



# BENTON UTILITIES

## BENTON, ARKANSAS

January 15, 2020

Miles Johnson, Enforcement Analyst  
Water Division / Enforcement Branch  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118

RE: NPDES Permit No. AR0036498, AFIN 63-00063  
CAO LIS 11-069 / SSES Review

Dear Mr. Johnson,

I am pleased to offer the following 2019 report on the City of Benton's wastewater conveyance system, and affirm our efforts to satisfy the demands of the Consent Administrative Order issued in 2011. I am grateful to report that we have had a very productive year in our efforts to reduce sanitary sewer overflows as well as infiltration and inflow issues. Overall, we have had a productive year in a rapidly growing city with expanding infrastructure and capacity demands. With the help and support from our General Manager, Mr. David Vondran, P.E. and Benton Public Utility Commission we have been able to rehab many lift stations that have been a problem, we have also hit some of the bad areas with pipe bursting to reduce sewer stoppages and overflows. We have had numerous subdivisions, commercial buildings, retail complexes, and other significant development all come online. Consequently, this growth has challenged our resources, but we still feel we are on our way of satisfying the demands of the C.A.O. long before the 2023 deadline.

In keeping with the objectives outlined in the Sewer System Evaluation Study (SSES), we continue to place special emphasis on the significant reduction of sanitary sewer overflows as well as inflow and infiltration issues throughout the system. We have pursued these objectives by (1) gravity line repairs and replacement, (2) manhole rehabilitation, repairs and replacement, (3) addition of equipment, (4) upgrades and rehabilitation of lift stations, (5) proactive and preventative maintenance, and (6) strategic planning.

Some of our highlights of the year has been significant, we were able to decommission a lift station that has caused continuous problems in the area of Winstone Dr., replacing it with gravity sewer. We have upgraded major lift stations on Misty Dr, Partridge Dr, Hillside Dr, Hurricane Lake Trailer Park, Our Electric Building lift station, Silica Heights, Puckett St, and Willow St with the installation of another new Flygt pump. We have also started to make significant changes with SCADA system. We have rehabbed Hurricane Lake Main lift station with the Flygt Multismart pump station manager to let us use remote control programming, pump reversal to remove blockages automatically, pump efficiency to ensure intelligent maintenance and capital improvements. We are also have started changing out our PumpAlarm notification system to a better monitoring system of HighTide.

(Page 1, 2019 SSES//CAO Report)

The following chart represents statistical data of the sewer system.

Benton Wastewater Conveyance Statistical Data-2019													
JOB DATA:	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
Generators check	16	16	16	16	16	16	16	15	16	16	17	17	193
CAO GRAVITY REPAIR-PIPE BURST	0	0	0	0	0	0	956	740	412	0	0	0	2,108
Manhole SSES/CAO- work/inspect.	0	0	0	15	0	0	0	28	15	14	0	0	72
M.H -lined/Patched/Repair/cleaned	2	1	3	8	11	3	3	7	6	1	4	2	51
NO. OF I/S FAILURES or work done	27	23	16	18	23	15	14	20	22	33	23	17	251
NO. OF LIFTSTATIONS OVERFLOW	0	1	2	0	0	0	0	0	0	1	0	0	4
NO. OF LIFT STATIONS CLEANED	19	19	26	24	23	22	23	3	34	24	29	28	274
Survey sewer mains/ manholes	0	0	0	1	0	0	0	0	0	0	0	0	0
No. Sewer Main overflow	0	0	0	0	0	0	0	0	0	0	0	0	0
NO. OF MANHOLES OVERFLOW	5	2	3	2	3	0	1	1	3	0	0	2	22
AIR RELIEF /Force main- Overflow	0	0	0	0	0	1	0	0	0	0	0	0	1
Call out not sewer-storm water issue	0	0	1	3	13	7	0	0	0	0	3	2	29
NO. Line blockage call (not ours)	11	14	7	8	5	8	6	4	6	4	4	8	85
NO. OF SEWER LINES BLOCKAGE	13	6	5	9	5	4	6	2	5	4	2	7	68
NO. OF FT OF SEWER LINE CLEANED	5,116	12,748	2,525	2,422	13,824	1,491	1,880	15,174	1,911	1428	2,039	10,729	71,287
NO. OF FT PIPE BURSTED	0	419	585	0	0	0	0	0	0	0	0	0	1,004
SEWER POINT REPAIRS	0	2	4	1	0	2	4	2	0	1	3	4	23
Station/ Right a way/M.H-spray,cut	0	0	35	11	90	55	36	53	46	12	0	0	338
NO. Monthly Liftstations Inspected	376	405	453	492	278	479	476	418	405	484	489	498	5,253
NO. OF SEWER INSPECTIONS	26	34	28	15	24	30	16	19	20	13	18	33	276
NO. OF GREASE TRAPS INSPECTED	161	52	0	195	0	0	156	0	0	159	0	0	723
NO. OF FT OF SEWER LINE CAMERA	75	60	0	608	115	127	720	5014	4012	1652	2786	1,525	16,694
ASST. OTHER DEPT.	0	0	0	1	0	0	3	2	1	0	2	3	12

