North Little Rock Wastewater

ANNUAL REPORT

2022

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2022 HIGHLIGHTS

Rehabilitation Highlights

Under Construction

Project	Status	L.F.	Cost
Lower Riverside Interceptor CIPP (54" Interceptor)	Under Construction	4,344	$4,272,238.44
Curtis Sykes and Meadow Park Basin Pipe Bursting 2022 Rehabilitation (Secondary Sewer Lines)	Under Construction	20,955	$1,779,766
Dixie Baring Cross Basins Pipe Bursting 2021 (Secondary Sewer Lines)	Under Construction	18,456	$1,275,595
Total		**43,755**	**$7,327,599.44**

Completed

Project	Status	L.F.	Cost
Rose City and Military Drive CIPP 2021 (Secondary Sewer Lines)	Completed	27,285	$1,009,331
Curtis Sykes and Meadow Park Basins CIPP 2022 Rehabilitation (Secondary Sewer Lines)	Completed	27,194	$1,003,165
Dark Hollow Interceptors CIPP 2019 (18", 24", 30", and 36" Interceptors)	Completed	9,221	$2,238,983.10
Total		**63,700**	**$4,251,479.10**

Interceptor Project

Five Mile Creek Interceptor	Completed	**470.24**	**$2,011,264.20**

Operation Highlights

Faulkner Lake – New influent lagoon valves and vault installed for sludge lagoons. Existing valves were abandoned in place.

Five Mile – SCADA programming implemented to allow operation of both large influent pumps during heavy rain events with provisions to prevent overflows within the plant.

White Oak – Extensive SCADA expansion has begun. Lagoon aerators, sludge pumps, scum pumps, and door security alarms will be incorporated. A complete overhaul of the influent pump station controls is also underway.

Maumelle – Access hole on influent wet well cored and level transducer relocated to mitigate interference issues with rags.

Faulkner Lake Piping Modifications

Collection System Highlights

Thirty-four SSO incidents were reported in 2022.
1,553,693 LF of the gravity collection system was cleaned in 2022. This is **44%** of the 3,493,532 LF of active gravity lines in the system.
290,039 LF of the gravity collection system was televised in 2022. This is .**08%** of the 3,493,532 LF of active gravity lines in the system.

Environmental Compliance

Testing/ Inspections	Average per month	Average per year
Lab	4,343	52,116
Pretreatment	1,211	14,532

Lab employee running tests on a sample.

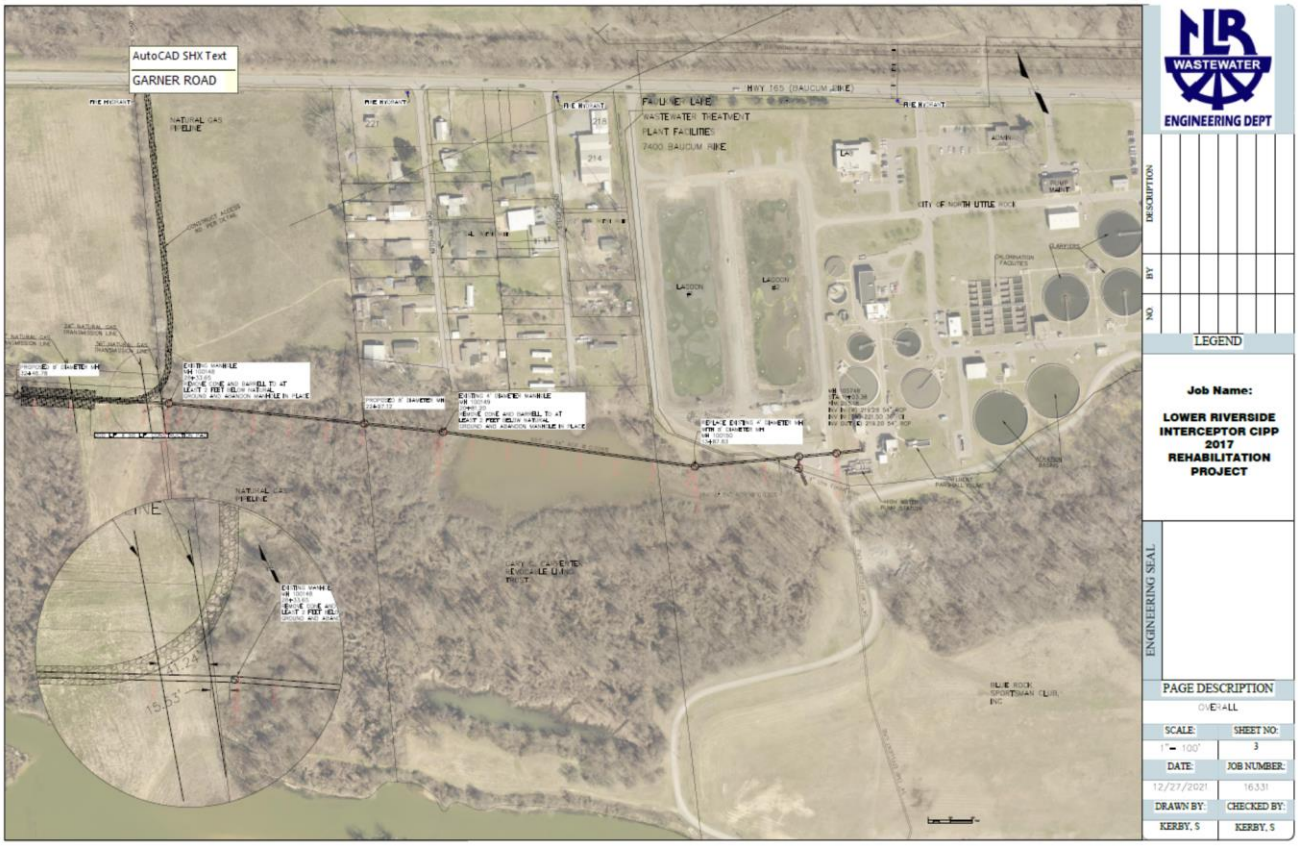
REHABILITATION SUMMARY

Projects Started in 2022

Lower Riverside Interceptor CIPP

Project overview:

- Rehabilitation, using Cured in Place Pipe methods, of approximately 4,344 linear feet of54" reinforced concrete pipe along with the installation of four, eight-foot diameter manholes.
- Notice of Award was granted in February 2022 to Insituform Technologies, LLC. For $4,272,238.44.
- Project is under construction.

