company's commitment to sewer system improvements.

9.2. Eastside WWTP Wet Weather Hydraulic Upgrade

While the CWL Eastside WWTP biological treatment capacity remains more than sufficient as currently designed, the plant's hydraulic capacity under wet weather flows was identified for certain capital improvements to optimize operation. Plans and specifications for a hydraulic upgrade were developed by Olsson and included an 18-MGD head works pump addition, bar screen replacement to increase hydraulic throughput, and construction of one 100'-diameter clarifier and one 120'-diameter clarifier. An automated inlet flow-proportioning weir, RAS and WAS pumps, UV disinfection and additional structures and piping were also included in the upgrades.

Despite significant rainfall amounts during construction and unusual COVID-19 conditions in 2020, Van Horn substantially completed the improvements on July 28, 2020. CWL has spent to-date over **\$15.539 million** on this project. This amount does not include significant in-house costs for work performed by CWL Engineering and Management personnel.

9.3. Midtown Interceptor

In an effort to address capacity constraints in the midtown Jonesboro (i.e. E. Nettleton Ave, Kitchen St, E. Matthews Ave and Arkansas State University) area, CWL contracted Olsson to assist in the design of the Midtown Interceptor. The targeted area is defined by sanitary sewer basins JB18, JB19, JB20, and JB21, as shown in Appendix B, Basin Delineation. The project includes approximately 4 miles of 24"-diameter and 1,900' of 18"-diameter gravity sewer connecting the midtown area to the Northeast Interceptor sewer, placed in service September 2014. In 2021, approximately 690' of 24"-diameter gravity sewer was added (including a railroad bore) to the west end of the interceptor, providing a connection to the proposed Kitchen Interceptor (Section 4.2). This extension will also eliminate an existing gravity sewer hanging ditch crossing.

David Cline Construction Company, Inc. was the successful bidder for the project and was issued a formal Notice to Proceed on November 4, 2019. The total estimated cost for the

project remains approximately **\$5.2 million**. CWL has invested over **\$3.9 million** to-date. The project is currently approximately 99% complete, with final completion now projected for the first half of 2022.

9.4. Ridgecrest Lift Station & Force Main/Gravity Sewer Upgrades

The Ridgecrest Lift Station was constructed in 2002/2003 to address capacity constraints in the Ridgecrest St, Sims Ave, Owens Ave, and Parkview St area (basin JB26; App B, Basin Delineation). Utilizing the sewer hydraulic model in coordination with RJN, CWL identified the need to optimize the functionality of the lift station through a redesign to a lower hydraulic grade line and increased pump capacity. CWL contracted with Crist Engineers, Inc. in the design of the replacement station and new wet weather diversion structure. These CAP Phase I improvements will increase the wet weather capacity in the design area, including Southwest Drive.

The Arkansas Department of Health approved the lift station plans on September 30, 2020. The City of Jonesboro has also reviewed and approved the construction. Van Horn Construction was awarded the bid on March 16, 2021. Construction began in August, 2021 and is scheduled for completion in February, 2022, depending on material delivery dates.

To remove a potential hydraulic throttle downstream of the existing Ridgecrest force main, CWL is currently designing a force main extension of approximately 2,300' of 18"-diameter PVC pipe. Factoring in both the lift station and force main improvements, CWL continues to evaluate any applicable gravity sewer upgrades that may be required to increase upstream conveyance capacity and/or address potential hydraulic throttles.

The projected total cost, including force main upgrades, has been adjusted to approximately **\$2.25 million** for the project. CWL has invested over **\$676,000** on this project to date.

9.5. Northwest (Main) Lift Station Replacement

In 2019, CWL identified replacement of the Northwest (Main) Lift Station as a Phase II Capital Improvement and began the design process. The Main Lift Station is responsible for pumping raw wastewater to the Westside WWTP for treatment and is currently handling approximately 2 MGD, dry weather flow. The increased capacity of the replacement prepares the Westside system for additional capital improvements in CAP Phase II and Phase III (1st Quarter 2026 thru 4th Quarter 2030). In addition, replacing the over 40-year-old lift station addressed maintenance issues and provides a more reliable, efficient and resilient station.

Olsson and Van Horn served as the consulting engineers and CMAR on the project, respectively, which began construction in March 2020. The new lift station includes three pumps, each

capable of 6,300 gpm (9.0 MGD), with the infrastructure for the installation of a future fourth pump as capacity needs dictate.

As stated, CWL and DEQ recognize these mitigation efforts are dynamic in nature and, as such, the maintenance needs and coordination of timing with the Westside WWTP replacement for this project expedited the replacement. Therefore, CWL determined that the advanced status of the improvements logically warranted redefining it as a Phase I Capital Improvement. **CWL is pleased to report that this replacement is now complete, with the new station being placed in-service August, 2021.** CWL invested approximately **\$7.75 million** in the project.

10.Phase I SSES Status - Final

As reported in 2020, CWL prioritized basins JB10, JB12, and JB35 (App B, Basin Delineation) to study in 2020 for an estimated total of approximately 29 miles of the sewer system. At the time of the 2020 annual report, CCTV inspection was incomplete for basins JB12 and JB35. In addition coding of the 100% CCTV inspection of JB10 was still in progress. These efforts were completed in late 2020 and early 2021. The results of the 2020 SSES activities are briefly outlined in the following section. The status of resultant repairs for these basins, as well as all of Phase I, is summarized in Section 7.

With the completion of this final Phase I SSES work, **CWL is pleased to report achieving over 37% SSES of the CWL collection system and thus meeting that portion of Milestone #5 of Phase I of CAP Addendum.** See Appendix C, Basin SSES Status, for a summary of the SSES activities for CWL basins, designating years worked and CAP Phase.

10.1. Phase I SSES Activities - Final Results

The following Table 10-1 provides the final summary for the 2020 SSES activities for JB10, JB12, and JB35. Detailed reports are available upon request.

Table 10-1: 2020 SSES Activities – Final Results

Service	Quantity			
	JB 10	JB 12	JB 35	2020 Basins Total
Manhole Inspections	173	135	306	614
Manhole Resultant Repairs Identified/Repaired	136/7	37/29	177/68	350/104
Line Testing and Repairs				
Smoke Test (ft) (1)	49,681	37,864	67,218	154,763
Dye Test	183	0	43	226
CCTV (ft) (2)	98,384	0	17,757	116,141
Main Cleaned (ft) (5)	89,225	513	23,172	112,910

Service	Quantity			
	JB 10	JB 12	JB 35	2020 Basins Total
Roots Cut (ft) (6)	5,650	0	3,697	9,347
SL-Rat® (ft) (3)	80,100	3,542	63,723	147,365
Replaced/Repaired Clean Out Caps	64	2	65	131
Laterals Identified/Repaired (4)	93/29	0/0	53/18	146/47
Resultant Main Repairs Identified/Repaired	165/17	0/0	36/2	201/19

Notes:

- (1) 100% of each JB was smoke tested
- (2) CCTV footage shown from SL-Rat® assessments and smoke test defects identified. CCTV of 100% of JB10 plus SL-Rat® assessments in basin.
- (3) SL-Rat® assessments of 12" lines and smaller.
Footage includes line segments that were re-assessed due to SL-Rat® score following cleaning of lines.
- (4) Customers notified of lateral defects / Laterals repaired by customers and inspected by CWL.
- (5) 100% of JB10 cleaned plus cleaning for SL-Rat® assessments.
- (6) Chemical root treatment footage for 2020 basins included in maintenance totals reported in 2020 Annual Report, Table 10-1.

