Received 11/01/16

MEMO

To: Mayor Kriseman

From: Steven Leavitt, Director SKL

Water Resources Department

Copy: City Council, Jackie Kovilaritch

Date: October 25, 2016

Re: Southwest Water Reclamation Facility (SWWRF)
Wet Weather and Liquid Process Capacity Assessment
July 31, 2014
Prepared by Brown and Caldwell (B&C)

Introduction

Over the last few weeks there has been much discussion about the above referenced report. This discussion has resulted in accusations being made that staff purposefully kept the report hidden and that they did not do anything in response to the report. As discussed below, both of these accusations are not true.

Unfortunately, there has been no public vetting and/or discussion of the true contents of what the report actually says. The common perception of what the report says is based on the misrepresentation of the report in Craven Askew's September 15, 2016, letter. As discussed in the first item below, his letter incorrectly states that the consultant recommends that improvements at SWWRF should be implemented before closing the Albert Whitted Water Reclamation Facility (AWWRF).

The City has recently contracted with Kerkering, Barberio & Company to conduct an independent investigation into this alleged misconduct related to what staff did or did not do with the above referenced report. However, their scope does not include any technical evaluation of the contents of the report. As discussed in greater detail below, the report states that a two hour peak flow of 60 mgd has a 1 in 10,000 chance of occurring. Based on this information that was known at the time, a two hour event with a very low probability of occurring is not enough to stop a major project and to immediately begin spending tens of millions of dollars on facilities to address this rare event. However, as noted below, staff did respond to this information and neither ignored it nor hid it.

I believe that some of the questions that the independent investigation should address are as follows:

What Does the Whistleblower's Letter Say About the Report?

Much of Mr. Askew's letter (copy attached) consists of verbatim excerpts from the report. To the average reader, this technical information probably does not mean much. However, just below the middle of the 9th page he makes the following conclusion that any non-technical reader could understand:

> "The study from the engineers indicate that Southwest could not handle the flow due to high weather events and recommended to do upgrades to handle hydraulic issues before transferring waste water flow from Albert Whitted as indicated above "SWWRF Wet Weather and Liquid Process Capacity Assessment Final July 31, 2014 #145682"."

If this statement were true, the average reader would be concerned about why staff closed the AWWRF. Unfortunately, the above statement is not true. Not only did the consultant not make this recommendation, they didn't make any recommendations at all. To my knowledge, no one has publically acknowledged Mr. Askew's misrepresentation of the report. Mr. Askew's letter was taken as fact and without any apparent investigation to the validity of his claims. There has been no public vetting and discussion of what the report actually says, which is significantly different than the current perception of what it says.

Based on this misconception, the scope of the independent investigator has been designed to give the predetermined answer that the report was not shared without addressing the key question, "Should it have been shared?" By presupposing the misperception of the report as a "fact", the results of the investigation are virtually guaranteed. Hardly a fair and honest investigation in which I believe everyone is interested.

What Does the Report say Regarding Peak Flows?

As stated on page 3-2, the report summarizes its findings relative to peak flows:

> "Based on the historical data, the highest combined annual AADF observed in 2013. The AADF has been 17.8 MGD with a peak hour flow of 60.72 MGD which occurred on September 25, 2013. Analysis of historical data indicated that, the hourly flows higher than 40 MGD happened less than 1% of the times and the duration of the main storm events generally did not extend more than a day. The maximum 24-hour rolling average flow was recorded as 50.5 MGD. Only 1% of the daily average flow was above 39 MGD. The

> analysis of historical data showed that the flows higher than 60 MGD occurred only for two consecutive hours in the 22-month worth of hourly data evaluated, which corresponds to 0.01% probability."

Thus, the frequency of exceeding the plant's maximum day capacity is relatively low and has a relatively short duration. The peak hour flow which has a 0.01% chance of occurring corresponds to 1 in 10,000 or approximately one day in a 30 year period. Based on this information, the low probability of an event occurring and the relatively short duration of the event, did not justify stopping a major project. However, as noted below, staff did not ignore the information but took this planning level information and incorporated it into some immediate projects as well as incorporating some projects into the capital improvement program.

Based on the historical data and the projected future population growth the consultant determined a 68.7 MGD peak flow rate. This was stated at the top of page 3-3:

> "The historical flow data from the 2012 – 2013 period has shown a maximum wet weather flow contribution in excess of the dry weather flow of approximately 43.2 MGD. Assuming that the maximum dry weather flow and the storm flow occur at the same time, the total projected flow to the SWWRF would be 68.7 MGD (25.5 MGD + 43.2 MGD)."