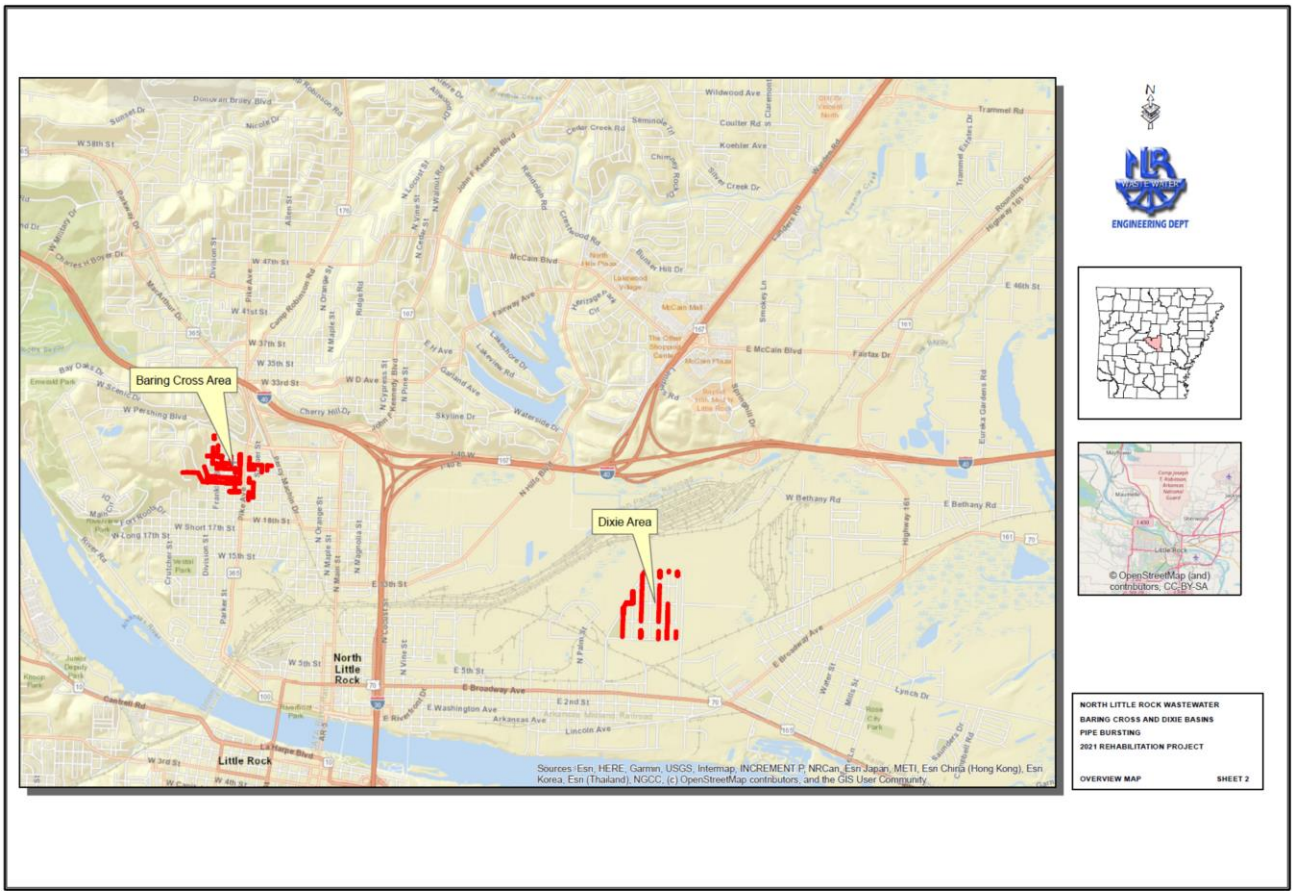


Lower Riverside Interceptor CIPP Project Location

Dixie Baring Cross Basins Pipe Bursting 2021

Project Overview:

- Rehabilitation of approximately 18,456 linear feet of 6" and 8" gravity sewer mains using pipe bursting methods and the reconnection of approximately 398 active services.
- Notice of award was granted to Burkhalter Technologies, Inc., November 2021, in the amount of $1,275,595.00.
- Project is under construction.

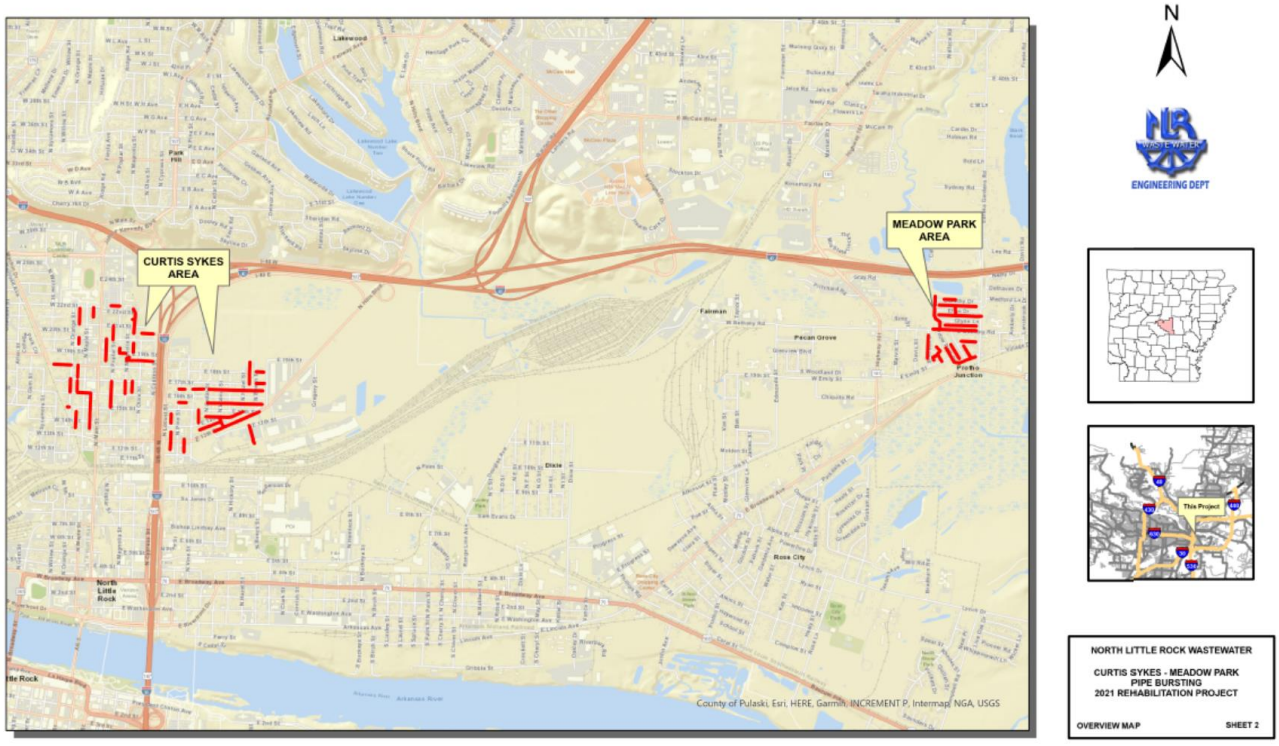


Dixie Baring Cross Basin Pipe Bursting 2021 Locations

Curtis Sykes and Meadow Park Basins Pipe Bursting 2022 Rehabilitation

Project overview:

- Rehabilitation using Pipe Bursting methods of approximately 27,194 linear feet of 6" and 8" gravity sewer mains, along with external reconnections for existing services.
- Notice of Award was granted in April 2022 to Horseshoe Construction, Inc. in the amount of $1,779,766.
- Project is under construction.



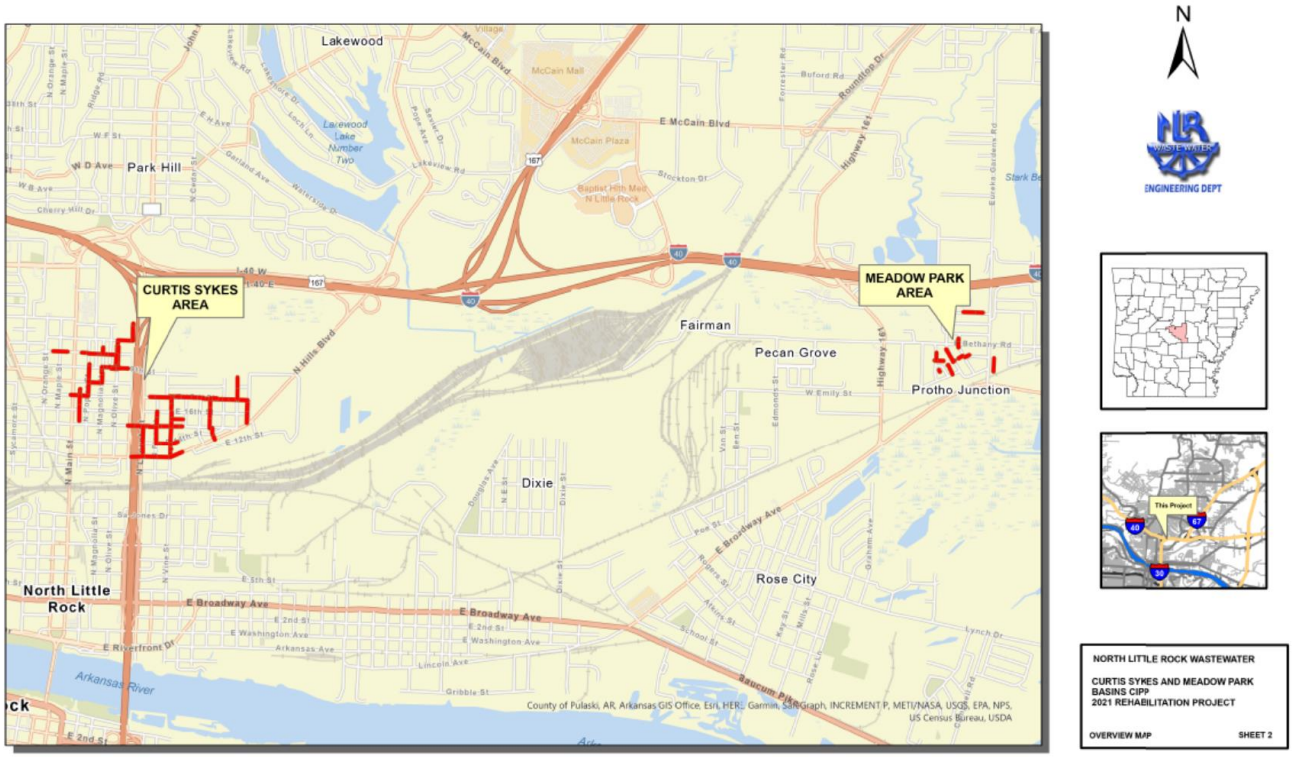
Curtis Sykes and Meadow Park PB Project Locations

Projects Completed in 2022

Curtis Sykes and Meadow Park Basins CIPP

Project Overview:

- Rehabilitation, using Cured in Place Pipe methods, of approximately 20,955 linear feet of 6"-15" gravity sewer mains along with approximately 200 internal reconnections for existing service lines.
- Notice of Award was granted February 2022 to Suncoast Infrastructure, Inc. in the amount of $1,003,165.
- Project was substantially completed November 2022.