10.1.1. Contracted Additional CCTV and Cleaning

In an effort to enhance CWL’s assessment of JB10 (an older basin within the sewer system) and to assist with staffing disruptions under COVID-19, CWL invested in contracting out the cleaning and obtaining of CCTV footage for 100% of the basin in 2020. The contract followed CWL crews’ smoke testing of the basin. Therefore, the contract scope of work also included dye flooding inspection and reverse setups on an as-needed basis. CES began inspection and cleaning of the approximately 9 miles of 4” to 12” pipe within the basin on October 6, 2020 and completed on November 5, 2020. CES provided a coded report of defects found within the basin to CWL and CWL PACP® trained personnel performed an in-depth review of the report, resulting in the 165 main line resultant repairs for the basin (Table 10.1). Total cost for the contracted portion of this effort was over **\$157,000**.

11. CMOM Software – GIS Implementation

As reported in previous CWL Progress Reports, CWL selected ESRI/ArcGIS to develop GIS-based mapping for the sanitary sewer system as the necessary first step toward a long term solution for CMOM data management. The goal, as previously reported, is to further develop internal databases and data collection processes that allow integration with CWL’s IBM i server and to identify/develop software and mapping solutions that would add value to CWL’s existing system and avoid duplication of many processes.

In 2018, ESRI conducted a Needs Assessment with CWL leadership and key team members from the majority of CWL departments. This process resulted in CWL partnering with CDM Smith Inc. beginning in early 2019 to develop a GIS strategic plan, geodatabase design and system architecture, and implementation plan.

As reported in 2020, CWL invested in Dell EMC® hardware and software infrastructure to support ESRI ArcMap current and future requirements and CDM Smith delivered a preliminary sewer geodatabase for CWL's review in March 2020. CWL continues to work with CDM Smith toward the full implementation of the GIS-based sewer system mapping; ArcGIS online applications for SSES data collection, management and review; and selection of complimentary CMMS software to facilitate efficient management of SSES and sewer maintenance information.

CWL has invested to-date almost **\$500,000** toward this effort for consulting and hardware, with over **\$126,000** spent in 2021.

12. Lift Station & Force Main Evaluation – Remedial Measures

While the proper operation and maintenance and adequate capacity of CWL's lift stations and force mains have been and will remain a priority for CWL, the Lift Station and Force Main Evaluation and Maintenance Program was proposed by CWL as a milestone in the CAP Addendum as an opportunity for current staff to thoroughly re-evaluate the suitability, overall performance and condition of the system and enhance and formalize the maintenance program.

Details regarding the approach and efforts toward completing the evaluation and program were provided in CWL's 2018 thru 2020 Progress Reports. The evaluation was formalized into a written document that was prepared by the target completion date of December 31, 2019 (portion of Milestone #4 of Phase I, CWL CAP Addendum).

Through an interdepartmental collaboration, CWL scrutinized the Evaluation findings and developed appropriate remedial measures for each lift station. CWL Engineering also identified two lift station systems (Beaver Creek, Wimpy Lane, Valley View & Oak Park system and Strawfloor & Sports Complex system) for further hydraulic analysis. The evaluation of the Oak Park system continues and the assessment of the Sports Complex system resulted in that lift station being identified as a CAP Phase II improvement (Section 4.3).

A summary of the remedial measures identified and the status is provided in Appendix E. To-date, CWL has completed approximately **85%** of the measures identified at a cost of over **\$379,000**, which includes the 2020 Oak Park Force Main upgrade.

13. Collection System Maintenance

In addition to the SSES activities of the three 2021 basins and all SSES resultant repairs outlined in previous sections, CWL performed the SSO corrective actions summarized in Table 13-1 as part of the routine inspection and maintenance of the collection system in various other areas throughout the system.

Table 13-1: 2021 Routine Collection System Maintenance (November 1, 2020 thru October 31, 2021)

Service	Quantity
	Routine Maintenance
Manhole Improvements:	
Repair/Seal Manhole	20
Adjusted Manhole	9
Replace Manhole Ring	1
Line Testing and Repairs:	
Smoke Test (ft)	0
Dye Test	82
CCTV (ft)	161,180
Main Cleaned (ft)	299,348
Roots Cut (ft)	6,637
SL-Rat® (ft) (1)	1,876,544
Laterals Identified / Repaired (2)	4/1
Sewer Main Repairs:	
Point Patch	135
Other Main Repairs	4
Chemical Root Treatment (ft) (3)	31,578
Capped Abandoned Laterals	0
CWL Repaired Laterals	0
Annual Inspections:	
Ditch Crossings Inspected	47
Air Relief Valves Inspected	5
Back-Lot Lines Inspected	42

Notes:

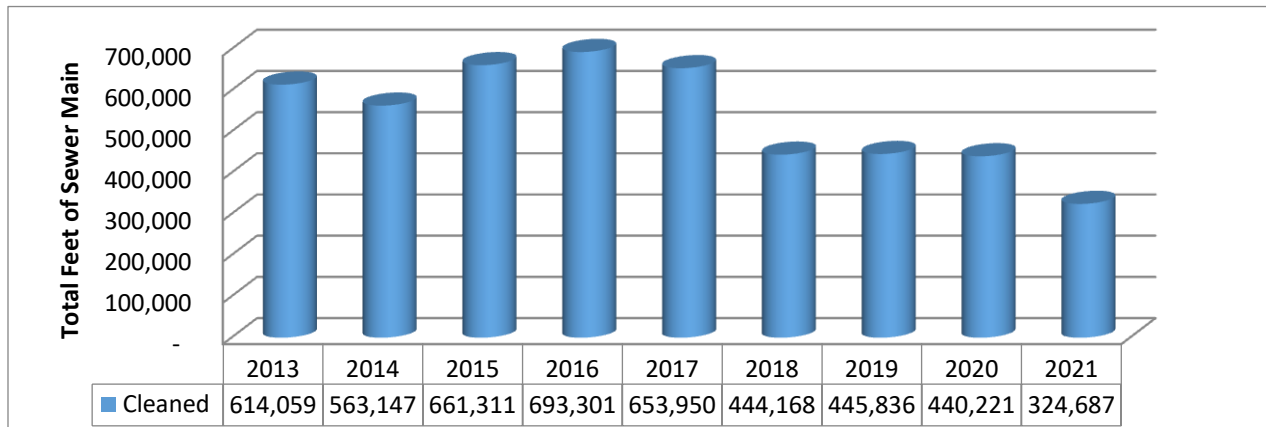
- (1) SL-Rat® assessments of 12" lines and smaller.
Footage includes lines segments that were re-assessed due to SL-Rat® score following cleaning of lines.
- (2) Customers notified of lateral defects / Laterals repaired by customers and inspected by CWL.
- (3) Includes chemical root treatment footage in 2021 SSES basins.

The following sections briefly provide further details for some of these SSO corrective actions.

13.1. Sewer Mains Cleaned

As presented in the CAP, CWL sewer service trucks maintain the system through routine cleaning. Graph 13-1 provides a summary of the past 8 years' totals, along with the total footage cleaned for January 1st thru October 31st of 2021.

Graph 13-1: Sewer Mains Cleaned (2013 thru October 31, 2021)



Note:

In the 2020 Progress Report, Total Feet of Sewer Main Cleaned was reported as 424,206'. November (11,162') and December (4,853') 2020 is included in the 2020 total shown.

