



FISHER ARNOLD
ENGINEERING INTEGRATION

June 27, 2019

Mr. Richard Healey
Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

**RE: UPDATE ON ACTIVITIES FOR CORRECTIVE ACTION PLAN
WEST MEMPHIS UTILITIES
NPDES PERMIT NUMBER AR0022039, AFIN 18-00879**

Dear Mr. Healey:

On behalf of West Memphis Utilities (WMU), please accept the following as an update of activities undertaken since our last update in November 2018. As outlined in the CAP, WMU outlined a plan of action to begin this year and continue at least through 2022. Listed below is a capsule summary of those activities either completed or underway since the CAP was implemented.

1. WMU continues to meet monthly with their CAP Working Group. Members of this group include Todd Pedersen, General Manager WMU; Ward Wimbish, Asst. General Manager, WMU; AJ Elhaj, Kristen Carpenter and Madeline Stokes, all engineers with WMU; Denise Bosnick, Director of Environmental Quality, WMU; and Paul Holloway, WWTP Manager, WMU. Also included in these monthly meetings as necessary are Tim Verner, P.E., Jeff Old, P.E. and Nate Kendall, P.E., Fisher & Arnold, and Mac Compton, P.E., RJN Group. This group directs and tracks on-going efforts by WMU staff and all outside consultants and contractors relative to efforts towards the elimination of systemwide SSOs.
2. The RJN Group has issued a preliminary Draft of the final West Memphis Wastewater Capacity Analysis and Preliminary Augmentation Options as of June 18, 2019. Review of this Draft are on-going with a final model of the collection system expected in the next 30 days.
3. The RJN Group was issued a contract in February 2019 to perform an SSES of Basins 10N, 10A, 13A-3, 15A-2 and 17-2 (a more detailed study area map is attached). All sewer manhole

9180 Crestwyn Hills Drive
Memphis, TN 38125

901.748.1811
Fax: 901.748.3115
Toll Free: 1.888.583.9724

www.fisherarnold.com

inspections will be completed by 7/1/2019 with smoke testing scheduled to begin in approximately 30 days once ground water levels return to more reasonable elevations (note that the Mississippi River is still well above flood stage). A Draft Report is expected in December 2019. The results of this report will be used to determine the 2020 rehabilitation work.

4. A hydraulic model of the WMU WWTP has been constructed by Fisher & Arnold, Inc. This model includes all existing headworks channels, aeration basins, clarifiers, UV basin and effluent pumping station as well as the equalization basin. Once the collection system model referenced in Item 2 above is complete this WWTP model will utilize the output from the collection system model to determine necessary WWTP, equalization basin and collection system upgrades with the end goal of eliminating collection system SSOs and WWTF bypasses.
5. Bids for the rehabilitation of approximately 550 sanitary manholes in Basins 3, 4, 8 and 17 have been accepted and WMU has awarded this work to ICM Technologies. Work will commence by mid July 2019 and is expected to through the end of 2019 to complete.
6. Work to replace Pump Station No. 1 is essentially complete with start-up scheduled for the last week in June and final clean up to be performed the first week of July 2019.
7. The city has completed the replacement of the mechanical bar screens at the WWTP.
8. WMU has authorized Fisher & Arnold, Inc. to perform a pump station assessment of station numbers 3, 7 and 15. Final reports on these assessments with recommendations will be delivered in July 2019.

Considering the activities described above, WMU has committed over \$810,900.00 in professional fees to accomplish these near-term efforts to assess their existing sewer system and to develop plans and specifications with the end goal of elimination of SSOs and WWTP bypasses since the approval of the CAP in late April 2018. Additionally, over \$1,389,000.00 in construction contracts for sewer system equipment and rehabilitation has been spent in the same time period.

Hopefully this summary of activities is useful to you and your staff and demonstrates the commitment of WMU to eliminate SSOs in their collection system and WWTP bypasses. If you require any additional information, please do not hesitate to contact me at this office.

Mr. Richard Healey
June 27, 2019
Page 3

Sincerely,

FISHER & ARNOLD, INC.



