



August 23, 2018

Julie Shearer
Flynn Engineering Services, P.A.
241 Commercial Boulevard
Lauderdale-By-The-Sea, Florida 33308

Subject: **REVISED WATER AND WASTEWATER CAPACITY AVAILABILITY LETTER**
Riverparc Square (Southside) - DRC #R17025
501 South Andrews Avenue, Fort Lauderdale, Florida 33301

Dear Ms. Shearer,

According to the site plan submitted, the project consists of constructing a building with 790 residential units, 297 hotel units, 296,991 square feet of office space and 44,634 square feet of retail space. An existing 82,934 square foot office building is to be removed from the site. The applicant is proposing to connect to existing City of Fort Lauderdale (City) water utilities along SW 1st Avenue and connect to existing sewer utilities along SW 1st Avenue and SW 5th Street. According to the calculations submitted, the project will increase water and sewer demand by 261,712 gallons per day or 0.262 million gallons per day (MGD). 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) 828-5850.

Sincerely,

Daniel Fisher, P.E.
Project Manager II

Enclosures: Water and Wastewater Capacity Analysis Determination
cc: Nancy Gassman, Ph.D., Interim Deputy 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 Determination**

Riverparc Square (Southside) - DRC #R17025
501 South Andrews Avenue, Fort Lauderdale, Florida 33301

PROJECT AND DESCRIPTION

Construction of a building with 790 residential units, 297 hotel units, 296,991 square feet of office space and 44,634 square feet of retail space. An existing 82,934 square foot office building it to be removed from the site.

DESCRIPTION OF EXISTING UTILITIES

Water: The site is currently served by a 6-inch water main along SW 1st Avenue which connects to an 8-inch water main along SW 5th Street and SW Flagler Avenue, see Figure 1.

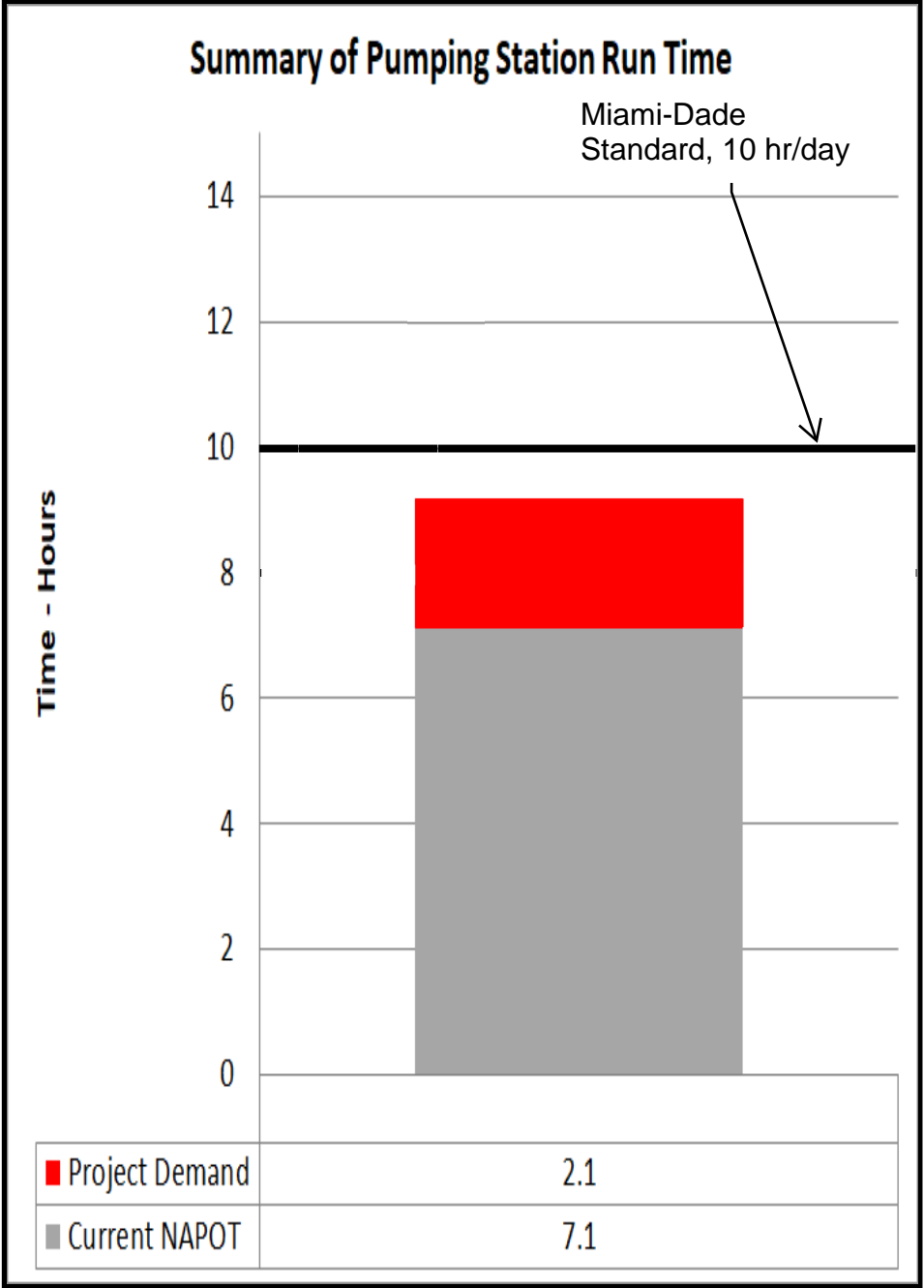
Wastewater: The site is currently served by an 8-inch gravity sewer which conveys flow downstream to an 18-inch sewer and to Pumping Station A-11(PS A-11).