The reduced cleaning footage following 2017, as shown in Graph 13-1 above, can be attributed to the efficiencies CWL is realizing through use of the SL-Rat®. See the following Section 13.2 for additional details.

13.2. SL-Rat® Activities

As previously reported, CWL began utilizing the SL-Rat® for acoustic inspections in July of 2016 to increase efficiency of sewer line blockage assessment. Lines that score poor to blocked are hydro cleaned and re-assessed. If the line continues to score poor to blocked for its size, the line segment is then inspected through CCTV to further evaluate the apparent blockage.

As CWL has refined procedures for the effective use of the data produced for different main sizes and material, CWL has found this tool allows for more efficient hydro cleaning efforts and CCTV inspections and thus increased SSES productivity and SSO mitigation. The reduced cleaning footage in CWL's routine maintenance of the collection system illustrates how effective this tool is to concentrate cleaning efforts in locations warranting the effort.

Based on these positive results, CWL again performed 100% SL-Rat® inspection of 12" and smaller mains in the three 2021 SSES basins, as well as in the rest of the collection system. Table 13-2 shows the ratings of the total line segments, including the approximately 165,579' in the 2021 SSES basin segments, tested with the SL-Rat® from November 1, 2020 thru October

31, 2021. A detailed report of the line segments tested in the 2021 SSES basins and a complete report of all line segments tested in 2021 are available upon request.

Table 13-2: SL-Rat® Sewer Line Assessment Results (November 1, 2020 thru October 31, 2021)

SL-Rat® Data for Total System	
Rating (1)	Quantity (line segments)
10-5	8,267
4-0	1,054
Footage= 2,041,473	

13.2.1. Contracted Additional SL-Rat® Assessments

In an effort to sustain annual maintenance activities during the disruptions associated with COVID-19, CWL invested in contracting portions of the system-wide acoustic inspections in 2020. As reported last year, MoS Environmental, Inc. completed SL-Rat® assessment of over 350,000’ of sewer mains in seven basins on November 11, 2020. Including recommendations for sections requiring immediate attention, the project’s total cost was just over **\$70,000** and expensed in part during 2021. CWL performed all 2021 SL-Rat® assessments in-house.

13.3. Contracted iTracker Assessments

CWL was introduced to iTracker® sensors in 2020 as a means to efficiently and accurately identify sections within the collection system with significant I&I contributions. As a means to enhance SSO mitigation efforts and test this technology’s effectiveness toward CWL’s goals, CWL contracted with Duke’s for an I&I micro detection project. This project consisted of using the iTracker® sensors to assess over 60,000’ of sewer mains in the JB01 basin, with the sections with inflow or infiltration that require attention identified. The sensors were deployed from January 13, 2021 to February 25, 2021. CWL was presented with results in April 2021. CWL is using this information to enhance I&I reduction efforts in JB01. The iTracker project results are available upon request. CWL invested **\$29,000** in the project.

13.4. Root Control Activities

Through an existing root control contract with Duke’s, approximately 31,578’ of sewer mains were chemically treated in 2021. A detailed report of the line segments, located throughout the collection system, chemically treated in 2021 is available upon request.

In addition to chemical treatment, CWL continues its practice of using a sewer rodding machine and sewer trucks equipped with jetter nozzles for controlling roots within the collection system. Approximately 7,440’ of sewer mains were root cut throughout the 40 basins of the system November 1, 2020 thru October 31, 2021.

In the past, annual footage chemically treated was based on the roots identified/cut in sewer mains the previous year. As discussed in 2020, CWL has continued proactive efforts to chemically treat identified mains as expeditiously as practical.

13.5. Contracted Additional CCTV and Cleaning

Due to recent findings in JB30, CWL invested in contracting out the cleaning, obtaining CCTV footage, and providing rehab recommendations for 100% of the basin. The contract scope of work includes reverse setups on an as-needed basis along with detailed recommendations for rehab of the inspected sewer mains. CES began inspection and cleaning of the approximately 5.6 miles of 4" to 12" pipe within the basin in December 2021. CES will be providing a coded report of defects found within the basin to CWL along with their rehab recommendations. Total estimated cost for this effort is over **\$109,000**.

13.6. Manhole Hybrid Polyurea Lining Rehabilitation

In conjunction with the manhole repair and rehabilitation efforts outlined in previous sections, CWL developed a list of 56 manholes for high-performance lining rehabilitation. The majority of these manholes are located at a lift station discharge point or at a manhole upstream and/or downstream of the discharge. CWL let a contract for bids on these rehabilitations in April 2021. Midwest Infrastructure Coatings, LLC from Owensville, MO won the bid with a three-part polyurea rehabilitation coating and began work in July of 2021. Two additional manholes were added to the original 56 and as of November 1, 2021, 52 of the 58 manholes have been rehabilitated. A detailed spreadsheet regarding the manholes identified for high-performance lining and rehabilitation status is available upon request. CWL has invested over **\$203,000** to-date on this project, including in-house labor for inspections.

13.7. Sewer Main CIPP Lining

CWL evaluates each main line defect as a potential candidate for CIPP lining. CWL has developed a list of prospective mains, which includes both resultant repairs from SSES basins as well as additional mains identified for repairs. CWL let a contract for bids on these repairs in November 2021. The contract includes approximately 8,000' of CIPP lining with a current estimated cost of **\$640,000**. A detailed spreadsheet regarding the sewer mains identified for CIPP lining is available upon request.

13.8. Dead End Sewer Mains Manhole Installations

As a result of performing SSES in older basins during 2020, CWL began an effort to contract out the installation of manholes on existing dead end sewer mains. These improvements will not only facilitate any required rehabilitation on associated sewer mains but also future cleaning and inspecting needs. The first contract for 13 manholes in JB10 was let in May 2021 and Cline NEA Underground Inc. was awarded the bid. CWL is in the process of developing a second

contract of manholes in JB20 for bids in 2022. CWL has invested over **\$47,000** toward this effort to-date. Detailed information regarding manhole locations is available upon request.

14. Sewer Lateral Repair Program Status

Formally started in 2013 and refined in 2016, CWL’s Sewer Lateral Repair Program is utilized to address identified sewer lateral defects both inside and outside of the SSES basins being evaluated each year. The program consists of detailed lateral defect records and associated customer interactions. Upon confirmation of a private lateral defect, the property owner is notified and appropriate follow-up is then performed and tracked through the program. The following Table 14-1 summarizes CWL’s efforts since 2016 by laterals identified and current repair status totals for all basins. Detailed spreadsheets regarding these repairs are available upon request.

Table 14-1: Total Lateral Defects Identified & Current Repair Status (As of November 1, 2021)

Total	Identified	Repaired	Percent Complete
2016	94	80	85%
2017	37	36	97%
2018	58	47	81%
2019	33	19	58%
2020	153	50	33%
2021	112	30	27%
Total	487	262	54%

15. FOG Management Program Status

As presented in the CAP, CWL’s FOG Management Program monitors FSEs through quarterly grease interceptor inspections while also conducting FOG public outreach by means of educational brochures, company website, customer billing, newspaper, television, and/or other media outlets such as Facebook, Twitter, and Instagram. Since the initial CAP, CWL has made significant efforts to further enhance its FOG Management Program, as presented in previous Progress Reports, with the expansions of quarterly grease interceptor inspections and FOG outreach to public schools; development of a several FOG brochures and postcards; and enhancement of FSE monitoring activities within the collection system.

