



BENTON UTILITIES

BENTON, ARKANSAS

January 08, 2021

Leslie Allen-Daniel, Enforcement Coordinator
Office of Water Quality / Enforcement Section
Division 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 Ms. Allen-Daniel,

This letter comprises the Benton Utilities Wastewater Conveyance system 2020 annual report, and affirm our efforts to satisfy the demands of the Consent Administrative Order issued in 2011. 2020 has come with many challenges with the wide spread of Covid-19 and its effects on our department, contractors that we use and part suppliers. I am grateful to report that even with the challenges with Covid-19 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 an increasingly rapid 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, replacing many pumps in our system, 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. 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 highlights of the year have been significant in helping grow our sewer infrastructure while repairing problems that cause overflows in our system. We have done a total rehab on 4 lift stations and replaced 14 lift stations pumps. We are making significant changes with SCADA system. We have installed 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 at our major lift stations. We are also have started changing out our PumpAlarm notification system to a better monitoring system of HighTide at our smaller stations. We have installed 13 High Tide units and 4 Flygt Multismart units.

(Page 1, 2020 SSES//CAO Report)

The following chart represents statistical data of the sewer system.

Benton Wastewater Conveyance Statistical Data-2020													
JOB DATA:	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
Generators check	16	16	16	14	16	16	17	17	17	17	17	17	196
CAO GRAVITY REPAIR-PIPE BURST	0	0	0	0	0	0	0	0	0	0	0	0	495
Manhole SSES/CAO- work/inspect.	6	2	89	56	84	48	30	30	10	0	0	0	355
M.H -Lined/Patched/Repair/cleaned	6	5	10	0	1	0	0	1	1	0	0	0	24
NO. OF L/S FAILURES or work done	30	5	20	13	21	19	18	10	15	14	17	19	337
NO. OF LIFTSTATIONS OVERFLOW	0	0	0	0	0	0	1	0	1	0	0	0	2
NO. OF LIFT STATIONS CLEANED	22	24	19	22	16	25	28	22	23	12	23	18	254
Survey sewer mains/ manholes	0	17	3	18	1	2	3	0	0	0	0	0	44
No. Sewer Main overflow	0	0	1	0	0	0	1	1	1	0	0	1	5
NO. OF MANHOLES OVERFLOW	2	0	4	1	1	2	0	1	1	2	1	1	16
AIR RELIEF /Force main- Overflow	0	0	0	0	0	2	0	0	0	2	0	1	5
Call out not sewer-storm water issue	0	2	1	0	1	0	2	0	0	0	0	0	6
NO. Line blockage call (not ours)	10	7	5	7	10	7	4	2	7	2	3	3	66
NO. OF SEWER LINES BLOCKAGE	5	6	10	3	1	6	3	1	4	4	5	7	53
NO. OF FT OF SEWER LINE CLEANED	4144'	14,547'	3038'	5127'	6668'	1,152'	995'	7,514'	1,433'	9104'	1,483'	1,974'	57,182'
NO. OF FT PIPE BURSTED	620'	0'	0'	0'	0'	0'	0'	0'	0'	0'	1156'	0'	1,776'
POINT REPAIR DUE TO BORING CO. or Contractor	1	2/ 10'	1	0	0	1	1/12'	1/8'	1/6'	0	4/12'	3	15
SEWER POINT REPAIRS	0	2/ 20'	4/16'	2/5'	0	0	1/20'	2/12'	3/23'	2/12'	4/14'	4/10'	24
Station/ Right of way/M.H-spray,cut	0	0	38	60	43	72	65	24	23	0	0	0	325
Right of Ways cleared cut	0	2/ 13MH	4/32MH	7/55MH	0	1/6MH	0	3/15MH	5	0	0	0	22/126MH
NO. Monthly Liftstations Inspected	447	382	382	463	340	469	343	364	371	376	364	374	4,675
NO. OF SEWER INSPECTIONS	30	22	34	16	28	43	40	35	28	39	32	31	378
NO. OF GREASE TRAPS INSPECTED	163	0	0	158	0	0	0	0	0	2	0	1	324
NO. OF FT OF SEWER LINE CAMERA	1830'	3579'	1862'	125'	1531'	1272'	2214'	1924'	1450'	2337'	100'	548'	18,772'
ASST. OTHER DEPT.	0	0	1	1	1	0	3	2	3	0	3	1	15