As discussed in the next section, the consultant developed three options for addressing this peak flow rate.

What Recommendations did the Consultant Make?

As noted above, the consultant did not make any recommendations relative to peak flows. The consultant developed three options to address the issue of peak flow. These options consisted of modifications and improvements to the SWWRF and/or to the collection system. Each option was designed to handle the calculated peak flow rate of 69 mgd. The options differed in the maximum amount that could be fully treated for one day. As provided in Table 6-5, "Summary List of Planning Level Improvements", the three options were developed based on the following flows:

Option 1
- 69 MGD – Projected Wet Weather Flow
- 40 MGD – Maximum Treatment Capacity

Option 2
69 MGD – Projected Wet Weather Flow
50 MGD – Maximum Treatment Capacity

Option 3
69 MGD – Projected Wet Weather Flow
69 MGD – Maximum Treatment Capacity

The consultant developed the options, but did not develop any cost estimates nor did they make any recommendations as to which option the City should implement. As noted above, they did not make a recommendation that an option should be implemented before transferring flow from AWWRF.

Staff considered the three options and began implementing the components of Option 1. This option includes the modification of the plant's biological treatment process (addition of step feed to the aeration basins). As noted below, staff did initiate the modification of the plant to include the step feed option in the Biosolids to Energy Project.

As stated on page 5-5, Option 1 also included the construction of a 10 MG flow equalization tank.

> "Since the hydraulic capacity of the SWWRF is 40.5 MGD, flows higher than 40.5 MGD capacity will have to be equalized. For this option, an equalization tank with a volume of approximately 10 MG would be required to be able to reduce the wet weather flows from 69 MGD to 40.5 MGD entering the plant."

This tank would be used to store raw wastewater during the time of peak flows. Once the peak flow had passed, the stored raw wastewater would be directed to the SWWRF for full treatment.

In an April 25th e-mail (copy attached), John Parks, the Department's Technical Support Manager noted that the collection system storage should be considered as a method to buffer the peak flows (storing flow in the collection system effectively turns the collection system into an equalization tank).

> "Collection system storage was not considered and could be used to buffer peak hour flows."

As it worked out, we also ended up with 8 MG of flow equalization storage at the AWWRF facility. Thus, we functionally implemented all of the elements of the consultant's Option 1.

Why Does the Report Exist at All?

In 2012 and 2013 we experienced a couple of wet weather events that produced higher peak flows than we were used to at both the AWWRF and the SWWRF. One of those wet weather events has recently been reported in the news media with the erroneous assumption that staff ignored the event. The fact that we commissioned a consultant to study the impact is evidence that staff did not ignore the event.

Staff became concerned about how the SWWRF would perform if these peak flows from the two collection basins hit the SWWRF at the same time. Because of this concern we engaged the consulting firm of B&C to do a planning level study to look at the impact of the peak flows from these events on SWWRF. We frequently use consultants, because of their outside technical expertise, on these types of planning level studies to help us determine where we should prioritize our capital improvement funds.

What did the Staff do as a Result of the Report?

As a result of the B&C report, staff took a number of steps to address peak flows. Some of these were implemented immediately, some were initiated immediately, and some were incorporated into future capital improvement projects. All of these were done with the goal of balancing our fiduciary responsibility to our rate payers with responding to an event that had a 1 in 10,000 chance of occurring (per the consultant).

1. We increased the design peak hydraulic capacity of the Biosolids to Energy Project, which was well into design at the time, to 70 mgd. This resulted in the following modifications:

    a. Modified the piping from the headworks to the primary clarifiers

    b. Modified the piping from the primary clarifiers to the aeration basins

    c. Modified the primary splitter box to allow for step feed to the aeration basins

    d. Increased the diameter of the primary clarifiers

The addition of the step feed process and the expansion of the primary clarifier capacity will increase the capacity of the existing secondary treatment process at the SWWRF.

2. Focused our annual pipeline rehabilitation efforts (pipe lining and replacement) in the Albert Whitted and Southwest basins.

