



Brunswick-Glynn County Joint Water and Sewer Commission
1703 Gloucester Street, Brunswick GA 31520
Thursday, October 5, 2017 at 2:00 pm
Commission Meeting Room

COMMISSION MEETING AGENDA

Call to Order

Invocation

Pledge

PUBLIC COMMENT PERIOD

Public Comments will be limited to 3 minutes per speaker. Comments are to be limited to relevant information regarding your position and should avoid being repetitious. Individuals should sign in stating your name, address and the subject matter on which you wish to speak. Your cooperation in this process will be greatly appreciated.

COMMITTEE UPDATES

Compliance & Legislative – Commissioner Browning

Facilities – Commissioner Adams

Finance – Chairman Elliott

Human Resources & Safety – Commissioner Harvey

Public Information & Customer Relations – Commissioner Copeland

APPROVAL

1. **Minutes from September 21, 2017 Regular Meeting** (*subject to any necessary changes*)

DISCUSSION

1. **Customer Service Update** – J. Sellers
2. **Waste Water Treatment Plant Flows Update** – M. Ryals
3. **Foam Issues at Academy Creek** – M. Ryals
4. **Letter to EPD Update** – M. Ryals
5. **JWSC Construction Standards Update** – T. Kline
6. **R & R Capital Projects Update** – T. Kline

EXECUTIVE DIRECTOR'S UPDATE

CHAIRMAN'S UPDATE

EXECUTIVE SESSION

MEETING ADJOURNED

*All citizens are invited to attend.
There is a possibility of a quorum of City or County Commissioners being present.*



**Brunswick-Glynn County Joint Water and Sewer Commission
1703 Gloucester Street, Brunswick, GA 31520
Thursday, October 5, 2017 at 2:00 PM**

COMMISSION MINUTES

PRESENT:

**Donald M. Elliott, Chairman
Clifford Adams, Vice-Chairman
Cornell L. Harvey, Commissioner
Mike Browning, Commissioner
Steve Copeland, Commissioner
David H. Ford, Commissioner
Robert Bowen, Commissioner**

ALSO PRESENT:

**Jimmy Junkin, Executive Director
Charlie Dorminy, Legal Counsel HBS
Andrew Burroughs, Deputy Executive Director
Todd Kline, Senior Engineer
Pam Crosby, Director of Procurement
John D. Donaghy, Director of Finance
Jay Sellers, Director of Administration
Cindy Barnhart, T.S.I.**

Chairman Elliott called the meeting to order at 2:00 PM. Chairman Elliott provided the invocation and Commissioner Ford led the pledge.

PUBLIC COMMENT PERIOD

Chairman Elliott opened the public comment period.

Rick Padgett – Mr. Padgett requested to discuss street flooding in his neighborhood from storm water, and asked for advice on who to address regarding this issue. Mr. Padgett was advised by Chairman Elliott that he should contact Dave Austin at Glynn County. It was noted that storm water and drainage is handled by the City and County.

There being no additional citizens for public comment, Chairman Elliott closed the public comment period.

COMMITTEE UPDATES

Compliance & Legislative Committee – Commissioner Browning

There was no update at this time.

Facilities Committee – Commissioner Adams

Commissioner Adams was not present during the update period, but it was noted that the items covered in the Facilities Committee meeting will be covered in the Discussion period later in the meeting.

Finance Committee – Chairman Elliott

There was no update at this time.

Human Resources & Safety Committee – Commissioner Harvey

Commissioner Harvey updated that Commission that the Human Resources & Safety Committee had met earlier in the morning. Recruiting and termination statistics were discussed, and some additional information will be added to the report to help the Commissioners identify the new staff that has been hired. He noted that the position of Director of Operations will go back to the Finance Committee later for discussion. The services of the interim Deputy Director were also discussed. He mentioned that the appeals process was reviewed and will be discussed again in the next Human Resources & Safety Committee Meeting. Chairman Elliott added that there have only been 2 safety incidents for the year of 2017 and commended the staff for keeping their personnel safe and doing a good job, and thanked them.

Public Information & Customer Relations Committee – Commissioner Copeland

There was no update at this time.

APPROVAL

1. Minutes from the September 21, 2017 Regular Commission Meeting

Commissioner Browning made a motion seconded by Commissioner Ford to approve the minutes from September 21, 2017 Regular Commission Meeting. Motion carried 6-0-1. (Commissioner Adams was not present at the time of the vote.)

DISCUSSION

1. Customer Service Update – J. Sellers

Jay Sellers presented an update on Customer Service to the Commission. He began by noting some statistics which he had researched such as numbers on incoming customer phone calls during the two periods of 1/1/2017 to 5/1/2017 and 6/1/2017 to 10/4/2017. From the first period to the second, the total number of incoming customer calls doubled, the percentage of answered calls dropped, the percentage of hang-ups increased, and the number of voicemail messages left increased. Jay added that the service level over these two periods dropped from 65% to 28% through no fault of the Customer Service Representatives. He discussed many changes that were made on July 1, 2017 which affected the statistics he noted. Those changes included rate increases, a change in the billing system, customer account numbers changed, the online payment portal changed, billing statements changed, processing of mailed in check payments, and Hurricane Irma. Jay continued that the call volume and walk-in traffic has been high as a result of these changes and their side-effects, thus reducing the customer satisfaction level. Jay presented some suggested changes and options to provide a higher level of customer service in a more timely manner. These suggested options included solutions for walk-in customer service as well as customer phone calls. Currently additional staff has been added from hiring one full time CSR, and periodically borrowing staff from another department to assist with phone calls, as well as other solutions such as staggering schedules for CSRs, overtime as necessary, etc. Additional options suggested by Jay will be discussed further at the next Finance Committee and Human Resources & Safety Committee Meetings.