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 16 manhole sanitary sewer overflows (SSO's) were recorded in 2020 from 22 sanitary sewer overflows (SSO's) recorded in 2019, 5 air relief and force main overflows in 2020 due to contractor error. At the same time, some 57,182' linear feet (10.8 miles) of sewer main cleaned with our jet-vac. Targeted pipe bursting (2,271 linear feet) done in areas plagued with inflow and infiltration (I & I) problems, and 39 sewer point repairs. Moreover, there was 18,772 linear feet of sewer line video inspected to identify line deficiencies and issues. There was a total of 379 manholes in which repairs and rehabilitation work were performed. There were 2 lift stations that had SSO's in 2020 from 4 lift stations recording SSO's in 2019, but there were also 254 lift station cleanings (jet-vac) done with a total of 4,675 lift station inspections. In an effort to keep oil and grease out of the system and from entering the treatment plant, 324 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	10	0	3	0	3	76	18	81	2	3	14	13	0	3	2	0	17	18	6	59	
Manhole Repairs Still Needed on CAO														0	0	0	0	0	0	0	0	0
BASIN NO. 2	495	116	12	96	9	0	221	57	351	0	14	14	117	0	18	4	9	115	8	9	280	
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	51	22	16	106	23	46	392	
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	4	1	1	27	3	11	73	
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	54	17	18	46	27	56	253	
Manhole Repairs Still Needed on CAO														0	0	0	0	13	0	0	13	
BASIN NO. 6	210	14	2	75	0	16	78	37	130	0	18	48	14	0	24	9	3	24	28	18	120	
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	89	
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	1	8	5	6	81	5	1	179	
Manhole Repairs Still Needed on CAO														0	0	0	0	8	0	0	8	
BASIN NO. 9	107	2	5	29	0	6	43	20	70	1	4	30	2	0	15	4	1	4	18	7	51	
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	3	364	48	60	126	195	195	1037	
Manhole Repairs Still Needed on CAO														0	3	26	0	0	0	0	29	
BASIN NO. 11	540	5	26	54	94	15	337	12	409	1	8	117	5	1	48	5	3	47	73	4	186	
Manhole Repairs Still Needed on CAO														0	0	1	0	0	27	0	28	
Total number of repairs we started from on the CAO report:													495	2	444	116	79	574	316	340	1871	
Total number of repairs left from all basins:													0	4	28	0	80	32	1	145		
Total number of completed manhole repairs:													5	591	121	117	629	406	355	2224		

This chart above and below 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. We will complete the manhole portion in year 2021, two years ahead of the deadline. We only have 145 manholes left.

BENTON UTILITIES SS MANHOLE REPAIR RECORD SUMMARY																			Manhole finished repairs								
Basin No.	Total No. Manholes	Unable to Access	Surface Above Manhole					Need for Repair					Repair Requirement							Manhole Replaced	Bench and Trough Repaired or Sealed at Pipe	Roots Removed	Cover Replaced	Rim Raised	Extension or Rim Sealed	Lining Completed	
			Conc. Pave	Asph. Pave	Side Walk Pave	Grav	Grass	Wood	None	1st	2nd	Low	No Access	Replace Manhole	Bench & Trough or Around Pipe	Remove Roots	Replace Cover	Raise Rim	Seal Rim or Extension								Cementitious Lining
BASIN NO. 1	110	10	0	3	0	3	76	18	81	2	3	14	13	0	3	2	0	15	18	6	0	3	2	0	17	18	6
BASIN NO. 2	495	116	12	96	9	0	221	57	351	0	14	14	117	0	14	4	6	115	7	9	0	18	4	9	115	8	9
BASIN NO. 3	657	128	30	241	0	11	226	90	445	8	36	40	128	0	40	22	10	106	19	33	0	51	22	16	106	23	46
BASIN NO. 4	217	26	3	125	6	7	63	7	173	0	13	5	26	0	3	1	1	27	3	11	0	4	1	1	27	3	11
BASIN NO. 5	594	35	4	344	4	20	160	62	458	4	67	30	35	0	49	17	18	45	2	56	0	54	17	18	46	27	56
BASIN NO. 6	210	14	2	75	0	16	78	37	130	0	18	48	14	0	22	5	3	24	26	16	0	24	9	3	24	28	18
BASIN NO. 7	124	37	1	38	0	4	34	4	72	0	6	9	37	0	2	4	0	36	8	2	0	2	4	0	36	8	2
BASIN NO. 8	388	72	2	134	0	12	183	37	291	0	6	19	72	0	8	4	4	79	4	1	1	8	5	6	81	5	1
BASIN NO. 9	107	2	5	29	0	6	43	20	70	1	4	30	2	0	15	4	1	4	18	7	0	15	4	1	4	18	7
BASIN NO. 10	949	46	34	239	21	12	531	78	456	4	157	286	46	1	256	48	34	76	140	195	3	364	48	60	126	195	195
BASIN NO. 11	540	5	26	54	94	15	337	12	409	1	8	117	5	1	32	5	2	47	71	4	1	48	5	3	47	73	4
Total Work Done on Manholes																					5	591	121	117	629	406	355
Totals	4,391	491	119	1,878	134	106	1,952	422	2,936	20	332	612	495	2	444	116	79	574	316	340	2	444	116	79	574	316	340
Total Manholes Inspected	3,900																				0	4	28	0	80	88	1
Total manhole repair Requirements																			1,871			Total number of manhole repair still left to do:					145
																						Total number of manhole repaired:					2,224