CWL’s FOG Management Team is comprised of representatives from the following departments: Water and Sewer Service/Maintenance, Water and Wastewater Treatment, Laboratory, Engineering and General Operations. The Team meets routinely to review and evaluate current FOG Management Program elements, identify potential ways to enhance the

program, and ensure implementation of the previously mentioned inspection and outreach activities.

The FOG Management Team continues to work diligently to further enhance and expand its outreach efforts through increased monitoring and sampling efforts and door hanger and postcard distributions. As previously reported, increased monitoring and sampling within the collection system has allowed CWL opportunities to collaborate with FSEs and also distribute outreach material concerning the proper disposal of FOG.

In addition to the residential FOG door hangers first distributed in 2019 and developed for residential areas where evidence of FOG has been identified in the collection system, a “sewer trash” door hanger was developed and approved in 2020. Similar to the FOG door hanger, the “sewer trash” version targets collection system areas identified with trash issues. CWL distributed 1,230 FOG and “sewer trash” door hangers to residential areas in 2021.

The Team began holiday postcard deliveries focused on FOG and “sewer trash” in 2020 and continued these efforts in 2021, with the development of a Halloween themed postcard (Appendix F) focused on FOG. These were delivered in October 2021 to approximately 44,000 residential and post office box customers.

As reported in 2020, the Team developed a children’s activity book for distribution to area public schools (Appendix G) as a creative solution for continued public school outreach during the COVID-19 challenges. These activity books, distributed in the first quarter of 2021, provided information and activities related to FOG disposal, wastewater treatment, and sewer trash disposal. In November 2021, FOG team members were able to conduct a school program that focused on FOG and sewer trash at one of the local public elementary schools. The Team plans to continue these elementary school outreach efforts in 2022, which may include FOG/sewer trash programs and/or distribution of the children’s activity book.

The on-going efforts of the FOG Management Team allows CWL to continually evaluate and improve, as identified, the current components of the FOG Management Program, with a goal of heightening its effectiveness in SSO mitigation.

16. Lift Station Maintenance and Improvements

As previously reported, both the Hereford Lift Station and Morton Mitchell Lift Station are currently being replaced with gravity sewer as part of the Midtown Interceptor contract. In addition, CWL has knowledge of the potential decommission, upgrade or relocation of up to four other lift stations as a positive result of residential developments.

As reported in the 2019 Progress Report, CWL identified the Colony Park Lift Station for potential upgrades. Due in part to the focused use of personnel for project and operational priorities under the constraints of the COVID-19 environment in 2020, CWL rescheduled the upgrade for 2021, depending on final prioritizations for the year. In 2021, CWL determined that the 2016 Hereford Lift Station, upon decommissioning, could be successfully utilized for the Colony Park upgrades. Therefore, the Colony Park improvements are now pending the Hereford removal. The Colony upgrades are planned to include a generator and manual transfer switch and is currently estimated at a total cost of **\$200,000**.

In 2021, CWL also began further assessment of the Dorton Road Lift Station (Appendix H), serving the Jonesboro Industrial Park. CWL determined that the following improvements are warranted:

- (1) Replace existing wet well piping.
- (2) Coat the wet well walls.
- (3) Add VFDs to pumps.
- (4) Upgrade electrical equipment to mitigate arc flash concerns.
- (5) Increase ventilation through the building to combat corrosive gases.

This work is preliminary planned to begin in 2022, depending on personnel constraints and material availability, and currently estimated at a total cost of **\$1 million**.

As part of CWL's SSO mitigation efforts and as previously reported, CWL improved specifications to now require developer installed new lift stations to include, in general: (1) the discharge manhole to be constructed with Spectra Shield (or equal) protective coating; (2) a Rosemount Magnetic (or equal) flow meter to be installed; and (3) a stationary diesel fuel Kohler (or equal) emergency generator with an automatic transfer switch to be installed. The success of these enhanced specifications was realized in CWL's newest lift station, the Villas, online May 19, 2020.

Beyond these steps and planning, CWL continues to evaluate and prioritize future lift station needs and will determine if any additional lift station projects should be scheduled for 2022 in addition to the Sports Complex and Ridgecrest Lift Stations discussed in Sections 4.3 and 9.4, respectively.

17. Conclusion

CWL is pleased to present the activities outlined in this report as evidence of CWL's ongoing efforts in SSO mitigation. Due to the creative and resilient efforts of CWL personnel, these activities were achieved even while navigating the current supply chain impacts/disruptions of the COVID-19 pandemic.

As stated in the CAP, CWL fully understands the iterative, ongoing nature of this process and is committed to continual improvement of the management and operation of the collection system and maintaining adequate capacity of the system. This commitment was, in CWL's opinion, even more fully demonstrated in the uncommon and dynamic events of the past two years. CWL believes that these ongoing proactive efforts and associated capital expenses, as well as the future corrective actions identified in CWL's CAP Addendum, demonstrate CWL's dedication to collection system improvements.

This CAP report represents CWL's fulfillment of DEQ's request for an annual progress report and constitutes CWL's sincere interest in ongoing and transparent communication with the DEQ beyond the fulfillment of our voluntary commitment of a Progress Report every two years, as presented in item IV of the Addendum to CWL CAP.

