November 14, 2018

Nathan Lewis
Botek Thurlow Engineering, Inc.
3409 NW 9th Avenue, Suite 1102
Fort Lauderdale, Florida 33309

Subject: **WATER AND WASTEWATER CAPACITY AVAILABILITY LETTER**
New River Yacht Club Phase III – DRC No. R18067
416 SW 1st Avenue, Fort Lauderdale, FL 33301

Dear Mr. Lewis,

According to the information submitted, the project consists of constructing a multi-story residential building consisting of 230 units, 2400 square feet of retail, amenities, and a parking structure located north of SW 5th Street between SW 1st Avenue and South Andrews Avenue. Water and sanitary connections to City of Fort Lauderdale (City) utilities are proposed on the west side of the property along SW 1st Avenue and on the south side of the property along SW 5th Street. The project will increase water and sewer demand by approximately 0.056 million gallons per day (MGD). The existing water and wastewater infrastructure has sufficient capacity to support the proposed demand.

The Department of Sustainable Development (DSD) will review and approve such flow calculations. Furthermore, if DSD staff issues comments on the proposed flow calculations after the issuance of this capacity availability letter, the consultant shall request a revised letter with the correct approved flow calculations. The determination of capacity availability is based upon tools and data analysis as of the date of this letter. Availability of capacities, as calculated in the attached analysis, is not guaranteed and no existing system capacity shall be considered "committed" for this project until a permit has been issued and all fees have been paid. The City reserves the right to re-evaluate the availability of capacities at the time of permit application. If sufficient capacities are not available, the City may deny the permit application or ask the Owner/Developer to submit an alternate design prior to approval. Information contained in this letter will expire one year from the date issued. Should you have any questions or require any additional information, please contact me at (954) 828-6126.

Sincerely,

Thomas Lawrence, P.E.
Project Manager II

Enclosures: Water and Wastewater Capacity Analysis
cc: Nancy Gassman, Ph.D., Interim Deputy Public Works Director
Joe Kenney, P.E., Assistant Public Works Director
Talal Abi-Karam, P.E. Assistant Public Works Director
Dennis Girisgen, P.E., City Engineer
File: Water and Sewer Capacity Letters

City of Fort Lauderdale
Public Works Department
Water and Wastewater Capacity Analysis

New River Yacht Club Phase III – DRC No. R18067
416 SW 1st Avenue, Fort Lauderdale, FL 33301

PROJECT AND DESCRIPTION

Construction of a multi-story residential building consisting of 230 units, 2400 square feet of retail, amenities, and a parking structure.

DESCRIPTION OF EXISTING UTILITIES

Water: The site is currently served by a 6-inch water main along SW 1st Avenue on the west side of the property and a 4-inch water main along SW 5th Court on the south side of the property. See Figure 1.

Wastewater: The site is currently served by an 8-inch gravity sewer main along SW 1st Avenue along the west side of the property and an 8-inch gravity sewer main that runs north-to-south along an alley in between SW 1st Avenue and South Andrews Avenue. See Figure 2.

Pumping Station: The site is served by PS A-11 which is located at the southeast corner of the SW 7th Street and SW Flagler Avenue intersection.

SUMMARY OF ANALYSIS AND REQUIRED ACTION

The existing water and wastewater infrastructure has sufficient capacity to serve the project with no improvements required.