Tim Verner, P.E.
Senior Vice President

TV/tv

CAP Working Group Meeting Minutes Attached
2019 SSES Work Area Map Attached

Cc: Todd Pedersen, General Manager, WMU
Bailey Taylor, Enforcement Coordinator, ADEQ
Rebecca Rathe, Enforcement Analyst, ADEQ



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper
Phone: 870-735-3355
West Memphis, AR 72301

CAP MEETING (12-20-2018)

Attendees Onsite:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj, Kristin Carpenter, Madeline Stokes.
- **F&A-** Tim Verner
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj.
- **F&A-** Tim Verner, Jeff Old.
- **RJN-** Mac Compton, Stephen Jeffus.

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. System Wide Flow Monitoring

- Compton stated the next step of SSES is the recommendation and figure out the potential cost.
- Verner stated that WMU need to figure how much they are planning on spending dollar amount a year.
- Verner stated that that we need to figure out which basins have not yet been study for the up coming budget.
- Pedersen stated that basin 17-2 need to be smoked and dye in the sewer lines in summer or on dry week.
- Wimbish stated that basin 17-2 will be further investigate.
- Compton requested Water data from large users. (E.g. **Dog Track, School, Coke plant, Truck Stop, Awesome product, and Mid-South**)

C. Sewer System Model

- Elhaj stated that the additional Manholes that RJN requested are expected to be complete by the end of December.
- Compton stated that the model is about 95% complete and expect to have the model fully operated on April 1, 2019.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

- Compton requested serial number pump for 3 of the pump stations. (*Sent on 12/26/2018*)

D. WWTF Hydraulic Capacity Assessment

- Verner stated that stick model will be fully complete and waiting on the sewer system model to be complete.
- Verner stated that stick model has been ran using numbers that Paul gets to WWTF without exceeding its limit and has been calibrated.

E. WWTF Recommended Hydraulic Improvement Report

- Verner stated that the recommendation report still on hold until both models are complete.

F. Manhole/Sewer line Rehabilitation

- Verner stated that F&A should have the plans complete by the end of December of 2018.
- Verner stated that plans and recommendations are 95 % complete.
- Verner stated that once the propose bid item is complete: F&A and WMU will pick and choose which sewer lines and manholes will be rehab.

G. Pump Station 1 Rehabilitation

- Elhaj stated that WMU still waiting on submittals for Pumps and building.

H. Operation Assessment for 3 Pump Stations

- Verner stated the Operation Assessment for 3 Pump Stations will be complete by the end of January 2019.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper
Phone: 870-735-3355
West Memphis, AR 72301

CAP MEETING (1-30-2019)

Attendees Onsite:

- **W.M.U.C.-** Todd Pedersen, Paul Holloway, AJ Elhaj, Denise Bosnick, Kristin Carpenter, Madeline Stokes.
- **F&A-** Jeff Old
- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj.
- **F&A-** Tim Verner, Jeff Old.
- **RJN-** Mac Compton, Stephen Jeffus.

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. System Wide Flow Monitoring

- Compton stated the SSES recommendation and the potential cost for 2019 will be \$ 313,215.00.
- Compton stated that RJN had modified chapter 5 (Summary and Potential Plan) with the cost for every year.
- Pedersen requested electronic copy of modified chapter 5 (Summary and Potential Plan) with the cost for every year.

C. Sewer System Model

- Compton requested Water data from large users, and WMU still in the process of getting it to RJN. (E.g. **Dog Track, School, Coke plant, Truck Stop, Awesome product, and Mid-South**).
- Elhaj stated that the additional GPS Manholes that RJN requested were sent on January 29, 2019.
- Elhaj requested that RJN to review and see if there are any critical manholes that were not surveyed.
- Compton stated that the RJN modelers were calibrating the model and they notice that station 9 & 21 are not pumping during heavy rain.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

- Pedersen stated that station 9 & 21 should be pumping during heavy rain.
- Compton requested the running time for last two months for station 8,9, and 21. (WMU was not able provide the requested information)
- Compton stated that the preliminary model demonstration model will be held on February 15, 2019 and expect to have the model fully operated on April 1, 2019.
- Compton stated that the serial number pump for the 3 of the pump stations (PS# 11, 17 & 18) have been received.

D. WWTF Hydraulic Capacity Assessment

- Old stated that stick model will be fully complete and waiting on the sewer system model to be complete.

E. WWTF Recommended Hydraulic Improvement Report

- Old stated that the recommendation report still on hold until both models are complete.