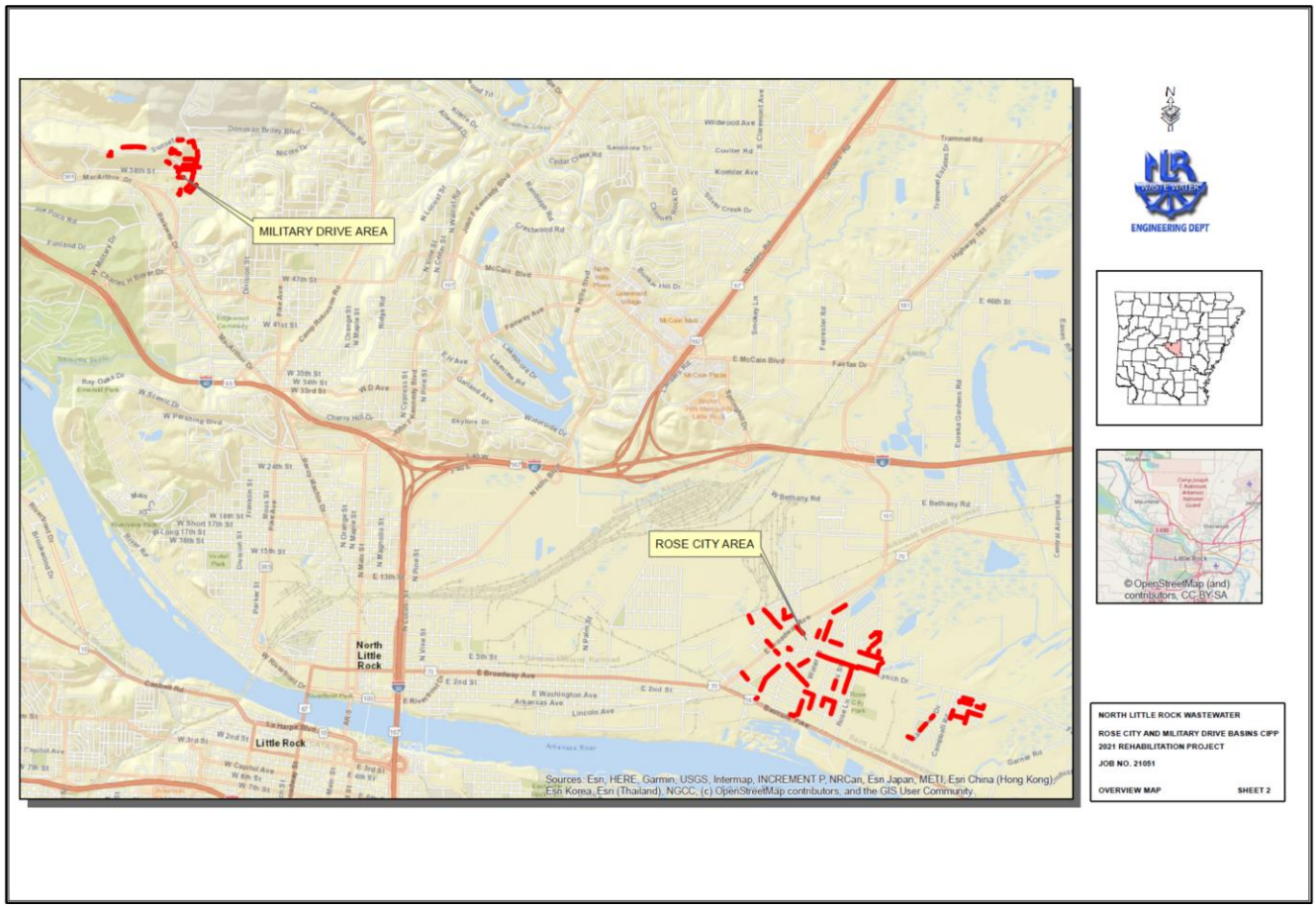


Curtis Sykes and Meadow Park CIPP Project Locations

Rose City and Military Drive CIPP 2021

Project Overview:

- Rehabilitation of approximately 27,285 linear feet of 6" and 10" gravity sewer mains along with approximately 443 internal reconnections of existing service lines.
- Notice of Award was granted July 2021 to Insituform Technologies in the amount of $1,009,331.53.
- Project was substantially completed November 2022.

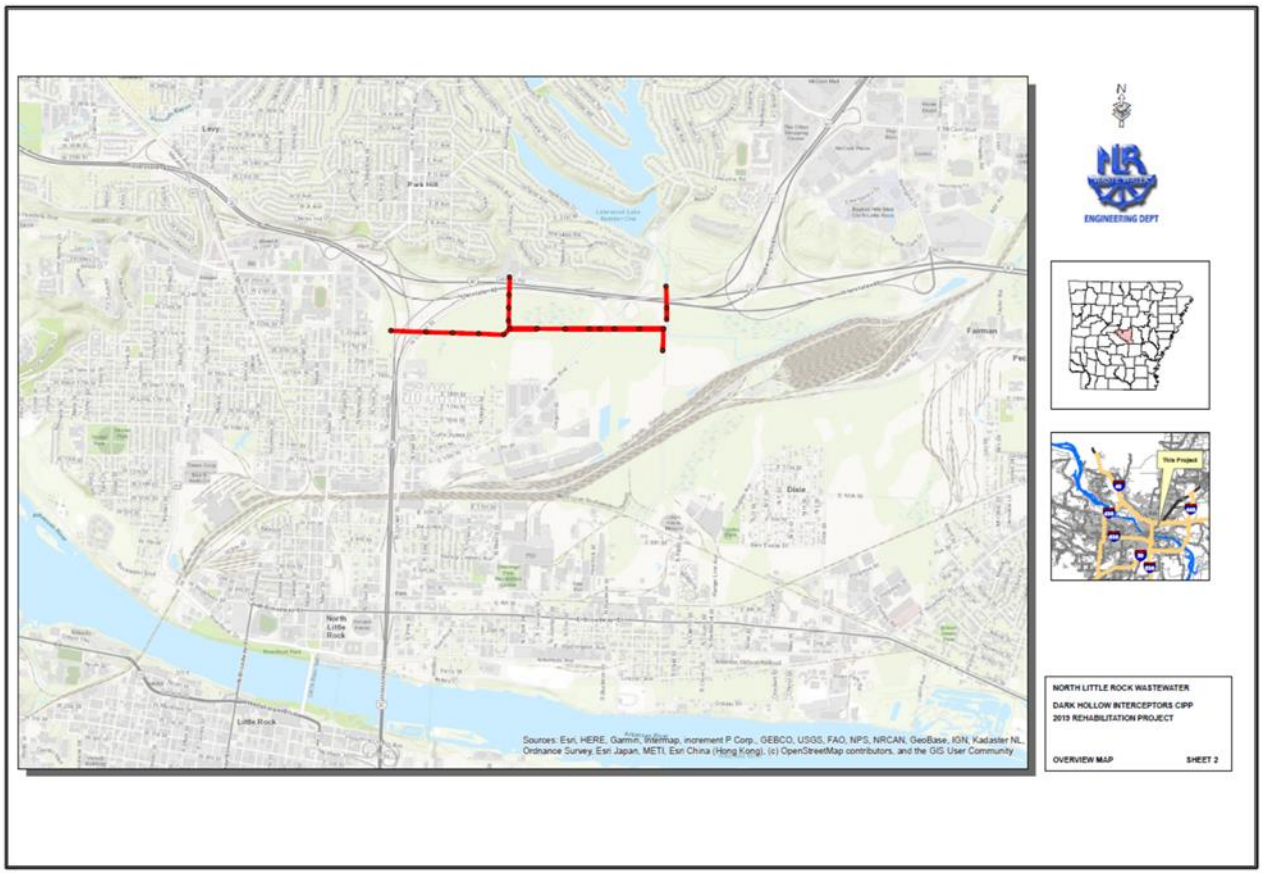


Rose City and Military Drive CIPP 2021 locations

Dark Hollow Interceptors CIPP 2019

Project overview:

- Rehabilitation of approximately 9,221 linear feet of 18", 24", 30", and 36" gravity sewer interceptors using Cured in Place pipe methods and the rehabilitation of 19 manholes.
- Notice of Award was granted in March 2021 to Insituform Technologies in the amount of $2,238,983.10.
- Completion was in March 2022.

