



LITTLE ROCK

**Water Reclamation
Authority** ONE WATER.
ONE FUTURE.

SIERRA CLUB

Settlement Compliance Report

Submitted to the Little Rock
Water Reclamation Commission
February 21, 2018

2017

SIERRA CLUB SETTLEMENT
ANNUAL REPORT
FOR 2017

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**SIERRA CLUB SETTLEMENT COMPLIANCE REPORT
FOR 2018
EXECUTIVE SUMMARY
From Greg Ramon, C.E.O.**

I am pleased to submit the attached Sierra Club Annual Report outlining the progress Little Rock Water Reclamation Authority (LRWRA) has made in mitigating sanitary sewer overflows during 2017. System improvements began on September 12, 2001, when LRWRA (formally Little Rock Wastewater) and the Sierra Club signed the Settlement Agreement (Agreement). Since then, LRWRA has worked diligently to comply with the terms set forth. Since its inception, LRWRA has spent more than \$364 million to meet the requirements of the Agreement. It is projected to cost an additional \$173 million to renew the aging collection system and to reduce the occurrence of sanitary sewer overflows. Since the signed Agreement, LRWRA has realized great success in mitigating non-capacity related overflows and continued to meet the Agreement throughout 2017. This is a result of the established maintenance procedures and schedules which continue to provide the desired results by minimizing mainline stoppages within the collection system. It is my privilege to say that LRWRA continues to meet the requirements for non-capacity overflows outlined in the Agreement.

As it relates to capacity related overflows, LRWRA continues to have success. We have secured the needed sewer rate increases and bond financing necessary to continue to make the improvements to the system. We have embarked on renewing the collection system, increasing capacity by 31 million gallons at the Scott Hamilton Peak Flow Facility and we will make improvements at the Fourche Creek Water Reclamation Facility as well as the Adams Field Water Reclamation Facility.

In June 2017, we made a shift in our identity from Little Rock Wastewater to Little Rock Water Reclamation Authority. We're not about wasting water; we're about reclaiming, cleaning and returning the water to nature. We believe the name change aligns better with our efforts to protect the environment.

Also as part of our communication efforts, LRWRA continues to educate our customers on available programs to assist in preventing overflows, maintaining a reliable sewer system and construction projects around the city. Our commitment to helping residents receive reliable service is as strong as ever. We continue to promote our *Can the Grease* © and *Sewer Service Line Replacement Program* which decreases the frequency and magnitude of sanitary sewer overflows. In 2017, we began a new program called *Cap the Cleanout* where LRWRA will replace a missing or damaged cap on a resident's cleanout. This continues to help us seal the system and protect the environment.

I am proud of the past success and look forward to future improvements which continue to move LRWRA in the right direction. We believe our efforts are in line with improving our community and the environment we all cherish.

Respectfully submitted,

Greg Ramon, CEO

I. INTRODUCTION

The following activities constituted LRWRA's major compliance efforts which are discussed with other activities in the order mentioned, consisting of (1) Project Updates; (2) Financing; (3) Other Compliance Actions; (4) Supplemental Environmental Projects; (5) 2017 Non-Capacity Related Sanitary Sewer Overflows; and, (6) 2017 Capacity Related Overflows.

II. PROJECTS UPDATE

The System Evaluation Capacity Assurance Plan (SECAP) update is the Capital Improvement Plan (CIP) to mitigate overflows for the designated design storm.

LRWRA has listed the (CIP) projects in the 2018 budget and scheduled the projects accordingly. The report lists storage facilities, operation adjustments, capacity improvements, and other pertinent items to mitigate overflows. One such project, the Grassy Flat main was completed which required a capacity increase from an 18-inch main to a 30-inch mainline. The one storage site project is now in construction, Scott Hamilton Drive Peak Flow Facility (formerly referred to as the Mabelvale Pike Peak Flow Attenuation Facility), adding 31 million gallons (MG) of storage capacity to the existing facility. On December 1, 2015, LRWRA was granted a discharge permit modification allowing parallel treatment to the existing biological train. The new water reclamation facility configuration allows for 94 million gallons per day of continuous treatment while meeting discharge permit parameters. The new approach eliminates the need for additional storage at the Adams Field Water Reclamation Facility (AFWRF). There are multiple projects listed in the SECAP update to increase the capacity of existing gravity mains. A large diameter main (42-inch & 48-inch) proposed from 36th street to Mabelvale Pike is the largest line project required. Multiple projects such as manhole adjustments and upsizing of mains are included in the report. The SECAP update assumed all previous collection system projects would be completed. The following list is projects already completed or currently included in the 2018 budget.

A. Little Maumelle Water Reclamation Facility

Construction of the project was completed in March 2011, and the facility was placed in operation in July 2011.

B. Peak Flow Attenuation Facilities

Construction of the projects was completed in August 2011.

C. Cantrell Road Pump Station and Force Main Upgrade

Construction of the projects was completed in November 2015.

D. Scott Hamilton Drive Peak Flow Facility (formerly referred to as Mabelvale Pike Peak Flow Attenuation Facility)

The SECAP update, dated November 2010, identified the need for additional storage to complement the existing storage facility on Scott Hamilton Drive. The additional storage, along with a hydraulic upgrade at the Peak Flow Pump Station, further reduces the surcharge of rainfall dependent inflow and infiltration within the North and South 60 Sewer Interceptors. This mitigates sanitary sewer overflows within the service area for the identified design storm. The preliminary engineering report identified the need for an additional 31 MG of storage. The Conditional Use Permit phase is completed. LRWRA progressed towards completion of the design phase efforts for this project in mid-2016. The project was bid and construction began in September 2016.

The Peak Flow Pump Station was designed with a vacant pump position, so the capacity of the station could be readily increased when storage becomes available. The increased capacity of the station will reduce the occurrence of sanitary sewer overflows for the design storm event with additional 31 MG storage at the Scott Hamilton Peak Flow Facility. The additional pump is scheduled to be installed in 2018 along with the additional storage basin.

