

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

2017 Annual Report

CONSENT ADMINISTRATIVE ORDER

February 28, 2018

IN ACCORDANCE WITH
LIS NO. 06-037
DATED MARCH 9, 2006

2017

RECEIVED

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VIA HAND DELIVERY

February 27, 2018

Mr. Caleb Osborne
Associate Director - Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Re: 2017 Annual Report for the
Collection System Management Program (CSMP)
Little Rock Water Reclamation Authority
Little Rock, Arkansas
Arkansas Department of Environmental Quality
Consent Administrative Order LIS No. 06-037

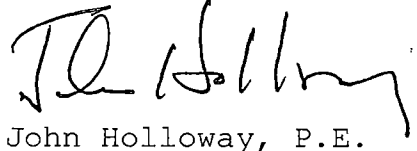
Dear Mr. Osborne:

Little Rock Water Reclamation is pleased to submit one original with a copy on a thumb drive of the referenced 2017 Annual Report on the implementation and effectiveness of the Collection System Management Program in compliance with the Arkansas Department of Environmental Quality Consent Administrative Order LIS No. 06-037 ("CAO") as referred to on Page 9 of 20, Paragraph V of the CAO.

Should you have any questions regarding this submittal, please contact me at 501-688-1416 or email at john.holloway@lrwra.com.

Sincerely,

LITTLE ROCK WATER RECLAMATION AUTHORITY



John Holloway, P.E.

Letter to ADEQ
Re: 2017 Annual CSMP Report
February 27, 2018
Page 2

Director of Engineering Services

Attachment

***NOTE:** The 2017 Annual Report is available at <http://www.lrwu.com/capitalprojects> for the individuals listed below. If you experience issues accessing this information, please do not hesitate to contact me.

cc: Little Rock Water Reclamation Commission
Greg Ramon, CEO
Howell Anderson, P.E., Chief Operating Officer
Little Rock Water Reclamation Authority Directors
Mayor Mark Stodola
City Manager Bruce Moore
City Attorney Tom Carpenter

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
CONSENT ADMINISTRATIVE ORDER
ANNUAL REPORT
FOR 2017

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	1
I. INTRODUCTION.....	2
II. PROJECTS UPDATE.....	2
A. Little Maumelle Water Reclamation Facility	2
B. Peak Flow Attenuation Facilities	2
C. Cantrell Road Pump Station and Force Main Upgrade.....	2
D. Scott Hamilton Drive Peak Flow (formerly referred to as Mabelvale Pike Peak Flow Attenuation Facility)	2
E. Fourche Creek Water Reclamation Facility Hydraulic Upgrade	3
F. Adams Field Parallel Treatment – (previously Storage/Disinfection)	3
G. Fourche Creek Water Reclamation Facility Nutrient Removal.....	4
H. Adams Field Water Reclamation Facility Asset Renewal Phase 1	4
I. Jamison Pump Station Upgrade.....	5
J. Overflow Mitigation Projects	5
1. Overflow Mitigation Projects (OMPs) funded by RLF 2013:	5
a. Allsopp North/Country Club Rehabilitation	5
b. Allsopp Park/Country Club Outfall	5
c. Leawood OMP	5
d. Lower Swaggerty OMP	5
e. Pleasant Valley OMP.....	5
f. Echo Valley OMP.....	5
g. 0H-0G Relocation.....	5
h. 42” Force Main Inspection & Diversion Structure – R29.....	5
i. Allsopp North/Country Club Manhole Rehab.....	5
j. Leawood Manhole Rehab.....	5
k. Echo Valley Manhole Rehab.....	5
l. Pleasant Valley Manhole Rehab.....	6
m. Springer Blvd – R1.....	6
n. West Markham Mainline – R6	6
o. Bishop Street Upsize – R14.....	6
p. Grassy Flat Main – R27	6
q. Lower Swaggerty OMP Manhole Rehab.....	6
r. 17 th Street Pipeburst Upsize – R15.....	6
s. Fair Park Relay – R12.....	6
2. Overflow Mitigation Projects (OMPs) funded by RLF 2016	6
a. 36 th Street to Mabelvale Pike Outfall	6
b. Upper Country Club Outfall.....	6
c. Granite Mountain OMP	6

d.	Jimerson West OMP	6
e.	River Ridge OMP.....	6
f.	Overlook/Pinnacle Point OMP	7
g.	Middle Hinson Drainage Area OMP	7
h.	Longfellow OMP	7
i.	Rose Creek Central OMP	7
j.	Sherrill Heights OMP.....	7
k.	Mainline Improvements for Verified Overflows/Growth.....	7
l.	Cantrell Basin Inflow and Infiltration Reduction SSES.....	7
3.	Overflow Mitigation Projects (OMPs)Planned for RLF 2018.....	8
4.	Overflow Mitigation Projects (OMPs)Planned for RLF 2019.....	8
5.	Overflow Mitigation Projects (OMPs) Planned for RLF 2020	9
6.	Overflow Mitigation Projects (OMPs) Completed under RLF VIII.....	9
a.	Jimmerson Creek (RLF VIII)	9
b.	Jimmerson West Outfall (RLF VIII).....	9
c.	Jimmerson East and Upper Hinson Manhole Rehab (RLF VIII)	9
d.	Allsopp South (RLF VIII)	9
e.	Barton (RLF VIII).....	9
f.	System Evaluation and Capacity Assurance Plan Update (RLF VIII).....	9
III.	FINANCING	10
Discussion	10	
RLF 2013 Funded Projects.....	10	
RLF 2016 Funded Projects.....	11	
IV.	OTHER COMPLIANCE ACTIONS.....	11
A.	Signage/Public Notification/Public Information	11
V.	2017 NON-CAPACITY RELATED SANITARY SEWER OVERFLOWS.....	12
A.	Compliance Standard.....	12
B.	Non-Capacity Related Sanitary Sewer Overflows in 2017.....	12
C.	Compliance Assessment.....	12
D.	Additional Projects Not Covered by SECAP.....	13
E.	Acoustic Inspection	13
VI.	2017 CAPACITY RELATED SANITARY SEWER OVERFLOWS.....	14
A.	Compliance Standard.....	14
B.	Capacity Related Sanitary Sewer Overflows in 2017.....	14
VII.	UPDATE OF THE CONSTRUCTION PROJECTS.....	15
VIII.	CONCLUSION.....	16

ATTACHMENTS
TABLE OF CONTENTS

- A. Sanitary Sewer Overflow Response Plan (*Table A-1, Table A-2*)
- B. Notice of Sanitary Sewer Overflow – Temporary Sign
- C. Notice of Sanitary Sewer Overflow – Permanent Sign
- D. Non-Capacity Related Sanitary Sewer Overflows Summary Report and Map
- E. Capacity Related Sanitary Sewer Overflows Summary Report and Map

**SIERRA CLUB SETTLEMENT COMPLIANCE REPORT
FOR 2017
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.

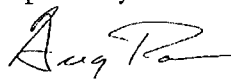
As it relates to capacity related overflows, LRWRA continues to have success. We have secured the needed sewer rate increases and bond financing necessary to continue to make the improvements to the system. We have embarked on renewing the collection system, increasing capacity by 31 million gallons 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 replaces 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*).

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 C*).

V. 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 D*).

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.

VI. **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 E*).

VII. UPDATE OF THE CONSTRUCTION PROJECTS

The SECAP Update lists projects which address the objective of the CAO. The table on the following page updates the anticipated completion dates of these projects.