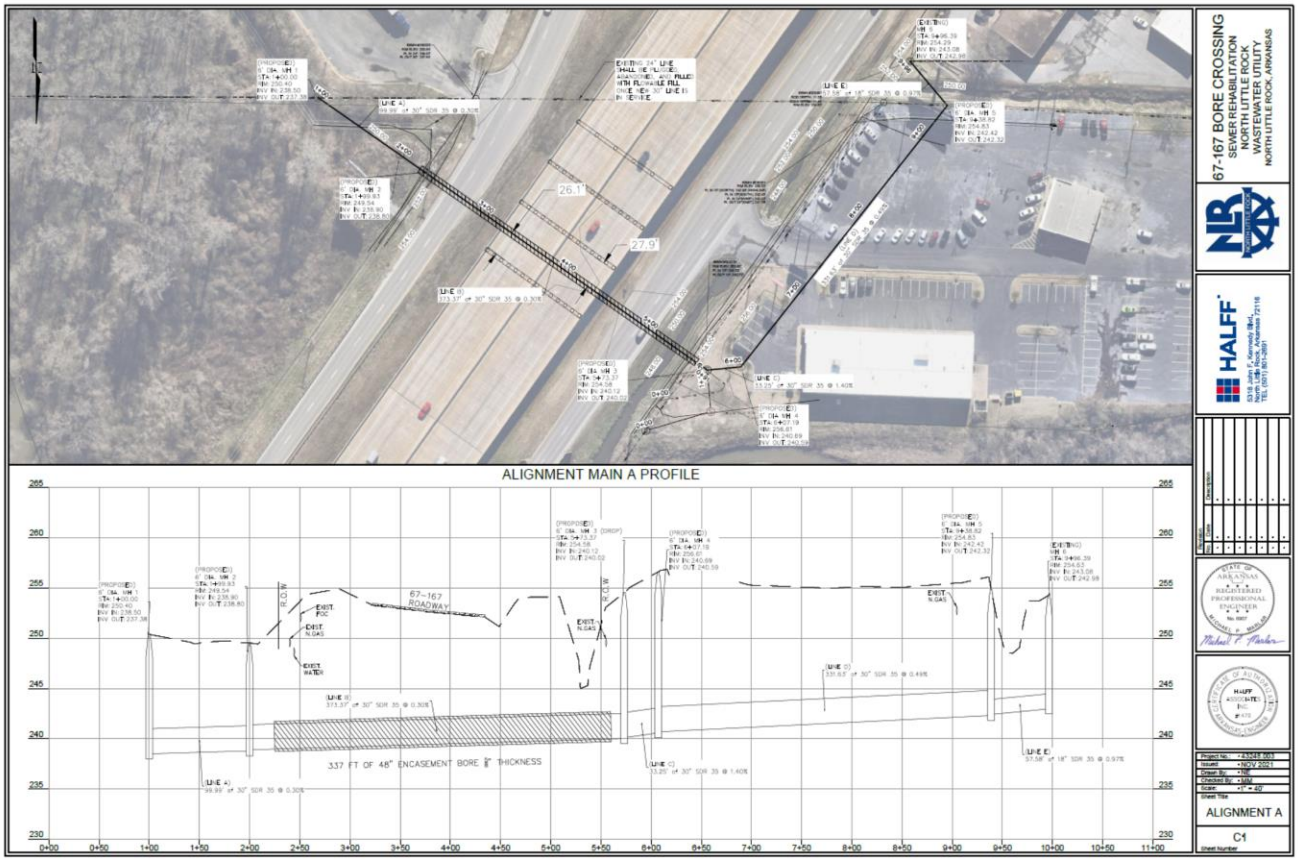


Dark Hollow Interceptors CIPP Project Locations

Five Mile Creek Interceptor Relocation

Project Overview:

- Emergency Relocation of the Hwy 167 interceptor.
- Existing 24" Interceptor was failing under Hwy 67/167.
- Diamond construction was awarded the project. The final invoice was $2,011,264.
- Project was completed in December 2022.



Five Mile Creek Interceptor Bore Crossing

OPERATIONS SUMMARY

January

- Five Mile – Installed new 30" effluent Magmeter flowmeter. Began running comparison between existing 1.5 ft weir flow measurements.
- Five Mile – Constructed new access road between treatment plant and solar plant.
- Five Mile – SCADA programming implemented to allow operation of both large influent pumps during heavy rain events with provisions to prevent overflows within the plant.
- Five Mile – SCADA programming implemented to initiate bar screen raking sequence based upon level differential should differential occur before timer calls for a rake sequence.

February

- Faulkner Lake – Wiring panel cleaned up and replaced for polymer/sludge PLC and controls.
- Faulkner Lake – SCADA programming implemented to operate primary clarifier pumps 1 & 2 on timers to reduce organic loading of the sludge lagoons.
- Maumelle – Access hole on influent wet well cored and level transducer relocated to mitigate interference issues with rags.

March

- Faulkner Lake – Sludge underflow alarm meters installed on primary clarifiers 1 & 2 and fully integrated into SCADA.

April

- Five Mile – Effluent flow comparisons between weir and magmeter complete. 1.5 ft flow weir removed from chlorine contact structure and new magmeter has been designated the official flow measuring device.
- Five Mile – SCADA programming implemented to retrieve and display status and smart data from influent & effluent generators and automatic transfer switches.
- Maumelle – SCADA aeration basin level alarm system to prevent overflow damaged in storm was repaired and put back in service.

May

- Five Mile – Electrical storm caused failure on controllers for effluent generator, automatic transfer switch, west aerator #4, and gate opener. All items were replaced and placed back in service.
- Faulkner Lake – Sludge valving and piping modifications implemented to allow Moyno feed pumps to send sludge to the lagoons after a polymer treatment. This enhanced settling and odor complaints from western neighbors have ceased.
- Maumelle – Effluent pump #1 was repaired and put back in service.

June

- Five Mile – Solar plant inverter #5 failed and was replaced under warranty.
- Faulkner Lake – RAS pump station controller has failed. Unit was obsolete, and a currently supported model consistent with existing plant installations was programmed, installed, and fully integrated into SCADA.

July

- Five Mile – Solar plant inverter #4 failed and was replaced under warranty.

August

- Five Mile – Effluent ATS controller failed due to storm and was replaced. Due to reoccurring issues caused by transient voltages from lightning, a suppression expert was called in to evaluate and provide recommendations. Surge suppression devices installed at effluent flow meter and effluent ATS.
- Faulkner Lake – New influent lagoon valves and vault installed for sludge lagoons. Existing valves were abandoned in place.
- Faulkner Lake – Western stormwater ditch was cleaned out and large trees that inhibit drainage were removed.

September

- Five Mile – Effluent pump #2 was repaired and put back in service.
- Faulkner Lake – Leak on 20" high water lift station force main to the lagoons was excavated and repaired.
- Faulkner Lake – Final Clarifier Launder cover project on the Faulkner Lake secondary clarifiers is complete.
- Faulkner Lake – All south storm drain ditches were cleaned out. Eroded storm drains were landscaped and B-stone was applied when necessary.

October

- Annual chlorine equipment rebuild is completed for FL, FM, & WO.