The five-year forecast prepared in conjunction with the 2018 capital budget allocates project cost of \$8,890,191 in 2018 and \$20,400 in 2019.

E. Fourche Creek Water Reclamation Facility Hydraulic Upgrade

The hydraulic upgrade of the Arch Street Pump Station from 36 million gallons per day (MGD) to 45 MGD necessitated the hydraulic upgrade of the Fourche Creek Water Reclamation Facility (FCWRF) to a minimum of 45 MGD. In 2008, LRWRA, with its consultant CDM, completed a 20-year CIP to assess treatment processes, identify deficiencies, and plan for improvements to the water reclamation facility to meet future hydraulic and process needs. The overall project was divided into four phases. Phase One was the addition of the new disinfection system, with a project cost of \$9,756,140.97. The disinfection project was completed January 2011. The second phase was the addition of a secondary clarifier, with a project cost of \$ 10,066,644.03, was completed October 2011. With the completion of the second phase, the water reclamation facility can hydraulically handle 45 MGD. The third phase will address headworks and primary and secondary clarifier needs with a project cost estimate of \$4,135,904 in 2018, and \$4,814,096 in 2019. Phase Four of FCWRF does not include any improvements pertaining to the SECAP update. This project is scheduled to be completed in 2019.

F. Adams Field Parallel Treatment– (previously Storage/Disinfection)

The SECAP update, dated November 2010, identified the need for additional storage at the AFWRF to complement existing and proposed storage facilities (Scott Hamilton Drive Peak Flow Facility). The additional storage would allow for extended hydraulic pass-through of rainfall dependent I&I volume thereby mitigating sanitary sewer overflows within the service area for the identified design storm. However, the amount of storage prescribed in the SECAP update limits the wet weather capacity of the water reclamation facility to the duration of the design storm. Also, elevated flow rates through the biological portion of the water reclamation facility hinder the ability of the water reclamation facility to remove ammonia nitrogen (NH₃-N). Within the 2016-2017 permit cycle, Arkansas Department of Environmental Quality (ADEQ) requires more stringent limits on the amount of NH₃-N within the effluent.

In 2014, LRWRA applied for and was granted in late 2015 a permit modification enables parallel treatment of the biological system. A parallel treatment system used during wet weather events takes peak flows from the biological treatment train allowing it to run steady state and thereby remove NH₃-N to within permit limits. Also, parallel treatment proves effective in adequately treating effluent to within permit limits during wet weather events. The advantage of a parallel treatment system over storage is the water reclamation facility can maintain its peak capacity for a much longer duration than the design storm thereby reducing the amount of spillage within the collection system. With this permit modification, LRWRA abandoned the concept of additional storage at the water reclamation facility and proceeded with parallel treatment design in 2017. As a part of this project, LRWRA plans to increase the peak flow treatment capacity to 94 MGD by installing pile cloth media filtration to be operated in parallel with the existing activated sludge facilities. In 2015, before ADEQ determined the oxygen demanding constituent of all municipal wastewater discharges, NH₃-N, has a significant effect on the predicted dissolved oxygen (DO) level in the Arkansas River. The ADEQ water quality model indicated a NH₃-N permit limit of 7.0 mg/l for the AFWRF was needed to meet the in-stream DO water quality standard of 5.0 mg/l. This project is proposed to address capital improvements to the secondary clarification, aeration basins and equipment to comply with future permit limits for NH₃-N removal. The forecast prepared within the 2018 capital budget allocates project cost of \$28,326,408 between 2018 and 2019.

G. Fourche Creek Water Reclamation Facility Nutrient Removal

Effective October 1, 2014, ADEQ issued a permit renewal for the facility. Within the permit, ADEQ directed LRWRA to comply with a schedule for ammonia based limits predicated upon general water quality standards for this segment of the Arkansas River. At 18-months after the effective date of the renewed permit, Report No. 1 was submitted which contained an evaluation of the current treatment system, as configured, and its inability to comply with the final ammonia nitrogen (NH₃-N) limits on a consistent basis. Prior to the 24-month after the effective date deadline for Report No. 2, a correspondence was received from ADEQ indicating their re-evaluation of the water quality model incorporating more accurate river widths, and site-specific instream values instead of ecoregion-based values. According to this letter, the re-evaluation of the modeling analysis and the ammonia toxicity calculations determined NH₃-N limits are not needed for this facility. Both the updated model and the updated ammonia toxicity calculations were technically reviewed and deemed technically acceptable by EPA. Therefore; ADEQ recommended that LRWRA file for an NPDES permit modification application as soon as possible to have the final CBOD₅ and NH₃-N limits and the remaining compliance schedule removed from the current permit. On October 13, 2016, LRWRA filed with ADEQ the FCWRF Permit Modification Application requesting these changes.

H. Adams Field Water Reclamation Facility Asset Renewal Phase 1

The AFWRF was placed into service as a primary water reclamation facility in 1961 with the addition of secondary treatment in 1972. AFWRF went through some modifications in the 1980s. In the mid-2000s, the facility was again modified to reduce odors, eliminate risks associated with chlorine gas storage, and accommodate flows up to 94 MGD through primary treatment for a period of hours. Through these modifications, some facility assets were

renewed or replaced to accommodate the intent of the modifications. However, no formal Asset Management Plan (AMP) has been developed to evaluate and plan for the replacement or renewal of depreciated, unreliable, or dysfunctional assets that could threaten the health and environment of the Arkansas River. While the AMP is being developed in another project, this project sets aside monies to allow for the systematic replacement of identified assets targeted for replacement or renewal at the facility. The forecast prepared within the 2018 capital budget allocates project cost of \$25,395,578 between 2020 and 2022.