2. Wastewater Treatment Plant Flows Update – M. Ryals

Mark Ryals updated the Commission on the Wastewater Treatment Plant Flows for Academy Creek, Dunbar, and Southport. The BOD's on the effluent were noted and discussed for various months where differences were seen. BOD stands for Bio-Chemical Oxygen Demand. The effects of rain, such as bringing in more solids, on the BOD were also discussed and compared for certain months at the various plants. The percent of plant capacity used was also noted for various months.

3. Foam Issues at Academy Creek – M. Ryals

Mark Ryals provided the Commission with the background causing staff to look at foam issues again. He also provided the Commissioners with a copy of a technical memorandum regarding an Academy Creek

Wastewater Treatment Plant Effluent Foam Reduction Evaluation & Recommendations. This report was prepared by Constantine Engineering, Inc. for BGJWSC on September 6, 2017. In the discussion it was noted that when the plant is treating BOD at a higher level, the drawback is that the foam is at a higher level. The foam is often caused by old grease sludge that is in the system being treated by chlorination. There was additional discussion pertaining to this subject matter.

4. Letter to EPD Update – M. Ryals

Mark Ryals advised the Commission that he is in the process of drafting two letters to the EPD regarding the reports of silt overflow. There is an individual who periodically flies over the facilities and makes reports based on what he “believes” he sees when he flies over and takes pictures, for example a recent report of grey water. Mark noted that the Academy Creek Plant is operating and performing well within the limits.

5. JWSC Construction Standards Update – T. Kline

Todd Kline advised that the JWSC standards were last updated in February of 2012. They can be accessed on the JWSC website on the Planning & Construction page. Todd has requested Timothy Ransom who has 30 years of experience to compile the technical data to revise and update the standards. The final standards will either be then completed in house or by an outside consultant. Todd also presented the Revision Plan and Schedule of Milestones. There was additional discussion regarding County and State standards, as well as concerns of private water systems being constructed to meet or exceed certain standards. The final draft of the JWSC standards are expected to be presented to the Commission in October of 2018.

6. R & R Capital Projects Update – T. Kline

Todd Kline presented the R & R Capital Projects update to the Commission. Project 232 – Phase 1 change order under review to switch from open cut to directional drilling under a section of Hwy 341; Phase 2 revisions to route due to existing utilities along SR99, Seaboard/GA Pacific easements possible (provides water & fire protection availability). Project 319 – record drawings have been received and under JWSC review, coordination with G-DOT for WM service abandonment for PS 4019 underway, working with city engineer on a list of locations holding water. Project 421 – JWSC has requested scheduled plan for completion, final grouting & adjustment work on sanitary sewer will be done after paving, installation of utility conflict box at intersection of Mansfield and Reynolds St., WM installation at Bay St. within G-DOT r/w is incomplete, staff evaluating change order pricing vs. JWSC in-house valve installation; Project 503 – JWSC staff met with contractor on site to verify locations of force main, JWSC staff has reviewed record drawings and forwarded back to contractor with revisions, awaiting submission of project closeout documents, warranty documents and submission of final record drawings; Project 504 – record drawings received, project close out documents have been received and are approved; Project 505 – final payment executed, record drawings complete; Project 701 – initial component to open small amount of N. Mainland capacity, coordinated with SPLOST 2016 Phase 1, 3,200 LF of 24” force main upgrade using open cut, Jack & Bore and HDD methods, CSX & NS Railroad jack and bore complete, pre-purchased material pipe delivered on August 1, 2017 and HDPE manhole delivered on October 2, 2017; Project 702 – SPLOST 2016, divided into 4 phases to expedite, long term component of solution for N. Mainland capacity, Phase 1 near term N. Mainland capacity relief: pumps have been pre-purchased, contractor is mobilized and working at PS 4028, 4048, 4005, 4006, and 4110, decommissioned underground fuel tanks removed, next progress meeting scheduled for October 10, 2017. Todd also discussed the capital projects which are in the Engineering/Design in progress stage. Those projects are: Project 501 – Alder Circle, Project 602 – Holly St. Sewer Rehabilitation/Replacement, Project 702 – North Mainland Sewer Basin Re-route, Project 703 – PS4003 Decommission & Gravity Sewer, Project 704 - Canal Road to Glynco Parkway 12” Water Main Loop, and Project 705 – Hautala to Old Jesup 12” Water Main Loop.

EXECUTIVE DIRECTOR’S UPDATE

There was no update at this time.

CHAIRMAN'S UPDATE

There was no update at this time.

EXECUTIVE SESSION

Commissioner Adams made a motion seconded by Commissioner Harvey to adjourn into Executive Session to discuss personnel issues. Motion carried 6-0-1 (Commissioner Bowen was absent for the vote).

The Chairman stated that there will be no vote after the Executive Session.

Return to Regular Session.

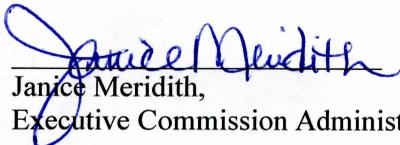
Commissioner Ford made a motion seconded by Commissioner Browning to return to the Regular Meeting. Motion carried 6-0-1 (Commissioner Bowen was absent for the vote).

Commissioner Adams made a motion seconded by Commissioner Ford to adjourn the Meeting. Motion carried 6-0-1 (Commissioner Bowen was absent for the vote).

There being no additional business to bring before the Commission, Chairman Elliott adjourned the open meeting at 4:40 pm.