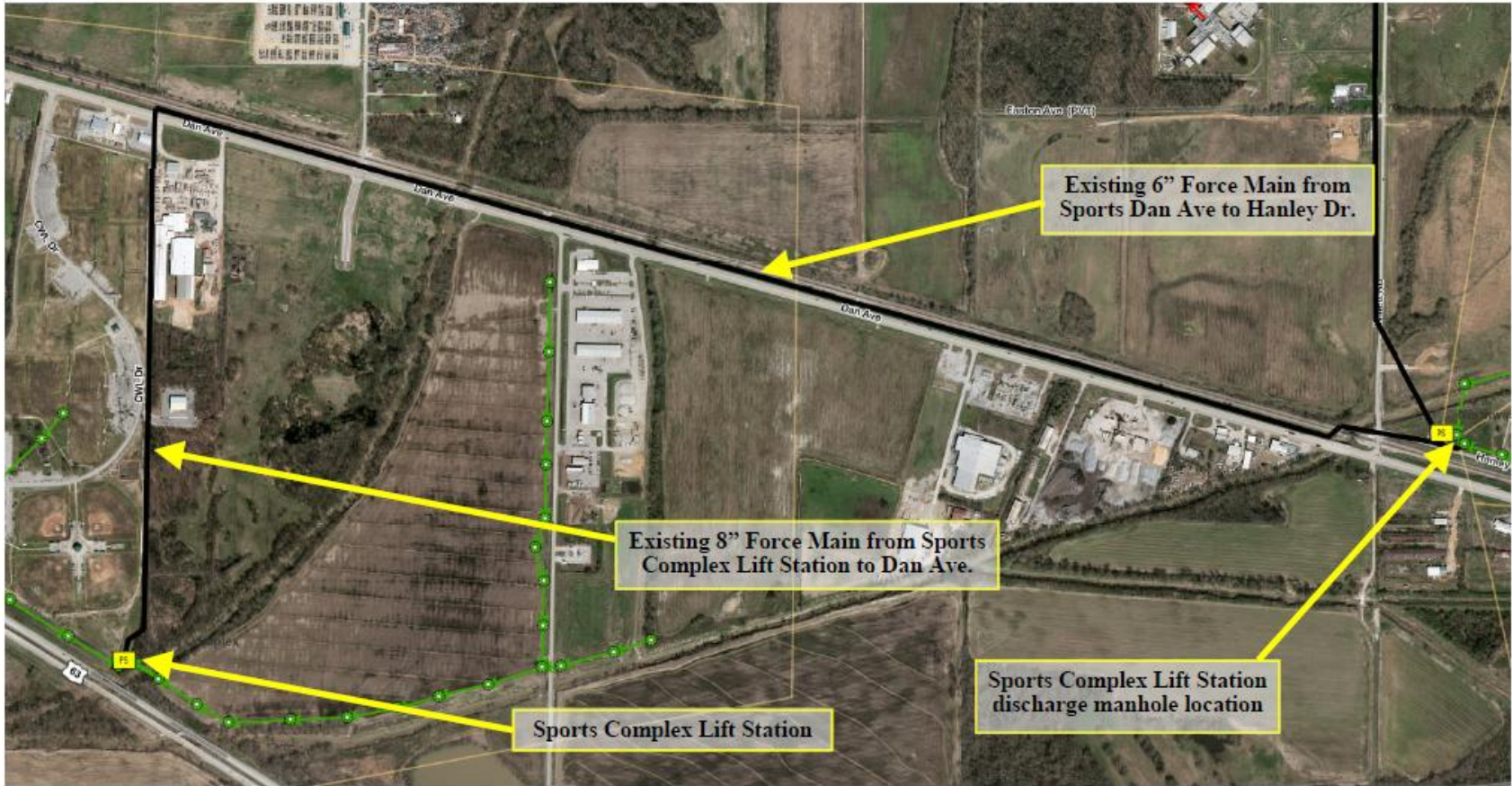
Appendix A

Phase II Capital Improvements



Kitchen Interceptor Phase I





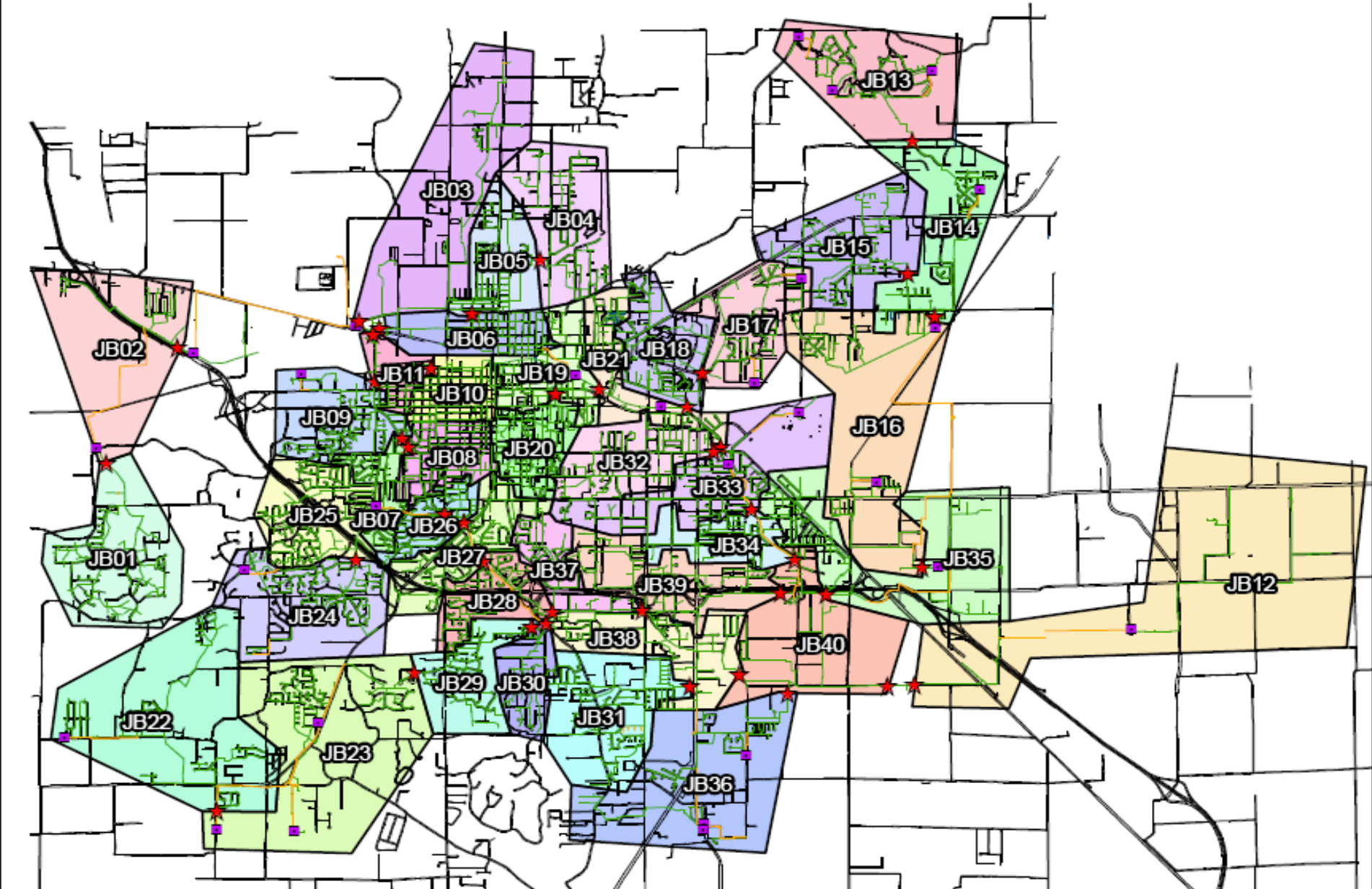
Sports Complex Lift Station



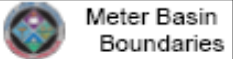
Appendix B

Basin Delineation

Jonesboro, AR



★ Meter Site — Force Mains □ R/JN Meter Basins
■ Lift Stations — Sewer Lines



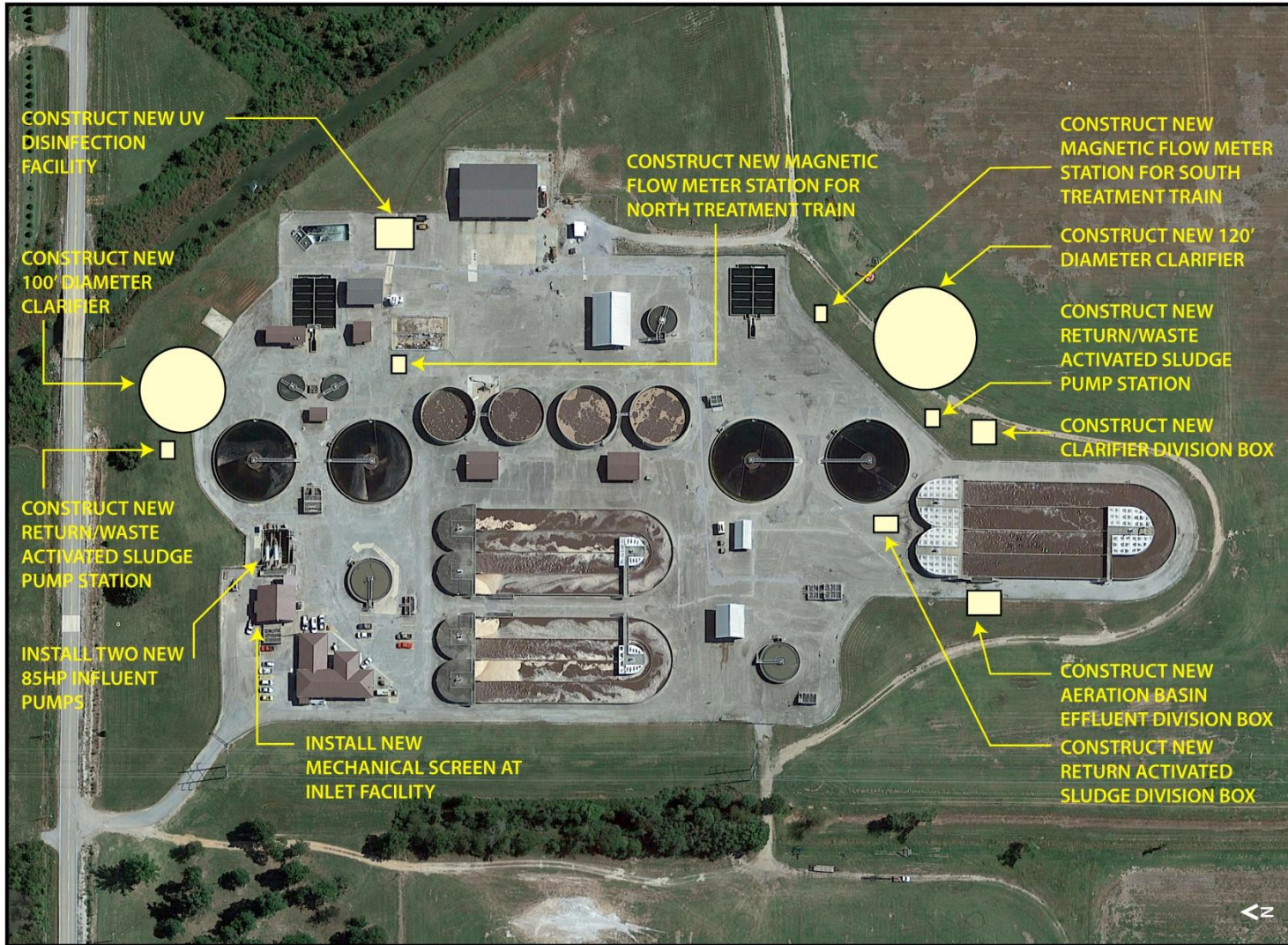
Appendix C

Basin SSES Status

SSES Basins by Year/Phase	
Basin	Year of SSES
JB 01	
JB 02	
JB 03	
JB 04	
JB 05	2021
JB 06	
JB 07	2016
JB 08	
JB 09	2021
JB 10	2020
JB 11	
JB 12	2020
JB 13	
JB 14	
JB 15	
JB 16	
JB 17	2017
JB 18	2017
JB 19	
JB 20	2021
JB 21	2018
JB 22	
JB 23	2019
JB 24	2016
JB 25	2016
JB 26	2016
JB 27	2019
JB 28	
JB 29	
JB 30	2018
JB 31	2018
JB 32	2017
JB 33	
JB 34	
JB 35	2020
JB 36	
JB 37	
JB 38	2019
JB 39	
JB 40	
	Phase I SSES
	Phase II SSES