I. Jamison Pump Station Upgrade

The Jamison Road Pump Station was constructed in 1993. The station consists of five submersible pumps which include two 25 HP and three 150 HP pumps. There are two grinders and screens – one on each of the inlet channels. Dry weather flow at the station is approximately 2 MGD. Peak pumping capacity is approximately 16 MGD. Overall the wet well, valve vault, and building structure are in good condition and the station is functioning as designed. No changes are immediately required, but the SECAP recommended installing back-up power, painting the ferrous surfaces at the station, and replacing the grinders with a mechanical bar screen when maintenance of the grinders becomes an issue. The forecast prepared within the 2018 capital budget allocates project cost of \$640,657 in 2020 and \$1,648,908 in 2021. The project is scheduled to start in 2020 and be completed in 2021.

J. Overflow Mitigation Projects

In the late 1980s, LRWRA was the first municipality in Arkansas to establish a program to address excessive inflow and infiltration which leads to sanitary sewer overflows during or following wet weather events. During the 1990s, LRWRA shifted its focus not only to address excessive I/I within public mains but to restore capacity to basin outfalls that were undersized for designated wet weather events and labeled this effort as the overflow mitigation program (OMP). The program has reduced the number of overflow points within the city as well as reduced the amount of extraneous rainwater treated. LRWRA will continue this program as evidenced by the following identified future projects and corresponding funding efforts:

1. Overflow Mitigation Projects (OMPs) funded by RLF 2013:

- a. **Allsopp North/Country Club Rehabilitation** - Construction completed December 2015.
- b. **Allsopp Park/Country Club Outfall** - Construction completed February 2015.
- c. **Leawood OMP** - Construction completed October 2017.
- d. **Lower Swaggerty OMP** - Construction completed August 2017.
- e. **Pleasant Valley OMP** - Construction completed October 2015.
- f. **Echo Valley OMP** - Construction completed April 2016.
- g. **0H – 0G Relocation** - Construction completed March 2016.
- h. **42” Force Main Inspection & Diversion Structure – R29** - Construction completed December 2016.
- i. **Allsopp North/Country Club Manhole Rehab** - Construction completed October 2017.
- j. **Leawood Manhole Rehab** - Construction completed October 2017.
- k. **Echo Valley Manhole Rehab** - Construction completed October 2017.

- l. **Pleasant Valley Manhole Rehab** - Construction completed October 2017.
- m. **Springer Blvd – R1** - Construction completed August 2017.
- n. **West Markham Mainline – R6** - Construction completed September 2017.
- o. **Bishop Street Upsize – R14** - Construction completed September 2016.
- p. **Grassy Flat Main – R27** - Construction completed December 2016.
- q. **Lower Swaggerty OMP Manhole Rehab** - Construction completed October 2017.
- r. **17th Street Pipeburst Upsize – R15** - Construction completed September 2016.
- s. **Fair Park Relay – R12** - Construction completed August 2016.

2. Overflow Mitigation Projects (OMPs) funded by RLF 2016:

- a. **36th Street to Mabelvale Pike Outfall** **\$1,794,765**
 This project involves the design of a new 42-inch sewer main to enable LRWRA to combat overflows by providing a more robust collection system. As designated in the System Evaluation and Capacity Assurance Plan (SECAP), required projects R22 and R23 have been merged together to make up the 36th Street to Mabelvale Pike Outfall. The primary purpose of this project is to eliminate hydraulic restrictions at the outfalls of the Rock Creek and Brodie Creek interceptors. Construction on this project will begin in 2018.

- b. **Upper Country Club Outfall** **\$321,567**
 This project consists of replacing approximately 1,465 LF of 8-inch and 10-inch gravity sewer pipe of various material with 12-inch gravity sewer pipe in a residential area. This project is located within Subbasin 11102 on Country Club Boulevard and runs southeast towards Club Road. Construction on this project will begin in 2018.

- c. **Granite Mountain OMP** **\$829,754**
 This project consists of several minor improvements within Subbasin 30200. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and Closed-Circuit Television (CCTV) both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Construction began in August 2017 and is scheduled to be completed in September 2018.

- d. **Jimerson West OMP** **\$380,309**
 This project consists of several minor improvements within Subbasin 11502. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and CCTV both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Construction on this project will begin in 2018.

- e. **River Ridge OMP** **\$52,559**
 This project consists of several minor improvements within Subbasin 11200. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and CCTV both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Construction on this project will begin in 2018.

- f. Overlook/Pinnacle Point OMP** **\$290,428**
 This project consists of several minor improvements within Subbasin 10070. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and CCTV both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Construction on this project will begin in 2018.
- g. Middle Hinson Drainage Area OMP** **\$2,817,703**
 This project consists of several minor improvements within the Little Maumelle Water Reclamation Facility collection area, or the Middle Hinson Basin. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and CCTV both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Middle Hinson is a conglomerate of seven (7) individual subbasins to make up one area of interest. Construction on this project will begin in 2019.
- h. Longfellow OMP** **\$152,963**
 This project consists of several minor improvements within Subbasin 11400. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and CCTV both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Construction on this project will begin in 2018.
- i. Rose Creek Central OMP** **\$503,312**
 This project consists of several minor improvements within Subbasin 10902. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and CCTV both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Construction on this project will begin in 2018.
- j. Sherrill Heights OMP** **\$82,174**
 This project consists of several minor improvements within Subbasin 11000. These improvements include the rehabilitation/replacement of sewer mains, reconnection of sewer service connections, rehabilitation/replacement of manholes and CCTV both pre and post rehabilitation. The purpose of the project is to reduce inflow and infiltration. Construction on this project will begin in 2018.
- k. Mainline Improvements for Verified Overflows/Growth** **\$223,371**
 This project consists of improvements in the main sewer line to reduce potential overflows that were predicted to occur by the hydraulic model but have not been noted to occur in the past. The predicted overflows were field checked during an actual storm event to determine if they are occurring. Improvements to the system will be completed to mitigate any overflows that were verified to occur. Construction on this project will begin in 2018.
- l. Cantrell Basin Inflow and Infiltration Reduction SSES** **\$916,875**

This project is a study of the collection system within the Cantrell Basin to reduce inflow and infiltration. The Cantrell Basin is a conglomerate of 18 individual subbasins to make up one area of interest. This basin encompasses 6,960 acres of primarily residential and undeveloped land types. The collection system within the Cantrell Basin consists of 5,141 manholes and approximately 869,780 linear feet of sewer line.