November

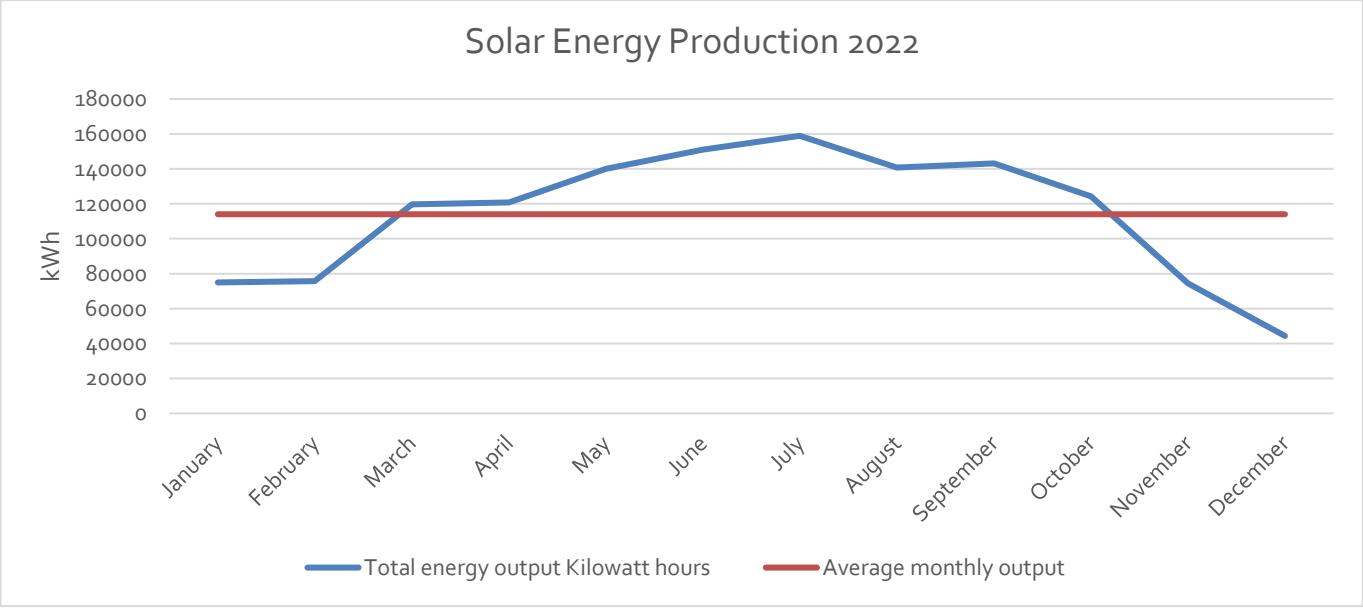
- Five Mile – Landscaping and stump removal along access road to solar plant is completed to allow easier maintenance in the future.
- Five Mile – Repair completed on chlorine induction pump #1.
- Five Mile – Overflow pipes between west and east lagoons installed to allow more wet weather flow. The west lagoon has a bottleneck on its outfall capacity.
- Faulkner Lake – Large diameter manhole rehab project on manholes 5, 6, 7, and belt press is complete.
- White Oak – Failed controller for chlorine pump #1 is replaced and programmed.
- Annual flow meter calibrations at all plants is completed.

December

- Faulkner Lake – Telemetry wiring installed, and Gates 2 & 3 incorporated into SCADA.
- White Oak – Extensive SCADA expansion has begun. Lagoon aerators, sludge pumps, scum pumps, and door security alarms will be incorporated. A complete overhaul of the influent pump station controls is also underway.
- Maumelle – Annual chlorine and sulfur dioxide equipment rebuild is complete.

Solar Energy Production

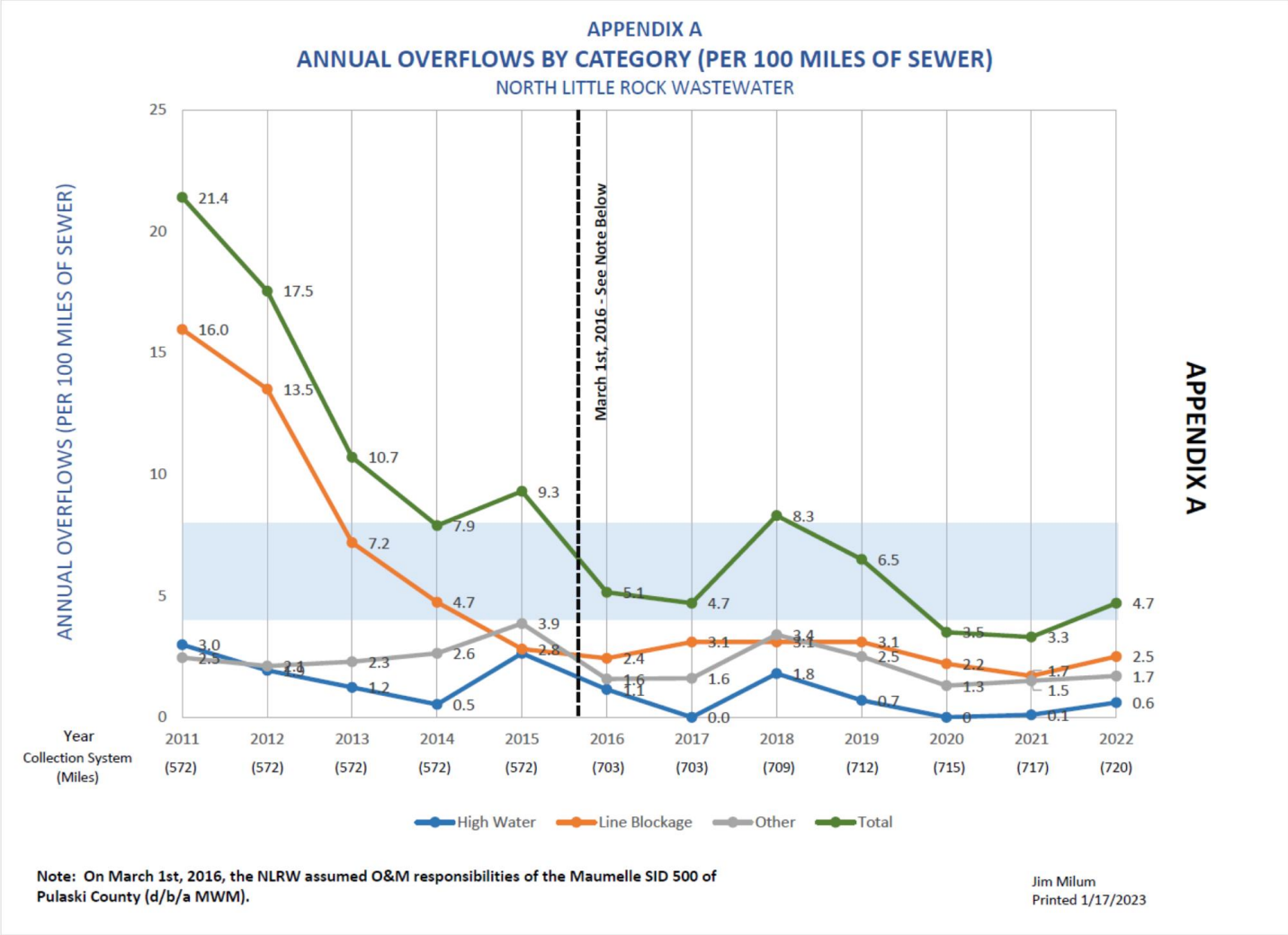
Month	Total energy output Kilowatt hours	Expected energy output Kilowatt hours
January	74978	56563
February	75619	59696
March	119630	88340
April	120760	90462
May	140050	106920
June	151070	108334
July	158910	113218
August	140810	100019
September	143180	100314
October	124160	88098
November	74490	53767
December	44330	32884
2022 Total:	1367987 kWh	
Average monthly output:	1367987 / 12 =	113999 kWh
Average daily output:	1367987 / 365 =	3748 kWh