F. Manhole/Sewer line Rehabilitation

- Old stated that F&A should have the plans and bid schedule complete and plan to present to WMU on February 15, 2019.
- Verner stated that plans and recommendations are 95 % complete.
- Verner stated that once the propose bid item is complete: F&A and WMU will pick and choose which sewer lines and manholes will be rehab.

G. Pump Station 1 Rehabilitation

- Elhaj stated that WMU received the Electrical and Equipment submittal.
- Pedersen requested that F&A to review both submittals and provided the recommendation.

H. Operation Assessment for 3 Pump Stations

- Old stated the Operation Assessment Draft for the 3 Pump Stations will be sent to WMU on February 2, 2019.
- Old requested the running time for last two months for station 3,7, and 15. (WMU was not able to provide the requested information)



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper
Phone: 870-735-3355
West Memphis, AR 72301

CAP MEETING (2-27-2019)

Attendees Onsite:

- **W.M.U.C.-** Todd Pedersen, Paul Holloway, AJ Elhaj
- **F&A-** Jeff Old

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj.
- **F&A-** Tim Verner, Jeff Old.
- **RJN-** Mac Compton, Stephen Jeffus.

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. SSES Potential Plan for 2019

- Elhaj stated the SSES Potential Plan for 2019 from RJN will be proposed to the Utility Commission meeting on March 14, 2019.

C. Sewer System Model

- Elhaj stated that the preliminary model demonstration was held on February 15, 2019 and expect to have the model fully operated on April 1, 2019.

D. WWTF Hydraulic Capacity Assessment

- Old stated that stick model will be fully complete and waiting on the sewer system model to be complete.

E. WWTF Recommended Hydraulic Improvement Report

- Old stated that the recommendation report still on hold until both models are complete.

F. Manhole/Sewer line Rehabilitation

- Old stated that F&A will have hard copy plans and specification to WMU by Friday the 29th of February 2019.
- WMU will submit an advertisement on February 28, 2019.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

- WMU and F&A agreed that Open Bid will be on April 3, 2019 at 2 pm.
- As discussed on February 15, 2019:
 - i. WMU had decided to do all the manhole rehabilitation including: High, medium, and low priority. (Total eliminate of I/I is 51.46% based on RJN studies).
 - ii. WMU had decided to do all the high priority for the line replacement. (Total eliminate of I/I is 32.88% based on RJN studies).
 - iii. WMU had decided to do all the high priority for the point repair. (Total eliminate of I/I is 0.47% based on RJN studies).
 - iv. The total of rehabilitation project will eliminate of I/I is 84.81% based on RJN studies.

G. Pump Station 1 Rehabilitation

- Elhaj stated that Gorman Rupp submittal has been reviewed by F& A and furnish as Corrected.
- Elhaj stated that Electrical submittal has been requested for resubmit by F&A.

H. Operation Assessment for 3 Pump Stations

- Old stated the Operation Assessment Draft for the 3 Pump Stations still on hold until RJN provide flows.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

CAP MEETING (3-27-2019)

Attendees Onsite:

- **W.M.U.C.-** Todd Pedersen, Paul Holloway, AJ Elhaj, Kristin Carpenter, Madeline Stokes.
- **F&A-** Tim Verner, Nate Kendell.

Attendee Conference call:

- **RJN-** Mac Compton

Project Members:

- **W.M.U.C.-** Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj.
- **F&A-** Tim Verner, Jeff Old.
- **RJN-** Mac Compton, Stephen Jeffus.

The Following Actions that were discussed:

A. Review Meeting Minutes

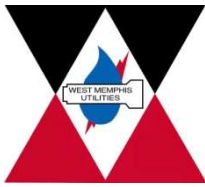
- Everyone agreed to last meeting notes, and no comments were made.
- Elhaj stated that under the SSES Potential Plan, there was a typo with the year (2018) and has been updated to 2019.

B. SSES Potential Plan for 2019

- Elhaj stated the 2019 SSES Potential Plan from RJN was approved during the Utility Commission meeting on March 14, 2019.
- Elhaj stated the SSES Potential Plan agreement was received on March 26, 2019 and has been signed and sent to RJN on March 27, 2019.
- Compton stated that RJN has received the 2019 SSES agreement on March 27, 2019.
- Compton stated that RJN will start manhole inspection in mid to late April 2019.
- Pedersen requested that RJN to have a pre-meeting before SSES work starts.
- Compton has proposed pre-meeting for SSES on April 24, 2019 after CAP meeting. WMU has accepted.