3. Overflow Mitigation Projects (OMPs) Planned for RLF 2018:

RLF 2018 Projects

36th Street to Mabelvale Pike Outfall	18,890,862
Granite Mountain OMP	1,381,058
Jimerson West OMP	2,266,849
Longfellow OMP	2,769,729
Mainline Improvements for Verified Overflows/Growth	2,516,766
Middle Hinson Drainage Area OMP	10,700,822
Overlook/Pinnacle Point OMP	1,778,479
River Ridge OMP	141,521
Rose Creek Central OMP	4,276,635
Sherrill Heights OMP	1,141,761
Upper County Club Outfall	2,572,711
Total	\$48,437,193

4. Overflow Mitigation Projects (OMPs) Planned for RLF 2019:

RLF 2019 Projects

Abigail Street Relay	5,457
Barrow OMP	349,628
Cantrell Basin Inflow and Infiltration Reduction Construction'	2,593,524
Lower Swaggerty OMP	1,187,929
Rebsamen Sewer Basin Inflow and Infiltration Reduction	2,865,211
Rock Creek & Grassy Flat Sewer Basin Inflow and Infiltration Reduction	2,865,211
Rock Creek Remediation – CIPP Lining Only	750,000
Roselawn Cemetery Relay	38,985
Subbasin 30100 OMP	267,262
University Ave Relay	49,790
Walton Height OMP	227,851
Total	\$11,200,848

- **Project purpose:** SECAP/CAO/Sierra Club - Protect Health, Environment

5. Overflow Mitigation Projects (OMPs) Planned for RLF 2020:

RLF 2020 Projects

17th Street Relay	\$393,680
Allsopp Park South Near CRPS	1,123,841
Barrow OMP SB 30700	2,857,778
Boyle Park Mainline	711,774
Cantrell Basin Inflow and Infiltration Reduction Construction'	6,083,361
Markham to Rodney Parham Relay	155,741
Rebsamen Sewer Basin Inflow and Infiltration Reduction	9,389,393
Rock Creek & Grassy Flat Sewer Basin Inflow and Infiltration Reduction	5,279,836
Rodney Parham Relay	53,833
Rose Creek East Relay	805,835
Roselawn Cemetery Relay	574,162
Subbasin 30100 OMP	1,501,445
University Ave Relay	730,493
Victory Street Relay	8,197
Walton Heights - Basin 11600 OMP	1,694,015
Total	\$31,363,384

- **Project purpose:** SECAP/CAO/Sierra Club - Protect Health, Environment

6. Overflow Mitigation Projects (OMPs) Completed under RLF VIII:

- a. **Jimmerson Creek (RLF VIII)** – Completed in 2010.
- b. **Jimmerson West Outfall (RLF VIII)** – Completed in 2010.
- c. **Jimmerson East and Upper Hinson Manhole Rehab (RLF VIII)** – Completed in 2010.
- d. **Allsopp South (RLF VIII)** - Completed in 2011.
- e. **Barton (RLF VIII)** – Completed in 2011.
- f. **System Evaluation and Capacity Assurance Plan (SECAP) Update (RLF VIII)** – Completed in 2010.

III. FINANCING

Discussion:

A sewer revenue bond of \$11,000,000 was approved by the City of Little Rock (CLR) Board of Directors in 2017. CLR Ordinance 21,479, for Water Reclamation System Revenue Bonds Series 2017, was adopted on September 19, 2017. This bond issue was necessary to fund the design and construction of the FCWRF Phase III Rehabilitation project provided in the SECAP and the SECAP Update. The goal of this project is to increase the hydraulic capacity of the water reclamation facility from 36 MGD to 45 MGD and mitigate capacity related sanitary sewer overflows in the LRWRA collection and treatment system.

RLF 2013 Funded Projects

Proceeds from RLF 2013 totaling \$4,918,800 funded the costs associated with engineering services and construction of the following projects in 2017. The final reimbursement request for RLF 2013 was submitted to Arkansas Natural Resources Commission on October 13, 2017.

Project Number	Project Description
4060300	Allsopp North/Country Club Rehabilitation
4070600	Leawood OMP
4070700	Echo Valley OMP
4070800	Pleasant Valley OMP
4080100	Granite Mountain OMP
4080200	Lower Swaggerty OMP
4080300	Subbasin 30100 OMP
4083100	Jimerson West OMP
4084600	Longfellow SB11400
4111300	Springer Boulevard Relay - SECAP R1
4112300	West Markham Mainline - SECAP R6
4120300	42" Force Main Inspection
4120400	Grassy Flat Main
4171700	Jimerson West OMP Phase 2

RLF 2016 Funded Projects

Proceeds from RLF 2016 totaling \$17,728,272 funded costs associated with engineering services and construction of the following projects in 2017. The RLF 2016 balance remaining as of December 31, 2017 totals \$41,603,690 and this RLF is expected to complete in 2019.