COLLECTION SYSTEM SUMMARY

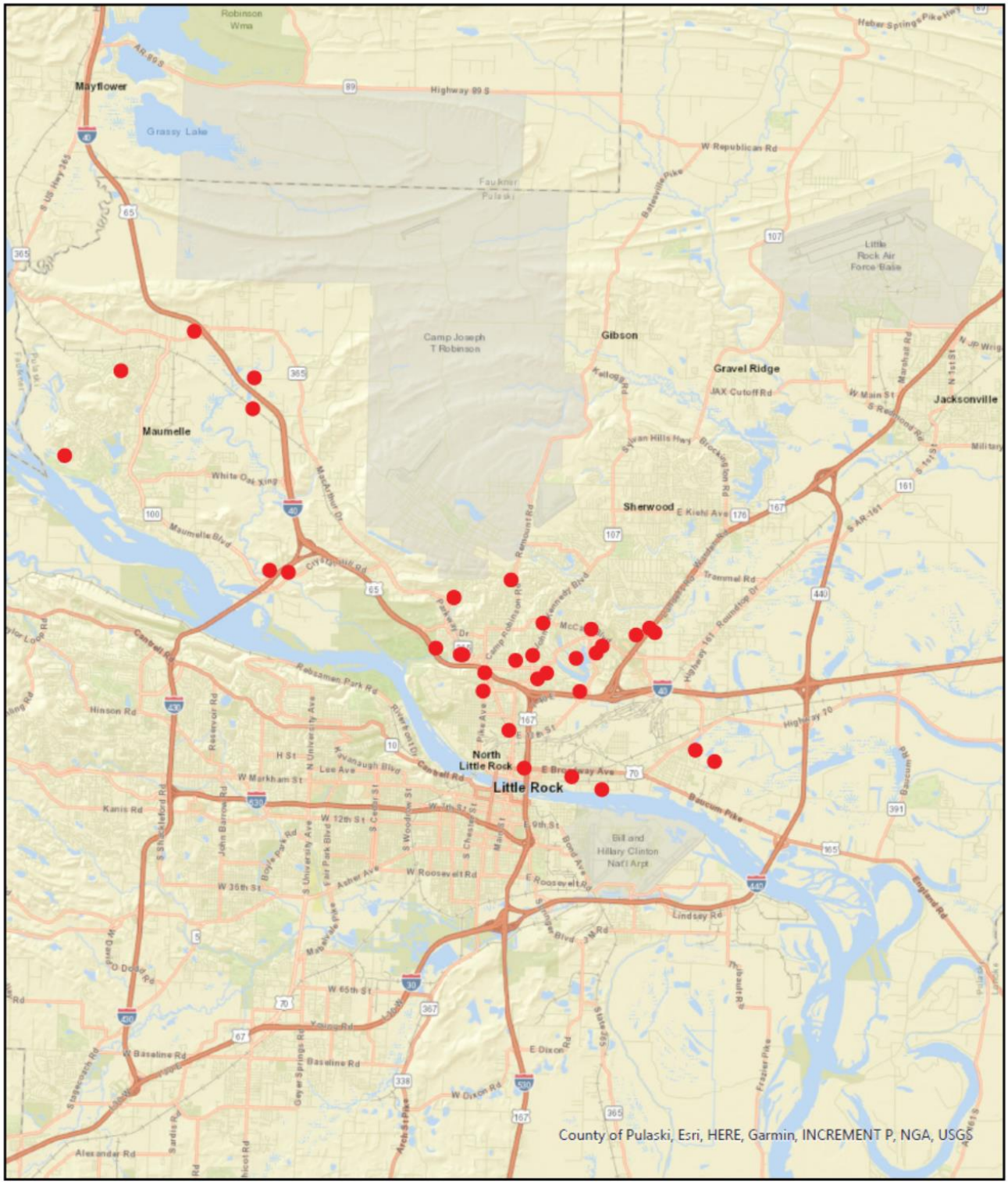
Annual Overflows

- Thirty-four SSO incidents were reported in 2022.
- 2022 had an average of 4.7 SSOs/100miles of sewer as noted in the following chart:



SSOs

- The following map shows the locations of the 2022 SSO occurrences:

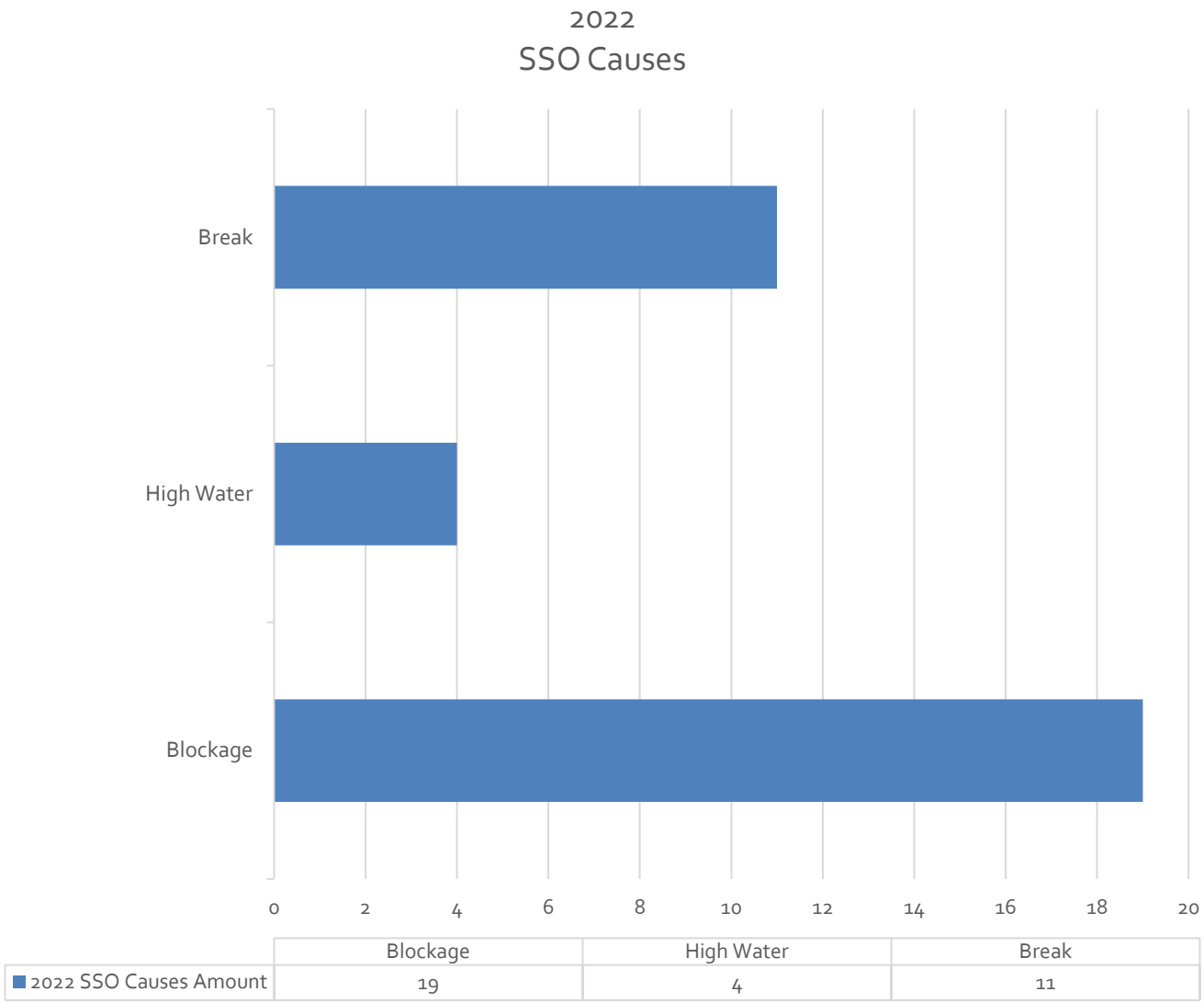


North Little Rock Wastewater

SSO Locations - 2022

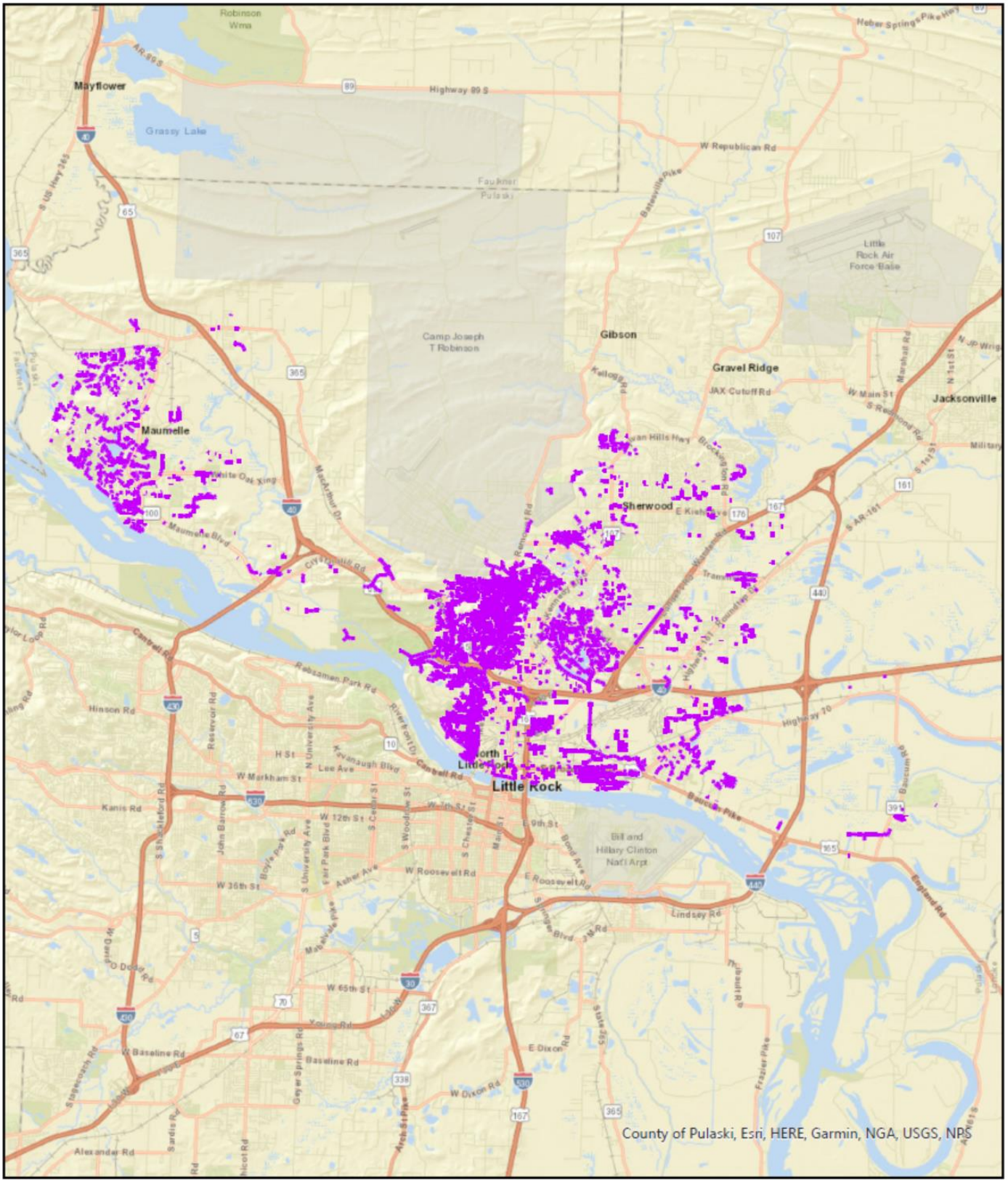
Printed 1/17/2023
J. Milum

- The following graph shows the causes of the SSOs in 2022:



Gravity Sewer Lines Cleaned

- 1,553,693 LF of the gravity collection system was cleaned in 2022.
- The following map shows the locations of lines cleaned in 2022:



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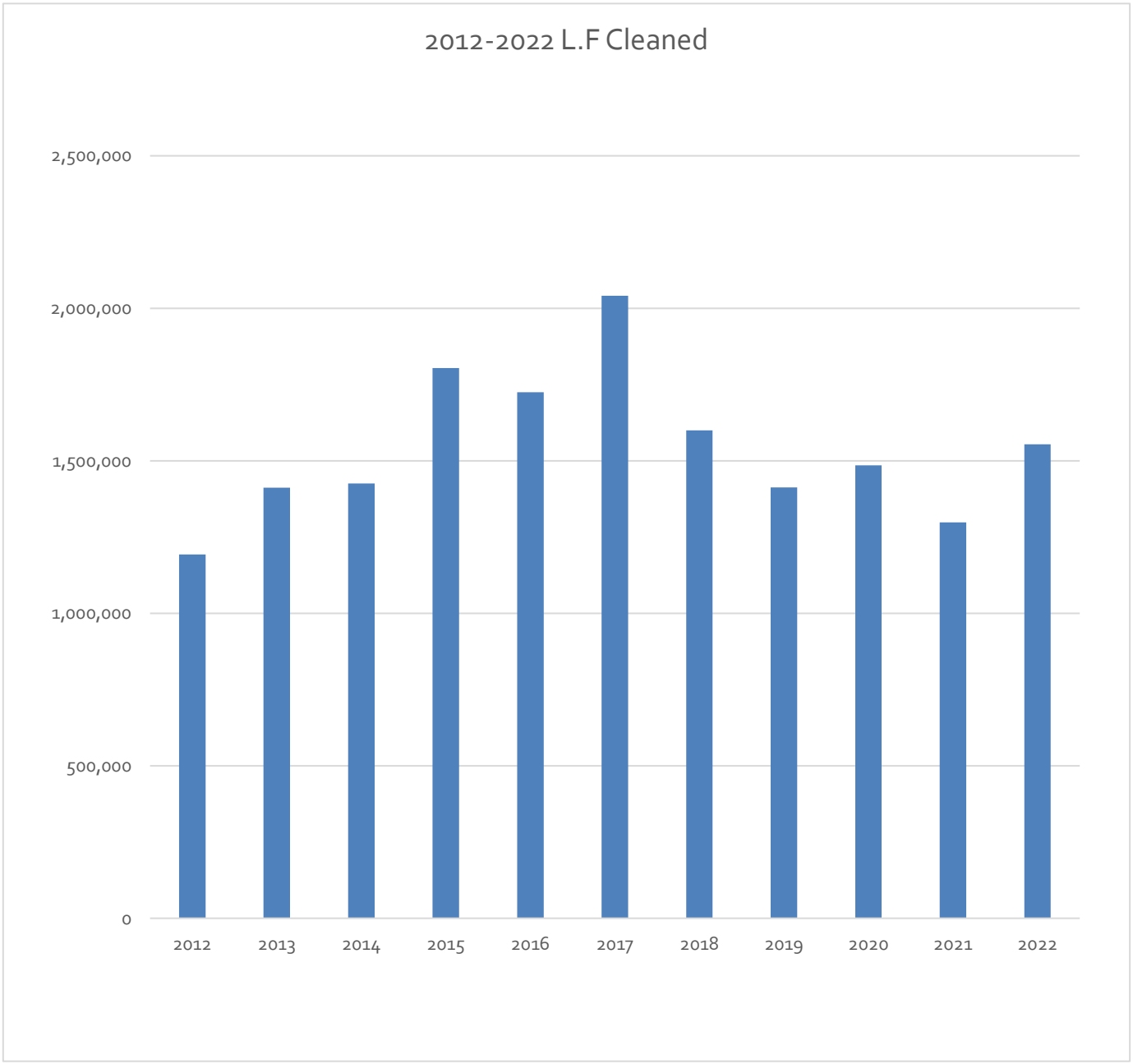
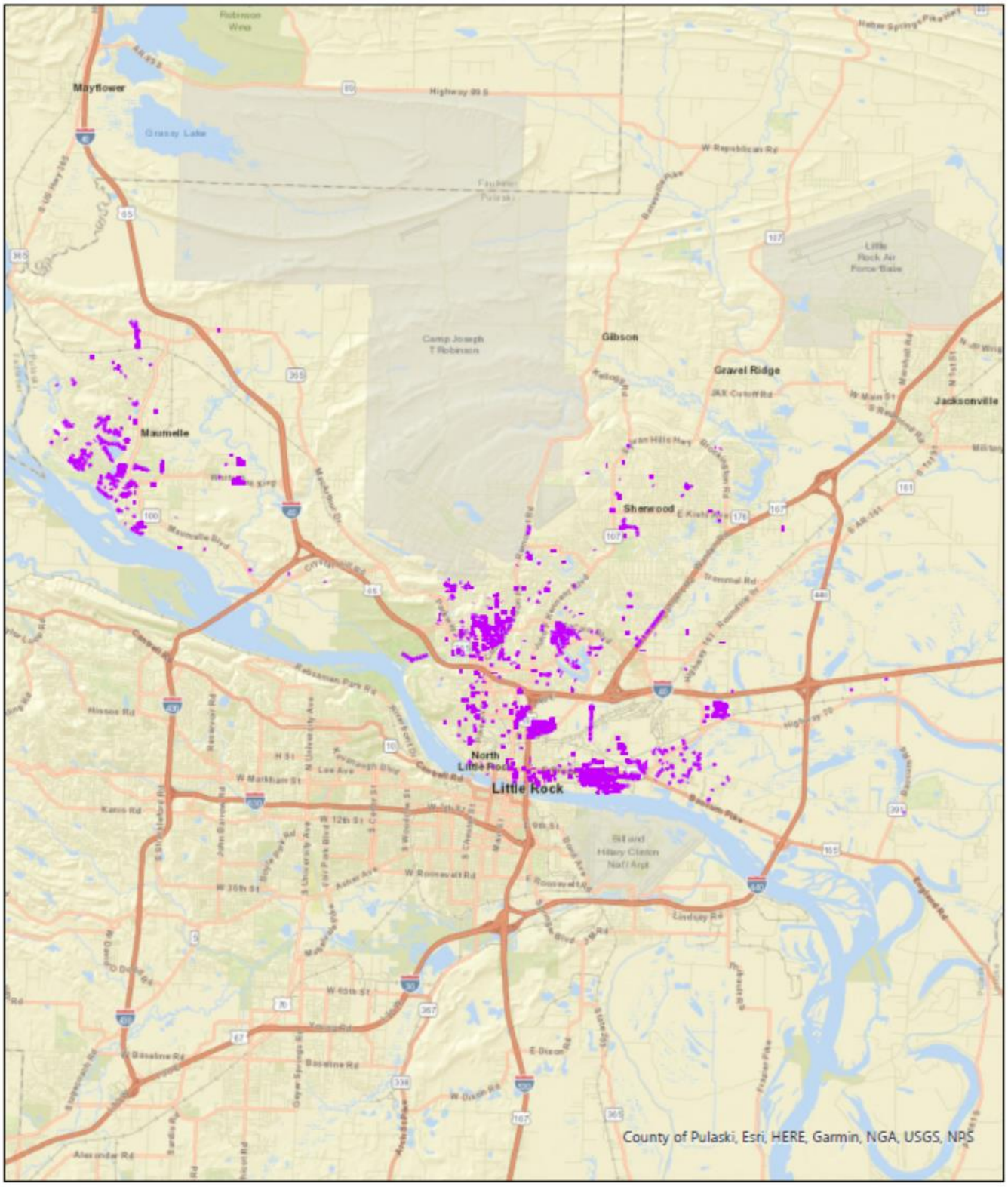
North Little Rock Wastewater