Description	Project Number		Intermediate Completion Date in CAO	Previously Adjusted Intermediate Completion Date	Current Estimated Completion Date	Actual Completion Date	Status as of 31-Dec-17
Collection System							
1. OH - OG Relocation	3120400	RLF 11	31-Mar-16			5-Mar-16	Completed
2. Allsop North Country Club Rehabilitation	4060300	RLF 11	31-Dec-12	6-Apr-17		31-Oct-17	Completed
3. Leawood OMP	4070600	RLF 11	31-Dec-14	6-Apr-17		31-Oct-17	Completed
4. Echo Valley OMP	4070700	RLF 11	31-Dec-12	6-Apr-17		31-Oct-17	Completed
5. Pleasant Valley	4070800	RLF 11	31-Dec-10	6-Apr-17		31-Oct-17	Completed
6. Lower Swaggerty OMP	4080200	RLF 11	28-Feb-17	6-Apr-17		31-Aug-17	Completed
7. Springer Blvd. Relay	4111300	RLF 11	28-Feb-17	1-Mar-17		10-Aug-17	Completed
8. West Markham Mainline	4112300	RLF 11	31-Dec-16	1-Jul-17		13-Sep-17	Completed
9. Fairpark Relay	4112900	RLF 11	31-Dec-16			3-Aug-16	Completed
10. Bishop Street Relay	4113400	RLF 11	31-Dec-16			22-Sep-16	Completed
11. 42 Inch Force Main Inspection & R29	4120300	RLF 11	30-Jun-16			31-Dec-16	Completed
12. Grassy Flat Main	4120400	RLF 11	31-Dec-16			9-Dec-16	Completed
13. Allsopp Park and Country Club	4131900	RLF 11	31-Dec-12	31-Dec-14		19-Jan-15	Completed
14. University Avenue Relay - SECAP - R7	4112400	RLF 14 & 15	31-Dec-16	31-Dec-17	31-Dec-21		Design
15. Roselawn Cemetery Relay - SECAP - R9	4112600	RLF 14 & 15	31-Dec-16	31-Dec-18	31-Dec-20		Design
16. 17th Street Relay - R10	4112700	RLF 15	31-Dec-16	31-Dec-18	31-Dec-20		Design
17. Granite Mountain OMP - M20	4080100	RLF 12	31-Dec-17	31-May-18	30-Sep-18		Construction
18. Rose Creek East Relay - SECAP - R13	4113000	RLF 15	31-Dec-16	31-Dec-18	31-Dec-21		Design
19. Victory St. Relay - SECAP R20	4113500	RLF 14 & 15	31-Dec-16	31-Dec-17	31-Dec-20		Design
20. Rodney Parham Relay - SECAP - R25	4113600	RLF 14 & 15	31-Dec-16	31-Dec-17	31-Dec-20		Design
21. Markham to Rod Parham Relay - SECAP R26	4113700	RLF 14 & 15	31-Dec-16	31-Dec-17	31-Dec-21		Design
22. Upper Country Club Outfall - R19	4120800	RLF 12 & 13	31-Dec-16		31-Dec-18		Design
23. 17th Street Pipe Burst - R15	4123000	RLF 12	31-Dec-16			22-Sep-16	Completed
24. Jamerson West OMP	4171700	RLF 11 & 12 & 13	31-Oct-18		30-Jun-19		Design
25. Longfellow OMP - Subbasin 11400	4084600	RLF 11 & 12 & 13	31-Oct-18	30-Jun-19	30-Sep-19		Design
26. Abigail Street Relay - R11	4112800	RLF 14 & 15	31-Dec-17	31-Dec-18	31-Dec-21		Future
27. River Ridge - SB 11200 OMP	4115000	RLF 12 & 13	31-Oct-18		30-Jun-19		Design
28. Sherrill Heights - SB 11000 OMP	4115100	RLF 12 & 13	31-Oct-18	30-Jun-19	30-Sep-19		Design
29. Cantrell Basin I/I Reduction SSES	4160300	RLF 12 & 14	31-Oct-18	31-Dec-23	31-Dec-23		Future
30. Rose Creek Central OMP	4101800	RLF 12 & 13	31-Dec-19	30-Jun-19	30-Sep-19		Design
31. 36th Street to Mabelvale Pike Outfall - R22 & R3	4120500	RLF 12 & 13	30-Jun-18	31-Dec-21	31-Dec-19		Design
32. Overlook/Pinnacle Point 10070	4121400	RLF 12 & 13	31-Dec-19		30-Jun-19		Design
33. Mainline Improvements for Modeled Overflows/Growth	4121900	RLF 12 & 13	31-Dec-21	30-Jun-19	31-Dec-20		Design
34. Middle Hinson Drainage Area OMP	4160600	RLF 12 & 13	31-Dec-20	30-Dec-19	15-Mar-21		Preliminary
35. Subbasin 30100 OMP	4080300	RLF 14 & 15	31-Dec-12	31-Dec-20	31-Dec-21		Future
36. Sewer Assessment Lines >18"	4170300	RLF 13	31-Dec-19	31-Dec-19	31-Dec-20		Future
38. Cantrell Basin I/I Reduction Construction'	4160300	RLF 14 & 15 & 17	31-Dec-22	31-Dec-23	31-Dec-23		Future
39. Rebsamen Sewer Basin I/I Reduction **	4190200	RLF 14 & 15 & 17	31-Dec-23	30-Jun-24	30-Jun-23		Future
40. Rock Creek Sewer Basin I/I Reduction ***	4160800	RLF 14 & 15 & 17	31-Dec-23	31-Dec-23	31-Dec-23		Future
42. Barrow OMP SB 30700	4110400	RLF 14 & 15	31-Dec-09	31-Dec-20	31-Dec-21		Future
43. Walton Heights - Basin 11600 OMP	4114900	RLF 14 & 15	31-Dec-21	31-Dec-20	31-Dec-21		Future
46. Sewer Repairs Lines > 18"	4200400	RLF 15 & 17	31-Dec-23	31-Dec-25	31-Dec-23		Future
49. Boyle Park Mainline - (EXH C-RQ19) R24	4121600	RLF 15	31-Dec-23	31-Dec-24	31-Dec-22		Future
51. Allsopp Park South Near CRPS - R16	4160500	RLF 15	31-Dec-23	31-Dec-23	31-Dec-22		Future
52. Needed Collection System Projects			31-Dec-25		31-Dec-23		Future
Pump Stations							
54. Cantrell PS Upgrade & Force Main	6130100		31-Dec-15	31-Jul-15		16-Oct-15	Completed
55. Peak Flow Additional Pump	6130400	RLF 12	31-Dec-17	31-Oct-18	19-Mar-19		Construction
56. Jamison Pump Station Upgrade	6130500	RLF 16	28-Feb-18	31-Oct-20	31-Oct-21		Future
Treatment Plant							
57. Scott Hamilton Peak Flow Equalization Facilities	7130100	RLF 12	31-Dec-17	31-Oct-18	19-Mar-19		Construction
58. Fourche Creek WRF Phase III Rehabilitation	7160100	RLF 12	31-Dec-09	31-Dec-18	31-Dec-20		Design
59. AFWRF Parallel Treatment & Disinfection Upgrade	7130300	RLF 12	30-Sep-18	31-Dec-23	30-Sep-19		Design
60. Adams Field Asset Renewal	7150100	RLF 12 & 16	31-Dec-21	30-Sep-19	31-Dec-23		Future
* formerly known as Mabelvale Peak Flow							
** includes Rose Creek East and West OMP							
*** Includes Rebsamen Collector/Murray Park, Commercial, Harbor, Golf Course and Alltel							
**** formerly known as Adams Field Nutrient Removal (Ammonia)							
~ projects listed in the SECAP update							
^^ projects related to permit modifications or reliability upgrades							

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.

SANITARY SEWER OVERFLOW RESPONSE PLAN

TABLE OF CONTENTS

I. AUTHORITY	1
II. GENERAL	1
A. OBJECTIVES	1
B. ORGANIZATION OF PLAN	2
C. SSO TRACKING	2
III. OVERFLOW RESPONSE PROCEDURE	2
A. RECEIPT OF INFORMATION OF AN SSO	2
BLACK SSO FORM	4
RED SSO FORM	5
SSO Response Tracking Protocol	6
B. Dispatch of Appropriate Crew to Site of Sewer Overflow	7
C. Overflow Correction, Containment, & Cleanup	8
1. Responsibility of Response Crew Upon Arrival	9
2. Initial Measures for Containment	9
3. Additional Measures Under Potential Prolonged Overflow Conditions	10
4. Cleanup	10
D. OVERFLOW REPORT	11
E. CUSTOMER SATISFACTION	15
F. RESPONDING TO OVERFLOW LOCATIONS WHERE AN SSO HAS REOCCURRED PRIOR TO THE INITIAL SSO BEING COMPLETED	15
IV. PUBLIC ADVISORY PROCEDURE	16
A. TEMPORARY PUBLIC NOTICE FOR POLLUTED SURFACE WATER BODIES OR GROUND SURFACES THAT RESULT FROM UNCONTROLLED WASTEWATER DISCHARGES FROM LRWRA FACILITIES	16
B. PERMANENT PUBLIC NOTICE	16
Table IV-1	17
C. OTHER PUBLIC NOTIFICATION	18
V. REGULATORY AGENCY NOTIFICATION PLAN	18
A. IMMEDIATE NOTIFICATION	18
B. SECONDARY NOTIFICATION	19
VI. MEDIA NOTIFICATION PROCEDURE	19
VII. DISTRIBUTION AND MAINTENANCE OF SSORP	20
A. SUBMITTAL & AVAILABILITY OF SSORP	20
B. REVIEW & UPDATE OF SSORP	20
C. PRACTICAL RESOURCES	21
D. TRAINING	21

APPENDIX A: PROCEDURE TO TRACK SSO.....	22
APPENDIX B: SSO ACTION PLAN	28
APPENDIX C: DETECING POTENTIAL EXPLOSIVE OR TOXIC CONDITIONS.....	29
APPENDIX D: SSO FLOW & VOLUME DETERMINATION.....	31
APPENDIX E: SIGNAGE FOR OVERFLOWS.....	32
APPENDIX F: FLOWCHART FOR INTERNAL SSO REPORTING	33
APPENDIX G: FLOWCHART FOR EXTERNAL SSO REPORTING	34

Little Rock Water Reclamation Authority
Sanitary Sewer Overflow Response Plan
(As Amended February 2, 2018)

I. AUTHORITY

National Pollutant Discharge Elimination System ("NPDES"):

NPDES Permit for AFWTF # AR0021806 /AFIN 60-00409

NPDES Permit for FCWTF # AR0040177 / AFIN 60-01021

NPDES Permit for LMTP #AR0050849 / AFIN 60-04200

Issued by Arkansas Department of Environmental Quality ("ADEQ")

II. GENERAL

The Sanitary Sewer Overflow Response Plan ("SSORP") is designed to ensure that every report of a confirmed sanitary sewage overflow is immediately dispatched to the appropriate crew so that the effects of the overflow can be minimized with respect to the impacts on public health, sewer system integrity, quality of surface waters, and customer service. The SSORP further includes provisions to ensure safety pursuant to the directions provided by ADEQ and that notification and reporting is made to the appropriate local, state, and federal authorities. For purposes of this SSORP, "confirmed sewage spill" is also sometimes referred to as "sewer overflow," "overflow," or "sanitary sewer overflow" or ("SSO"). The effective date of this plan is **September 30, 2002.**

A. Objectives

The primary objectives of the SSORP are to protect public health and the environment, as well as, to satisfy regulatory agencies and waste discharge permit conditions which address procedures for managing SSOs, and to minimize risk of enforcement actions against Little Rock Water Reclamation Authority (LRWRA).

Additional objectives of the SSORP are as follows:

- ❖ Provide appropriate customer service;
- ❖ Protect water reclamation facility and collection system personnel;
- ❖ Protect the collection system, water reclamation facilities, and the assets of LRWRA; and
- ❖ Protect private and public property beyond the collection and treatment facilities.

This plan shall not supersede existing emergency plans or standard operating procedure's (SOPs) unless directed by the LRWRA Chief Executive Officer (C.E.O.).

B. Organization of Plan

The key elements of the SSORP are addressed individually as follows:

- ❖ Section III Overflow Response Procedure
- ❖ Section IV Public Advisory Procedure
- ❖ Section V Regulatory Agency Notification Plan
- ❖ Section VI Media Notification Procedure
- ❖ Section VII Distribution & Maintenance of SSORP

C. SSO Tracking

A procedure to track the frequency, type and location of SSOs has been prepared under "*SSORP: Appendix A*".

Data on each SSO occurrence is maintained in a database that can be analyzed based on any recorded SSO parameter. The database is maintained and backed up on a regular basis by the Information Services Department.

III. OVERFLOW RESPONSE PROCEDURE

The Overflow Response Procedure presents a strategy for LRWRA to mobilize labor, materials, tools, and equipment to correct or repair any condition which may cause or contribute to an unpermitted discharge. The plan considers a wide range of potential system failures that could create an overflow to surface waters, land, or buildings.

A. Receipt of Information Regarding a SSO

An SSO may be detected by LRWRA employees or by others. The Collection System Maintenance Dispatcher is primarily responsible for receiving phone calls from the public of possible SSOs from the water reclamation collection system, and for forwarding service requests to the Responding Crew(s).

Generally, dispatchers in the Collection System Maintenance Division receive telephone calls from the public reporting possible SSOs. The emergency phone line is staffed 24 hours per day, every day of the year. The Communications Department has a program in place for educating the public to report SSOs that they observe and to provide the phone number to be called.

Step 1: Information of Possible SSO is Obtained from Public

The Dispatcher (or Response Crew Leader) obtains all relevant information available regarding the possible overflow including:

- ❖ *Time & Date Call was received*
- ❖ *Specific Location*
- ❖ *Description of Problem*

- ❖ *Time & Date Overflow was Observed*
- ❖ *Caller's Name & Phone Number*
- ❖ *Observations of the caller (e.g. odor / duration / rear or front or property) &*
- ❖ *Other relevant information that will enable the Responding Crews to quickly locate, assess, and stop the SSO*

Once the spill has been confirmed to be an SSO by the Responding Crew, the Dispatcher records/inputs the SSO information and creates a service request number for assignment to the Responding Crew. The Dispatcher uses the Arc Map various waterway-type layers to identify bodies of water to determine if a drainage area is a name waterway.