Summarily, the spreadsheet documents problems within the system, but also significant efforts that were made in preventative and proactive maintenance to curtail these issues. We have had 22 manhole sanitary sewer overflows (SSO's) were recorded in 2019 from 43 sanitary sewer overflows (SSO's) recorded in 2018, 1 air relief and force main overflows in 1019 from 5 in 2018. At the same time, some 71,287 linear feet (13.5 miles) of sewer main was cleaned with our jet-vac. This success is largely due to the amount of line cleaning that was done, but also the targeted pipe bursting (3,112 linear feet) done in areas plagued with inflow and infiltration (I & I) problems. Moreover, there was 16,694 linear feet of sewer line video inspected to identify line deficiencies and issues. There was a total of 125 manholes in which repairs and rehabilitation work were performed. There were 4 lift stations that had SSO's from 9 lift stations recording SSO's in 2018, but there were also 274 lift station cleanings (jet-vac) done with a total of 5,253 lift station inspections. In an effort to keep oil and grease out of the system and from entering the treatment plant, inspections were performed on grease traps.



These numbers demonstrate that real effort and resources are being expended in the war against system failures. We feel, both statistically and practically, that we are making good progress in satisfying the requirements of the C.A.O. The following spreadsheet further illustrates this regarding manhole repairs.