Pumping Station: The site is served by PS A-11 located at 190 SW 7th Street.

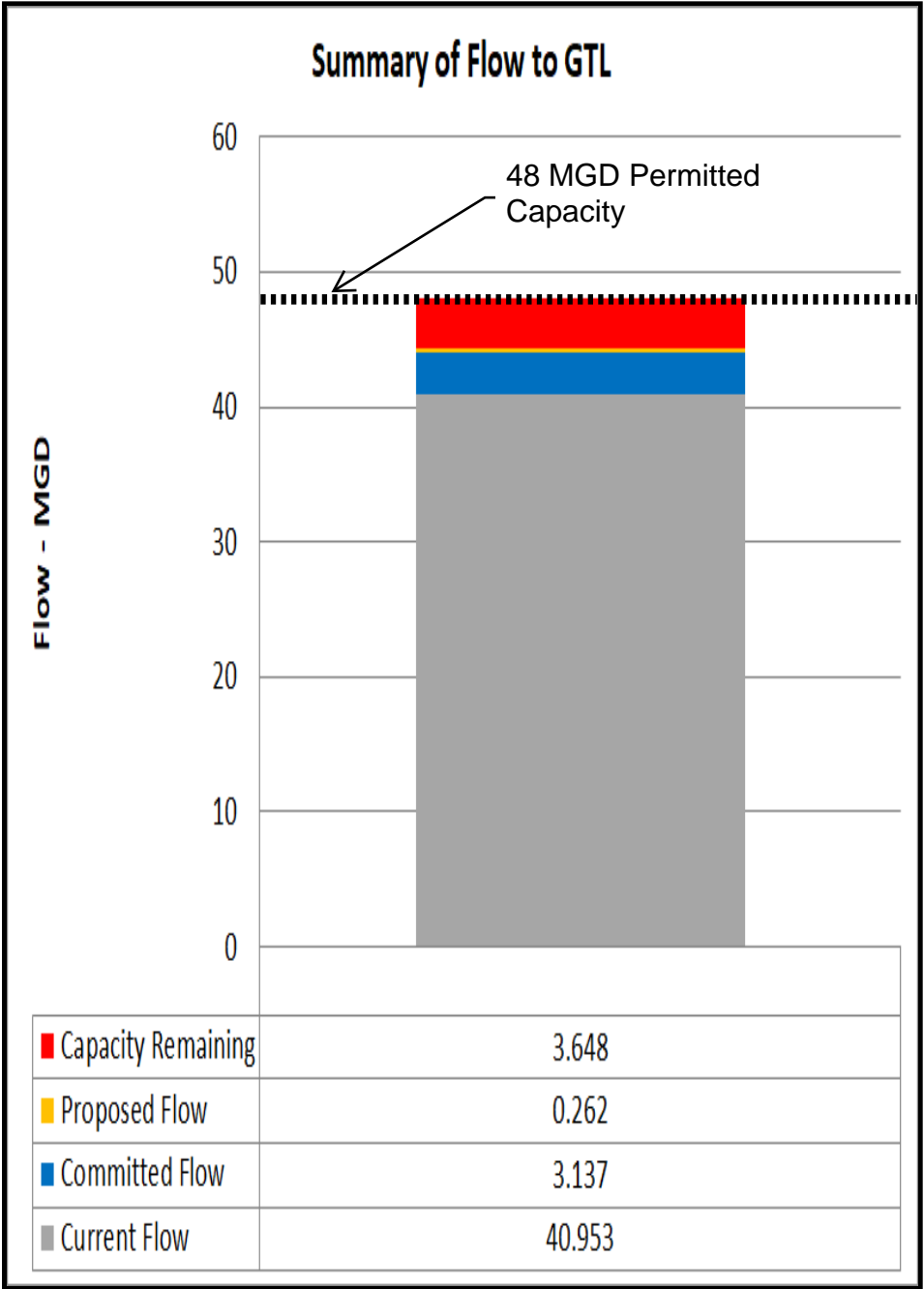
SUMMARY OF ANALYSIS AND REQUIRED ACTION

The applicant has proposed water mains improvements which will provide adequate capacity. The applicant will be required to permit, construct, own, operate and maintain a private gravity sewer system and private pumping station to collect and convey sewage. The applicant will also be required to permit and construct a forcemain and connect to the City's sewage transmission system. The applicant may propose an alternative solution to the satisfaction of the City. A memorandum of agreement (MOA) shall be required between the City and the applicant to coordinate the design requirements and construction of the improvements.