Dispatcher informs Responding Crew if the result is a named waterway so that the proper Overflow Report Form can be completed. A red Overflow Report Form is used when the drainage area is a named waterway (creek/stream/river), indicating environmental impact (SSO Environmental Damage Code "OEEI"). A red Overflow Report Form is also used when the SSO involves observed or evidence of human contact (SSO Environmental Damage Code "OEHC".)

Step 2: Information of SSO at Water Reclamation Facility is Obtained/Communicated

Pump station failures are monitored and received by operators on duty at the Adams Field, Fourche Creek, and Little Maumelle Water Reclamation Facilities. The Operator-On-Duty immediately conveys all information regarding alarms to the Superintendent of Facilities and Equipment to initiate the investigation. Investigating crew determines if the failure resulted in an overflow and then reports the findings to the Collection System Maintenance Dispatcher if an SSO has occurred. A completed Overflow Report Form shall be sent via e-mail to the Collection System Maintenance Administrator for documentation.

Step 3: Information of SSO from LRWRA Employee is Obtained/Communicated

SSOs detected by any personnel during their normal duties are reported immediately to the Collection System Maintenance Dispatcher who records all relevant SSO information and dispatches a Response Crew and additional response crews as needed.

Step 4: Spill is Confirmed to be an SSO

Collection System Maintenance Emergency Crew or Response Crew confirms the SSO. Until verified, the report of a possible spill will not be referred to as a "sewer overflow."

If an overflow has occurred, the crew leader completes the appropriate Overflow Report Form and follows the Sanitary Sewer Overflow Response Tracking Protocol (*See Figure III-1*)

Figure III-1: LRWRA (Black) SSO Report Form (revised 2/2/2018)

Revision Date: February 2, 2018

**LITTLE ROCK WATER
RECLAMATION AUTHORITY**

SANITARY SEWER OVERFLOW OR BYPASS REPORTING FORM

SERVICE REQUEST NUMBER: _____

REPORTED _____ ADDRESS: _____

BY: _____

CALL TIME: _____ AM or PM CALL DATE: _____
(circle one)

RESPONSE DATA:

CREW LEADER: _____

ARRIVAL TIME _____ AM or PM DATE: _____

COMPLETED TIME: _____ AM or PM DATE: _____

ACTION(S) TAKEN:

_____ HC = Hydro-cleaned/Jet-Vac. _____ DD = Disinfected & Deodorized/Environmental Cleanup

_____ HR = Hand/Machine Rodded _____ LIME = Lime Applied to Affected Area/Environmental Cleanup

_____ PN = Public Notification _____ GPPE = Generator Used to Power Pumps/Equipment

_____ WO = Work Order _____ EN = Notify Engineering

SSO DATA:

DATE OF SSO: _____ TIME OF SSO: _____ AM or PM

LOCATION: _____ ADDRESS: _____

CAUSE:

_____ RO = Root(s) _____ D = Debris _____ EF = Equipment Failure

_____ G = Grease _____ LF = Line Failure/Break _____ PF = Power Failure

_____ R = Rainfall/I&I _____ HC = Hydro Cleaning

_____ CO = Construction _____ VA = Vandalism

IMPACT OF SSO INCIDENT:

_____ GRPUB = SSO Reached Public Land Only _____ GRPVT = SSO Reached Private Property

_____ TP = SSO Occurred at Treatment Plant

ACTIVE DISCHARGE: _____ YES _____ NO (Evidence of Discharge)

OBSERVED FLOWRATE: _____ GALLONS PER MINUTE

ESTIMATED DURATION: _____ MINUTES

ESTIMATED VOLUME: _____ GALLONS

NOTE: IF SSO is active when found, the actual volume may be greater than the known volume.

ENVIRONMENTAL DAMAGE: _____ NEAH = No Evidence of Adverse Health or Environmental Impacts

Figure III-1: LRWRA (Red) SSO Report Form (revised 2/2/2018)

Revision Date: February 2, 2018

**LITTLE ROCK WATER
RECLAMATION AUTHORITY
SANITARY SEWER OVERFLOW OR BYPASS REPORTING FORM**
**WHEN USING THIS FORM, SEND AN EMAIL WITH THE SSO DATE AND LOCATION TO
SSOADEQ@adeq.state.ar.us WITHIN 24 HOURS!**

SERVICE REQUEST NUMBER: _____
 REPORTED BY: _____ ADDRESS: _____
 CALL TIME: _____ AM or PM CALL DATE: _____
 (circle one)

RESPONSE DATA:

CREW LEADER: _____
 ARRIVAL TIME: _____ AM or PM DATE: _____
 COMPLETED TIME: _____ AM or PM DATE: _____

ACTION(S) TAKEN:

_____ HC = Hydro-cleaned/Jet-Vac. _____ DD = Disinfected & Deodorized/Environmental Cleanup
 _____ HR = Hand/Machine Rodded _____ LIME = Lime Applied to Affected Area/Environmental Cleanup
 _____ PN = Public Notification _____ GPPE = Generator Used to Power Pumps/Equipment
 _____ WO = Work Order _____ EN = Notify Engineering

SSO DATA:

DATE OF SSO: _____ TIME OF SSO: _____ AM or PM
 (circle one)
 LOCATION: _____ ADDRESS: _____
 CAUSE: _____ RO = Root _____ D = Debris _____ EF = Equipment Failure
 _____ G = Grease _____ LF = Line Failure/Break _____ PF = Power Failure
 _____ R = Rainfall/I&I _____ HC = Hydro Cleaning
 _____ CO = Construction _____ VA = Vandalism

IMPACT OF SSO INCIDENT:

_____ CR = SSO Reached Receiving Water (creek/stream/river) _____ GRPUB = SSO Reached Public Land Only
 _____ CB = SSO Contained in Building/Basement Backup _____ GRPVT = SSO Reached Private Property
 _____ GRCB = SSO Reach Ground Surface AND Building _____ TP = SSO Occurred at Treatment Plant

If CR, provide name of waterway: _____

ACTIVE DISCHARGE: _____ YES _____ NO (Evidence of Discharge)

OBSERVED FLOWRATE: _____ GALLONS PER MINUTE

ESTIMATED DURATION: _____ MINUTES

ESTIMATED VOLUME: _____ GALLONS

NOTE: IF SSO is active when found, the actual volume may be greater than the known volume.

IF "GRCB" IS CHECKED, ESTIMATE GALLONS WITHIN BUILDING: _____

ENVIRONMENTAL DAMAGE: _____ OEHC = Observed or Evidence of Human Contact
 _____ OEEI = Observed or Evidence of Environmental Impact
 _____ EFK = Evidence of Fish Kill

FIGURE III-1. SSO RESPONSE TRACKING PROTOCOL

Step 1:

Crew that locates overflow fills out LRWRA Overflow Report Form:

- a) Red forms are used when there is evidence of human contact or environmental impact. When using this form, the Responding Crew leader is required to send an email to SSOADEQ@adeq.state.ar.us within 24 hours, listing the associated Treatment Plan NPDES Permit # & AFIN; the location, cause, and total volume of the SSO, along with the named body of receiving water, if applicable (as per the revised AFWWTP 2018 permit language). Dispatchers & Responding Crews should use Arc Map identify tool and various body of water layers to assist in determining if any involved drainage areas are named waterways (creek/stream/river). If it is determined that the fate is a named waterway, the SSO shall be reported on a LRWRA Red SSO Report Form.
- b) Black forms are used when there is NO evidence of environmental impact (no named waterway or receiving waters involved) and/or human contact.

Step 2:

Crew that locates overflow notifies Dispatch, who then assigns a Service Request number that is used to track each SSO occurrences and all related activities-

Step 3:

Response Crew (cleaning crew able to open main line stoppages) or Locating Crew (i.e. CCTV Inspection Crew; Acoustic Inspection Crew) installs SSO warning sign(s)

Step 4:

Response Crew or Locating Crew takes photographs *before cleanup*.

Step 5:

Response Crew cleans and sanitizes SSO area after rectifying the SSO /cause of stoppage, opening the main line up, and/or repairing the main line, etc...

Step 6:

Response Crew verifies cleanup is done correctly. If within a structure, assures that photos are taken within the structure, volume is estimated, flooring surface types noted, measurements noted, & the Customer Flood Report is properly completed. The contact information for the Safety & Risk Administrator is to be provided to customer, if applicable (i.e. damage claims).

Step 7:

Response Crew or Locating Crew removes warning signs after cleaning & sanitizing the SSO area.

Step 8:

Response Crew or Locating Crew takes photographs *after cleanup*

Step 9:

Response Crew verifies Overflow Report Form is turned into Collection System Maintenance Administrator (*same day*)

Step 10:

Collection System Maintenance Administrator downloads photographs into database

Step 11:

Collection System Maintenance Administrator enters overflow information into the SSO event database

Step 12:

Plant Superintendent reports SSO data to ADEQ and other departments as required by NPDES Permits

B. Dispatch of Appropriate Crews to Site of Sewer Overflow

Failure of any element within the water reclamation collection system that threatens to cause or causes a SSO triggers an immediate response to isolate and correct the problem. Crews and equipment are available to respond to any SSO location 24-hours a day. Additional maintenance personnel are designated “*On Call*” in the event that extra crews are needed. *Appendix B* summarizes the *SSO Action Plan*.

Step 1: Dispatching Crews

Dispatchers receive notification of possible SSOs (as outlined in *Section III-A* entitled “Receipt of Information Regarding an SSO”) and dispatch an Emergency Crew or the appropriate area Response Crew as required.

Dispatchers notify the appropriate Supervisor(s) by phone regarding SSOs and field crew locations.

Step 2: Crew Instructions and Work Orders

Responding Crews are dispatched by phone. The Maintenance Dispatcher receives instructions from the Responding Crews or their Supervisors regarding the appropriate crews, materials, supplies, and equipment needed.

Dispatchers verify that the entire message has been received and acknowledged by the crews who were dispatched. All standard communications procedures are followed. All employees being dispatched to the site of a SSO proceed immediately to the site of the overflow. Any delays or conflicts in assignments are reported immediately to the Supervisor for resolution.

In all cases Response Crews report their findings to Supervisor immediately upon making their investigation, including possible damage to private and public property. If Supervisor has not received findings from the field crew within 1 hour, Supervisor contacts the response crew to determine the status of the investigation.