C. Sewer System Model

- Compton stated that RJN are still working on the model, but they are still running into issues. Compton requested that WMU to provide the on and off set points for pump station 7,8, and 9.
- Pedersen stated that pump station 8 & 9 are VFD and not on and off set points.
- Holloway stated that he would contact Bill to get the set points for pump station 7, 8, and 9.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

- Compton stated once RJN receive the sets points for the 3 pump stations they should have the model fully operated by mid-April.

D. WWTF Hydraulic Capacity Assessment

- Verner stated that stick model will be fully complete and waiting for the sewer system model to be complete.
- Verner stated once RJN finishes up with the sewer system model, FA will complete the assessment within 60 days after the sewer system model is completed.

E. WWTF Recommended Hydraulic Improvement Report

- Verner stated that the recommendation report still on hold until both models are complete.

F. Manhole/Sewer line Rehabilitation

- Elhaj stated that the project has been advertised to the public on March 6, 2019.
- Elhaj stated that WMU and FA had a pre-bid meeting on March 20, 2019.
- Verner had recommended to have the manholes and sewer line rehabilitation broken down into two separate contracts.
- WMU and F&A agreed to have a meeting set up for March 29, 2019 to decide whether to split the project into two contracts or leave it as one contract.
- As discussed on March 29, 2019:
 - i. WMU and F&A agreed to have two separate bids for manhole and sewer line rehab.
 - ii. Old stated that FA will send out addendum 1 on April 1, 2019.
 - iii. WMU and F&A agreed to send an advertise letter to the local newspaper on April 1, 2019.
 - iv. WMU and F&A agreed to advertise on April 3, 5, 8 of 2019.

G. Pump Station 1 Rehabilitation

- Verner stated that the pumps and building are expected to deliver on May 5, 2019.
- Elhaj stated that Electrical submittal has been resubmit to Old for review on March 19, 2019.

H. Operation Assessment for 3 Pump Stations

- Verner stated the Operation Assessment Draft for the 3 Pump Stations still on hold until RJN provides flows.
- Verner stated that the assessment for 3 pump stations will be completed in May 2019.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

CAP MEETING (4-24-2019)

Attendees Onsite:

- W.M.U.C.- Todd Pedersen, Paul Holloway, AJ Elhaj, Ward Wimbish.
- F&A- Nate Kendell.

Attendee Conference call:

- RJN- Mac Compton

Project Members:

- W.M.U.C.- Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj.
- F&A- Tim Verner, Jeff Old.
- RJN- Mac Compton, Stephen Jeffus.

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. 2019 SSES Study

- Elhaj stated the 2019 SSES Potential Plan will be discuss after the CAP meeting.
- As discussed after the CAP meeting:
 - Compton stated that the 2019 SSES Study includes: 545 manholes Inspection, 136,000 LF Smoke Testing, 15 Dye tests, and 20,000 LF CCTV.
 - Compton stated that the RJN project coordinator will coordinate with Elhaj with locations and updates of the study.
 - Compton stated that they were few manholes from basin 10 that were not included in the manhole inspections.
 - Pedersen stated that RJN can add the additional manholes from basin 10 that were not included in the manhole inspections.
 - Compton stated that the manhole inspections is expected to start on April 29, 2019 and no later than May 1, 2019.
 - Compton stated that the manhole inspections is going take two months to complete.
 - Compton stated that the smoke testing will start on July 3, 2019 if weather permit.
 - Compton stated that the sewer smoke test flyer will be sent to WMU for approval before it goes out to public.
 - Pedersen requested Elhaj to get a contact person from West Memphis Fire Department during the smoke testing.
 - Compton stated that they will send out a 48-hour notice to public.
 - Compton stated that the smoke testing will start no later than two weeks after notice.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

- Compton stated they would CCTV the sewer lines if they notice signs during smoke test and manhole inspection.

C. Sewer System Model

- Compton stated that RJN are still working on the model, they are trying to complete by the end of April 2019.