Appendix D

Phase I Capital Improvements

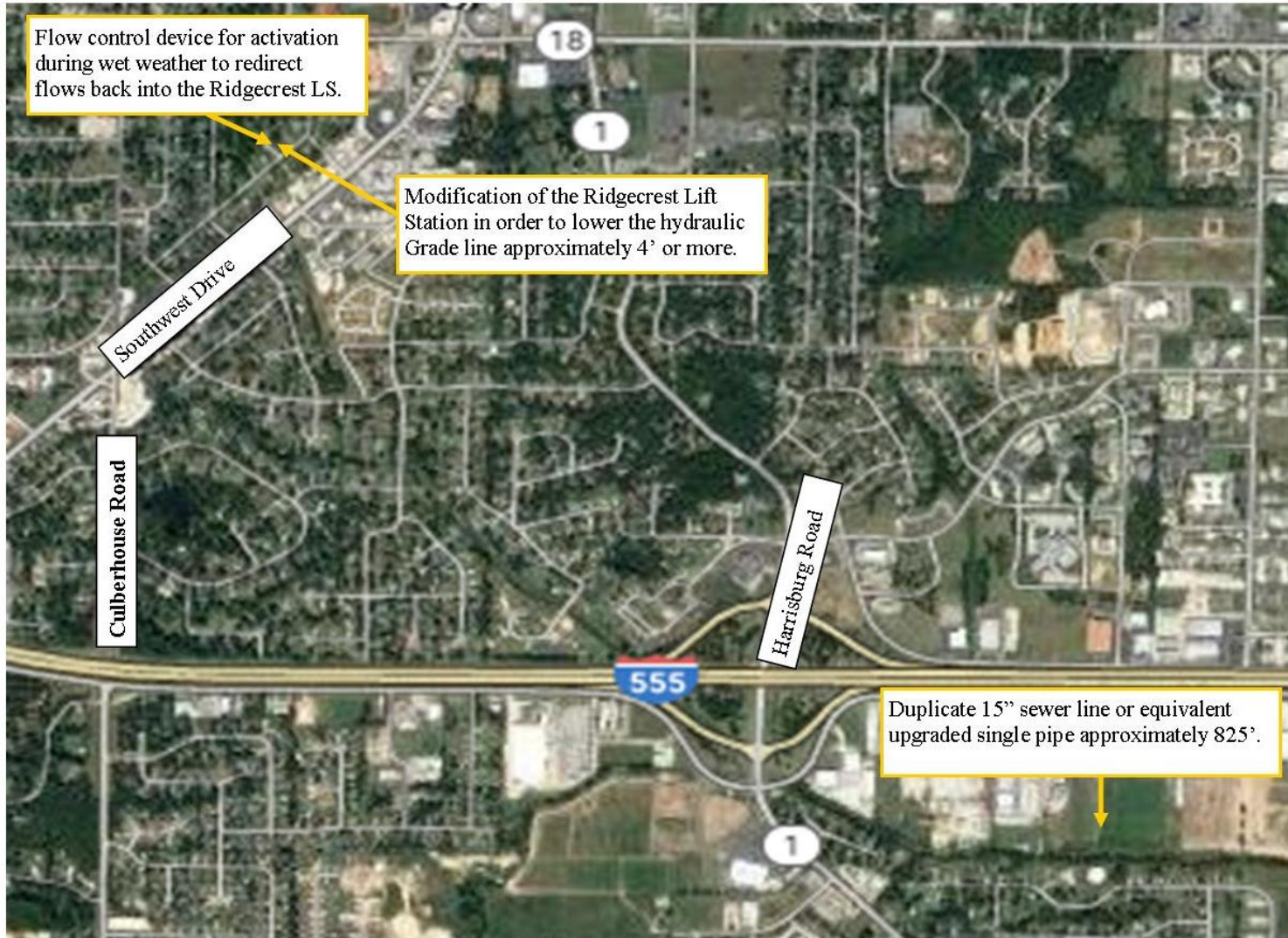


EASTSIDE WASTEWATER TREATMENT PLANT IMPROVEMENTS

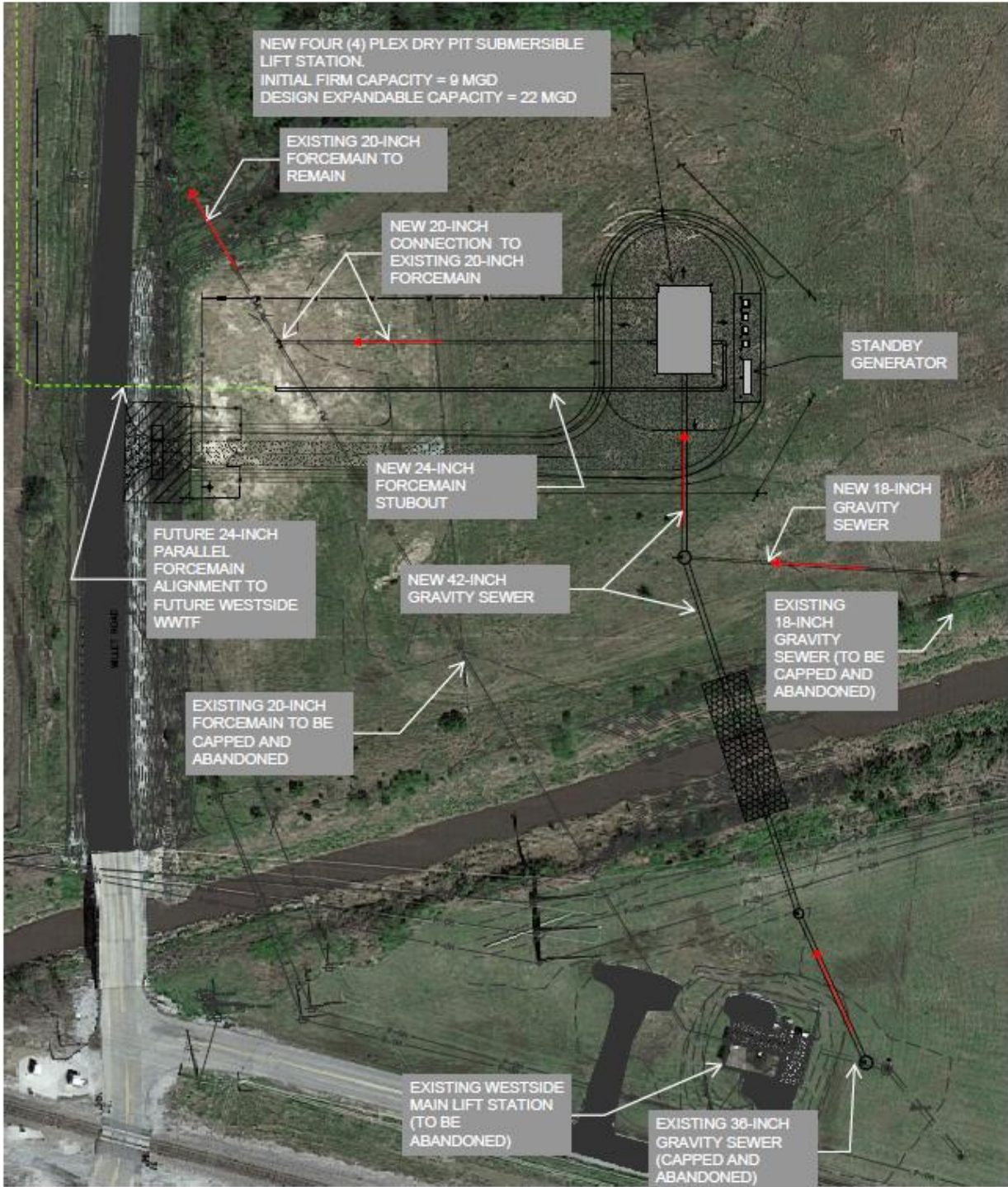


Midtown Interceptor Sewer





Ridgecrest Lift Station and Gravity Sewer



NEW WESTSIDE MAIN LIFT STATION

NOT TO SCALE



DECEMBER 2020

Appendix E

Lift Station & Force Main Remedial Measures

Lift Station Remedial Measures		
Lift Station	Remedial Measure	Status
Airport	Fill Low Spots	Complete
Airport	Install Lightning Strike Protection	Complete
Airport	Install Manual Transfer Switch (Portable Generator Connection)	Complete
Airport	Reinstall Ventilation Pipe & Cover Holes on Wet Well Lid	Complete
Beaver Creek	Install Lightning Strike Protection	Complete
Beaver Creek	Install Manual Transfer Switch (Portable Generator Connection)	Complete
Beaver Creek	LED Light on Existing Pole	Complete
Clinton School	Fill Perimeter for Drainage	Complete
Clinton School	Install Lightning Strike Protection	Complete
Clinton School	Install Pressure Probe as Wet Well Primary Control	Complete
Clinton School	LED Light on Existing Pole	Complete
Colony Park	Add Fencing	In Progress
Colony Park	Concrete & Chat Driveway for Vehicle Access	In Progress
Colony Park	Install 6" Electromagnetic Flow Meter	In Progress
Colony Park	Install Full SCADA	In Progress
Colony Park	Install LED Light Directional Light w/ Switch	Complete
Colony Park	Install Lightning Strike Protection	Complete
Colony Park	Install Pressure Probe as Wet Well Primary Control	Complete
Commerce Drive	Install Lightning Strike Protection	Complete
Commerce Drive	Install Pressure Probe as Wet Well Primary Control	Complete
Congress Circle	Install Drive for Vehicle Accessibility	Complete
Congress Circle	Install LED Light & Pole	Complete
Congress Circle	Install Lightning Strike Protection	Complete
Congress Circle	Install Manual Transfer Switch (Portable Generator Connection)	Complete
Congress Circle	Install Pressure Probe as Wet Well Primary Control	Complete
Congress Circle	Install Status-Only SCADA	In Progress
Dorton Road	Install 2 Lift Station Bypasses with Tee & Valve	In Progress

Lift Station Remedial Measures		
Lift Station	Remedial Measure	Status
Dorton Road	Install 2-12" Electromagnetic Flow Meter	In Progress
Dorton Road	Install Lightning Strike Protection	Complete
Dorton Road	Install Pressure Probe as Wet Well Primary Control	Complete
Horseshoe Trail	Add Fencing	Complete
Horseshoe Trail	Install Lightning Strike Protection	Complete
Horseshoe Trail	Install Pressure Probe as Wet Well Primary Control	Complete
Minx Hill (226)	LED Light Directional Light w/ Switch	Complete
Oak Park	10" Electromagnetic Flow Meter	Complete
Oak Park	10" Plug Valve Installation (Flow Throttling Capability)	Complete
Oak Park	90 Degree and Down b/w Wet Well Points for VV FM	In Progress
Oak Park	Install Lightning Strike Protection	Complete
Oak Park	Install Pressure Probe as Wet Well Primary Control	Complete
Oak Park	Replace Existing Light on Pole w/ LED Light	Complete
Oak Park	Wet Well Spraying to Address Flaking	In Progress
Sage 1 (Southern Hills)	Install LED Light & Pole	Complete
Sage 1 (Southern Hills)	Install Lightning Strike Protection	Complete
Sage 1 (Southern Hills)	Install Manual Transfer Switch (Portable Generator Connection)	Complete
Sage 1 (Southern Hills)	Install Pressure Probe as Wet Well Primary Control	Complete
Sage 2 (HWY 351)	Install LED Light & Pole	Complete
Sage 2 (HWY 351)	Install Lightning Strike Protection	Complete
Sage 2 (HWY 351)	Install Manual Transfer Switch (Portable Generator Connection)	Complete
Sage 2 (HWY 351)	Install Pressure Probe as Wet Well Primary Control	Complete
Sage 2 (HWY 351)	Status-Only SCADA	Complete
Sage 3 (Lochmoor)	6" Electromagnetic Flow Meter	In Progress
Sage 3 (Lochmoor)	Install Drive for Vehicle Accessibility	In Progress
Sage 3 (Lochmoor)	Install Lightning Strike Protection	Complete
Sage 3 (Lochmoor)	LED Light Directional Light w/ Switch	Complete