Donald M. Elliott, Chairman

Attest:


Janice Meridith,
Executive Commission Administrator



**ACADEMY CREEK WPCP
PERMIT NUMBER GA0025313
PLANT PERFORMANCE**

MONTH	1	2	3	4	5	6	7	8	9	10	11	12
	INF	INF	Pinova	EFF	EFF	BOD	TSS	Rain	Rain	Rain	EFF	Percent
	AVG FLOW MGD	MAX DAILY MGD	AVG	AVG FLOW MGD	MAX DAILY MGD	EFF mg/l AVG	EFF mg/l AVG	Inches AVG	Inches MAX	Total	Monthly Limit FLOW MGD	of Plant Capacity Used
Jan-16	6.2	7.0	0.5	6.6	7.5	7	18	0.10	1.0	3.0	13.5	49%
Feb-16	7.6	9.4	0.7	7.8	9.7	8	13	0.13	2.0	3.8	13.5	58%
Mar-16	6.7	7.0	0.7	7.0	7.7	8	13	0.04	0.3	1.2	13.5	52%
Apr-16	6.3	7.0	0.6	6.8	7.7	7	12	0.07	1.0	2.2	13.5	50%
May-16	6.1	6.8	0.6	6.6	7.7	7	12	0.10	2.3	3.1	13.5	49%
Jun-16	6.3	7.2	0.6	6.7	8.1	4	9	0.13	2.3	4.0	13.5	50%
Jul-16	6.1	9.7	0.7	6.3	7.1	8	9	0.08	0.9	2.5	13.5	47%
Aug-16	5.7	6.3	0.7	6.2	7.3	7	10	0.14	1.5	4.4	13.5	46%
Sep-16	7.3	12.2	0.7	7.8	13.0	8	12	0.32	4.7	9.7	13.5	58%
Oct-16	10.4	15.5	0.7	10.5	15.4	7	11	0.46	9.8	14.1	13.5	78%
Nov-16	7.4	8.2	0.5	7.6	8.7	8	10	0.00	0.1	0.1	13.5	57%
Dec-16	6.9	8.6	0.6	7.2	8.5	7	12	0.10	1.0	3.2	13.5	53%
Jan-17	7.8	12.7	0.5	8.4	13.4	6	10	0.10	1.0	5.9	13.5	62%
Feb-17	7.0	8.1	0.7	7.5	8.6	5	9	0.13	2.0	2.5	13.5	56%
Mar-17	6.2	6.7	0.7	6.5	7.6	6	12	0.04	0.3	0.9	13.5	48%
Apr-17	5.7	6.3	0.6	6.1	6.7	7	12	0.07	1.0	1.0	13.5	45%
May-17	5.5	6.3	0.6	6.0	7.4	7	13	0.10	2.3	6.2	13.5	44%
Jun-17	7.2	9.6	0.6	7.6	10.3	5	9	0.13	2.3	7.2	13.5	56%
Jul-17	6.6	9.2	0.6	7.0	9.8	5	10	0.15	1.7	4.7	13.5	52%
Aug-17	7.7	9.3	0.6	8.3	10.1	5	11	0.30	1.8	9.3	13.5	61%
Sep-17												
Oct-17												
Nov-17												
Dec-17												
AVG	6.8	8.7	0.6	7.2	9.1	6.6	11.3	0.1	2.0	4.5		54%
MAX	10.4	15.5	0.7	10.5	15.4	8.0	18.0	0.5	9.8	14.1		78%
MIN	5.5	6.3	0.5	6.0	6.7	4.0	9.0	0.0	0.1	0.1		44%



**DUNBAR CREEK WPCP
PERMIT NUMBER GA0021521
PLANT PERFORMANCE**

MONTH	1	2	3	4	5	6	7	8	9	10	11	12
	INF	INF	No	EFF	EFF	BOD	TSS	Rain	Rain	Rain	EFF	Percent
	AVG	MAX	Industrial	AVG	MAX	EFF	EFF	Inches	Inches	Inches	Monthly	of
	FLOW	DAILY	Flow	FLOW	DAILY	mg/l	mg/l	AVG	MAX	Total	Limit	Plant
MGD	MGD		MGD	MGD	AVG	AVG				MGD	Capacity	
												Used
Jan-16	2.5	2.9		2.3	2.7	1.0	1.0	0.11	1.0	3.5	4.0	58%
Feb-16	2.8	3.2		2.6	3.1	2.0	1.8	0.15	2.6	4.5	4.0	65%
Mar-16	2.7	3.2		2.4	2.8	3.1	2.4	0.06	0.5	1.9	4.0	60%
Apr-16	2.8	3.2		2.4	2.8	1.9	1.2	0.09	1.1	2.7	4.0	59%
May-16	2.8	3.2		2.2	2.6	2.0	2.4	0.05	1.0	1.7	4.0	56%
Jun-16	3.2	3.7		2.5	3.0	2.9	2.3	0.25	3.3	7.6	4.0	61%
Jul-16	3.2	3.9		2.5	3.0	2.0	1.0	0.01	0.2	0.2	4.0	61%
Aug-16	2.9	3.5		2.1	2.6	2.0	1.0	0.20	2.6	6.1	4.0	54%
Sep-16	3.3	5.2		2.6	4.7	1.0	1.0	0.32	5.5	9.7	4.0	65%
Oct-16	3.8	5.1		3.0	4.5	2.4	2.3	0.27	6.1	8.5	4.0	76%
Nov-16	2.9	3.2		2.6	2.9	2.0	2.0	0.01	0.2	0.2	4.0	64%
Dec-16	2.8	3.4		2.5	3.0	3.0	1.0	0.10	1.7	3.1	4.0	63%
Jan-17	2.9	4.2		2.7	3.7	3.0	3.0	0.13	1.5	3.9	4.0	67%
Feb-17	2.8	3.1		2.7	3.0	2.0	3.0	0.04	0.5	1.0	4.0	68%
Mar-17	2.7	3.1		2.6	2.9	2.0	1.0	0.03	0.7	0.8	4.0	64%
Apr-17	2.7	3.6		2.5	2.8	3.0	1.0	0.06	1.0	1.9	4.0	62%
May-17	2.5	3.7		2.6	3.4	2.0	1.0	0.12	1.0	3.8	4.0	66%
Jun-17	3.4	3.9		3.1	3.7	4.0	2.0	0.24	2.9	7.3	4.0	79%
Jul-17	3.6	4.9		3.3	4.7	4.0	2.8	0.27	2.1	8.5	4.0	82%
Aug-17	3.4	3.9		3.1	3.6	3.0	1.8	0.22	1.4	6.7	4.0	76%
Sep-17	3.9	5.0		3.6	4.6	5.0	2.0	0.35	10.4	10.5	4.0	90%
Oct-17												
Nov-17												
Dec-17												
AVG	3.0	3.8		2.7	3.3	2.5	1.8	0.1	2.3	4.5		67%
MAX	3.9	5.2		3.6	4.7	5.0	3.0	0.4	10.4	10.5		90%
MIN	2.5	2.9		2.1	2.6	1.0	1.0	0.0	0.2	0.2		54%