Benton Utilities Wastewater Conveyance Manhole Repair Record																						
Basin Number	Total No. Manholes	Surface Above Manhole										Priority Need for Repair				Repair Requirement						Total number of manholes still needing repair
		Unable to Access	Concrete Pave	Asphalt Pave	Sidewalk Pave	Gravel	Grass	Wood	None	1st	2nd	Low	No Access/Not able to perform inspection	Replace Manhole	Bench & Trough or Around Pipe	Remove Roots	Replace Cover	Raise Rim	Seal Rim or Extension	Cementitious Lining		
BASIN NO. 1	110	13	0	3	0	3	76	18	77	2	5	13	13	0	3	2	0	15	18	6	44	
Manhole Repairs Still Needed on CAO														0	0	0	0	0	0	0	0	0
BASIN NO. 2	496	117	20	103	9	1	246	57	351	0	14	14	117	0	14	4	6	115	7	9	155	
Manhole Repairs Still Needed on CAO														0	0	0	0	19	0	0	19	
BASIN NO. 3	657	128	30	241	0	11	226	90	445	8	36	40	128	0	40	22	10	106	19	33	230	
Manhole Repairs Still Needed on CAO														0	0	0	0	32	0	1	33	
BASIN NO. 4	217	26	3	125	6	7	63	7	173	0	13	5	26	0	3	1	1	27	3	11	46	
Manhole Repairs Still Needed on CAO														0	0	0	0	2	0	0	2	
BASIN NO. 5	594	35	4	344	4	20	160	62	458	4	67	30	35	0	49	17	18	45	2	56	187	
Manhole Repairs Still Needed on CAO														0	0	0	7	13	0	0	20	
BASIN NO. 6	210	14	2	75	0	16	78	37	130	0	18	48	14	0	22	5	3	24	26	16	96	
Manhole Repairs Still Needed on CAO														0	0	0	0	3	0	0	3	
BASIN NO. 7	124	37	1	38	0	4	34	4	72	0	6	9	37	0	2	4	0	36	8	2	52	
Manhole Repairs Still Needed on CAO														0	1	1	0	3	0	0	5	
BASIN NO. 8	388	72	2	134	0	12	183	37	291	0	6	19	72	0	8	4	4	79	4	1	101	
Manhole Repairs Still Needed on CAO														0	0	0	0	8	0	1	9	
BASIN NO. 9	107	2	5	29	0	6	43	20	70	1	4	30	2	0	15	4	1	4	18	7	49	
Manhole Repairs Still Needed on CAO														0	0	0	0	0	5	0	5	
BASIN NO. 10	949	46	34	239	21	12	531	78	456	4	157	286	46	1	256	48	34	76	140	195	749	
Manhole Repairs Still Needed on CAO														0	111	26	18	62	54	0	271	
BASIN NO. 11	540	5	26	54	94	15	337	12	409	1	8	117	5	1	32	5	2	47	71	4	162	
Manhole Repairs Still Needed on CAO														0	16	4	1	17	29	0	67	
Total number of repairs we started from on the CAO report:													495	2	444	116	79	570	316	340	1871	
Total number of repairs left from all basins:													0	128	31	26	159	88	2	434		

This chart offers a summary of both significant progresses made as well what remains to be accomplished relating to manhole repairs. There is continued effort directed towards locating and evaluating manholes that are under asphalt or inaccessible otherwise. Examination of these manholes will reveal what additional repairs will be needed. In turn, cost projections for labor and supplies for repairs can be made for budgetary planning.

There has also been significant manhole rehab that was done outside the scope of the C.A.O. For example, we have repaired and replaced 10 more manholes on one of our major gravity lines that were covered up by at least six feet of fill dirt and bricks falling from the walls into the sewer main, and rehabbed 10 more manholes with epoxy coated lining and new ring-lid gaskets on our major 15" gravity line from Hurricane Lake to Thomas Pasture lift station. This Hurricane Lake 15" gravity main drained from our 16" force main that has caused manhole corrosion with the possibility of manholes collapsing. A key component of line system improvement is pipe bursting. There was more than a mile (3,112 linear feet) of pipe bursting done in 2019. Some of this work, however, was done in areas outside the scope of the C. A. O. For example, it became necessary to pipe burst where the line was collapsing, and I & I was rampant in the vicinity of Lynwood Dr.

The following spreadsheet offers a snapshot of what has been accomplished to date and that which remains under the C. A. O.