3. Conducted a manhole survey and evaluation of the entire Albert Whitted basin.

4. Conducted a manhole survey and evaluation of the entire Southwest basin.

5. Based on the manhole surveys, focused our manhole rehabilitation efforts in the two basins.

6. Based on the manhole surveys, focused our manhole ring and cover efforts to install new gasketed manhole covers in the two basins.

7. In both the Albert Whitted and Southwest Basins, we installed manhole dishes in low lying manholes.

8. At the SWWRF we maximized the size of the reject storage tank (15 MG) that would fit in the land available and stay below the height of the existing tanks. This maximized our ability to store water that did not meet reclaimed water quality standards.

9. Initiated a project to transfer the two existing 450 horsepower reclaimed water distribution pumps from AWWRF to the SWWRF. This increased our ability to send water into the distribution system and/or down the injection wells.

10. Initiated a project to study the feasibility of constructing a pump station and force main in order to be able to transfer flow from the Southwest basin to the Northwest basin.

11. To the proposed FY16 – 20 CIP, we added a project at SWWRF to modify/expand the effluent filtration capacity.

In addition to undertaking a number of activities that were not mentioned by the consultant, as noted earlier, staff basically initiated all of the elements of Option 1.

Was the Report Kept a Secret?
Absolutely not. This report was done based on the team concept in the same way that all of the Water Resources Department projects are done. At least 4 Engineering Department staff and at least 7 Water Resources Department staff participated in the project. The report was also shared with Eckerd College staff.

The fact that the report exists at all demonstrates that there was no desire to "hide" a problem. If you want to hide a "problem" you certainly do not go out and hire a consultant to study the problem.

The Water Resources Department is involved in 8 to 10 engineering and planning reports every year and virtually none of them are brought to the attention of the Administration and/or Council. They are one step in the process of identifying an issue, quantifying the issue, developing a solution to the issue, and then implementing the solution. As noted above, that is exactly what staff did in this situation – identify, quantify, develop and implement.

How is the Report Applicable to the Three Major Overflow Event?
This is the key question that needs to be addressed. As noted above, the idea that the consultant recommended not transferring flow from AWWRF is absolutely false. Every storm event is different and each one has a different impact on the system. The storm's impact on the system is based on a number of factors:

1. the overall duration of the event
2. the location, duration, and intensity of the rain
3. the timing of rainfall in one area of the collection system relative to the rainfall in another area
4. the preceding weather conditions
5. whether the ground is dry or saturated at the start of the event
6. the ground water level
7. the tidal level

Thus, side by side comparisons of two events is virtually impossible. In these cases however, there was at least one significant difference between the events that were evaluated in the report and the three storm events that resulted in overflows. The wet weather events that the consultant evaluated were relatively short duration events measured in one or two days. The three wet weather events that resulted in overflows were significantly longer events measured in weeks. The August 2015 event lasted for over three weeks.

With the high flow long duration events that occurred, we were basically asking the plants to operate at these peak flow rates for long periods of time. Instead of treating

flow for one hour at a rate of 40 mgd, we were asking the plant to treat that flow rate for many days.

After the AWWRF was closed, the SWWRF was able to handle the normal peak flows. The only times that it overflowed is when the storm event was so severe that the Governor of the State of Florida declared a state of emergency. In each of these cases, other utilities in Pinellas County also had overflows resulting from these high flows.

One final note. During the last event we basically received the full wet weather impact of a Category 1 hurricane. During that event we had a significant overflow at the Northwest Water Reclamation Facility (NWWRF). To the best of anyone's memory, that facility has never experienced an overflow of that magnitude. The NWWRF collection system is completely separate from the AW and SW collection basins. The question of AWWRF being on line or off line is a moot point as it relates to the NWWRF. This reinforces the idea of the incident being the result of an extreme wet weather event that exceeded the design criteria of the facility.

Conclusion

As discussed above, there was no attempt by staff to hide the report. The report was initiated because of staff concerns. When the report was completed, as noted above, staff took a number of actions to address the wet weather flow issue. Because of the original misrepresentation in Mr. Agnew's letter, there is a significant ongoing misunderstanding of what the report says. In order for the independent investigation to be both fair and complete, it needs to include a thorough technical review and vetting of the actual contents of the report. I request that you and other City staff involved in this investigation give your honest consideration of this information. I am confident in your interest that this investigation be both fair and objective and that you will do so as the investigation proceeds.