Southport WPCP
PERMIT NUMBER GA0038938
PLANT PERFORMANCE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12
	INF	INF	No	EFF	EFF	BOD	TSS	Rain	Rain	Rain	EFF	Percent
	AVG	MAX	Industrial	AVG	MAX	EFF	EFF	Inches	Inches	Inches	Monthly	of
	FLOW	DAILY	Flow	FLOW	DAILY	mg/l	mg/l	AVG	MAX	Total	Limit	Plant
MGD	MGD		MGD	MGD	AVG	AVG				MGD	Capacity	
												Used
Jan-16	0.367	0.389		0.36	0.4	4	9	0.10	0.9	3.2	1.5	24.20%
Feb-16	0.386	0.426		0.36	0.4	4	9	0.13	2.0	3.8	1.5	23.87%
Mar-16	0.381	0.407		0.358	0.409	6	8	0.04	0.5	1.3	1.5	23.87%
Apr-16	0.367	0.399		0.339	0.391	6	8	0.08	1.5	2.5	1.5	22.60%
May-16	0.362	0.417		0.332	0.425	2	5	0.15	2.0	4.8	1.5	22.13%
Jun-16	0.360	0.382		0.333	0.419	5	5	0.14	2.0	4.2	1.5	22.20%
Jul-16	0.342	0.358		0.312	0.387	6	6	0.08	1.1	2.4	1.5	20.80%
Aug-16	0.364	0.437		0.351	0.477	7	4	0.21	1.8	6.4	1.5	23.40%
Sep-16	0.390	0.494		0.375	0.532	7	6	0.28	5.2	8.3	1.5	25.00%
Oct-16	0.393	0.608		0.390	0.703	9	5	0.22	6.0	6.3	1.5	26.00%
Nov-16	0.367	0.417		0.393	0.458	4	4	0.01	0.2	0.2	1.5	26.20%
Dec-16	0.359	0.435		0.408	0.503	5	6	0.11	1.4	3.4	1.5	27.20%
Jan-17	0.380	0.500		0.410	0.557	5	6	0.14	2.6	4.4	1.5	27.33%
Feb-17	0.363	0.380		0.353	0.426	9	7	0.03	0.1	0.7	1.5	23.53%
Mar-17	0.355	0.380		0.345	0.431	5	4	0.03	0.5	0.8	1.5	23.00%
Apr-17	0.354	0.374		0.334	0.355	8	4	0.05	0.7	1.4	1.5	22.27%
May-17	0.362	0.395		0.354	0.417	7	3	0.17	1.6	5.2	1.5	23.60%
Jun-17	0.4	0.4		0.4	0.4	4.0	4.9	0.39	5.3	11.8	1.5	27.80%
Jul-17	0.4	0.5		0.4	0.5	4.5	4.2	0.33	1.8	10.2	1.5	27.87%
Aug-17	0.4	0.5		0.4	0.5	3.8	3.9	0.45	1.5	7.6	1.5	27.60%
Sep-17	0.0	0.5		0.4	0.5	5.0	5.0	0.41	9.2	12.3	1.5	26.67%
Oct-17												
Nov-17												
Dec-17												
AVG	0.4	0.4		0.4	0.5	5.5	5.6	0.2	2.3	4.8		25%
MAX	0.4	0.6		0.4	0.7	9.0	9.0	0.5	9.2	12.3		28%
MIN	0.0	0.4		0.3	0.4	2.0	3.3	0.0	0.1	0.2		21%



TECHNICAL MEMORANDUM

Academy Creek Wastewater Treatment Plant Effluent Foam Reduction Evaluation & Recommendations

PREPARED FOR: Brunswick-Glynn County Joint Water and Sewer Commission, GA

PREPARED BY: Constantine Engineering, Inc.

DISTRIBUTION: Mark Ryals/BGJWSC Jimmy Junkin/BGJWSC
Kirk Young/BGJWSC Todd Kline/BGJWSC
Jim Kizer/TCG Dave Marshall/TCG
Win Timberlake/TCG Ted Hortenstine/TCG

PROJECT NUMBER: 100166.05

DATE: September 6, 2017

Process Evaluation

The Academy Creek Wastewater Treatment Plant (ACWWTP) is a basic secondary wastewater treatment plant that is designed to meet a monthly TSS limit of 30 milligrams per liter (mg/L) and a weekly TSS limit of 45 mg/L, based on average monthly and weekly flows of 13.5 and 16.9 million gallons per day (mgd). The process used at the facility is a pure oxygen activated sludge system (UNOX) that was originally developed in the mid 1970's.