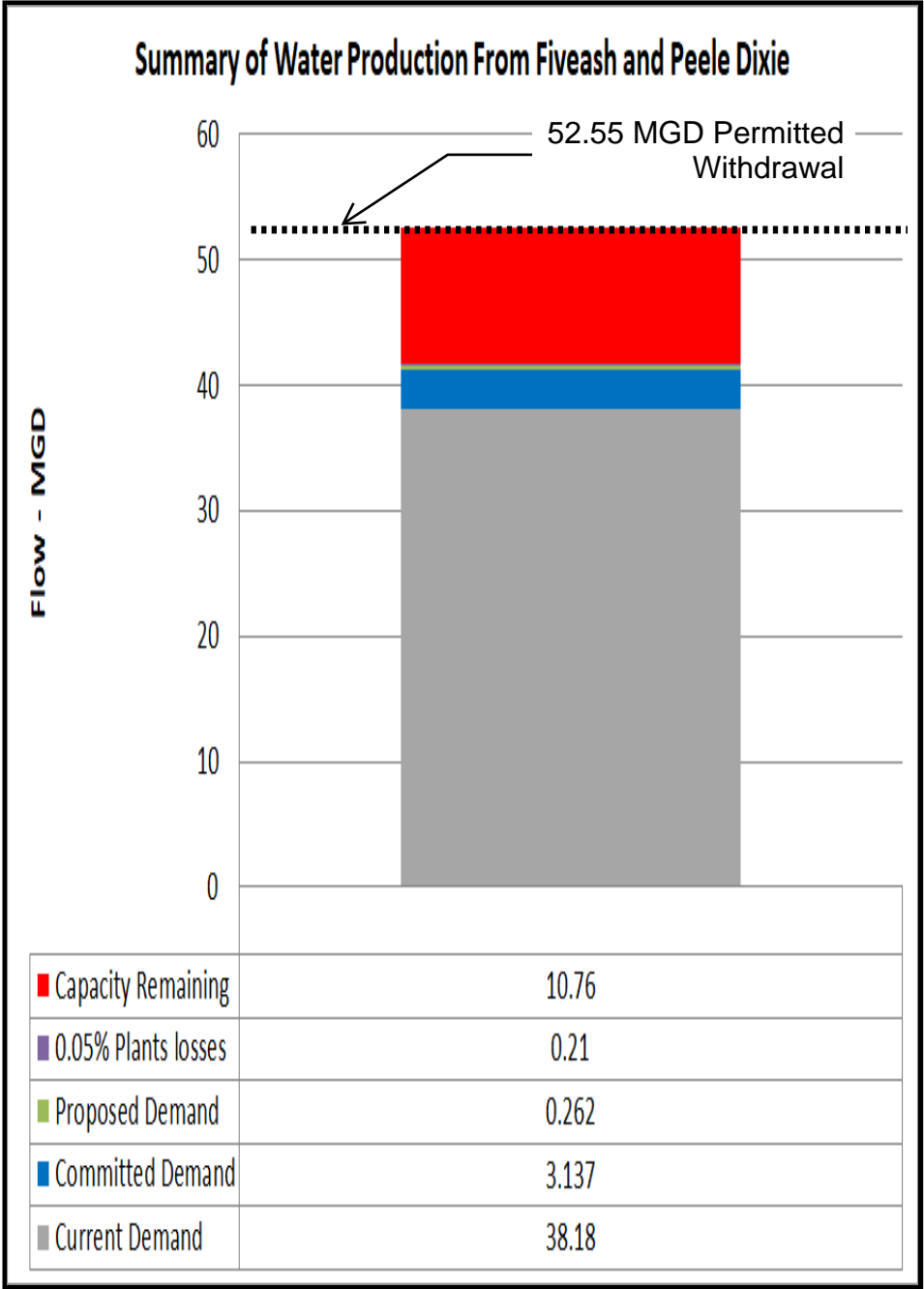
Graphical Summary of Analysis



* All units in time - Hours