September 15, 2016

To: Mayor Rick Kriseman

Council: Charlie Gerdes, Jim Kennedy, Ed Montanari, Darden Rice, Steve Kornell, Karl Nurse, Lisa Wheeler-Bowman and Amy Foster

From: Craven R. Askew, City of St. Petersburg NEWRF Chief Plant Operator

CC: Debra Bynum, Chris Guella, Claude Tankersley, Steve Leavitt, Charlie Wise

Public safety and the environment is suspected to be possibly in danger due to the sewerage spills produced by the Albert Whitted Advanced Wastewater Reclamation Facility (AWWRF) shut down. Therefore, I Craven R. Askew am exercising my rights as under the Whistleblower Act and, Federal Water Pollution Control Act of 1972 (FWPCA) 33 U.S.C 1367 - "Clean Water Act" prohibits retaliation against any employee who reports alleged violation relating to discharge of pollutants into water. 29 CFR 24,. Below is my statement of concerns.

The City of St. Petersburg has four plants located throughout the City.

- Plant #1 AWWRF - Albert Whitted design flow 12.4 MGD (24.8 MGD high weather design flow)
- Plant # 2 NEWRF -Northeast Water Reclamation Facility design flow 16 MGD (32 MGD high weather design)
- Plant #3 NWWRF-Northwest Water Reclamation Facility design flow 20 MGD (40 MGD high weather design)

- Plant #4 SWWRF - Southwest Water Reclamation Facility design flow 20 MGD (40 MGD high weather design)

The City of St. Petersburg has been conducting studies related to closing down the AWWRF and transferring sewerage to the SWWRF for over five years now, because there is not enough land availability for construction of a reject tank at AWWRF. This tank is intended for reject flow handling as per the FDEP wastewater regulation, just in case the plant goes out of compliance the facility will have somewhere to place the rejected water until the plant comes back into compliance. Engineering studies below indicate modification was needed at SWWRF prior to AWWRF shut down.

The city requested engineering services for Task Order No. 12-04-CDMIW Agreement for Professional Services SWWRF Evaluation of Reclaimed Water Pump Station Modifications City Project No. 14032-11, November 1, 2013, Stating the following:

BACKGROUND

Construction of force mains, gravity sewer systems, and pump stations is currently underway that will allow the CITY to divert raw wastewater from the Albert Whitted Water Reclamation Facility (AWWRF) to the SWWRF. Once these new facilities are placed into operation, the AWWRF will be decommissioned, although deep injection wells used to dispose of excess reclaimed water will be retained. These wells are currently used for disposal of excess reclaimed water generated at the AWWRF but, upon completion of the facilities currently under construction, the CITY will have the ability to transmit reclaimed water from its reclaimed water distribution system to the injection wells.The diversions of raw wastewater flow from the

AWWRF to the SWWRF will increase the quantities of reclaimed water effluent at the SWWRF. While the CITY is planning to construct additional reclaimed/reject water storage capacity on the site, the CITY has determined that additional high-service reclaimed water pumping capacity may be needed during peak flow events.

Information gathered from Memorandum response pertaining to Task Order # 12-04-CDMIW From CDM on January 10, 2014:

6.0 Evaluation of Options Pg 8

With regard to comparing these options from the perspective of "schedule", it is important to note that the existing 450-hp pumps are needed at the AWWRF until that plant is shut down and flow is diverted to the SWWRF. Between the time that flow is diverted and the time that the relocated pumps are placed into service at the SWWRF, there is a potential for an occurrence of peak wet weather flows at SWWRF in excess of reclaimed water pumping capacity. Accordingly, the comparison of the two options from a "schedule" perspective is a relative comparison of the potential time required to complete the relocation of the 450-hp pumps following the initiation of flow transfer from the AWWRF.

Note: As per council meeting video. "August 27, 2015 time 22.05 minutes into the meeting" The pumps wasn't installed which prevented effluent spills during August 2015 as City original designed before or shortly after AWWRF shut down stated in Task Order #: 12-04-CDMIW due to high wet weather peak flow. "Memorandum from CDM for task order 12-04-CDMIW states - The diversions of the raw wastewater flow from the AWWRF to the SWWRF will increase the quantities of reclaim water effluent at the SWWRF. Based on recent wet weather peak flows, the

City has determined that additional high service reclaimed water pumping capacity is needed." There was an email from Steve Leavitt on July 16, 2015 @ 5:20 Subject: SW Dewatering Analysis - 13062-111 stating "1. SW RCW Pumps - Project to replace/upgrade RCW pump capacity. Needs to be done and placed in service by the time we begin transferring AW flows to SW so that our disposal capacity matches our plant capacity."