Project Number	Project Description
4080100	Granite Mountain OMP
4083100	Jimerson West OMP
4084600	Longfellow OMP – Subbasin 11400
4101800	Rose Creek Central OMP
4112400	University Avenue Relay
4113500	Victory Street Relay
4113600	Rodney Parham Relay
4113700	Markham to Rodney Parham Relay
4115000	River Ridge – SB 11200 OMP
4115100	Sherrill Heights – SB 11000 OMP
4120500	36th Street to Mabelvale Pike Outfall
4120800	Upper Country Club Outfall
4121400	Overlook/Pinnacle Point 10070
4121900	Mainline Improvement for Overflows
4160300	Cantrell Basin Inflow and Infiltration Reduction
4160600	Middle Hinson
4170100	Trenchless Sewer Line Renewal
4171700	Jimerson West OMP Phase 2
7130100	Scott Hamilton Drive Peak Flow Equalization Facilities
7130300	AFWTF Parallel Treatment Install & Disinfection
7150100	AFWTF Asset Renewal
7160100	FCWTF Phase III Asset Renewal

IV. OTHER COMPLIANCE ACTIONS

A. Signage/Public Notification/Public Information:

As required in the Agreement, LRWRA staff developed a Sanitary Sewer Overflow Response Plan (SSORP) which was authorized by the Little Rock Sanitary Sewer Committee, now the Little Rock Water Reclamation Commission (LRWRC), on September 18, 2002. The SSORP, as amended, is included in this document (*see Attachment A*). The plan establishes a protocol for maintenance crews to follow when responding to a sanitary sewer overflow event and specifies internal and regulatory reporting procedures. The SSORP is reviewed and revised annually to ensure all policies, procedures, and contacts are accurate. The response protocol includes provisions for temporary signage and posting notices at individual residences (*see Attachment B*). A copy of the “door hanger” LRWRA uses to post residences is also provided (*see Attachment C*).

Practically all the sanitary sewer overflow notification program requirements contained in the Agreement are addressed in the SSORP, including the provisions for permanent signage at recurring sanitary sewer overflow locations on public property. Locations eligible for permanent signage are in *Table A-1* of the SSORP. Permanent signage is placed at recurring sanitary sewer overflow sites (*see Attachment D*).

- B. Public Education and Outreach Programs** - LRWRA is committed to public education and outreach and has developed several programs to reach our customers to minimize Sanitary sewer overflows and to educate the public on what they should do to help protect the environment.

1. *Public Relations* – To provide consultation services, market research and other related services LRWRA has contracted with The Design Group, a Little Rock based multicultural communications and marketing company. The Design Group played a critical role in the launching of Project RENEW, updating the SSLRP information to make it customer friendly, the organizing of public meetings and market strategies to promote educational programs. We also worked with the Design Group on educating the public about the name change from Little Rock Wastewater to Little Rock Water Reclamation Authority.

2. *Project RENEW* – As part of LRWRA’s multi-year, capital improvement project to renew aging pipelines throughout the city, an outreach campaign continued in project areas. The outreach included postcard mailers to the homes, community meetings, door hangers, targeted phone calls, one-on-one meetings, vehicle magnets for contractors and an interactive project map on the website, so residents can search to see if there are any current or planned projects in their neighborhood (*see Attachment E*).

3. *Can the Grease®* - The *Can the Grease®* initiative kicked off in 2002 as a means of education, motivation, and promotion of the grease related problems in Little Rock’s sanitary sewer system. LRWRA’s residential customers can request a grease information “starter kit,” which includes a grease container, three (3) heat-resistant liners, the LRWRA *Can the Grease®* information card and the WEF Fat-Free Sewers brochure, and an information magnet. Starter kits are also distributed in larger quantities at community events and to apartment complexes. In 2017, **419** starter kits were delivered to residential customers, **692** to apartment complexes and mobile home parks, **1,600** at various community events or tradeshow, **109** for grease related overflows, and **25** for the subsidy program. LRWRA distributed approximately **2,845** *The Can the Grease®* starter kits for the year (*see Attachment F*).

The Can the Grease® program was nationally recognized in 2008 with the *NACWA Public Information & Education Award*, and in 2009 with the *ADEQ Stewardship Award*.

4. *Cap the Cleanout* - *Cap the Cleanout* is an initiative kicked off in 2017. While working in project areas evaluating and rehabilitating sewer lines, if a cleanout cap is found to be missing from the homeowner’s sewer line they receive a free cap, and have it replaced by LRWRA. This is part of our continued efforts to help homeowners

properly maintain their sewer service line while helping us seal the system. By replacing the cleanout cap it prevents rainwater from entering the sewer system causing water to unnecessarily be treated, keeps debris out of the service lines which can cause blockages and leads to backups in the home, prevents small animals and rodents from entering the sewer system and helps prolong the life of the sewer system. (*see Attachment R*).

5. Sewer Service Line Replacement Program – Passed as an ordinance in June 2012 and put into effect January 1, 2013, the Sewer Service Line Replacement Program was put into effect to control inflow and infiltration from a source LRWRA had no control over in the past. Studies determined up to 40 percent of the excess water entering the collection system was coming from the private sewer services of homes and many of these homes have had long-standing sewer service line issues that were too costly to repair by the home owner alone. Since its implementation, there have been **2,429** applicants to the program with **1,795** complete replacements. The average cost of replacing a service line is **\$3,360** to which LRWRA offers up to \$2,500 in assistance reimbursement. The funds supporting the program are collected from a \$1.00 monthly charge to the domestic customer and are held in an independent account. All funds in the account go directly back to our customers. An additional funding source was added in February 2016, allowing LRWRA to reimburse some homeowners (meeting more stringent guidelines) with money from the State of Arkansas RLF. To date, LRWRA has issued **\$618,465** in homeowner reimbursements using these State of Arkansas Revolving Loan Fund (RLF) monies. In total LRWRA has reimbursed **\$4,461,639** back to customers participating in the program since its inception. Before the implementation of this program, LRWRA met with the Arkansas Plumbers’ Association and hosted an educational meeting informing local plumbers on how the program works and how to process these requests with LRWRA (*see Attachment G*).