The UNOX treatment process is reportedly designed to operate at high mixed liquor suspended solids (MLSS) concentrations (typically between 4,000 and 7,500 mg/L) and short retention times (less than about 2 hours) to produce effluents of comparable quality with conventional activated sludge of relatively lower solids and longer retention times. The system is designed to operate at average biomass loading rates of 0.30 pounds of biochemical oxygen demand (BOD) per pound of mixed liquor volatile suspended solids (MLVSS) and maximum values of 0.45 pounds BOD per pound MLVSS. Unfortunately, it is often observed that these systems experience problems with filamentous bacteria bulking and foaming that can adversely affect the secondary clarifier performance.

The ACWWTP presently is operating 2 of its 3 UNOX aeration basins, Basins 2 and 3, that have a combined treatment volume of about 1.4 million gallons. Based on the recent historical average daily influent flow of about 7.0 mgd, the retention time in the 2 UNOX basins is about 4.8 hours. This is about 200 percent greater than typical values for similar UNOX systems.

The historic 30-day average MLSS concentrations at the ACWWTP was about 6,500 mg/L and assuming a historical average daily influent flow of about 7.0 mgd the influent BOD loading is 9,633 pounds per day (ppd). The historic 30-day average MLSS concentrations at

the ACWWTP was about 6,500 mg/L which corresponds to about a 20 day solids retention time (SRT). Based on this MLSS concentration, and a percent volatile fraction in the MLSS of 76 percent, and assuming UNOX basins 2 and 3 are operating, the MLVSS biomass in the aeration basins is about 56,502 pounds. This equates to a biomass loading rate of about 0.167 pounds BOD per pound MLVSS applied. This value is about 50 percent lower than typical values for similar UNOX systems.

The effects of operating the UNOX system at a high biomass loading is a higher MLSS concentration which increases the solids loading rate (SLR) on the clarifiers. At the time of the reported complaint, the WWTP was operating with 4 of the 70-foot diameter, 11-foot side water depth (SWD) clarifiers on line (based on Google Earth photography). Assuming the UNOX operating parameters presented in the above paragraph, the clarifier SLR would have been 35.2 pounds per day per square foot (ppd/sf); which is significantly greater than the typical design value for similar clarifiers of 20 to 25 ppd/sf. The hydraulic loading rate (HLR) on the clarifiers would have been about 455 gallons per day/sf (gpd/sf). While this value is slightly elevated, we would recommend a value of less than about 400 gpd/sf based on their shallow SWD, the clarifiers are provided with dual weirs which reduces the weir loading and assists the clarifiers to handle slightly higher HLRs.

Operating the UNOX system at the low biomass loading rate of 0.17 ppd BOD/ppd MLVSS allows the system to better reduce the influent BOD, but can contribute to filamentous bacteria bulking and foaming. On August 28, 2017, the Commission received the results of a microscopic analysis of a March 21, 2017 sample of the UNOX system biomass. The microscopic analysis report states clearly, *"We have performed many microscopics (analyses) for the Academy Creek plant and generally the foaming is caused by the growth of filamentous bacteria, nocardia."* The report further states, *"I have attached the last exam we performed back in March of this year. At that time there was a large foaming event which was caused by nocardia growth."* Constantine believes that based on the previous experience with Nocardia foaming and bulking at the WWTP, the cause of the floating substances in the receiving stream during this event was the result of filamentous bulking and foaming. The materials present in the photographs resemble similar foam and scum that can be caused by such events. The floating grease balls may be the result of high SLRs on the clarifiers.

Recommendations

Based on the information presented above, Constantine recommends the following process modifications and improvements:

1. Gradually reduce the biomass loading rate on the UNOX system to the target rate of about 0.30 ppd BOD/ppd MLVSS by increasing the wasting rate in the system.
2. Begin to chlorinate the return activated sludge (RAS) by applying a constant chlorine feed of between 1 and 5 pounds of chlorine per pound of MLVSS in the UNOX system. The application of chlorine should begin at the low range while slowly increasing the feed as required to control the filamentous bacteria in the system and obtain the desired settling rates in the clarifiers. The plant should target a sludge volume index (SVI) of less than about 100.
3. Begin to apply a chlorine surface spray to control the foam and scum in the RAS Boxes.



Commission Discussion

To: BGJWSC Board Members
From: Todd Kline, P.E. (Planning & Construction, Senior Engineer)
Date: 2017 October 05
Re: JWSC R&R/Capital Project Status Update

Capital Projects- Construction in Progress

- Project 232- State Route 99 Waterline Extensions – Seaboard Construction Company (Brunswick)
 - Original Contract: \$1,177,792.15; 70% paid out
 - Approved Change Order(s) to date: \$53,823.99
 - Notice to Proceed Date: February 29, 2016 / 270 Days
 - Projected Completion Date: T.B.D. (pending GDOT revision approval)
 - Days to Completion: T.B.D. (pending GDOT revision approval)
 - Phase I- Engineering Design; Re-route of waterline due to existing utilities – G-DOT approval received on September 25, 2017. JWSC in the process of obtaining easements along the Sterling Baptist Church for WM installation. Change order under review; \$20k
 - Phase II- Construction 15% - Contractor starting on wetlands bores along SR 99. Revisions to route due to existing utilities. Seaboard/GA Pacific easements possible.
 - Phase IIA (GA Power R/W)- COMPLETE
 - Phase III (Green Swamp Rd.)- COMPLETE
 - JWSC agreement to relocate WM within G-DOT r/w if required due to road widening.