Lines Cleaned - 2022



CCTV

- 290,039 LF of the gravity collection system was televised in 2022.
- The following map shows the location of lines videoed in 2022:



Printed 1/17/2023
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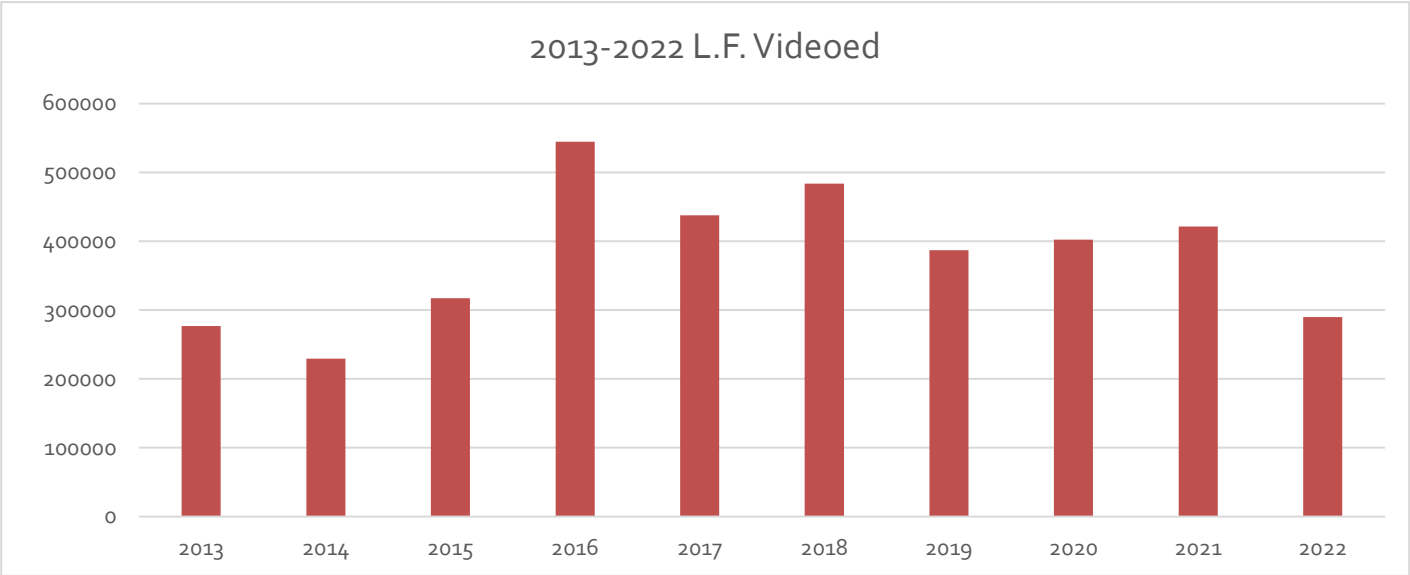
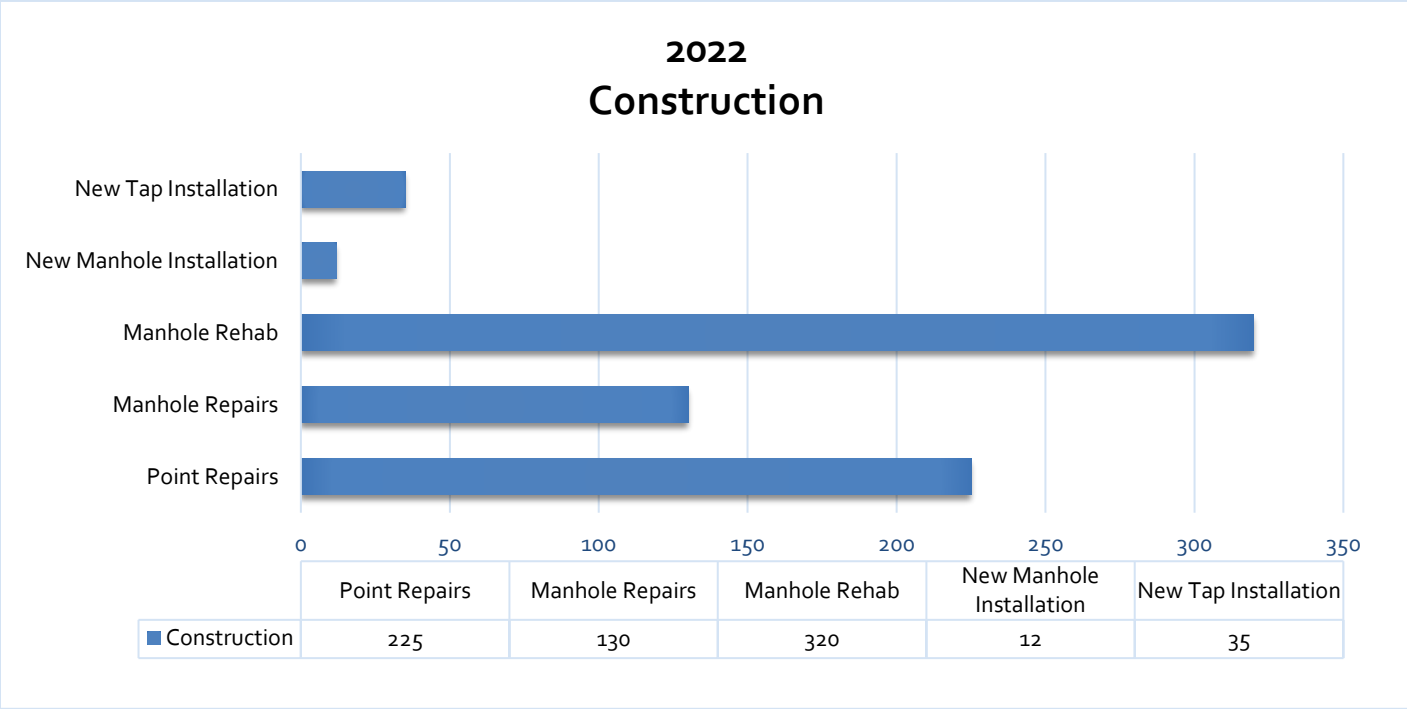
Closed Circuit Television Inspection - 2022



Construction

- The following graph is the 2022 Year end totals for Construction Work Recap:



ENVIRONMENTAL COMPLIANCE SUMMARY

Laboratory

Testing	Frequency
BOD/CBOD	1130/mo.
DO	71/mo.
TSS	286/mo.
Field Grab pH	240/mo.
Fecal	272/mo.
TRC	105/mo.
COD	298/mo.
SS	188/mo.
Comp pH	188/mo.
Stream Temp	205/mo.
Alkalinity	178/mo.
Ammonia	178/mo.
T. Phosphorus	74/mo.
Decl2	127/mo.
O&G	65/mo.
Lab Temps	60/mo.
Calibrations	126/mo.
% Total Solids	146/mo.
% Volatile Solids	146/mo.

- Total average testing per month-4,343
- Total average testing per year-52,116

Average Pretreatment Testing and Inspections

Activity	Frequency
Grab pH	380/mo.
Stream Temp	380/mo.
Calibrations	30/mo.
Sample Station Visits	300/mo.
Annual Industry Compliance Inspection	2/mo.
Grease Trap Inspections	34/mo.
Waste Survey	3/mo.
Special Projects	2/mo.

- Total average pretreatment testing per year-1,211
- Total average pretreatment testing per year-14,532