During these studies the City noticed different weather events which affected the hydraulic flow for each plant, especially Albert Whitted and Southwest. Brown and Caldwell completed study; (SWWRF Wet Weather and Liquid Process Capacity Assessment Final July 31, 2014 #145682)

During these studies the City noticed different weather events which affected the hydraulic flow for each plant, especially Albert Whitted and Southwest. Brown and Caldwell completed study; (SWWRF Wet Weather and Liquid Process Capacity Assessment Final July 31, 2014 #145682)
Information gathered from SWWRF Wet Weather and Liquid Process Capacity Assessment Final (note: This final report indicates on the footer located on the very bottom of the pages) July 31, 2014 #145682 (NOTE: Not the Draft dated June 06, 2014 as stated on footer located on the very bottom pages)

1.1 Scope (Pg 1-1)

A scope of work was developed by Brown and Caldwell (BC) and approved by the City with the objective of establishing the maximum treatment capacity for the SWWRF to meet the existing effluent requirements including the flows and pollutant loadings from the AWWRF. In addition, the scope of work included planning level recommendations to eliminate hydraulic and treatment process bottlenecks at the SWWRF to handle the projected peak wet weather influent flow of 69

MGD. A combination of historical data analysis, hydraulic and process (BioWin™ and computational fluid dynamic, CFD) modeling were used to assess the treatment capacity of the processing units at the SWWRF.

1.3 Objectives (Pg 1-2)

The objectives of the treatment process assessment included the following components:

1. Establish the existing wet weather treatment capacity for the SWWRF to meet the existing effluent requirements.

2. Determine the capacity beyond current flow and pollutant loadings to accommodate future conditions.

3. List planning level improvements and/or operational strategies needed to increase the capacity of the SWWRF to handle the future projected wet weather flows.

3.1 Historical Wet Weather Flows (Pg 3-2)

Based on the historical data, the highest combined annual AADF observed in 2013. The AADF hasbeen 17.8 MGD with a peak hour flow of 60.72 MGD which occurred on September 25, 2013. Analysis of historical data indicated that, the hourly flows higher than 40 MGD happened less than1% of the times and the duration of the main storm events generally did not extend more than a day . The maximum 24-hour rolling average flow was recorded as 50.5 MGD. Only 1% of the daily averageflow was above 39 MGD. The analysis of historical data showed that the flows higher than 60 MGDoccurred only for two consecutive hours in the 22-month worth of hourly data evaluated, whichcorresponds to 0.01% probability.

Historical daily dry weather diurnal peaking factors have ranged from approximately 0.71 to 1.27; hence, under normal circumstances, the projected dry weather flow to the SWWRF at 20

MGD design flow conditions would range from 14 MGD to 25.5 MGD.The historical flow data from the 2012-2013 period has shown a maximum wet weather flow contribution in excess of the dry weather flow of approximately 43.2 MGD. Assuming that the maximum dry weather flow and the storm flow occur at the same time, the total projected flow to the SWWRF would be 68.7 MGD (25.5 MGD + 43.2 MGD).

5.1 Biosolids to Energy Project Modifications (Pg 5-1)

Section 6 discusses recommended process changes in order to handle future loadings to the plant. As a part of the Biosolids to Energy project, two primary clarifiers are proposed to be located hydraulically between the headworks and the aeration basin splitter box. The 30-inch flow meter that was shown to be a hydraulic restriction at the proposed peak flow rates will be taken out of the flowpath and a new 48-inch flow meter will be located immediately upstream of the primary clarifiersplitter box. This will provide sufficient hydraulic grade to support the new primary clarifiers within the treatment plant's hydraulic grade.

A new splitter box that equally proportions flow between the two proposed primary clarifiers using cutthroat flumes and weirs is also included in the design. An adjustable overflow/bypass is alsoproposed to divert some or all of the incoming flow from the headworks directly to the aeration basins thus bypassing the primary clarifiers. The cutthroat flumes have been sized to each pass future average and peak flow individually without entering submerged flow condition. Primary clarifier effluent will return to the opposite side of the primary clarifier splitter box where flow can be directed to three potential locations. The primary flow path is through another cutthroat flume feeding the head of the aeration basin splitter box. As flows increase, excess flow can be step-fedinto to the second zone of the aeration basin using a modulating weir gate that

adjusts according tothe metered flow coming into the primary clarifier splitter box and the measured flow being sent tothe aeration basin splitter box. A third flow path will be for the highest flows which will enable flows to be sent to the third aeration zone for contact stabilization. A manual overflow weir gate will control the amount of flow sent to contact stabilization.