- Project 319- Urbana Sewer Replacement – Washington County Machine Shop (Macon)
 - Original Contract: \$1,811,764.44; 96% paid out
 - Approved Change Order(s) to Date: \$80,746.50 (addition of manholes, and grouting of abandoned sewer mains)
 - Notice to Proceed Date: October 26, 2015 / 270 Days
 - Projected Completion Date: Substantially Complete
 - Days to Completion: 0
 - Record Drawings have been received and under JWSC review.
 - Coordination with G-DOT for WM service abandonment for PS 4019 underway.
 - Working with City Engineer on a list of locations holding water.

- Project 421- Mansfield Street Sewer Replacement – J.H. Stone Construction (Brunswick)
 - City of Brunswick Project – JWSC MOU executed February 4, 2015
 - Original Contract (JWSC portion): \$737,857.13; 54% paid out
 - Approved Change Order(s) to Date: \$169,714.17 (sewer service connections and abandonment/ removal of unknown water & sewer mains)

- Notice to Proceed Date: June 8, 2015 / 270 Days
 - Projected Completion Date: T.B.D. (City of Brunswick)
 - Days to Completion: T.B.D. (City of Brunswick)
 - Contractor is still present and working; JWSC has requested a scheduled plan for completion.
 - Sanitary sewer: Complete excluding final grouting & adjustment work after paving.
 - Storm: City of Brunswick storm drain installation began in December; nearing completion. Installation of utility conflict box at the intersection of Mansfield St. and Reynolds St.
 - Water: WM installation at Bay St. within G-DOT r/w – Incomplete, staff evaluating change order pricing vs JWSC in-house valve installation.
 - Roads: J. Hiers installing GAB on Monk Street and working towards Mansfield Street.
- Project 503- Canal Crossing Water & Force Main Improvements – East Coast Asphalt LLC (Douglas)
 - Glynn County Project – JWSC MOU executed December, 03 2015
 - Original Contract: \$26,392.90 (upgrade from 12” to 16” water main); 60% paid out
 - Approved Change Order(s) to Date: \$785,193.10 (addition of 20” FM and directional bores under Spur 25)
 - Notice to Proceed Date: March 23, 2015 / 365 Days
 - Projected Completion Date: Substantially Complete (Glynn County)
 - Days to Completion: T.B.D.
 - JWSC staff met with contractor on site to verify locations of force main.
 - Record drawings: Submitted by contractor on August 16, 2017, JWSC staff have reviewed and forwarded them back to the contractor with revisions.
 - Awaiting submission of project closeout documents; warranty crossing at McDonalds; warranty docs and submission of final Record Drawings.
- Project 504- Canal Crossing Pumpstation – Ricketson Construction Company (Douglas)
 - Original Contract: \$271,000.00; 90% paid out
 - Approved Change order(s) to Date: \$0.00
 - Notice to Proceed Date: September 30, 2015 / 180 Days
 - Projected Completion Date: Substantially Complete
 - Days to Completion: 0
 - Record Drawings: Received on August 16, 2017
 - Project close out documents have been received and are approved; GA Power service transfer.
- Project 505- Pumpstation 2032 Regional Station & Forcemain – TB Landmark (Jacksonville, FL)
 - Original Contract: \$1,981,117.00; 100% paid out
 - Approved Change Order(s) to Date: \$0.00
 - Notice to Proceed Date: January 3, 2017 / 200 Days
 - Projected Completion Date: July 22, 2017
 - Days to Completion: 0
 - Final Payment: Executed
 - Record Drawings: COMPLETE
- Project 701- PS4048 Force Main improvements – TB Landmark (Jacksonville, FL)
 - Original Contract: \$1,478,103.00; 3% paid out
 - Approved Change Order(s) to Date: \$65,398.68
 - Notice to Proceed Date: September 12, 2017 / 120 Days
 - Projected Completion Date: January 10, 2018
 - Days to Completion: 120

- Initial component to open small amount of N. Mainland capacity; coordinated with SPLOST 2016 Phase 1. (Exhibit Attached)
- 3,200 LF of 24" force main upgrade using open cut, Jack & Bore and HDD methods.
- CSX & NS Railroad Jack & Bore: COMPLETE
- Pre-purchased Material: Pipe delivered on August 1, 2017; HDPE manhole delivered on October 2, 2017.

- Project 702- North Mainland Sewer Basin Re-route - \$11,700,000.00 (Budget)
 - SPLOST 2016 (Exhibit attached)
 - Divided into four Phases to expedite.
 - Long term component of solution for N. Mainland capacity.
 - Phase 1- Near term North Mainland capacity relief; Constantine Constructors (Ft. Walton Beach, FL)
 - Design/Build
 - Pumps have been pre-purchased
 - Contractor mobilized and working at PS 4028, PS 4048, PS 4005, PS 4006, and PS 4110.
 - Decommissioned underground fuel tanks removed.
 - Next progress meeting October 10, 2017

Capital Projects – Engineering/Design in Progress

- Project 501- Alder Circle (Sea Palms East) Water Line/Fire Protection – EMC Engineering Services (Brunswick)
 - Probable Cost Estimate: \$242,217.80
 - SPLOST funded.
 - Glynn County bid for construction; bids received \$400k+; all bids rejected.
 - On hold awaiting re-evaluation of project scope.
 - Comparing to previous county project on Bayberry/Sea Palms.

