Charlie,
I had valuable information which would help the management staff prior to the council meeting today on AWWRF startup evaluation.

Respectfully,
Craven

Craven, Ken,
Do me a favor and don’t copy everyone on these types of discussions. The first initial comment or response can be copied but no need to copy all on subsequent E-mails.

Regards,
CRW

Ken,
NEWRF is already at 50% design which requires a design upgrade if the capacity increases as per Chapter 62-600.405. Your plant is already pass the design due to AWWRF shut down. This will require more money for upgrades to NE, NW, SW. Building a new lift station also requires more money and Kw. All of the upgrades required needs to be stated in the report due to the high cost. Currently we are having spills which directly relates to AWWRF shut down. This places public safety at risk every time we put wastewater into the bay. AWWRF infrastructure already exist which needs to be calculated into the cost prior to upgrading NEWRF, NWRF and SWRF. All of the money being used towards these Hydraulic high weather events can be used at AWWRF upgrades. This will allow the City to keep all four (4) plants and save money due to the AWWRF existing infrastructure. This will also prevent spills which is our number one priority.

Craven

George K. Wise

Thursday, July 14, 2016 6:28 AM
Or we could build a lift station at the northern end of the SE WRF’s collections system and send some flow to the NE WRF’s southern end of the collection system and able to send say up to 5 MGD to NE WRF and with the “wet weather” station say send up to another 5 MGD to NW WRF send. Then we can also build some of the upgrades at SW WRF and do some much needed upgrades at both NE WRF and NW WRF. Might take some of the problem of small foot prints at all the plants.

Ken Wise
Chief Operator SW WRF
727-892-5121

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From: Craven R. Askew
Sent: Wednesday, July 13, 2016 3:48 PM
To: Charles R. Wise; Janet G. DeBiasio; Eric Peters
Cc: Sylvia A. Rosario; David Abbaspour; Steve Leavitt; Thomas Gibson; Claude Tankersley; Phillip Keyes; George K. Wise; Jason C. Venable
Subject: RE: AWWRF Startup Evaluation - Final Technical Memorandum

Staff,
I would like to comment and make suggestion towards AWWRF startup Evaluation. Below are comments and suggestion:

Noted from AWWF Technical July 2016 pg 9
Reject water would have to be disposed either down the deep injection wells or pumped offsite to new storage facilities. At this time, it is unknown whether the FDEP would allow the continued use of the deep injection wells for reject disposal. Therefore, this option considers the schedule and cost impacts for both reject disposal alternatives.

Suggestion:
Lift station 85 (AWWRF) and a 15 MGD Reject tank I (SWWF) is already built. This was already designed to handle both wastewater flow from both plants, therefore, the state will have no issue sharing the tank with SWWF and AWWRF. The infrastructure is already built to handle FDEP requirement to handle reject water. This will require piping modification with valve control at SWWF to redirect flow to the reject tank or to retreat it through SWWF treatment process. This will save dramatic amount of money on upgrading SWWF and allowing the City to maintain it existing robust treatment system down town. This will save the City $32,000,000

Noted from AWWF Technical July 2016 pg 9
Starting the AWWRF's biological treatment process could be challenging. If the City would be allowed to discharge effluent to the deep injection wells that doesn't meet permit quality standards during the startup period, growing the proper biological mass for stable operation would be simplified. However, if this is not allowed, another approach to starting the biological process is summarized in Figure 4.

Suggestion:
I do agree with the startup challenges, but since we can control the flow going to AWWRF by LS85 we can eliminate very little to no reject water to the wells. We can reseed AWWRF biological mass from other plants for a quicker startup. During the start we will only feed flow influent waste to the aeration tank and clarifiers. Then we can start feeding
biological seed, delivered by Vactor Trucks, from the other plants (NEWRF, NWWRF and SWWRF) at the RAS pit while the Return Activated Solids pump is running at 60Hz. This may take 4 to 6 days.

Noted from AWWF Technical July 2016 pg 10
Disposal of waste solids to the SWWRF for treatment would require a complicated batch wasting and pumping operation. The influent gravity pipe to the AWWRF was filled with concrete after Lift Station 85 was put in service. Therefore, Lift Station 85 would be needed as the influent pump station for the AWWRF. Since Lift Station 85 would also be needed to transfer waste solids to the SWWRF, pumping waste solids to the SWWRF would interrupt the influent flow to the AWWRF. The amount of waste solids is not enough to pump alone through Lift Station 85 force main, and would need to be diluted with influent wastewater to provide adequate flow. One sequence in how this could be controlled after the AWWRF is restarted is as follows:
1. Waste solids would be stored in the aerated holding tank.
2. When the holding tank is full, all or partial discharge from Lift Station 85 would be directed to the SWWRF. During this time, influent flow to the AWWRF would be reduced or stopped.
3. Waste solids from the holding tank would be pumped to the wet well in Lift Station 85, combined with influent wastewater, and then pumped to the SWWRF.
4. After the holding tank is empty, and enough flow has been pumped through the forcemain to pass the waste solids all the way to the SWWRF, the discharge from Lift Station 85 could be redirected back to continuing feeding the AWWRF.