5.2 Hydraulic Capacity after Current Recommended Improvements (Pg 5-2)

Various modeling scenarios were conducted to determine the hydraulic capacity of SWWRF after the modifications proposed in the Biosolids to Energy Preliminary Engineering Report. The hydraulic capacity of the unit process was defined as the flow at which the wastewater would over topple the top of wall for that tank. At 40 MGD flow, none of the unit processes were hydraulically challenged as shown in Figure 5-1; however, upon running the future peak wet weather flow of 69 MGD, the hydraulic elements failed to hold proper hydraulic gradients. The losses through the hydraulic elements were so great that the hydraulic grade line in all of the elements exceeded the top of the wall for the simulated process units. After various iterations and model runs, it was determined that the hydraulic capacity for the SWWRF was limited to 40.5 MGD. The limiting unit process at that flow was the filters. The following hydraulic bottlenecks were identified under the 69 MGD future peak wet weather flow condition:

· Effluent Weir Channel at Chlorine Contact Basin.

· 54-inch pipe between Filters and Chlorine Contact Basin.

· 24-inch pipe from Filter #4 to Filter #3.

· 48-inch pipe between Secondary Clarifiers and Filters.

· 48-inch pipe between Aeration Basin to Secondary Clarifiers.

Additionally, the future peak wet weather flow of 69 MGD caused increased head loss through the Screens, Secondary Clarifiers Splitter Box, Secondary Clarifiers and Filtration process units.

6.1.1 Secondary Clarifiers (Pg 6-2)

The Treatment Process and Hydraulic Evaluation Report dated March 2013, identified the secondary clarifiers as the main process bottleneck at the SWWRF with an existing capacity of approximately 34 MGD peak wet weather flow. The CFD model identified the internal mechanisms and sludge withdrawal mechanisms as the main components limiting the clarification capacity at the facility. It should be noted that the CFD modeling results were based on a design sludge volume index (SVI) of approximately 120 mL/g which is considerably lower than the historical SVI values at the SWWRF. BC recommended the adoption of positive means to reduce the SVI at the SWWRF, especially during wet weather conditions. The report identified recommendations to the internal mechanisms of the existing secondary clarifiers to increase their capacity and efficiency, including increasing the dimensions of the center well to approximately 40 feet in diameter and 7 feet deep and to replace the existing sludge withdraw mechanisms by TowBro-type suction mechanisms. In addition, the report included recommendations for the addition of peripheral baffles to improve effluent quality.

A series of scenarios were simulated with the CFD model built during the capacity assessment in 2011. The model was modified and adopted to simulate the wet weather conditions described herein. Table 6-4 presents a summary of the capacity assessment results for the secondary clarifiersat the SWWRF.

6.2 Options to Increase Wet Weather Capacity (Pg 6-4)

This section provides a brief description of possible options at the SWWRF to increase the capacity of the secondary clarifiers and to handle wet weather flow conditions. All options considered aimed at reducing the loadings to the existing secondary clarifiers, which is the capacity-limiting process unit at the SWWRF.

The following presents a summary list of the treatment options considered during this project:

· Wet weather flow equalization.

· Addition of a new secondary clarifier.

There was storms in the St. Petersburg area in 2012 and 2013 that indicated a tremendous amount of flow caused by I&I which would affect the Albert Whitted and Southwest transfer. The City decided to do studies to indicate what impact it would do if they shut down Albert Whitted treatment plant and transferred the flow to SWWRF. The study from the engineers indicate that Southwest could not handle the flow due to high weather events and recommended to do upgrades to handle hydraulic issues before transferring waste water flow from Albert Whitted as indicated above "SWWRF Wet Weather and Liquid Process Capacity Assessment Final July 31, 2014 #145682".