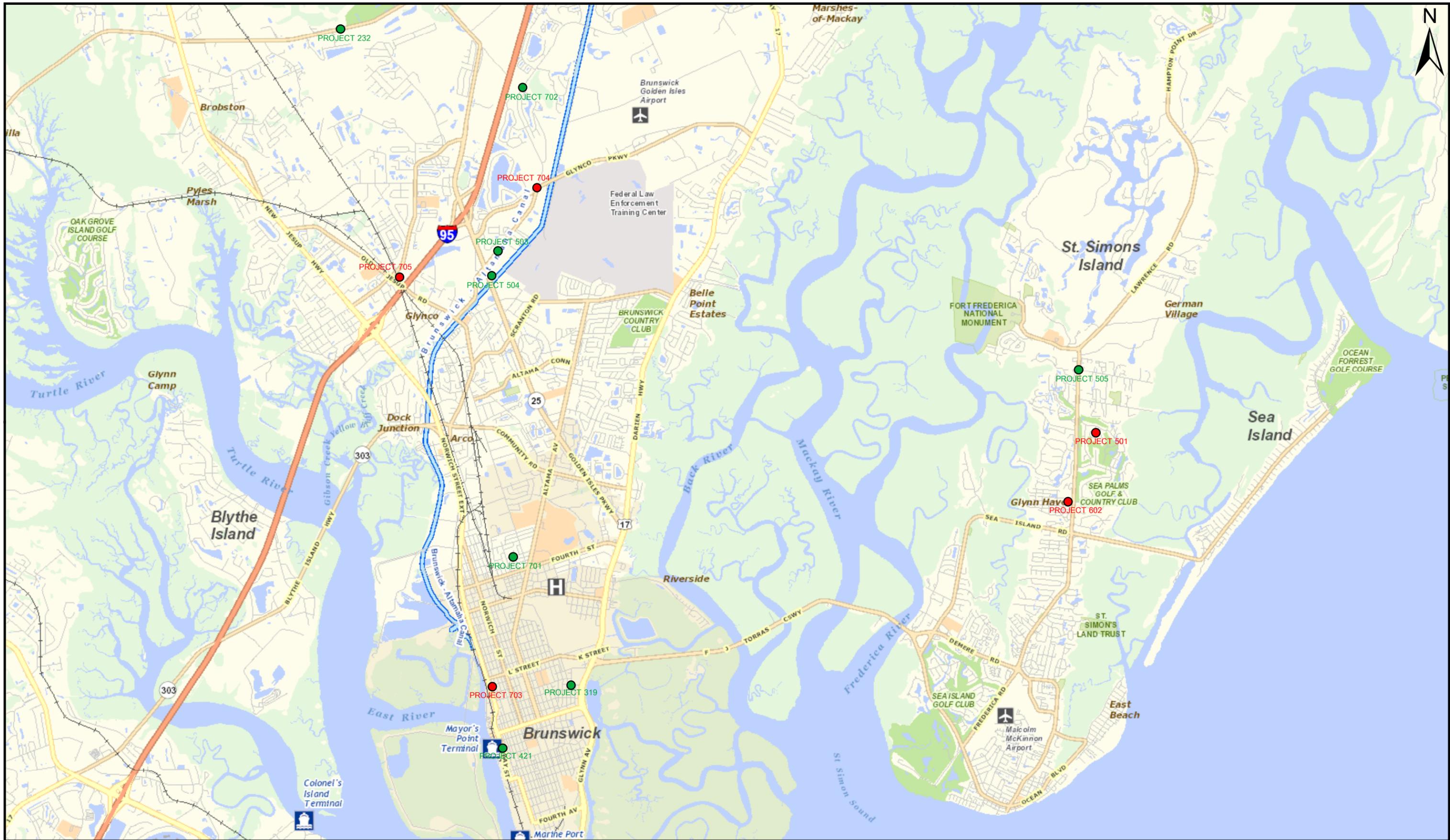
- Project 602- Holly St. Sewer Rehabilitation/Replacement – Hodges, Harbin, Newberry & Tribble Inc. (Macon)
 - Probable Cost Estimate: \$497,691.25
 - SPLOST funded.
 - Engineering Design: Final design complete; Bid documents were received this week and are under review.
 - Evaluating construction schedule; will be submitted to Glynn County for construction bidding/award.

- Project 702- North Mainland Sewer Basin Re-route - \$11,700,000.00 (Budget)
 - SPLOST 2016
 - Divided into four Phases to expedite.
 - Long term component of solution for N. Mainland capacity.
 - Phase 2- New 20" force main from Canal Rd., bypass PS4036 to B&W Grade Rd.
 - Preliminary components for other phases being: utility locates, geo-technical, surveying, permitting.
 - Preliminary engineering underway; Coordination with Glynn County required to finalize route on Canal Road required.
 - JWSC is in the process of obtaining necessary easements for project.
 - 4WE Evaluation of downstream receiving sewer may affect scope; recommendation 2 weeks.
 - Phase 3- New 20" force main from PS4110 to Canal Road.
 - Phase 4- Force main re-route from PS4039 & PS4109 to Canal Rd.
 - Projected construction for PS 4110 segment: 8 – 12 months; 2-3+ year project in total.
 - Downstream gravity system rehab requirements being evaluated; Easement acquisition.

- Project 703- PS4003 Decommission & Gravity Sewer - \$6,800,000.00 (Budget)
 - SPLOST 2016 allotment of \$3.3M.
 - Elimination of PS4003; gravity flow straight to Academy Creek WWTP.
 - Preliminary engineering in progress to determine scope and project specifications.

- Project 704- Canal Road to Glynco Parkway 12" Water Main Loop - \$1,000,000.00 (Budget)
 - Pre-engineering in progress: route discussions with Glynn County.
 - Continuation of existing 16"/12" water main on Canal Road to Glynn Co. Parkway – approximately 2,500 LF.