Comment:
I agree with transferring sludge to SWWRF from AWWRF. It would be better to do this transfer during peak flow so AWWRF flow is not interrupted to the biological treatment. A inline solids analyzer would be recommended at SWWRF effluent pipe so the AWWRF operators would know when to stop the solids transfer.

Noted from AWWRF Technical July 2016 pg 18
3.0 RECOMMENDATION
Based on this limited evaluation of the options for restarting the AWWRF, it appears that the best course of action is to continue with Option 1 - Continue Wet Weather Storage at the AWWRF until the expansion of the SWWRF is completed.
Each option has its advantages and disadvantages. However, considering the urgency and costs associated with any action the City undertakes with the AWWRF, Option 1 fares better than the other options for the following reasons:
• Option 1 is the quickest, least complex, and lowest cost option to implement. However, there is no guarantee this option would prevent future discharges before the planned expansion of the SWWRF is completed.
• Option 2 - Restart the AWWRF Liquid Stream Treatment has a significant cost and duration. By the time this option could be implemented, the planned expansion of the SWWRF is scheduled to be near completion. The effort and expense associated with Option 2 for the limited time it may be in operation makes this the least desirable approach of all options.
• Option 3 - Convert the AWWRF to Advanced Wastewater Treatment is a significant investment and the longest duration to implement. Option 3 would change the ongoing long-term approach to wastewater treatment by committing to operating the AWWRF into the future.

My recommendation is to keep AWWRF in service due to the plant design and capacity issues.
High Points:
1. SWWRF land footprint eliminates future expansion due to the biosolids project.
2. SWWRF is only designed for 40 MGD (design flow 20 mgd) and AWWRF is designed for 24.8 MGD (design flow 12.4) at peak hydraulic flows. This gives the City a total 64.8 MGD of treatment during high flow weather events.
3. Reject flow capacity to prevent spills or discharge to AWWRF wells are limited at SWWRF due to sharing the reclaim trunk line at SWWRF effluent. This eliminates the option of using the 48 MGD capacity wells during weather events which will expose the public to wastewater. SSO could have been eliminated during August 2015 and June 2015 if AWWRF was left open for treatment and well capacity. The wells during these events was not at maximum capacity of 48 MGD due to SWWRF reject condition and/or hydraulic design issues such as; Headworks, clarifiers, filters and Chlorine Contact Chambers.

4. SWWRF was not designed to handle 64.8 MGD (combined hydraulic flow of AWWRF and SWWRF) during the AWWRF shut down, therefore, AWWRF could have used the wells during the weather events which would have prevented spills.

5. I/I study needs to show hourly peak flow from AWWRF and SWWRF with data from Tropical Storm Debby, June 25, 26, 27, 2012 and September 03, 2003 and September 06, 2004.

6. Cost is important but we need to look at public exposure to harmful pathogen bacteria. We need to prevent SSO.

Respectfully,
Craven R. Askew

From: Charles R. Wise
Sent: Wednesday, July 13, 2016 8:40 AM
To: Janet G. DeBiasio
Cc: Craven R. Askew; Sylvia A. Rosario
Subject: FW: AWWRF Startup Evaluation - Final Technical Memorandum

Craven, Sylvia, Janet,
FYI. See attached.
CRW

From: Eric Peters [mailto:EPeters@carollo.com]
Sent: Friday, July 08, 2016 5:03 PM
To: David Abbaspour <David.Abbaspour@stpete.org>; Steve Leavitt <Steve.Leavitt@stpete.org>; Thomas Gibson <Thomas.Gibson@stpete.org>; Claude Tankersley <Claude.Tankersley@stpete.org>; Phillip Keyes <Phillip.Keyes@stpete.org>; Charles R. Wise <charles.wise@stpete.org>; George K. Wise <George.Wise@stpete.org>; Jason C. Venable <Jason.Venable@stpete.org>
Subject: AWWRF Startup Evaluation - Final Technical Memorandum

All —

Attached is the Final version of the AWWRF Restart Evaluation Technical Memorandum.
Feel free to call or email with any questions or comments. I will be in contact next week to prepare for the meeting on the 14th.

Thanks for your assistance and have a nice weekend.

Eric Peters, PE
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