Step 3: Additional Resources

The Supervisor receives requests for additional personnel, material, supplies, and equipment from crews working at the site of a SSO, and conveys the requests to the appropriate parties

Step 4: Preliminary Assessment of Damage to Private and Public Property

The focus is to resolve the problem. The Response Crews use discretion in assisting the property owner/occupant as reasonably as they can. Be aware that LRWRA could face increased liability for any further damages inflicted to private property during such assistance. In the event the SSO occurs inside a structure, the Safety & Risk Administrator shall be notified and shall personally assess and document all damages as well as notify the Supervisor of the event. The Response Crew shall enter private property for purposes of overflow reporting. NOTE: A Collections System Maintenance Supervisor can take the place of the Safety & Risk Administrator in damage assessment activities relating to the time-sensitive information in the case that the Safety & Risk Administrator is unable to be on site at that time. In this case, the Collection S System Maintenance Supervisor will provide the customer with the

Safety & Risk Administrator's business card. All communication regarding damage claims will take place between the property owner and the Safety & Risk Administrator. The crew shall take appropriate still photographs, if possible, of the area of the SSO and the impacted area to thoroughly document the nature and extent of impact

Step 5: Field Supervision and Inspection

The Responding Crew (or whomever confirmed the SSO), visits the site of the SSO, if possible, and takes photos and installs warning signage to ensure that provisions of this Overflow Response Plan and other directives are met.

Step 6: Coordination with Hazardous Material Response

Upon arrival at the scene of an SSO, should a suspicious substance (e.g., oil sheen, foamy residue) be found on the ground surface, or should a suspicious odor (e.g., gasoline) not common to the sewer system be detected:

- ❖ the Responding Crew should secure the immediate area and should contact the Dispatcher or Safety & Risk Department. ***Remember that any vehicle engine, portable pump, or open flame (e.g., cigarette lighter) can provide the ignition for an explosion or fire should flammable fluids or vapors be present. Keep a safe distance and observe caution until assistance arrives***
- ❖ Subsequent response actions should follow existing LRWRA procedures for ***“DETECTING POTENTIAL EXPLOSIVE OR TOXIC CONDITONS”***. These procedures are detailed in the LRWRA Safety Manual & attached as to this SSORP as *Appendix C*.

Only when the Safety & Risk Department determines it is safe and appropriate for personnel to resume activities can they then proceed under the SSORP with the containment, clean-up activities, and correction.

C. Overflow Correction, Containment, and Clean-Up

SSOs of various volumes occur from time to time despite concerted prevention efforts. Spills may result from blocked sewer lines, pipe failures, or mechanical malfunctions among other natural or man-made causes. LRWRA is constantly on alert and ready to respond upon notification and confirmation of an overflow.

This section describes specific actions to be performed by the crews during a SSO.

The objectives of these actions are:

- ❖ To protect public health, the environment and property from sewage overflows and to restore the surrounding area back to normal as soon as possible;
- ❖ To promptly notify the regulatory agency's communication center of preliminary overflow information and potential impacts;
- ❖ To contain the SSO to the maximum extent possible including preventing the discharge of sewage into surface waters; and
- ❖ To minimize the LRWRA exposure to any regulatory agency penalties and fines

To minimize the LRWRA exposure to any regulatory agency penalties and fines. Under most circumstances, LRWRA handles all response actions with its own maintenance forces. They have the skills and experience to respond rapidly and in the most appropriate manner. An important issue with respect to an emergency response is to ensure that the temporary actions necessary to divert flows and repair the problem do not produce a problem elsewhere in the system. For example, repair of a force main could require the temporary shutdown of the pump station and diversion of the flow at an upstream location. If the closure is not handled properly, sewage system backups may create other overflows.

Circumstances may arise when LRWRA could benefit from the support of private-sector construction assistance. This may be true in the case of large diameter pipes buried to depths requiring sheet piling and dewatering should excavation be required. LRWRA may also choose to use private contractors for open excavation operations that might exceed one (1) day to complete.

1. Responsibilities of Response Crew/Locating Crew upon Arrival

It is the responsibility of the initial Responding Crew (or Locating Crew that finds and confirms the SSO) that arrives at the site of an SSO to protect the health and safety of the public by mitigating the impact of the SSO to the extent possible. Should the SSO not be the responsibility of LRWRA, LRWRA shall notify Little Rock Code Enforcement of the incident.

Upon arrival at an SSO, the initial Response Crew/ Locating Crew:

- ❖ Determines the cause of the overflow (e.g. sewer line blockage, pump station mechanical or electrical failure, sewer line break, etc.)
- ❖ Identifies and requests, if necessary, assistance or additional resources to correct the overflow or to assist in the determination of its cause;
- ❖ Takes immediate steps to stop the overflow, e.g. relieves pipeline blockage, manually operates pump station controls, repairs pipe, etc. Extraordinary steps may be considered where overflows from private property threaten public health and safety (e.g., an overflow running off private property into the public right-of-way)

Note: If Locating Crew confirms the SSO (i.e. Inspection Crew), it is the duty of the Locating Crew to contact the appropriate Response Crew (i.e. area Hand Rod Crew; area Hydro Clean Crew; Hydro Clean Rover Crew; Daytime Emergency Crew) for immediate arrival on site to take steps to stop the overflow, relieve pipeline blockage, etc.

- ❖ Requests additional personnel, materials, supplies, or equipment that will expedite and minimize the impact of the SSO.

2. Initial Measures for Containment

Measures to contain and / or recover the overflowing sewage are initiated to minimize the impact to public health or the environment.

- ❖ Determine the immediate destination of the SSO. Dispatchers can use the Arc Map database to assist in determining if the destination of the SSO is a named waterway (creek/stream/river).
- ❖ Identify and request the necessary materials and equipment to contain or isolate the overflow if not readily available; and

- ❖ Take immediate steps to contain the overflow (e.g., block or bag storm drains, recover through vacuum truck, divert into downstream manhole, etc.) if conditions allow as determined by LRWRA Maintenance Department.
- ❖ In the event an SSO has discharged into a creek, stream, or river, immediate measures to eliminate and contain the discharge will be taken. Immediate steps to eliminate the SSO discharging into a creek, stream, or river can include the following:
 - ❖ Establish bypass pumping of sewer to other areas of the collection system or holding tanks until repairs can be made
 - ❖ Utilize equipment that can vacuum sewer to eliminate or contain overflow until repairs can be made

Once corrective action has been taken to restore flow to the collection system, immediate measures will be taken to contain and remove contaminants from the waterway as feasible. The focus is to remove oxygen-depleting solids from water, returning it back into the collection system. Efforts can include the following:

- ❖ Establishing strategic points of containment along the waterway and removing contaminants through pumping, vacuuming, sweeping, etc.
- ❖ Applying disinfectants as feasible along edges of waterway to eliminate contamination
- ❖ Utilize portable aerators as feasible along edges of waterway to maintain adequate oxygen levels in water to preserve aquatic life until proper removal of contaminants is achieved

3. Additional Measures Under Potentially Prolonged Overflow Conditions

In the event of a prolonged sewer line blockage or a sewer line collapse, a portable bypass pumping operation should be set up around the obstruction.

- ❖ Take appropriate measures to determine the proper size and number of pumps required to effectively handle sewage flow.
- ❖ Implement continuous or periodic monitoring of the bypass pumping operation as required.
- ❖ Address regulatory agency issues in conjunction with emergency repairs.

4. Cleanup

SSO sites are to be thoroughly cleaned after an overflow. No readily identified residue (e.g., sewage solids, papers, rags, plastics, rubber products) is to remain.

- ❖ Where practical, thoroughly flush the area and clean of any sewage or wash-down water. Solids and debris are to be flushed, swept, raked, picked-up, and transported for proper disposal.
- ❖ Secure the overflow to prevent contact by members of the public until the site has been thoroughly cleaned. If posting is required, refer to *Section IV*.
- ❖ Where appropriate, disinfect and deodorize the overflow site.
- ❖ Where sewage has resulted in ponding, pump the pond dry and dispose of the residue in accordance with applicable regulations and policies.
- ❖ If a ponded area contains sewage which cannot be pumped dry, it may be treated with approved waterway application that is designed to kill bacteria. If sewage has discharged into a body of water that may contain fish or other aquatic life, do not use bleach or other appropriate disinfectant and contact the Arkansas Game & Fish Commission for specific instructions.
- ❖ Use of portable aerators may be required where complete recovery of sewage is not practical and where severe oxygen depletion in existing surface water is expected.
- ❖ Do ***not*** use enzymes in flowing creeks, streams, or waterways

D. Overflow Report

Emergency Crew, Locating Crew, or Response Crew completes a LRWRA Sanitary Sewer Overflow or Bypass Report Form (*See Figure III-1*). The Crew promptly notifies Dispatcher when the SSO is eliminated.

There are two (2) types of LRWRA internal Overflow Report Forms: a red Sanitary Sewer Overflow or Bypass Report Form & a black Sanitary Sewer Overflow or Bypass Report Form (commonly referred to "Overflow Report Forms"). The "impact" of the SSO and/or the proper ADEQ environmental damage code that best describes the SSO at hand are used to determine the proper Overflow Report Form when reporting each SSO. ADEQ environmental damage codes and associated proper LRWRA internal Overflow Report Form are listed next for reference.

Information regarding the SSO includes the following:

1. Environmental Damage / Impact of SSO:

a) Red LRWRA Overflow Report Forms are used to report any SSO that involves:

❖ Observation or Evidence of Environmental Impact (ADEQ Environmental Damage Code OEEI): for example, an overflow that has reached / impacted a named waterway such as a named creek, stream, pond, or river

This includes all SSOs where there is indication that the SSO reached surface waters. For SSOs where sewage was observed running to surface waters, Emergency Crew / Response Crew / Locating Crew should complete a red SSO Report Form (indicating ADEQ code "OEEI" – observed or evidence of environmental impact); this indicates all SSOs where sewage was observed running to surface waters, or where there was obvious indication (e.g. sewage residue) that sewage had flowed to surface waters.

❖ If the overflow was contained in a named creek/stream/river/pond, the name of the waterway must be supplied. Dispatchers can utilize the Arc Map database to help in determining if the SSO reached a named waterway (creek/stream/river). There is a blank on the red Overflow Report Form where the name of the watery should be entered; this information is required for SSO entry in the Hansen database when the fate of named waterway ("CR") is selected.

❖ Observation or Evidence of Human Contact (ADEQ Environmental Damage Code OEHC): for example, a building backup where sewer has reached / impacted the inside of a residence of business; or an overflow where person/persons were observed to have come in contact / been impacted with the overflow.

❖ Evidence of Fishkill (ADEQ Environmental Damage Code EFK): for example, an SSO that reached /impacted a waterway where it is observed that there was Fishkill as a result (aquatic life was impacted as a result).

b) Black LRWRA Overflow Report Forms are used to report any SSO that involves:

❖ No Evidence of Human Contact of Environment Impact (ADEQ Environmental Damage Code NEAH): for example, an SSO that did not reach a named watery nor had any evidence of or observations of human contact involved such as most ground surface areas or drainage areas that are not named waterways.

- ❖ This includes all SSOs where there is indication that the SSO had *not* reached surface waters. These include SSO occurrences such as the following, indicating ADEQ code NEAH – evidence of environmental impact or human contact & thus can be used a guide to characterize such occurrences:
- ❖ SSO that runs to covered storm drains (with no public access) where personnel verify, by inspection, that the entire volume is contained in a sump or impoundment and where complete clean up occurs leaving no residue.
- ❖ SSOs where observation or on-site evidence clearly indicates that all sewage was retained on land and did not reach surface water and where complete cleanup occurs leaving no residue.