- Extension of 12" water main from Glynn Co. Parkway to Airport Road – approximately 6,000 LF.
 - Utilize 3,000 LF of surplus 12" C900 PVC pipe from PS2030 project.
 - Eliminate single feed to Glynco Pkwy., airport and FLETC; loop Canal Crossing.
 - Evaluating JWSC in-house project; design & construction.
 - WM installation under Altamaha Canal: COMPLETE
- Project 705- Hautala to Old Jesup 12" Water Main Loop - \$110,000.00 (Budget)
 - Cate Rd. / Old Jesup Rd. Intersection.
 - 600 LF of 12" water main.
 - Provide second connection between the former City and County water systems.
 - Engineering design by Planning & Construction; COMPLETE.
 - Proposed construction by JWSC WD Division.
 - Investigating addition of Pressure Reducing Valves to regulate effect on water production facilities; modeling in progress.
 - Recent finding of closed 12" valve by Water Distribution at Community/Habersham.

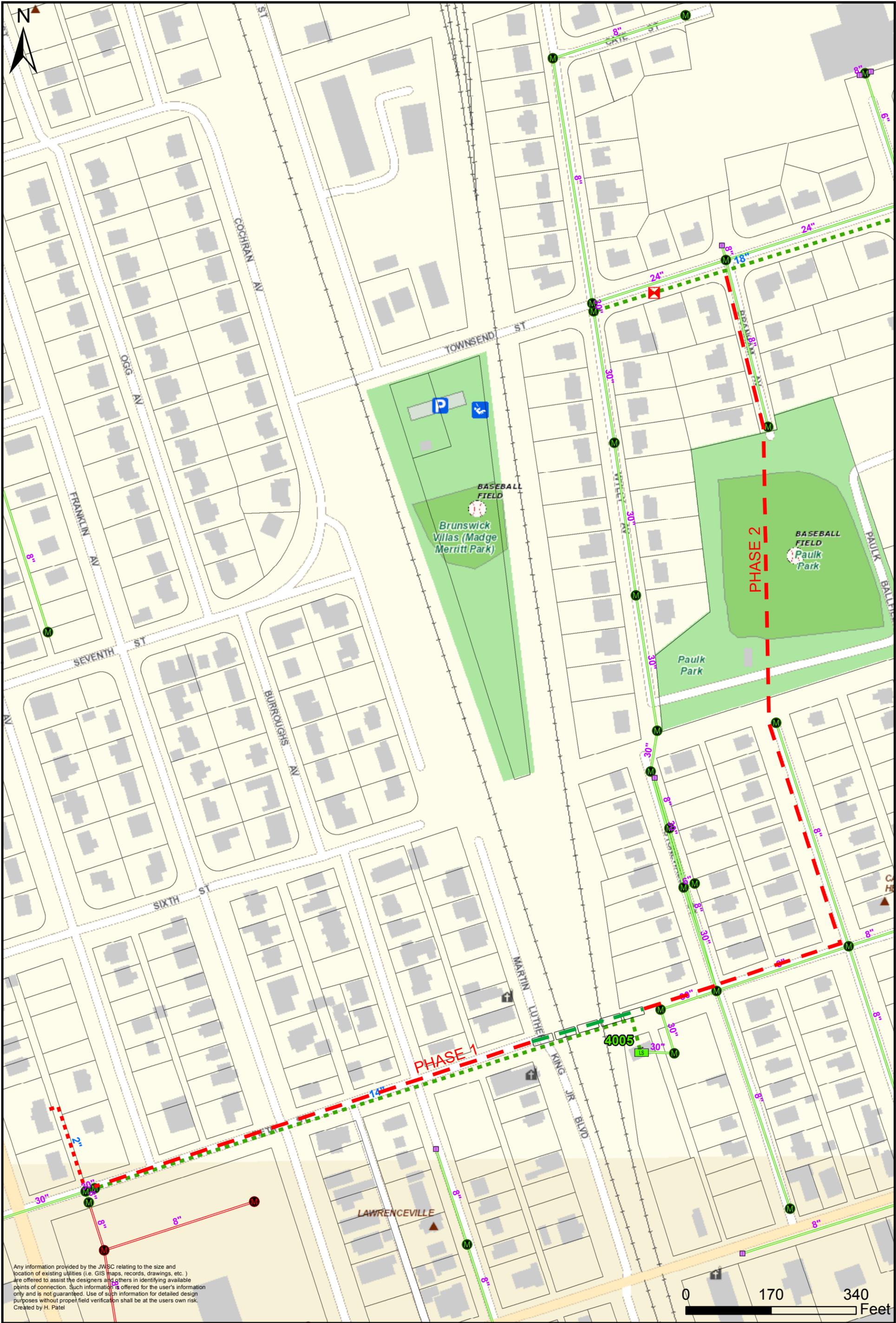


Any information provided by the JWSC relating to the size and location of existing utilities (i.e. GIS maps, records, drawings, etc.) are offered to assist the designers and others in identifying available points of connection. Such information is offered for the user's information only and is not guaranteed. Use of such information for detailed design purposes without proper field verification shall be at the users own risk. Created by H. Patel

BRUNSWICK-GLYNN JOINT WATER & SEWER COMMISSION
 1703 GLOUCESTER STREET, BRUNSWICK, GA 31520
JWSC R&R/CAPITAL PROJECTS

- CONSTRUCTION IN PROGRESS
- DESIGN IN PROGRESS





Any information provided by the JWSC relating to the size and location of existing utilities (i.e. GIS maps, records, drawings, etc.) are offered to assist the designers and others in identifying available points of connection. Such information is offered for the user's information only and is not guaranteed. Use of such information for detailed design purposes without proper field verification shall be at the users own risk. Created by H. Patel



BRUNSWICK-GLYNN JOINT WATER & SEWER COMMISSION
 1703 GLOUCESTER STREET, BRUNSWICK, GA 31520
PS4048 FORCE MAIN IMPROVEMENTS - PROJECT NO. 701

— — — — — COMPLETE
 - - - - - INCOMPLETE