D. WWTF Hydraulic Capacity Assessment

- Kendell stated that stick model will be fully complete and waiting for the sewer system model to be complete.
- Kendell stated once RJN finishes up with the sewer system model, FA will complete the assessment within 60 days after the sewer system model is completed.

E. WWTF Recommended Hydraulic Improvement Report

- Elhaj stated that the recommendation report still on hold until both models are complete.

F. Manhole/Sewer line Rehabilitation

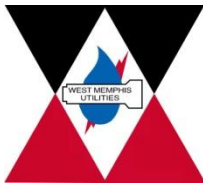
- Elhaj stated that the project has been re-advertised to the public on April 5 & 8, 2019 as two separate projects.
- Elhaj stated that WMU and FA had two pre-bid meeting on April 20, 2019.
- Kendell stated that FA will send out an addendum for 2019 manhole & sewer line rehabilitation on April 25, 2019.
- Wimbish stated that WMU will add the two projects to the city council meeting agenda.

G. Pump Station 1 Rehabilitation

- Elhaj stated that the pumps and building are expected to be delivered on May 8, 2019.
- Elhaj stated that the construction for pump station #1 rehab will start on May 9, 2019.
- Kendell stated that Electrical submittal that been resubmit has been approved.

H. Operation Assessment for 3 Pump Stations

- Kendell stated the Operation Assessment Draft for the 3 Pump Stations still on hold until RJN provides flows.
- Kendell stated he will get flows for pump station # 3 from RJN.
- Kendell stated once FA received the flows and the report for PS# 3 will be delivered to WMU.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper
Phone: 870-735-3355
West Memphis, AR 72301

CAP MEETING (5-29-2019)

Attendees Onsite:

- W.M.U.C.- Todd Pedersen, Paul Holloway, AJ Elhaj.
- F&A- Jeff Old.

Attendee Conference call:

- RJN- Mac Compton

Project Members:

- W.M.U.C.- Todd Pedersen, Ward Wimbish, Paul Holloway, AJ Elhaj.
- F&A- Tim Verner, Jeff Old.
- RJN- Mac Compton, Stephen Jeffus.

The Following Actions that were discussed:

A. Review Meeting Minutes

- Everyone agreed to last meeting notes, and no comments were made.

B. 2019 SSES Study

- Compton stated that RJN crew will continue manhole inspection on June 3, 2019.
- Compton stated that the smoke test will be coming up soon.

C. Sewer System Model

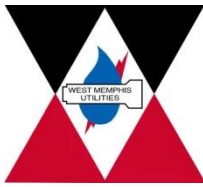
- Compton stated that RJN are still calibrating the model, they are trying to complete by the Mid-June 2019.
- Compton stated that they're having issues with pump station 7. Compton gave alternative option, which is potential to eliminate pump station 7 and have the sewer goes to pump station 9.

D. WWTF Hydraulic Capacity Assessment

- Elhaj stated once RJN finishes up with the sewer system model, FA will complete the assessment within 60 days after the sewer system model is completed.

E. WWTF Recommended Hydraulic Improvement Report

- Elhaj stated that the recommendation report still on hold until both models are complete.



WEST MEMPHIS UTILITY COMMISSION

604 East Cooper

Phone: 870-735-3355

West Memphis, AR 72301

F. 2019 Manhole Rehabilitation

- Elhaj stated that WMU and ICM (Contractor) and agreed to move forward with the 2019 manhole rehab project
- Elhaj stated that WMU and ICM (Contractor) had met to review the bid proposal for 2019 manhole rehab project.
- Elhaj stated that ICM will get WMU actual cost estimate.
- Pedersen stated that WMU and FA to set up a meeting to discuss sewer line rehab project and possible break down into a pipe burst bid, point repair bid, and CIPP bid.
-