There has also been significant manhole rehab that was done outside the scope of the C.A.O. For example, we have repaired 8 more manholes with epoxy lining to ensure the gasses and H2S do not deteriorate the manholes and cause major issues. We have also implemented in our specifications that any manholes that are constructed in the Benton Utilities infrastructure will require epoxy coated on the downstream end of any new lift station.

A key component of line system improvement is pipe bursting. We have completed (2,271 linear feet) of pipe bursting done in 2020. 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 and up size our sewer main where the line was collapsing, and I & I was rampant in the vicinity of Burton St. and W. Hazel and another section on Chris St, Hicks St, and Eagle Point for new development on Northshore Dr. We are still working in this area due to the delays of Covid-19 and will be continuing our Pipe Burst on our C.A.O when we get finished with this sewer main upsize. We have completed 495 linear feet on the C.A.O.

We have taken into our system on new residential development a total of 12,032 feet of new 8” sewer main.

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: 2020						
Basin No.	Pipe Defect/Repair Requirement										Repair Completed						Repairs Left
	Storm Drain	Asph Pave	Side walk Pave	Grass	Line Sag/Grease	Separati on joints/ Roots	Objects through main	Replace Pipe size	Point Repair	Pipe Burst Length Ft	Line Sag/Grease	Separati on 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	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	2,997	0
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	0
Total	2	38	1	56	38	79	7	0	13	27,412	17	29	5	0	4	21,028	6,471
Total number of feet left to pipe burst:																6,471	

Out of the total 27,412 linear feet of pipe bursting required under the C. A. O., 21,028 feet has been completed. This leaves 6,471 feet to be done. It is conceivable that this residual footage can be completed in less than 2 years. Emergency deviations as described above can alter this projection, but this is a realistic goal.

A noticeable reduction in I & I has resulted with our pipe bursts program. 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 and we still had manhole overflows. 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 and repair projects, we found many sections of gravity sewer mains that have been taking in creeks during heavy rain events. We have also performed point repairs on 6 ductile creek crossings this year and stabilized the bank and wash out on all 6 crossings, many lines on the creeks created major I&I into our system.

We have performed many point repairs this year that have been creating sewer stoppages and some had been creating manhole overflows. We have reduced the number of overflows from 2019 and will be working on reducing 2020's number in 2021.

Another continuing development in 2019 through 2021 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. And due to the Highway 5 widening project we will be relocating our gravity sewer main on Highway five.

- 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
- over 900 feet of 8-inch force main
- over 2,300 feet of 15-inch diameter with 11 manholes.

We have also installed and completed 1,018' of new force main crossing bored under the Saline River that was getting washed out.

In conclusion, 2020 was a challenging year trying to juggle the C.A.O and our sewer infrastructure with the road blocks Covid-19 has brought. But I believe we still had a very 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 nschultz@bentonutilities.com 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
Doug Stracener, Chairman of the Benton Utilities Public Utilities Commission
Byron Hicks, P.E. and C.E.O. of McClelland Consulting Engineers, Inc.