Figure 1 – City Water Atlas

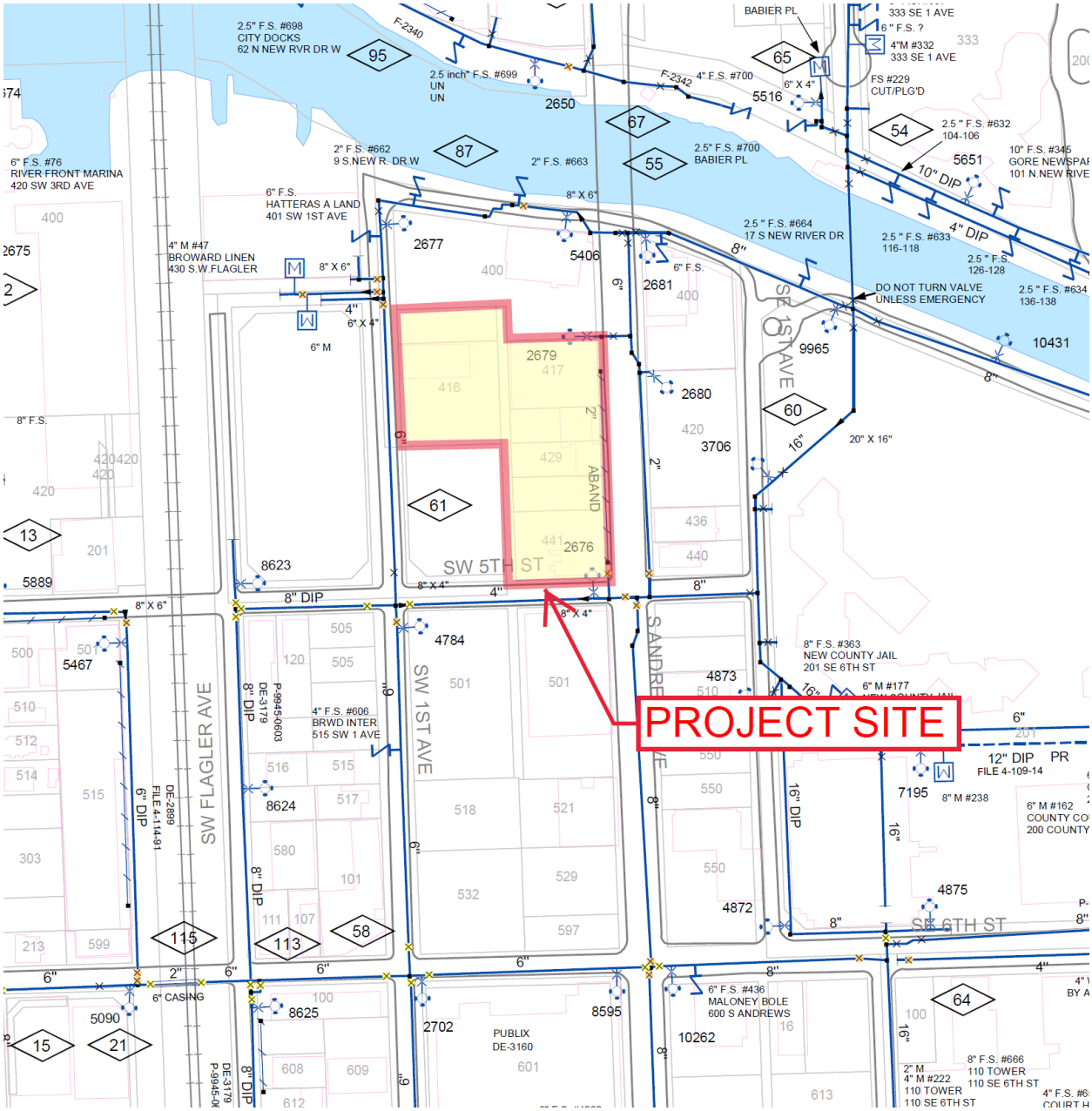
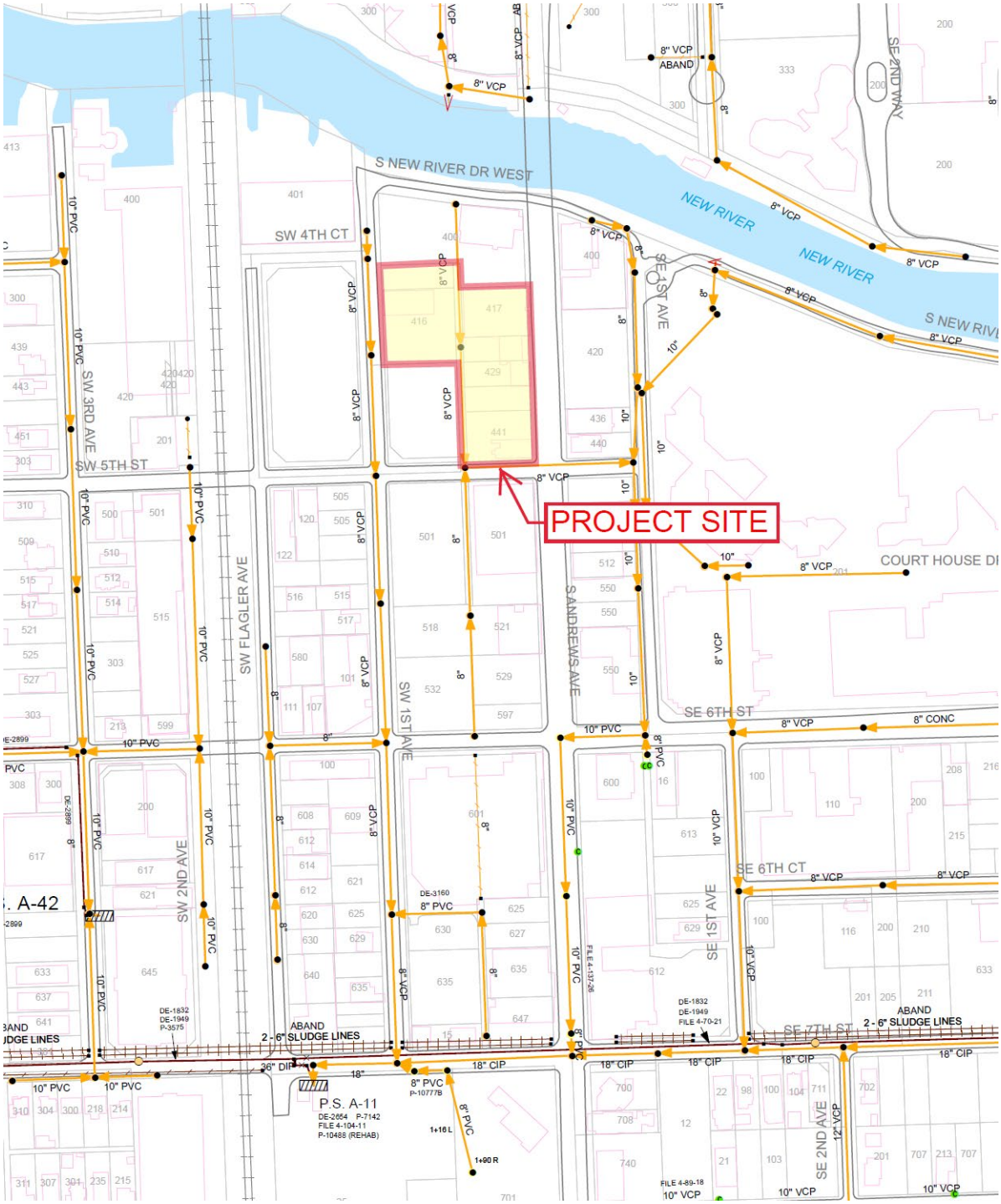