NOTE: The Below Scenarios is **NOT** AN SSO:

- ❖ Preplanned or emergency maintenance jobs involving bypass pumping (if access by the public to a bypass channel is restricted) and subsequent complete cleanup occurs leaving no residue. Any preplanned bypass under these circumstances will not be considered an overflow; and

The below summary table for SSO Impact Quick Reference Guide that can be used to help in determining when to use a red LRWRA Overflow Report Form vs a black LRWRA Overflow Report Form.

ADEQ Environmental Damage Code:	ADEQ Environmental Code Definition & SSO Description(s):	Type of LRWRA Sanitary Sewer Overflow or Bypass Report Form to be Used for Reporting an SSO: (Red or Black)
OEEI	<p>Observation or Evidence of Environmental Impact</p> <p><i>*Description of SSO:</i> an overflow where the sewer spill has reached a named waterway (pond/ creek / stream / river, etc.)</p>	Red Overflow Report Form
OEHC	<p>Observation or Evidence of Human Contact</p> <p><i>*Description of SSO:</i> an overflow where the sewer spill has reached the inside of a building structure such as a residence or a business or where it was observed that there were people walking / riding bicycles through the overflow area</p>	Red Overflow Report Form
EFK	<p>Evidence of Fishkill</p> <p><i>*Description of SSO:</i> an overflow where the sewer spill has reached a waterway and aquatic life was impacted as a result / there was Fishkill present</p>	Red Overflow Report Form
NEAH	<p>NO Evidence of Environmental Impact or Human Contact</p> <p><i>*Description of SSO:</i> an overflow where the sewer spill did not reach a named waterway nor had any evidence of human contact such as most ground surface areas or drainage areas that are not named waterways</p>	Black Overflow Report Form

2. TIME of SSO

The "*TIME of SSO*" field is a reporting requirement for all SSOs. It is a required field for completion on both types of internal Overflow Report Forms (red and black), as well as within the Hansen database. There are differing ways to determine the *TIME of SSO*, and it is dependent upon if the SSO is capacity-related (wet weather; due to rainfall; main line is at capacity) or non-capacity related (dry weather; due to blockage or structural issue; main line is not at capacity and is surcharging for some other reason).

Thus, the *TIME of SSO* is determined one (1) of the following methods, depending on whether the SSO is capacity-related or non-capacity related:

a) Capacity-Related Overflows:

An email is received by Collection System Maintenance from Engineering personnel, confirming that a category level (A / B/ C) rain event has occurred and stating at what time it became a category level (A / B/ C) rain event. Collection System Maintenance personnel review LRWRA Operations rainfall data, based upon minute-by- minute data from Little Rock rain gauge locations, to determine the time that the rain began to diminish.

From this data, Collection System Maintenance personnel determine the *TIME of SSO* by choosing a time that is approximately one (1) hour after the rain began to diminish, thus allowing the water to begin seeping into the ground and into the LRWRA Collection System. The determined *TIME of SSO* is sent via email to Collection System Maintenance Right-of-Way Crews who begin checking manhole locations identified by Engineering personnel and are listed in *Table A-2* of the SSORP. The *Time of SSO* is also communicated to Dispatchers and Maintenance Supervisors, Cleaning and Inspection Divisions:

The determined *TIME OF SSO* is consistently used by Right-of-Way Crews/Response Crews on the LRWRA Overflow Report Form in the *DATE of SSO* and *TIME of SSO* fields for each SSO found that is related to the corresponding rain event.

b) Non-Capacity-Related Overflows:

The *TIME OF SSO* is when the Response Crew arrives on site and confirms that the reported sewage spill is an actual overflow. Thus, the *TIME of SSO* and the *ARRIVAL TIME* fields will be identical and will be recorded as such on the Overflow Report Forms as well as in the Hansen database.

3. COMPLETED DATE & COMPLETETD TIME of SSO

The date and time at which the SSO cleanup efforts have been completed and the "after cleanup" photo has been taken is the date and time information that should be entered in the *COMPLETED TIME* and *DATE* fields in the Hansen database (and on the Overflow

Report Form (if available and not yet submitted to the Maintenance Administrator, meaning the cleanup was completed the same day the SSO was reported.)

4. ESTIMATED VOLUME of SSO

The *VOLUME of SSO* is figured by multiplying the *FLOWRATE of SSO (GPM – gallons per minute)* with the *ESTIMATED DURATION OF SSO (MINUTES)*.

To establish the *FLOWRATE OF SSO*, one (1) of the flowing methods should be applied:

- Direct observation of the overflow: *See Appendix D* for guidance on estimating sewer overflow rates using visual indicators of the asset and SSO area.
- Measurement of actual overflow from the sewer main.
- Visual Observations
- Pump Station and Lift Station flow charts and other recorded data that is available

When the rate of the overflow is known, multiply the duration of the overflow by the overflow rate.

When the rate of the overflow is not known, investigate the surrounding area for evidence of ponding or other indications of overflow volume in order to obtain an *ESTIMATED FLOWRATE of SSO* and, thus, an *ESTIMATE VOLUME of SSO*.

5. PHOTOGRAPHS of SSO

Response Crew / Locating Crew/ Emergency Crew takes photographs of the SSO area before cleanup AND after cleanup, when possible. These are submitted to the Maintenance Administrator and are uploaded into the LRWRA and Hansen databases.

6. ASSESSMENT of ANY DAMAGE to exterior/interior of public/private property:

Personnel shall enter private property for purposes of estimating or determining SSO volume. If permission to enter property, Response Crew / Emergency Crew / Locating Crew as well as other Collection system Maintenance field personnel, Collection System Maintenance Supervisors, Safety & Risk Administrator and/or Communications Coordinator should attempt to obtain photographs of the SSO and affected areas both before & after cleanup, as well as any affected area room measurements and flooring types A Customer Flood Report Form should be completed if possible, and the *VOLUME of SSO* should be noted in all areas possibly affected by the SSO.

E. Customer Satisfaction

When an SSO involving either observation or evidence of human contact (OEHC), observation or evidence of environmental impact (OEEI), or evidence of fishkill (EFK) is reported, the Hansen database automatically notifies the Communications Department when all SSO information is entered into the database. The Communications Department will then contact the reporting citizen(s) and discuss the actions taken and the problem resolution. Upon notification of these SSO occurrences, the Communications Department, if necessary, takes any follow up action required (i.e. notify media or residents affected – see *Section IV: Public Advisory Procedures and Section VI: Media Notification Procedure.*)

If the resident wants to make a claim for damages incurred, they are directed to the Safety & Risk Administrator. For all SSOs where damages may possibly be incurred, Collection System Maintenance crews provide the citizen(s) with the Safety & Risk Administrator's business card with listed contact information. The crew also complete a Customer Flood Report Form which is submitted to the Maintenance Administrator. The Maintenance Administrator logs the Customer Flood Report information into the Hansen database on the Service Request *Log* tab and also notifies the Safety & Risk Administrator of the occurrence. The Safety & Risk Administrator informs the resident of LRWRA's damage claim process and current Damage Claim Policy and handles all damage claims in entirety.

F. Responding to Overflow Locations Where an SSO has Reoccurred Prior to the Initial SSO Being Completed

When an SSO has been confirmed to have reoccurred prior to the initial SSO reported being closed, then the initial SSO reported will be closed with associated details. *(This may happen when there are back-to-back category level rainfall events and MH location checks are still in progress for the first rain event at the time the second category level rain event takes place and causes a MH asset to overflow again before cleanup has been completed from the first overflow following the first rain event.)*

The reoccurring SSO that has been confirmed will be recorded as another SSO incident with associated details.

If manhole locations listed in *Appendix A: Table A-2* of this document become inaccessible to LRWRA crews, the crew will conduct site visits daily until the site becomes accessible; crews will use an emergency call work order activity (CIEMER) to track the daily site visits/to document site conditions. If an SSO has in fact occurred once the manhole becomes accessible, the same Service Request will be associated to the Emergency Work Order(s) (CIEMER) and to the SSO Work Order for tracking purposes. All associated work order numbers can be found associated to the same service request number.

IV. PUBLIC ADVISORY PROCEDURE

This section describes the actions LRWRA takes, in cooperation with ADEQ and the Arkansas Department of Health (ADH) to limit public access to areas potentially impacted by unpermitted discharges of pollutants to surface water bodies from the wastewater collection system. Temporary and permanent public notices will be provided as indicated below. *A sample of both notices is provided in Appendix E.*

A. Temporary Public Notice for Polluted Surface Water Bodies or Ground Surfaces that Result from Uncontrolled Wastewater Discharges from LRWRA Facilities

LRWRA has the primary responsibility for determining when to post notices of polluted surface water bodies or ground surfaces that result from uncontrolled wastewater discharges from its facilities. The postings do not necessarily prohibit use of recreational areas, unless posted otherwise, but provide a warning of potential public health risks due to sewage contamination.

Table IV-1 outlines the decision process to recommend to the Chief Operating Officer (C.O.O.) that posting of a confirmed SSO be undertaken or that there is reasonable potential for an SSO to occur, thus the need to post in advance. If posting is deemed necessary, ADEQ shall be notified.

B. Permanent Public Notice

LRWRA shall place a permanent notice at manholes located on City-owned property that may experience SSOs more than once in any twelve-month period. A list of applicable manholes has been provided in *Appendix A: Table A-1*.

Table IV-1

Decision Process to Post Temporary Signage for Polluted Surface Water Bodies or Ground Surfaces that Result from Uncontrolled Wastewater Discharges from LRWRA Facilities

Category Reported Overflow	Step	Event
	1	Collection System Maintenance Division Supervisor or Response Crew confirms the SSO that is not posted has resulted in ponded wastewater (ground surface or ditch ponding) or direct discharge to body-contact recreational waters between May 1st and September 30th.
	2	Collection System Maintenance Division Supervisor notifies Chief Operating Officer and provides relevant SSO information (a) SSO Location (b) Remedial actions being taken
	3	Collection System Maintenance Supervisor dispatches investigation to consult with Collection System Maintenance Division on remedial actions and need / extent of posting
	4	Dispatched investigator notifies Collection System Maintenance Division of assessment and makes recommendation on posting
	5	Collection System Maintenance Supervisor consults Chief Operating Officer for final decision on posting
	6	If Chief Operating Officer decides posting is required, Chief Operating Officer directs Collection System Maintenance Division to post warning signs(s) and notifies the Communications Coordinator of intent to post and at which locations
	7	Warning signs(s) is/are posted by Collection System Maintenance Division
Potential Overflow	1	Reasonable potential for SSO that will result in ponded wastewater (ground surface or ponding) or direct discharge to body-contact recreational waters between May 1 and September 30 th identified
	2	Collection System Maintenance Supervisor identifying potential SSO consults with Chief Operating Officer for final decision on posting
	3	If Chief Operating Officer decides posting is required, Chief Operating Officer directs Collection System Maintenance Division to post warning signs and notifies the Communications Department of location & intent to post
	4	Warning sign(s) is/are posted by Collection System Maintenance Division

C. Other Public Notification

If the Chief Operating Officer (C.O.O.) determines additional public notification is needed, the Communications Department makes notifications under the C.O.O.'s direction.