Lift Station Remedial Measures		
Lift Station	Remedial Measure	Status
South Bend (Viney Creek)	Fill in Low Spots for Drainage	In Progress
South Bend (Viney Creek)	HydroRanger Replaced w/ Pressure Probe	Complete
South Bend (Viney Creek)	Install Lightning Strike Protection	Complete
South Bend (Viney Creek)	Install Manual Transfer Switch (Portable Generator Connection)	Complete
South Bend (Viney Creek)	LED Light Directional Light w/ Switch	Complete
Southeast	Install Lightning Strike Protection	Complete
Southeast	Replace Valves (Maintenance Improvement)	Complete
Southwest	Construct Concrete Driveway	Complete
Southwest	Install Lightning Strike Protection	Complete
Sports Complex	Construct Chat Drive for Vehicle Accessibility	Complete
Sports Complex	Install Lightning Strike Protection	Complete
Sports Complex	Install Pressure Probe as Wet Well Primary Control	Complete
Sports Complex	Octocrete b/w Wet Well Stacks (Groundwater I&I)	Complete
Spring Valley	Install LED Light on Existing Pole	Complete
Spring Valley	Install Lightning Strike Protection	Complete
Spring Valley	Install Manual Transfer Switch (Portable Generator Connection)	Complete
Strawfloor	Install LED Light on Existing Pole	Complete
Strawfloor	Install Lightning Strike Protection	Complete
Turtle Creek	Install LED Light in Fenced Area	Complete
Turtle Creek	Install Lightning Strike Protection	Complete
Valley View	10" Electromagnetic Flow Meter	Complete
Valley View	10" Plug Valve Installation (Flow Throttling Capability)	Complete
Valley View	Install Lightning Strike Protection	Complete
Valley View	Install Pressure Probe as Wet Well Primary Control	Complete
Valley View	Lift Station Bypass with Tee & Valve	Complete
Valley View	Replace Force Main Discharge Valve	Complete
Wimpy Lane	Install Lightning Strike Protection	Complete

Lift Station Remedial Measures		
Lift Station	Remedial Measure	Status
Wimpy Lane	Install Pressure Probe as Wet Well Primary Control	Complete
		70 / 82

Notes:

1. Hereford and Morton & Mitchell Lift Stations will be Decommissioned and Replaced with Gravity from Midtown Interceptor
2. Ridgecrest Lift Station is being Upgraded and Main Lift Station Upgrade is Complete
3. Engineering is Analyzing Need for Improvements on the Beaver Creek, Wimpy Lane, Valley View, and Oak Park Lift Stations' Conveyance Systems
4. Engineering has Identified the Sports Complex Lift Station as a Phase II Capital Improvement
5. Dorton Road Lift Station has been Identified for Improvements in 2022
6. Colony Park Lift Station has been Identified for Improvements in 2022

Last Revised: December 21, 2021

Appendix F

FOG Halloween Postcard

Please check this proof CAREFULLY. We, the printer, cannot accept responsibility for errors on an approved proof.

HELP US KEEP F.O.G. OUT OF THE SEWER SYSTEM

1. AFTER COOKING FOOD THAT CONTAIN FATS, OILS, AND GREASE (F.O.G.), LET THE F.O.G. COOL TO A SAFE TEMPERATURE.
2. PUT THE F.O.G. INTO A DISPOSABLE, CONTAINER (E.G. AN EMPTY SOUP CAN) AND DISPOSE OF THE CONTAINER IN THE TRASH.
3. SCRAPE FOOD SCRAPS FROM THE DISHES INTO THE TRASH CAN. USE A PAPER TOWEL TO WIPE F.O.G. OUT OF THE POTS AND PANS BEFORE WASHING THEM.
4. USE SINK STRAINERS TO CATCH FOOD WASTE DURING DISH WASHING. EMPTY THE STRAINER IN THE TRASH CAN.
5. SOAK UP SPILLED F.O.G. WITH AN ABSORBENT MATERIAL SUCH AS PAPER TOWELS OR KITTY LITTER AND THROW IT INTO YOUR TRASH CAN.



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SCRAPE - DON'T RINSE

DON'T FEED THE F.O.G. MONSTER



City Water & Light
400 E. Monroe, P.O. Box 1289
Jonesboro, AR 72401

PSRT STD
U.S. POSTAGE
PAID
PERMIT NO. 18
JONESBORO, AR
ECRWSS

*****ECRWSEDDM****

Postal Customer

Appendix G

FOG Activity Book

An overflowing toilet can ruin your home in an instant!



Word Search:

M F J R D S E B M Y E P N
 N K S Z U S P V A U E E K
 P I Z N A I R U A N D W R Y U
 I O P E R R N W K I D E J I F
 P G R E D L K M C C B A E R F
 E G P F I H A I R M A V I Q O
 S A B L A Z N E U X I B K D D
 P W A U P E W L V S F L O S S
 S C T S E W P R N T O I L E T
 L Y H H R B I E A Y R M M H K
 F F R A S T P P L P U E I K H
 O L O B H X W F E G P N W L O
 O O L E E U R H S K E H E U
 D O M E O V E R F L O W R Y S
 B D R X N P L A S T I C S S E

Word List:

- GUM
- WRAPPERS
- TOILET
- PLUMBER
- EXPENSIVE
- OVERFLOW
- FLOOD
- WIPES
- DIAPERS
- MEDICINE
- FLOSS
- PAPER
- FOOD
- GREASE
- RUIN
- BATHROOM
- PIPES
- SEWER
- HOUSE
- FLUSHABLE
- BACKUPS
- BANDAIDS
- HAIR
- THINK
- PLASTICS

Jonesboro Wastewater Crossword



ACROSS

4. "Flushable" does not always mean _____!
5. One Mercury thermometer can _____ 1,000,000 gallons of water.
6. Other things in your home that may contain Mercury are thermostats and fluorescent _____.
11. Prescription & Over The Counter _____ should not be put down the drain.
12. Paint thinners, brake cleaners, nail polish removers and other _____ should not be poured down the drain.

DOWN

1. "Wipes clog _____!"
2. Don't Pour Fats, Oils and Grease down your sink drain. Instead, you should _____ it, Can It, Trash It!
3. _____ is good to clean in between your teeth, but bad for your pipes.
6. This item makes popcorn, pancakes and muffins more tasty, but it surely is not welcomed down kitchen drains and pipes.
7. Kitchen sinks and toilets all run directly into our _____ system.
8. Pouring grease into a tin can and storing it in this will help eliminate F.O.G. down your drain and prevent clogged sewer pipes.
9. The only kind of paper that should be flushed.
10. Where you should throw away ALL kinds of used wipes.



Both the sink and toilet pipes run to our sewer system. Seek and find the following items that should not be put down the sink or flushed... If you do, you may just need to use one item to get rid of your clog!

Bandaid	Ketchup Bottle	Bubble Gum	Fish
Bacon	Hot Dog	Hairbrush	Egg
Butter Stick	Chicken Leg	Salad Dressing	Wipes Container
Dental Floss	Steak	Tin Can	Thermometer
Container	Medicine Container	Rungler	

Appendix H

Dorton Road Lift Station Improvements



Dorton Road Lift Station