6. Private Sewer Line Cleaning Permit – This program is aimed at apartment complexes to coordinate their private sewer line cleaning with LRWRA to prevent downstream stoppages due to flushing debris and fats, oil and grease (FOG) into the public mains. The program requires before cleaning their services, apartments contact LRWRA, obtain the free permit, use a debris catcher, and work with our crews to prevent overflows to residents downstream.

7. Bill Inserts – LRWRA created three (3) bill inserts distributed in 2017. The “You Knew us as Little Rock Wastewater, but we are so much more/Identity Change” was released in August and informed customers how our focus was on reclaiming, cleaning and returning the water to nature. The “How to Read Your Bill/Rate Adjustment” insert was released in December. The “*Can the Grease@/Utility of the Future Award*” bill insert was released in October and encouraged customers to continue utilizing the FREE *Can the Grease@* kits. This bill insert also informed residents that LRWRA received the Utility of the Future Today award. This award was given for excellence in innovation as it concerns water reclamation and environmental sustainability for Little Rock (*see Attachment H*).

8. **Awards** – LRWRA received several awards and recognition during 2017 for contributions to the environment, financial reporting, procurement, and innovation. The awards LRWRA received are as follows:

(a) **Certificate of Achievement for Excellence in Financial Reporting**

The Government Finance Officers Association (GFOA) is a nonprofit professional association that serves approximately 17,600 professionals in the governmental finance field. The Certificate of Achievement for Excellence in Financial Reporting (CAFR) is the “highest form of recognition in governmental accounting and financial reporting” by the GFOA and is a “significant accomplishment by a government and its management.” LRWRA’s CAFR was judged by an impartial panel that looked for high standards of the program such as “demonstrating a constructive ‘spirit of full disclosure’ to clearly communicate its financial story and motivate potential users and user groups to read the CAFR.”

This is LRWRA’s twelfth (12th) consecutive year to accomplish this feat. (*see Attachment I*)

(b) **Distinguished Budget Presentation Award** - The GFOA of the United States and Canada awarded LRWRA the GFOA'S Distinguished Budget Presentation Award for its budget for 2017. The award represents a significant achievement by the entity. It reflects the commitment of the governing body and staff to meeting the highest principles of governmental budgeting. To receive the budget award, the entity had to satisfy nationally recognized guidelines for effective budget presentation. These guidelines are designed to assess how well an entity's budget serves as:

- a policy document
- a financial plan
- an operations guide
- a communications device

Budget documents must be rated "proficient" in all four (4) categories, along with the 14 mandatory criteria within those categories to receive the award.

When a Distinguished Budget Presentation Award is granted to an entity, a Certificate of Recognition for Budget Presentation is also presented to the individual or department designated as being primarily responsible for its having achieved the award. This award was presented to Debbie Williams, Chief Financial Officer.

Award recipients have pioneered efforts to improve the quality of budgeting and provide an excellent example for other governments throughout North America. The GFOA is a nonprofit professional

association serving over 17,600 government finance professionals throughout North America. The GFOA's Distinguished Budget Presentation Awards Program is the only national awards program in governmental budgeting. This is LRWRA's eighth (8th) consecutive year to accomplish this feat. (see Attachment J).

- (c) **Excellence in Achievement – Procurement** - LRWRA received notification on June 19, 2017 the procurement department was presented the Excellence of Achievement Award for 2016 by the Universal Public Purchasing Certification Council (UPPCC) for having a fully certified staff. This was the ninth (9th) consecutive year LRWRA received this award.

This award was created to acknowledge an agency's commitment to the value of certification in the public sector. Marcheta E. Gillespie, Chair of the UPPCC Government Board, states "This accomplishment speaks volumes of [this] agency's commitment and dedication to the profession and the skills and expertise [LRWRA] bring[s] to the public procurement industry" (see Attachment K).

- (d) **Sterling Award – Procurement** In addition, LRWRA received notification on October 10, 2017 the procurement department was awarded the Universal Public Procurement Certification Council's (UPPCC) most prestigious agency recognition award, the Sterling Award, for 2016.

The Sterling Award is presented to agencies receiving the Agency Certification Award from the UPPCC for three consecutive years. Since we are considered a small agency, 100 percent of the qualifying staff must be UPPCC certified to achieve the award. Marcheta E. Gillespie, Chair of the UPPCC Government Board, states this award "should be displayed with pride as such an achievement brings increased credibility and recognition to your entity-an accomplishment that should be highly regarded by your elected officials and the citizenry you serve." (see Attachment L).

We are the only public entity in the State of Arkansas to win the award for 2016. This is our department's third time to win the award.

- (e) **Utility of the Future Today Award** – LRWRA received national recognition as a *Utility of the Future Today* for forward-thinking and innovative operations. LRWRA was one of 25 utilities from around the nation to receive the award. The award was presented by the National Association of Clean Water Agencies, Water Environment Federation, Water Environment & Reuse Foundation, WaterReuse, and the U.S. Environmental Protection Agency. There are approximately 16,000 utilities in the United States. Some of the areas LRWRA's application focused on: using methane gas at FCWRF and converting

it to power to run the facility; reuse of sludge on permitted land application sites; the Acoustic Inspection program; Project RENEW pipe renewal; success of programs such as Can the Grease and SSLRP; implementation of Cap the Cleanout; parallel treatment, disinfection, and ammonia facility upgrades at Adams Field Water Reclamation Facility; and community partnerships (*see Attachment N*).

- (f) **PISCES Award** – The U.S. Environmental Protection Agency recognized five exceptional projects from across the country in 2017. LRWRA’s SSLRP was one of the programs recognized. The SSLRP received this recognition because the program improves water quality, public health and is innovative. It improves Water Quality and public health by reducing the load on the collection system thus reducing any overflows in the system. It was considered innovative because LRWRA could make improvements to the system by providing an incentive for the homeowner to make the needed replacement of their sewer service line by offering up to \$2,500 reimbursement for qualified sewer service lines (*see Attachment Q*).