Tracking Gravity Line Repair.xlsx

BENTON UTILITIES SS GRAVITY MAIN REPAIR AND PIPE BURST RECORD (SUMMARY)											CORRECTED sewer lines needing to be pipe burst: 2019						
Basin No.	Pipe Defect/Repair Requirement										Repair Completed						Repairs Left
	Storm Drain	Asph Pav	Side walk Pav	Grass	Line Sag/Grease	Separation joints/Roots	Objects through main	Replace Pipe size	Point Repair	Pipe Burst Length Ft	Line Sag/Grease	Separation joints/Roots	Objects through main	Replace Pipe size	Point Repair	Pipe Burst Length Ft	Feet left on CAO report:
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	1	0	2	1	2	0	0	0	1,871	0	1	0	0	0	357	1,514
3	0	6	0	10	2	13	0	0	0	3,294	0	5	0	0	0	3,294	0
4	0	1	0	5	0	3	2	0	3	2,910	0	3	2	0	3	2,502	408
5	2	11	0	12	16	19	4	0	0	7,266	8	9	2	0	0	4,666	2,600
6	0	0	0	3	6	6	0	0	0	1,566	3	3	0	0	0	304	1,262
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	19	1	24	13	36	1	0	10	10,505	6	8	1	0	1	9,410	1,095
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>2</b>	<b>38</b>	<b>1</b>	<b>56</b>	<b>38</b>	<b>79</b>	<b>7</b>	<b>0</b>	<b>13</b>	<b>27,412</b>	<b>17</b>	<b>29</b>	<b>5</b>	<b>0</b>	<b>4</b>	<b>20,533</b>	
<b>Total number of feet left to pipe burst:</b>																<b>6,879</b>	

Out of the total 27,412 linear feet of pipe bursting required under the C. A. O., 20,533 feet has been completed. This leaves 6,879 feet to be done. It is conceivable that this residual footage can be completed in 2 years. Emergency deviations as described above can alter this projection, but this is a realistic goal.

A noticeable reduction in I & I has occurred. For example, during moderate to heavy rains (c. 2 inches), the Willow Street pump station required the use of the adjacent, auxiliary lift station (two 75-hp pumps) to handle the heavy flow and convey it to the 52-million-gallon equalization basin. With the upgrade of the 60 hp Flygt pumps, The Willow Street pump station is able to handle this level of rainfall. During the pipe burst projects, we found many sections of gravity sewer mains that have been taking in creeks during heavy rain events. We have pipe burst many lines that were on creeks that would create major I&I into our system. These sewer lines were on Jameson St. to Alcoa Rd., 100' areal crossing on 12" sewer main, Lynnwood Dr. and Chris Dr., and put in a new 160' areal crossing off I-30 that was in danger of collapsing into a major creek.

We have performed many point repairs this year that have been creating sewer stoppages and some have been creating manhole overflows. We have reduced the number of overflows from 2018 and will be working on reducing 2019's number in 2020.



Another continuing development in 2019 has been the ongoing state widening project of I-30 between the Highway 70 and the South Street exits. This is significantly affecting existing sewer infrastructure requiring relocation of certain sewer mains. Engineering was finished in 2017 with the following linear feet of sewer relocation:

- 1,051 feet of 8-inch diameter with 7 new manholes
- 451 feet of 10-inch diameter with 5 new manholes
- 1,525 feet of 15-inch diameter with 7 new manholes
- 364 feet of 24-inch diameter with 5 new manholes
- and over 900 feet of 8-inch force main

Most of this replacement has been completed in 2019 such as the 10-inch sewer main with manholes that will replace infrastructure that is in poor condition by the Saline County fairgrounds. However, the overall expense of this construction must be fronted by Benton Utilities with only partial reimbursement expected in time. Unanticipated projects like these constrain available financial resources that are needed for system maintenance.

In conclusion, 2019 was a productive year with demonstrable progress in meeting the demands of the Consent Administrative Order. The integrity of the system infrastructure was ensured and expanded. Inflow and infiltration have been noticeably reduced. We will continue to place emphasis again this year on the priority basins identified in the Sanitary Sewer Evaluation Study. It is both our goal and our work to improve Benton's sanitary sewer collection system for public health, for good stewardship of the environment, and for the demands of the vibrant growth of this city.

Please feel free to contact me at 501-776-5955, or you may email me at [nathan@bentonar.org](mailto:nathan@bentonar.org) with any questions or comments you may have.

Sincerely,

Nathan Schultz,  
Benton Utilities Wastewater Conveyance Manager

Cc: David Vondran, P.E., and General Manager of Benton Utilities  
Gary Ferrell, Chairman of the Benton Utilities Public Utilities Commission  
Byron Hicks, P.E. and C.E.O. of McClelland Consulting Engineers, Inc.