V. REGULATORY AGENCY NOTIFICATION PLAN

The Regulatory Agency Notification Plan establishes procedures LRWRA follows to provide formal notice to ADEQ as necessary in the event of SSOs. The reporting criteria listed below explain to whom various forms of notification should be made and provides those agencies/individuals to be contacted.

Agency notifications are performed in parallel with other internal notifications. The procedures for providing notification to the media of an SSO is presented in *Section VI - Media Notification Procedure*. Internal notification and mobilization of personnel is detailed in *Section III - Overflow Response Procedure*.

A. Immediate Notification

Upon data entry of an SSO event, an automated electronic event notification is sent to the Adams Field Water Reclamation Facility Operations Superintendent. The Adams Field Facility Superintendent then notifies and reports the SSO to ADEQ in compliance with LRWRA's NPDES Permits. For convenience, the AFWRF NPDES Permit reporting requirements are reprinted below.

"Overflows that endanger health or the environment shall be orally reported to the Enforcement Branch of the Office of Water Quality by telephone (501-682-0638) or by email, ssoadeq@adeq.state.ar.us within 24 hours from the time the permittee becomes aware of the circumstance. At a minimum, the following information is reported:

1. *Permit number and AFIN*
2. *The location(s) of overflow.*
3. *The receiving water (If there is one).*
4. *Cause of overflow.*
5. *The estimated volume of overflow (gal)*

A written report of overflows is provided to ADEQ within five days of the 24 hours oral report. A 5-day follow-up written report can be filled-in and submitted to the ADEQ Office of Water Quality/Enforcement Branch Web page at <https://www.adeq.state.ar.us/water/enforcement/sso/submit.aspx?type=s>"

The Maintenance Administrator is responsible for meeting the 24-hour oral or online notification requirement. The name, mailing address, e-mail address, and telephone number for LRWRA's primary ADEQ contact is:

Leslie Allen-Daniel
ADEQ Enforcement Analyst
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72218
Telephone: 501.682.0630

B. Secondary Notifications

After the parties identified as requiring *Immediate Notification* are contacted, the Chief Operating Officer (C.O.O.) will notify other federal, state, and local agencies, as well as other interested and possibly impacted parties (as directed by the C.O.O.)

VI. MEDIA NOTIFICATION PROCEDURE

When an SSO has been confirmed and is a threat to public health, the following actions are taken, if necessary, to notify the media:

- ❖ Sewer investigator / Response Crew verifies overflow & reports findings back to the Dispatcher.
- ❖ Dispatcher informs Communications Department, with primary contact being the Communications Coordinator (*see Table VI-1 for contact information*)
- ❖ After-hours and weekend SSOs that are a threat to public health is also reported to the Communications Department at the contact numbers listed in *Table VI-1*.
- ❖ All media requests, if a request is in fact received, should be referred to the Communications Department

The following LRWRA personnel are authorized to be interviewed by the media and are the designated spokespersons for LRWRA:

- Chief Executive Officer (C.E.O.)
- Communications Coordinator
- Chief Operations Officer (C.O.O.)
- Chief Legal Officer (C.L.O.)

Table VI-1
Little Rock Wastewater Media Contacts

Contact	Contact Name	Office	Mobile
Primary	Greg Ramon, Chief Executive Officer	501.688-1404	501-529-6340
Backup	Kenetta Ridgell, Communications Coordinator	501.688.1470	870.818.7993

VII. DISTRIBUTION AND MAINTENANCE OF SSORP

Annual updates to the SSORP reflect all changes in policies and procedures as required to achieve its objectives.

A. Submittal and Availability of SSORP

Copies of the SSORP and any amendments is distributed to the following departments and functional positions as part of the annual SCAR (Attachment A):

Department	Functional positions
Legal Services	Chief Executive Officer, Chief Legal Officer
Engineering	Director, Engineering
Maintenance	Director, Chief Operating Officer
Operations	Director, Superintendents
EAD	Director

All other personnel who become incidentally involved in responding to overflows should also be familiarized with the SSORP.

B. Review and Update of SSORP

Review of the SSORP is conducted annually and amended as appropriate.

LRWRA should:

- ❖ Update the SSORP with the issuance of a revised or new NPDES permit or state waste discharge permit (*reviewed annually and renewed permits are reviewed now*)
- ❖ Conduct annual training sessions with appropriate personnel
- ❖ Review and update, as needed, the various contact person lists included in the SSORP
- ❖ Along with the submittal of the annual Consent Administrative Order Report / Sierra Club Annual Report (SCAR), this SSORP document will be updated and submitted as Attachment A of the report.

C. Practical Resources

Laminated guides are printed and furnished to all employees involved with the SSO Response Plan, which provides an overview of the of procedures as well as essential phone numbers. There is also a quick reference for estimating sewer overflow volumes.

D. Training

Each division is responsible for training their personnel. The training should include any employee who is involved in or may be involved in the SSO process. These persons are provided a copy of the SSO Response Plan and the plan is reviewed in depth with them. This training should take place annually or when revisions occur so all personnel are brought up to date of any changes that may occur. Each division should also review their response efforts at these annual training sessions and take suggestions to revise procedures. These suggestions are then submitted to all divisions for review.

APPENDIX A. PROCEDURE TO TRACK SANITARY SEWER OVERFLOWS (SSOs)

The procedure to track the frequency & location of SSOs is:

Step 1:

All SSOs will have a Hansen-generated Work Order

Step 2:

SSOs are defined as the following:

❖ **CAPACITY SSOs:**

Asset has insufficient carrying capacity to handle inflow and / or infiltration during a storm event; Engineering shall maintain & update a list of capacity-related SSOs

Activity Code in Hansen Database	Activity Code Defined
▪ SOC	= Sewer Overflow – Capacity
▪ SOCP	= Sewer Overflow – Capacity – Private <i>(overflow at a Privately-owned asset)</i>

❖ **NON-CAPACITY SSOs:**

Overflow due to an obstruction in the main line, line failure, or equipment failures.

Activity Code in Hansen Database	Activity Code Defined
▪ SONC	= Sewer Overflow – Non-Capacity
▪ SONCP	= Sewer Overflow – Non-Capacity – Private <i>(overflow at a Privately-owned asset)</i>
▪ SONCO	= Sewer Overflow – Non-Capacity – Other <i>(due to vandalism or contractor damage)</i>

Step 3:

The Work order includes the asset number to identify the overflow locations, which is the upstream manhole number of the sewer main asset. A Service Request number is assigned by Dispatch for tracking all associated activities.

Step 4:

A Monthly Report is prepared, providing the number of capacity & non-capacity SSOs.

Step 5:

In addition to Work Order data, information on all reported SSOs is maintained in an event database, called the Discharge Monitoring Report (DMR). It contains all information required for regulatory reporting and more. (total number of SSOs and total volume – gallons – per month). Reports generated from the database have the capability of pulling SSO locations based upon dates, assets, and occurrences within a time frame.

Step 6:

The updated annual capacity-related SSO manhole list is developed for inclusion in the Permanent Signage phase of this SSORP. This list is maintained and annually updated as conditions and overflow mitigation efforts work to improve capacity-related deficiencies in the collection system. The following list, *Table A-1*, contains those SSO sites that should be equipped with permanent signage.

Table A-1: SSOs Eligible for Permanent Signage

SSO Manhole Number	Subbasin Number		
-10-B008	60301		
2H004	30030		
2H017	30040		
2H018	30040		
2H019	30040		
2H064	30030		
2H074	30700		
2K167	30700		
2O002	30501		
2O025	30501		
2O026	30501		
2R026	40703		
3D108	11501		
3I036	30700		
3K058	30700		
3K061	30700		
3N004	30501		
3N005	30501		
3N007	30501		
3N055	30400		
3O128	40702		
4B003	20030		
4B005	10090		
4L017	20030	<i>Continued...</i>	
4L076	20030	SSO Manhole #	Subbasin #
4N013	40030	5C003	10090
4N016	30400	5C007	11070
4N019	30400	5L030	20030
4N030	40702	6C006	10080
4N089	30501		

----- END -----

Step 7:

A second list was developed and is maintained by Engineering defining each potential capacity related SSO manhole by its respective Storm Level. Three such levels have been defined for simplicity in tracking the collection system's response to varying rainfall intensities.

- ❖ Storm Level A indicates an event that exceeds one (1) inch of rainfall in a 24- hour period. These SSO manholes are early indicators of the collection system's response to wet weather conditions.
- ❖ The next tier, Level B, consists of SSO manholes that have the propensity to trigger when rainfall amounts exceed the one year or greater frequency, i.e., 3.5 inches over a 24-hour period.
- ❖ The last tier, Level C, are SSO manholes that only trigger more than a two-year frequency storm event, i.e. 4.1 inches over a 24- hour period.

Rainfall amounts, recorded by the SCADA network at various stations throughout the collection system, are continuously reported to SCADA monitoring stations and to individual computers supported by SCADA. Engineering is responsible for monitoring existing rainfall conditions and notifying Maintenance when Levels A, B and C are reached. The following list, *Table A-2*, provides the known, or suspected, SSO manholes that have the potential to discharge during wet weather events.