9. Trade Associations, Exhibits, Fundraisers, and Community Service - One of the major success elements of our public awareness program in 2017 was our participation in community events. Participation in community events has allowed LRWRA to educate an extensive number of residents and business owners on the importance of reducing grease in the sanitary sewer system, inform them of the programs we offer and provide updates on our major projects and water conservation.

- (a) **Partners in Education** - LRWRA has teamed with local schools to aid and provide materials when needed and to help promote our public education programs. Since 1995, LRWRA has sponsored the Little Rock Central High (LRCH) School Science Fair by providing materials for protection of the gymnasium floor, the incentive awards, and judges. LRCH teachers, PTA, and administration have been most appreciative of LRWRA’s efforts in supporting environmental education, and LRWRA employees have been very responsive in volunteering. On February 3, 2017, the LRCH science fair was conducted and several LRWRA employees volunteered to serve as judges on projects ranging from Chemistry and Physics to Music and Biology. LRWRA also partnered with Henderson Middle School, David O’Dodd Elementary School and Booker T. Washington Elementary School providing appearances and guest speakers, educational activity books, bottled water, and the *Can the Grease*® kits at various school events.

- (b) **National Night Out** – LRWRA participated in four (4) National Night events in 2017, via the Neighborhood Resource Centers. On October 3, 2017, LRWRA employees participated in events throughout the City of Little Rock, promoting the *Can the Grease*® and the Sewer Service Line Replacement Program.

(c) ***Earth Day*** - LRWRA participated in two Earth Day events in April 2017, at UAMS and at Bernice Garden. LRWRA provided the *Can the Grease®* SSLRP information and Project RENEW information.

(d) ***Spanish Speaking Customers*** - To better reach Spanish-speaking customers, all handout materials have been translated and put together in packets to give to the homeowner or resident as needed.

(e) ***Community Involvement*** - Another way LRWRA promoted public awareness programs in 2017 was our participation in Little Rock's Adopt-A-Street Program where LRWRA adopted ¼ of a mile of road along Shackelford Road, the Channel 11 THV Summer Cereal Drive and a non-perishable food drive during the holidays both for the Arkansas Foodbank Network, provided clothes and toys during the holiday to eight (8) children adopted through David O'Dodd Elementary School, read books to elementary students about the importance of conserving water during the Volunteers in Public Schools (VIPs) reading program and participated in VIPs weekly reading periods with students at Otter Creek Elementary School. We also partnered with the American Red Cross to host a facility-wide blood drive.

10. Media - It has been the intent of LRWRA to continue improved communication with all areas of the media during 2017. This goal was accomplished through regularly issued press releases highlighting special topics of interest. LRWRA worked with The Design Group and ARCOMM Productions. After receiving the *Utility of the Future Award*, Greg Ramon, CEO, made several appearances on local TV and radio programs to discuss the forward-thinking and innovative operations that won LRWRA the award.

In 2017 LRWRA advertised in various local publications such as *Arkansas Times*, *El Latino* and *Arkansas Business*, to promote programs and public education campaigns (see Attachment M).

11. Publications – LRWRA printed several informational brochures on a variety of topics from our *Can the Grease®*, *The Sewer Service Line Replacement Program*, *Cap the Cleanout*, and *Work in Your Area Notices*.

12. Website - LRWRA continually maintained the website for www.lrwra.com with the latest news, updates, and information. The website enables visitors to view a calendar listing all LRWRC meeting dates, approved minutes of the Commission, and biographies of each Commissioner and Senior Staff. With several interactive displays, general water reclamation facility information, ordinances, rate information, and much more, website traffic continues to grow. One of the most visited areas of the site is the customer information section, which enables visitors to select a topic or department, and then populate a field with a question or comment. They can also look at LRWRA's construction schedule to see dates and places of work to be performed.

13. Facility Tours - LRWRA conducted eight (8) water reclamation facility tours at our Little Maumelle Water Reclamation Facility, Adams Field Water Reclamation Facility, and Fourche Creek Water Reclamation Facility. To further public education, brochures are distributed to each visitor detailing the facility during the tour(s). Some of those who toured the facility were: Rock City Robots, several classes from UALR, Central Arkansas Plumbers' Apprenticeship School, the Arkansas Environmental Academy, Boy Scouts of America, and Pulaski County Youth Services.

V. SUPPLEMENTAL ENVIRONMENTAL PROJECTS AND ANY OTHER LRWRA ENVIRONMENTAL EFFORTS

Friends of Fourche Creek: LRWRA formed a partnership with Audubon Arkansas and the Friends of Fourche Creek. The partnership is designed to help conserve and restore the natural ecosystem of Fourche Creek. LRWRA participated in a cleanup day, distributed *Can the Grease*® kits at their events, worked joint community booths and served on the Drain Smart committee that oversees the campaign to bring awareness to liter which can eventually end up in Fourche Creek.

VI. 2017 NON-CAPACITY RELATED SANITARY SEWER OVERFLOWS

A. Compliance Standard: The Settlement Agreement limits the number of non-capacity related sanitary sewer overflows per 100 miles of sanitary sewer operated and maintained by LRWRA in LRWRA's collection and treatment system. The Settlement Agreement specifies the following "interim schedule" for non-capacity related sanitary sewer overflows:

Calendar Year	Number of Allowable Non-Capacity Related Sanitary Sewer Overflows per 100 Miles of Sewer
2002	12
2003	11
2004	10
2005	9
2006	8
2007	7
2008	6

When LRWRA reduced non-capacity related sanitary sewer overflows to 6 per 100 miles of sewer mains for two (2) consecutive calendar years, LRWRA shall be deemed to have complied with all provisions of this agreement related to non-capacity related sanitary sewer overflows.