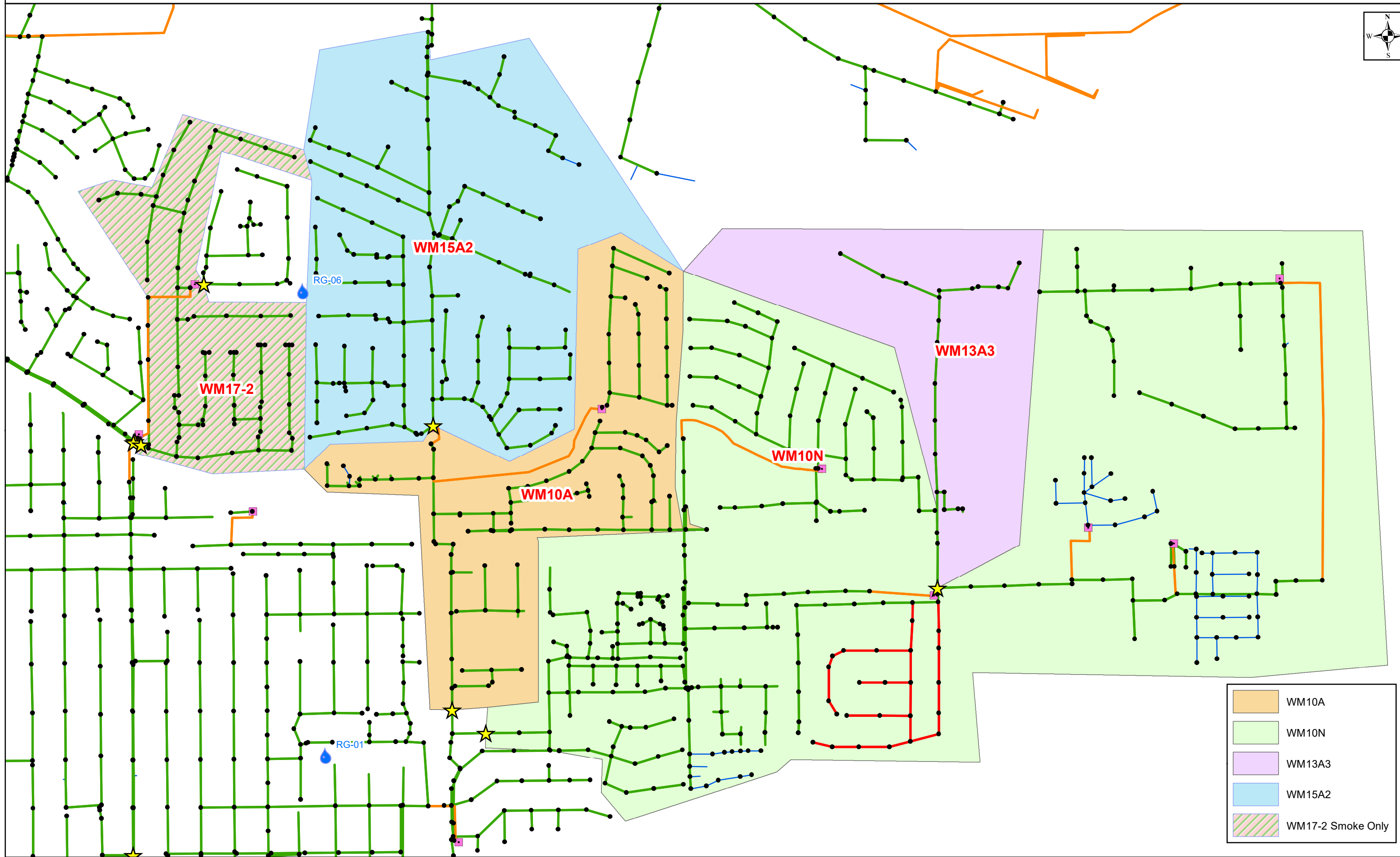
G. Pump Station 1 Rehabilitation

- Elhaj stated that the pumps and building are were delivered on May 20, 2019.
- Elhaj stated that the bypass pump was set up on May 21, 2019 and building demolish on May 24, 2019.
- Elhaj stated that the contractor will be pouring concrete on May 29, 2019.
- Old stated that WMU might need to get a 3rd party to do concrete test report.
- Old stated that WMU should review and measure the spacing of the steel rebar for the slab.
- Pedersen stated FA and WMU should go by pump station #1 and inspect it after the CAP meeting.

H. Operation Assessment for 3 Pump Stations

- Compton stated that FA should receive the flows for the 3 pump stations by Mid-June 2019.

West Memphis, AR



	WM10A
	WM10N
	WM13A3
	WM15A2
	WM17-2 Smoke Only

Rain Gauge
 Meter Locations
 • Manhole
 Gravity Sewer
 Overflow Sewer
 Pump Station
 Force Main
 Abandoned