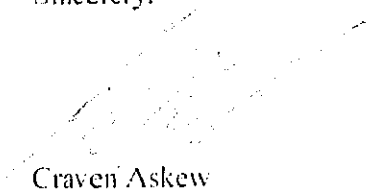
The city shut down Albert Whitted on April 2015 without making the recommended upgrades to Southwest as per Brown Caldwell July 31, 2014 report. Albert Whitted during the time of shut down was still in compliance with their water quality. Hydraulic modeling shown by Brown and Caldwell that Southwest could only handle 40 MGD but the study show that the Southwest should have been upgraded to handle 69 MGD prior to shutting down Albert Whitted due to the

recent storm events in 2012 and 2013. The city experienced high weather in August 2015 which caused over 30 million gallons spilled at Southwest, Clam Bayou and Tampa Bay due to Albert Whitted shut down. The city stated to counsel and to the public that it was an unusual weather event. We have since then had a rain event in June 2016 and September and August 2016 which discharged estimated sewage of 80 million gallons into Tampa Bay. I sent the city management staff an email stating my concerns about public safety is at risk due to Albert Whitted shut down Subject: AWWRF Startup Evaluation - Technical Memorandum, July 14, 2016 @ 9:43 AM

A hydraulic model would show that City of St. Petersburg would have handle the three (3) wet weather flows (August 2015, June 2016 and August/September 2016), as indicated in previously rain events in 2012 and 2013, if AWWRF was still online. This allow the City to handle the wet weather events as indicated in the 2012 and 2013 rain events. AWWRF wet weather hydraulic design flow is 24.8 MGD and SWWRF hydraulic design flow is 40 MGD, combined equals 64.8 MGD. If AWWRF was on-line and they had an issues with managing their water quality. Then AWWRF had the capability of sending it down to the wells at a rate of 48 MGD (2 wells @ 24 MGD each). This would have prevented direct public exposure to harmful bacteria in the receiving water. Albert Whitted wells was reconstructed after the April 2015 shut down to only take Reclaim Treated water only. Therefore, there is no way the city can discharge lower standards water to AWWRF Wells on all (3) wet weather events, August 2015, June 2016 and August/September 2016. Shortly after Albert Whitted was shut down, April 2015, the city proceeded to dismantle the plant site equipment which made AWWRF nonfunctional to process quality permitted sewerage, even after the August 2015 rain event. The city had eight (8) months to place Albert Whitted back into service due to the recent Study by CH2M and Brown & Caldwell reports. Instead, the city kept AWWRF down and continue to dismantle the plant.

Albert Whitted plant needs to be placed back into service until SWWRF completes the required upgrades for the sake of Public Health and Environmental impact of sewage spills.

Sincerely.



Craven Askew

City of St. Petersburg NEWRF Chief Plant Operator-Wastewater State License #: A-10042

Steven Marshall - Re: Draft TM for Peak Flow

From: John Parks
To: Abbaspour, David; Keyes, Phillip; Leavitt, Steve; Marshall, Steven; ...
Date: 4/25/2014 2:54 PM
Subject: Re: Draft TM for Peak Flow
CC: Bosso, Todd; Gibson, Thomas; Jimenez, Jose; Kelber, Debbie

I won't make your conference call next Tuesday. below are my thoughts on the TM:

AW pump station firm capacity is 23 mgd which is less than AW's projected peak hour flow contribution.

AWWRF influent flow meter maxes out at 25 mgd (per plant staff) maybe 26 mgd, so the max peak hour flow could be higher than the recorded 25.8 mgd.

If built, Gulfport PS could divert 4-5 mgd away from SW.

Collection system storage was not considered and could be used to buffer peak hour flows.

What is basis for the projected 0.4%/yr flow increase? If based on projected population, the TAZ population increase for the SW and AW areas used in the most recent SWWRF capacity analysis is 0.14%/year (2015 through 2025). There may be newer TAZ data out.

If projected flow numbers are based on increased population, the additional flow should be added to the dry weather ave and not yearly ave, because yearly ave includes wet weather flow days.

Off line storage could be used to buffer peak hour flows ; may be cost effective compared to increasing treatment capacity.

>>> Steven Marshall 4/22/2014 3:37 PM >>>

All,

Please find attached a draft technical memorandum for the combined future peak wet weather flow. It is important that we review this document and agree on the peak wet weather flow before B&C can finalize the wet weather capacity assessment to determine possible hydraulic and process bottlenecks at the upgraded SWWRF. I am requesting that we set up a conference call with B&C to discuss and finalize the peak wet weather flow analysis.