Figure 2 – City Sewer Atlas



WATER CAPACITY ANALYSIS

Requested Demand: Based on the applicant's site plan and building use information, the estimated potable water demand is 55,941 gallons per day (GPD), which equates to approximately 0.056 million gallons per day (MGD). Water use demands are calculated based on the City's "*Guidelines for the Calculations of Sanitary Sewer Connection Fees"*.

Evaluation of impact on existing distribution pipe (flow & capacity): According to the site plan the applicant is proposing to utilize the 6-inch water main along SW 1st Avenue on the west side of the property and upsizing the existing 4-inch water main along SW 5th Street to an 8-inch water main to also utilize. The InfoWater hydraulic model was analyzed to determine the impact of this project on the existing 6-inch and 4-inch water mains. The existing and proposed water mains have capacity to serve the project.

Evaluation of impact of Permitted Water Plant Capacity: The Fiveash and the Peele Dixie Water Treatment Plants are designed to treat 70 MGD and 12 MGD of raw water respectively (82 MGD total). The total permitted Biscayne aquifer water withdrawals for these plants is limited to 52.55 MGD per the South Florida Water Management District (SFWMD) permit number 06-00123-W.

The current twelve-month production at the two plants is 38.99 MGD. The previously committed demand from the development projects in the permitting or the construction stage is 3.137 MGD. Combining these figures with the demand from the proposed project of 0.056 MGD, the required production would be 42.18 MGD. This is less than the allowable withdrawal limit of 52.55 MGD. Therefore, the water plants have sufficient capacity to serve this project.

Recommended Water Infrastructure Improvements: No improvements required.

WASTEWATER CAPACITY ANALYSIS

Requested Demand: Based on the applicant's site plan and building use information the estimated additional potable water demand is 55,941 GPD, which equates to approximately 0.056 MGD (although wastewater is usually 80% of the potable water, a higher, conservative figure has been used for calculations). Sewer use demands are calculated based on the City's "*Guidelines for the Calculations of Sanitary Sewer Connection Fees"*.

Evaluation of impact on existing collection pipes: The existing site is served by an 8-inch gravity sewer main along SW 5th Street and an 8-inch gravity sewer main along SW 1st Avenue. Based on the information provided, 236 units will drain to the 8-inch sewer main along SW 5th Street and 4 of the units will drain to the 8-inch line along SW 1st Avenue.

Manual of Practice (MOP) 60, published by American Society of Civil Engineers (ASCE) for the gravity sewer design and used by the City staff, recommends that pipe diameters 15-inch or less be designed to flow half full during peak flows. Based on the tools and information available to the City staff, it has been calculated that the 8-inch diameter pipe in SW 5th Avenue will flow 41% full, less than the ASCE-recommended 50%. The 8-inch diameter pipe along SW 1st Avenue, after accounting for the 249-unit development upstream, will flow 45% full which is also less than the ASCE-recommended 50%. The existing 8-inch lines have capacity to serve the project.

Evaluation of impact on pumping station: Pump Station (PS) A-11 has a capacity of 1,045 gallons per minute (GPM) and has a Nominal Average Pumping Operating Time (NAPOT) of approximately 6.8 hours per day. Based on projected sewage flows, the run time would increase approximately 54 minutes per day for a total of 7.7 hours, less than the recommended threshold of 10 hours per day. Therefore, the pumping station has capacity to serve the project.

Evaluation of impact of Permitted Wastewater Plant Capacity: The City of Fort Lauderdale owns and operates the George T. Lohmeyer Regional Wastewater Treatment Plant (GTL), which provides wastewater treatment for the City of Fort Lauderdale. The Broward County's Environmental Protection and Growth Management Department's (EPGMD) Environmental Licensing & Building Permitting Division's licensed capacity for GTL is 48 MGD-AADF (Million Gallons per Day – Annual Average Daily Flow). The annual average daily flow (AADF) to the plant is 38.784. Combining the committed flows for previously approved projects of 3.137 MGD, plus the 0.056 MGD net contribution from the project, provides a total projected flow of 41.98 MGD. This is less than the permitted treatment plant capacity of 48 MGD. Therefore, the treatment plant has sufficient capacity to serve this project.

Recommended Wastewater Infrastructure Improvements: No improvements required.