B. Non-Capacity Related Sanitary Sewer Overflows in 2017: There were 39 non-capacity related sanitary sewer overflows reported in 2017. Of the 39 total, six (6) sanitary sewer overflows were related to construction and vandalism. The result was a total of 33 non-capacity related overflows attributed to the operation and maintenance of the LRWRA collection system. Of the 33 non-capacity related overflows, five (5) sanitary sewer overflows were attributed to debris; six (6) sanitary sewer overflows were attributed to grease; eight (8)

sanitary sewer overflows were attributed to line failures; fourteen (14) sanitary sewer overflows were attributed to tree roots. * (see Attachment O).

C. Compliance Assessment: LRWRA has reduced the number of non-capacity related sanitary sewer overflows attributed to the operation and maintenance of the collection system owned by LRWRA to below 6 per 100 miles of sewer lines for fourteen (14) consecutive calendar years, - 2004 with a total of 42, 2005 with a total of 53, 2006 with a total of 42, 2007 with a total of 46, 2008 with a total of 33, 2009 with a total of 38, 2010 with a total of 39, 2011 with a total of 45, 2012 with a total of 49, 2013 with a total of 46, 2014 with a total of 36, 2015 with a total of 36, 2016 with a total of 47, and 2017 with a total of 33. Therefore, under the Settlement terms in Paragraph No. 5, page 10, LRWRA is deemed to have complied with all provisions of this settlement related to non-capacity related sanitary sewer overflows.

Calendar Year	Miles of Sewer	Number of Non-Capacity Related Sanitary Sewer Overflows Per Year	Maximum Allowable Non-Capacity Related Sanitary Sewer Overflows (Based on 6 per 100 miles)
2004	1210	42	73
2005	1217	53	73
2006	1270	42	76
2007	1291	46	77
2008	1311	33	79
2009	1312	38	79
2010	1321	39	79
2011	1346	45	81
2012	1353	49	81
2013	1358	46	81
2014	1366	36	82
2015	1374	36	82
2016	1383	47	83
2017	1396	33	83

D. Additional Projects Not Covered By SECAP: In addition to the progress made on SECAP projects during 2017, LRWRA spent approximately \$5,198,586.00 renewing or replacing structurally deteriorated sewer mains. Old deteriorated sewers are sources of infiltration/inflow and are prone to blockage, contributing to both the number of capacity and non-capacity sanitary sewer overflows.

In a continued effort to maximize rehabilitation dollars, LRWRA treated 13,938 feet of mainline in 2017 with a contracted chemical root removal company with a total cost of \$20,853.58. Root removal is an important component of LRWRA’s Plan 66 that targets sanitary sewer overflow reduction.

LRWRA personnel completed work on 318 line segments that needed point repairs as well as relocated or replaced 6,384 feet of sewer line.

22,442 feet of sewer line was rehabilitated under the 2017 Trenchless Pipe Renewal contracts for pipe bursting and cured-in-place-pipe (CIPP), for a total cost of \$2,963,686.

In 2017, the Cleaning and Inspection Department televised 701,028 feet, Hand Cleaned 205,607 feet, Hydro Cleaned 1,309,375 feet, and Acoustically Inspected 5,592,647 feet of sewer lines.

E. Acoustic Inspection: In January 2017, LRWRA fully incorporated the Sewer Line Rapid Assessment Tool (SL-RAT®) into the maintenance program. This technology referred to as Acoustic Inspection, safely provides a fast, low cost, view of blockage conditions in the collection system. LRWRA uses the acoustic technology to help prioritize deployment of cleaning and close circuit televising inspection resources. Use of this technology helps LRWRA to avoid “cleaning clean pipe” while increasing responsiveness to problematic areas prone to causing non-capacity overflows. Approximately 1,100 miles or 80 percent of pipes in LRWRA’s collection system are appropriate for acoustic inspection, that is 6 inch to 12 inch gravity lines.

VII. 2017 CAPACITY RELATED SANITARY SEWER OVERFLOWS

A. Compliance Standard: The Settlement Agreement requires that capacity related sanitary sewer overflows be mitigated, provided that sanitary sewer overflows may occur without a breach of the Settlement Agreement if rainfall amounts exceed a duration-quantity table that essentially defines a two-year storm event (“qualifying event”). A qualifying event shall occur if any of the twelve permanent rain gauges within the collection system record a two-year storm event. More specific, to that end, the agreement required completion of a study recommending and establishing a time line for specific actions to address capacity related sanitary sewer overflows. The study would serve as the foundation for a long-term compliance program.

B. Capacity Related Sanitary Sewer Overflows in 2017: There were 147 capacity related sanitary sewer overflows reported in 2017 at 72 locations. There were two (2) rain events recorded in 2017 measuring above the Design Storm which resulted in one hundred two (102) capacity related overflows. The remaining forty-five (45) capacity related overflows occurring in 2017 resulted from rain events measuring below the Design Storm threshold (*see Attachment P*).

VIII. CONCLUSION

LRWRA has remained committed to educating our customers and the stakeholders of Little Rock on programs available to assist with maintaining a healthy sewer system, preventing overflows, and projects that may affect the area they live or work in. Many of these programs have received national recognition over the years and continue to be successful in their intent. LRWRA strives to improve upon these programs and to develop new programs as the world of water reclamation changes through new technologies, regulations, and industry knowledge. Since the development of these programs LRWRA has seen a noticeable drop in the frequency and severity of sanitary sewer overflows.

Since the execution of the Settlement Agreement in 2001, LRWRA has come a long way in mitigating sanitary sewer overflows. LRWRA plans on taking a holistic approach to improving the current aging

collection system by rehabilitating and replacing existing infrastructure that contributes to sanitary sewer overflows. The established maintenance procedures and schedules continue to provide the desired results by minimizing mainline stoppages within the system through replacement of structural pipe failures. LRWRA is committed to protecting public health and being a good steward of the environment.