Table A-2. Capacity Related SSOs by Storm Level

Storm Level	Status	Manholes	Area
A	Pending	0G015	31300
A	Pending	0G019	31300
A	Pending	0G025	31300
A	Investigate	0G087	31300
A	Active	-10-B008	60301
A	Active	10G199	10902
A	Pending	10I112	10901
A	Active	10J009	20700
A	Active	10L013	20800
A	Investigate	11K107	20700
A	Investigate	-1A048	11600
A	Active	1B012	11502
A	Investigate	1B018	11502
A	Active	1G087	30060
A	Active	2B068	11502
A	Pending	2E080	31100
A	Active	2H019	30040
A	Active	2H074	30030
A	Active	2K142	30700
A	Active	2K143	30700
A	Active	2K167	30700
A	Active	2O025	30501
A	Active	2O026	30501
A	Active	2Q020	40703
A	Active	2Q021	40703
A	Active	2R026	40703
A	Active	3D065	11501
A	Active	3D108	11501
A	Active	3I036	30700
A	Active	3K058	30700
A	Active	3K061	30700
A	Active	3N004	30501
A	Active	3N005	30501
A	Active	3N007	30501
A	Active	3N055	30400
A	Active	3O128	40702
A	Active	4B003	10090
A	Active	4B005	10090
A	Active	4L017	20030
A	Active	4L076	20030

A	Active	4N013	40030
A	Active	4N014	40030
A	Active	4N030	40702
A	Active	4N080	40702
A	Active	4N089	30501
A	Active	5C007	10070
A	Active	5L030	20030
A	Active	5L051	20030
A	Active	5L052	20030
A	Investigate	5L067	20030
A	Active	5L068	20030
A	Active	6C036	11400
A	Active	6C047	11400
A	Pending	6G012	21303
A	Active	6L011	20030
A	Investigate	6N009	40701
A	Active	6N016	40701
A	Active	6N077	40701
A	Active	-7A065	60200
A	Investigate	7J065	21100
A	Investigate	-7K001	30502
A	Active	7K113	21200
A	Active	-8-A012	60200
A	Active	-8-A015	60200
A	Pending	8E049	11101
A	Investigate	8E114	11101
B	Investigate	6C006	10080
C	Investigate	0D113	31700
C	Pending	0F146	31700
C	Active	11J053	20402
C	Investigate	1G008	30050
C	Active	1G010	30040
C	Pending	2E066	31100
C	Investigate	2H004	30030
C	Investigate	2H017	30040
C	Investigate	2H018	30040
C	Active	2H064	30030
C	Investigate	2M028	30400
C	Investigate	2M034	30400
C	Investigate	2M060	30400
C	Investigate	2M085	30400
C	Investigate	2O002	30501
C	Active	2P025	40702

C	Active	3K059	30700
C	Active	3K099	30700
C	Active	3N006	30501
C	Active	-4A028	60200
C	Active	4B001	10090
C	Active	4C090	11501
C	Active	4L013	30300
C	Active	4L015	30300
C	Active	4N016	30400
C	Active	4N019	40702
C	Active	4N031	40702
C	Active	5C003	10090
C	Active	6C002	10090
C	Active	6C004	10080
C	Pending	6D050	11102
C	Investigate	6G061	21303
C	Investigate	6H049	21200
C	Active	-6K011	30502
C	Active	6N008	40701
C	Investigate	6N015	40701
C	Active	-7A053	60200
C	Investigate	7K012	20020
C	Active	7K087	20020
C	Active	7K112	20020
C	Investigate	-8-A006	60200
C	Active	8I006	20902

The Status category indicates the confidence level and the potential for this manhole to experience an SSO.

- ❖ Active means a confirmed SSO was experienced
- ❖ Investigate means non-verified information has led to the inclusion of this listing and shall require field confirmation
- ❖ Pending indicates a rehabilitation effort has been conducted with field confirmation to follow to conclude positive mitigation.

Subbasin and Maintenance Crew Work Area (Maintenance. Area) categories are for internal Engineering and Maintenance Department tracking and work area assignment.

Step 8:

An annual report is prepared by Engineering, which includes a review of all capacity related overflows, as well as determine updates to the two tables above for permanent signage and potential capacity related SSO manholes. These updated capacity-related SSO lists are included for an amendment to this SSORP.

APPENDIX B. SSO ACTION PLAN

Dispatching Crews

Dispatchers receive notification of possible SSOs from two sources:

- The public
- Internal crews.

Notification During Working Hours

Dispatchers receive notification of a possible SSO from the public. They collect all relevant information as outlined in *Section III-A*, and dispatch a Response Crews / Emergency Crew to the site to verify if an SSO has occurred. The crew reports their findings back to Dispatch.

The Responding Crew / Emergency Crew determines if an SSO has occurred. The Responding Crew / Emergency Crew goes to the site and takes photographs before clean-up is started. Warning signs are posted at the site as well any adjacent homes if required and available. The Dispatcher or Supervisor verifies the Responding Crew completes an Overflow Report Form with the required information. The Dispatcher assists in determining if a red or black Overflow Report Form is used if the SSO involves a waterway. Arc Map is used to determine if a drainage area is a named waterway.

Crews start cleanup and sanitize the site. When complete, the Response Crew / Emergency Crew verifies cleanup is complete, takes after photographs, and removes warning signs.

Notification After Hours

The After-Hours Emergency Crews receive notification of a possible SSO from the public. They collect all relevant information as outlined in *Section III-A*, and proceed to the location. (Emergency Crew leader manages emergency phone after hours.)

The Emergency Crew determines if an SSO has occurred, attempts to resolve the problem, takes photographs before cleanup, and posts warning signs at the site as well as at adjacent homes if required. The crew completes an Overflow Report Form to submit at the beginning of the next workday.

The Emergency Crew begins cleanup and sanitizes the site. When complete, the crew takes after photographs and removes warning signs.

If the SSO occurred within a structure the Supervisor verifies cleanup is complete and all policies were followed. A site visit is performed no later than the first workday after the overflow occurrence. The Safety & Risk Administrator is informed as well, to handle any damage claims.

APPENDIX C. DETECTING POTENTIAL EXPLOSIVE OR TOXIC CONDITIONS

Purpose

To ensure all affected LRWRA employees are notified of potential health or safety hazards in the LRWRA collection system.

Procedure

The following procedures must be followed when detecting potential health or safety hazards in the LRWRA collection system:

Step 1

The LRWRA employee(s) or crew discovering the potential health or safety hazard notifies Dispatch (by calling 223-1509) or the Safety & Risk Department (688-1468) to report the potential problem.

A. Information included in the report:

1. *Name of the employee making the report*
2. *Street address or location of potential hazard*
3. *Manhole number (if known)*
4. *Brief description of findings*

B. If the health of safety hazard was reported to Dispatch, Dispatch contacts the Safety & Risk Department and report the above-listed information.

Step 2

The Safety & Risk Department investigates the report.

Step 3

If the Safety & Risk Department confirms the report, they notify Dispatch to ALERT all affected field crews the reported area is Off Limits until further notice. The Safety & Risk Department notifies ALL other affected LRWRA & CAW department Supervisors of the reported area.

Step 4

Dispatch drafts a notice with the location of the ALERTED areas and places a copy on all Safety News Bulletin Boards and backdoors at the LRWRA Clearwater Complex. Dispatch forwards a copy of the notice to the Safety & Risk Department for placement on other Safety News BBs throughout LRWRA.

Step 5

The Safety & Risk Department notifies CAW dispatch of the Potential Hazardous Area.

Step 6

If the investigation suspects a Natural Gas Leak, the Safety & Risk Department contacts CenterPoint Energy to report the situation.

Step 7

The Safety & Risk Department keeps ALL affected LRWRA & CAW departments informed of the situation and monitors their (CenterPoint Energy) findings.

Step 8

Once the health or safety hazard has been corrected, the Safety & Risk Department performs a follow-up investigation, and when NO HAZARDOUS conditions exist, the Safety & Risk Department removes the Safety ALERT and notifies all affected departments.

Step 9

If gasoline, solvents, paint, or other foreign material is suspected and the hazardous area is located in an Industrial/Commercial Area, the Safety & Risk Department contacts the Environmental Assessment Department (EAD) at 501.688-1493 or 688-1495 and transfers the report for further action.

Step 10

Industrial investigations resulting from explosive or toxic conditions is performed by EAD pretreatment staff members using procedures from the pretreatment procedures manual. Findings are be provided to the Safety & Risk Department upon completion of the investigation.

After Hours Reporting

If a hazardous atmosphere is detected after normal working hours, the employee must report the area the next working day prior to his/her normal working hours. After this report is made, the process begins with Step 1.

APPENDIX D. SSO FLOW & VOLUME DETERMINATION

As indicated previously in this SSORP, each SSO that is actively discharging during the investigation phase is evaluated for flow, and ultimate total volume discharged, each of which is included as part of the reporting requirements. The Engineering Department has defined a three-tiered flow estimating system derived from the reaction of the manhole lid about the flow exiting the collection system. This system is easily field estimated without the need for measuring devices, which in most instances, would fail to achieve a proper signal due to the lack of sufficient depth of flow.

It has been determined the majority of actively discharging SSOs reported by a Response Crew would be non-capacity related. Therefore, criteria for determining flow should concentrate on these conditions for gravity sewer collection systems. The three (3)-category rating system is outlined below:

*GPM = GALLONS PER MINUTE

❖ 0 – 10 GPM

This rate covers the light discharge experienced in the upper reaches of the collection system, usually with a small number of residential connections. The **visual indicator** would be a light flow (about the rate of a standard faucet) from around the manhole lid with no visible release of debris or solids and no movement or lifting of the lid itself.

❖ 10 – 100 GPM

This rate covers the moderate discharge experience in the lower reaches of the collection system, usually along the larger collector or outfall type sewer mains (typically 10" and larger mains) and in some capacity related SSOs. The **visual indicator** is a noticeable flow from around the manhole lid, slight debris or solids release, and a rocking or slight lifting of the manhole lid.

❖ 100 GPM (> Greater than 100 GPM)

This rate covers the heavy discharge experienced along the major outfall sewers and larger capacity related SSOs. The **visual indicator** is the definite release of debris or solids and the complete lifting or displacement of the manhole lid.

SSO volumes are derived from the above category multiplied by the duration of discharge. If the exact length of discharge is unknown, criteria for determining an estimated time has been established in the *Section III-D: Overflow Report*.

APPENDIX E. SIGNAGE FOR OVERFLOWS

LRWRA Temporary Signage - Verbiage
(Revised 2/2/2018 from LRW to LRWRA)

The following language shall be used on signs located on existing SSO sites during cleanup and on notices attached to homes adjacent to SSO sites:

NOTICE OF SANITARY SEWER OVERFLOW

Please avoid contact with this

sanitary sewer facility due to

the possibility of adverse health effects until cleanup can be completed

For Additional Information
Contact 688-1490

Permanent Signage - Verbiage
(Revised 2/2/2018 from LRW to LRWRA)

The following language is used on signs located on potential SSO sites that occur more than once in a twelve (12)-month period:

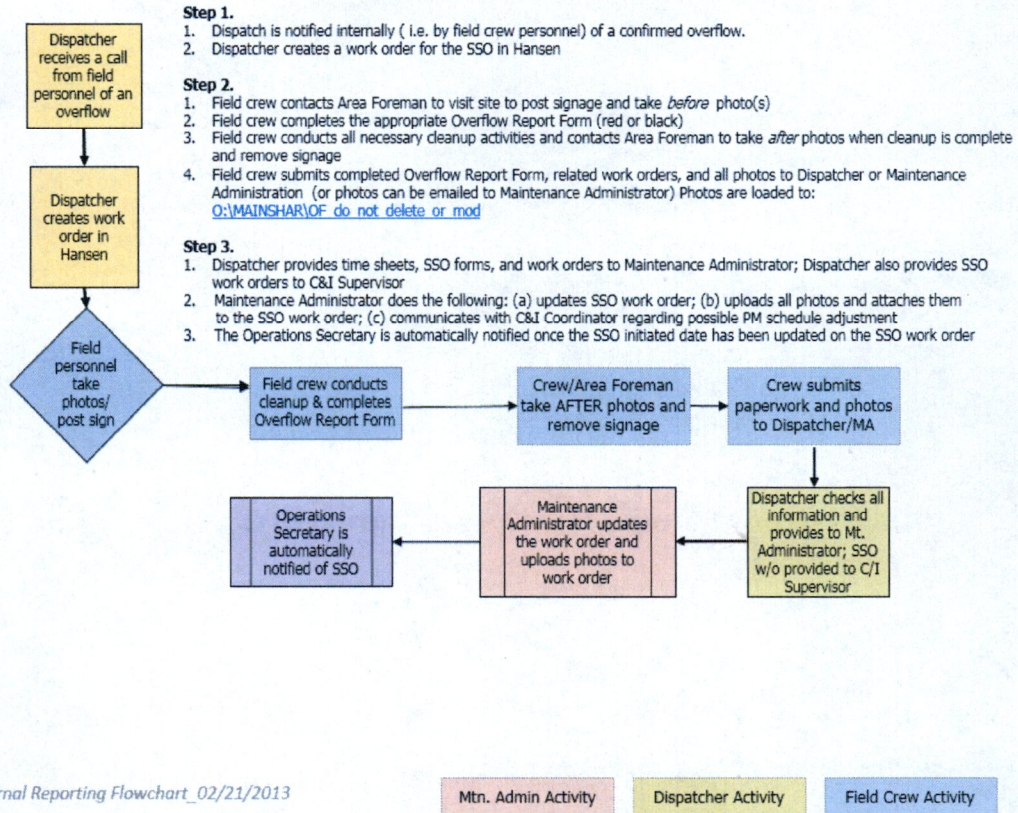
**NOTICE OF
SANITARY SEWER OVERFLOWS WHICH MAY OCCUR
AT THIS LOCATION**

Please avoid contact with this sanitary sewer facility during an overflow condition due to the possibility of adverse health effects until cleanup can be completed

For Additional Information
Contact 688-1490

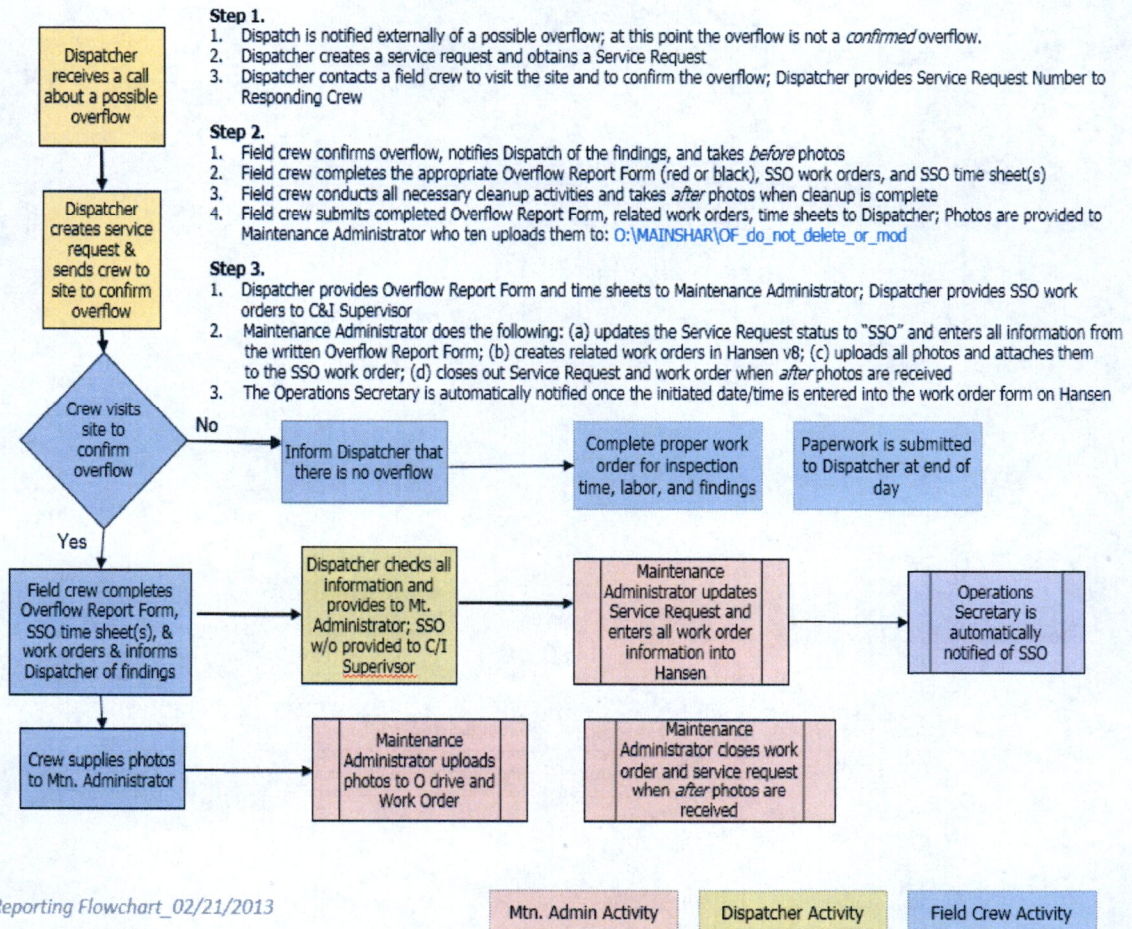
APPENDIX F. Flowchart for Internal SSO Reporting

SSO Reporting Flow Chart *(FOUND INTERNALLY)*



APPENDIX G. Flowchart for External SSO Reporting

SSO Reporting Flow Chart *(FOUND EXTERNALLY)*



SSO Manhole Number	Subbasin Number
-10-B008	60301
2H004	30030
2H017	30040
2H018	30040
2H019	30040
2H064	30030
2H074	30700
2K167	30700
2O002	30501
2O025	30501
2O026	30501
2R026	40703
3D108	11501
3I036	30700
3K058	30700
3K061	30700
3N004	30501
3N005	30501
3N007	30501
3N055	30400
3O128	40702
4B003	20030
4B005	10090
4L017	20030
4L076	20030
4N013	40030
4N016	30400
4N019	30400
4N030	40702
4N089	30501
5C003	10090
5C007	11070
5L030	20030
6C006	10080

Table A-1
Permanent Signage

Storm Level	Status	Manholes	Area
A	Pending	0G015	31300
A	Pending	0G019	31300
A	Pending	0G025	31300
A	Investigate	0G087	31300
A	Active	-10-B008	60301
A	Active	10G199	10902
A	Pending	10I112	10901
A	Active	10J009	20700
A	Active	10L013	20800
A	Investigate	11K107	20700
A	Investigate	-1A048	11600
A	Active	1B012	11502
A	Investigate	1B018	11502
A	Active	1G087	30060
A	Active	2B068	11502
A	Pending	2E080	31100
A	Active	2H019	30040
A	Active	2H074	30030
A	Active	2K142	30700
A	Active	2K143	30700
A	Active	2K167	30700
A	Active	2O025	30501
A	Active	2O026	30501
A	Active	2Q020	40703
A	Active	2Q021	40703
A	Active	2R026	40703
A	Active	3D065	11501
A	Active	3D108	11501
A	Active	3I036	30700
A	Active	3K058	30700
A	Active	3K061	30700
A	Active	3N004	30501
A	Active	3N005	30501
A	Active	3N007	30501
A	Active	3N055	30400
A	Active	3O128	40702
A	Active	4B003	10090
A	Active	4B005	10090
A	Active	4L017	20030
A	Active	4L076	20030
A	Active	4N013	40030
A	Active	4N014	40030
A	Active	4N030	40702

Table A-2

A	Active	4N080	40702
A	Active	4N089	30501
A	Active	5C007	10070
A	Active	5L030	20030
A	Active	5L051	20030
A	Active	5L052	20030
A	Investigate	5L067	20030
A	Active	5L068	20030
A	Active	6C036	11400
A	Active	6C047	11400
A	Pending	6G012	21303
A	Active	6L011	20030
A	Investigate	6N009	40701
A	Active	6N016	40701
A	Active	6N077	40701
A	Active	-7A065	60200
A	Investigate	7J065	21100
A	Investigate	-7K001	30502
A	Active	7K113	21200
A	Active	-8-A012	60200
A	Active	-8-A015	60200
A	Pending	8E049	11101
A	Investigate	8E114	11101
B	Investigate	6C006	10080
C	Investigate	0D113	31700
C	Pending	0F146	31700
C	Active	11J053	20402
C	Investigate	1G008	30050
C	Active	1G010	30040
C	Pending	2E066	31100
C	Investigate	2H004	30030
C	Investigate	2H017	30040
C	Investigate	2H018	30040
C	Active	2H064	30030
C	Investigate	2M028	30400
C	Investigate	2M034	30400
C	Investigate	2M060	30400
C	Investigate	2M085	30400
C	Investigate	2O002	30501
C	Active	2P025	40702
C	Active	3K059	30700
C	Active	3K099	30700
C	Active	3N006	30501
C	Active	-4A028	60200

Table A-2

C	Active	4B001	10090
C	Active	4C090	11501
C	Active	4L013	30300
C	Active	4L015	30300
C	Active	4N016	30400
C	Active	4N019	40702
C	Active	4N031	40702
C	Active	5C003	10090
C	Active	6C002	10090
C	Active	6C004	10080
C	Pending	6D050	11102
C	Investigate	6G061	21303
C	Investigate	6H049	21200
C	Active	-6K011	30502
C	Active	6N008	40701
C	Investigate	6N015	40701
C	Active	-7A053	60200
C	Investigate	7K012	20020
C	Active	7K087	20020
C	Active	7K112	20020
C	Investigate	-8-A006	60200
C	Active	8I006	20902

Table A-2

CAUTION



LITTLE ROCK
**Water
Reclamation
Authority**

**NOTICE OF
SANITARY SEWER OVERFLOW**

Please avoid contact with this
sanitary sewer facility due to
the possibility of adverse health effects
until cleanup can be completed.

For Additional Information

Contact: 501-688-1490



LITTLE ROCK
**Water
Reclamation
Authority**

**NOTICE OF
SANITARY SEWER OVERFLOWS
WHICH MAY OCCUR
AT THIS LOCATION**

Please avoid contact with this
sanitary sewer facility during an
Overflow condition due to the
possibility of adverse health effects
until cleanup can be completed.

For Additional Information
Contact: 501-688-1490

2017 Non - Capacity Related SSO's



Probable Cause

- Construction
- Debris
- Grease
- Line Failure
- Roots
- Vandalism

There were 39 Non-Capacity Related Overflows in 2017

Cause	Occurrences
Construction	5
Debris	5
Grease	6
Line Failure	8
Roots	14
Vandalism	1



01/19/2018 AMN

2017 Capacity Related SSO's



Locations	Occurrences per Locations	Total LRWRA Capacity SSO's
35	1	35
23	2	46
6	3	18
2	4	8
1	5	5
1	6	6
3	7	21
1	8	8
72	Year - 2017	147

SSO Locations Occurrences per Location

Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