* All units in Flow - MGD



* All units in Flow - MGD

Figure 1 – City Water Atlas

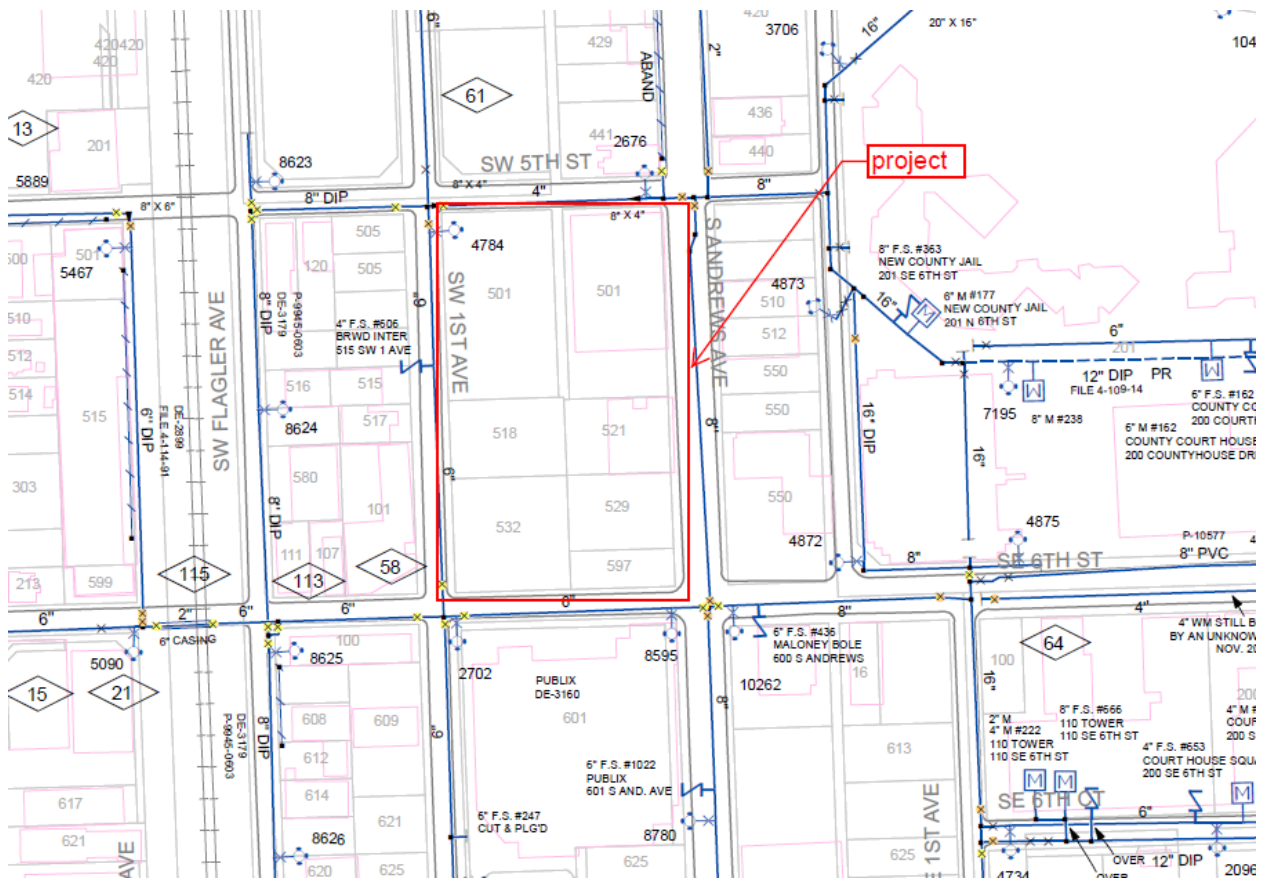
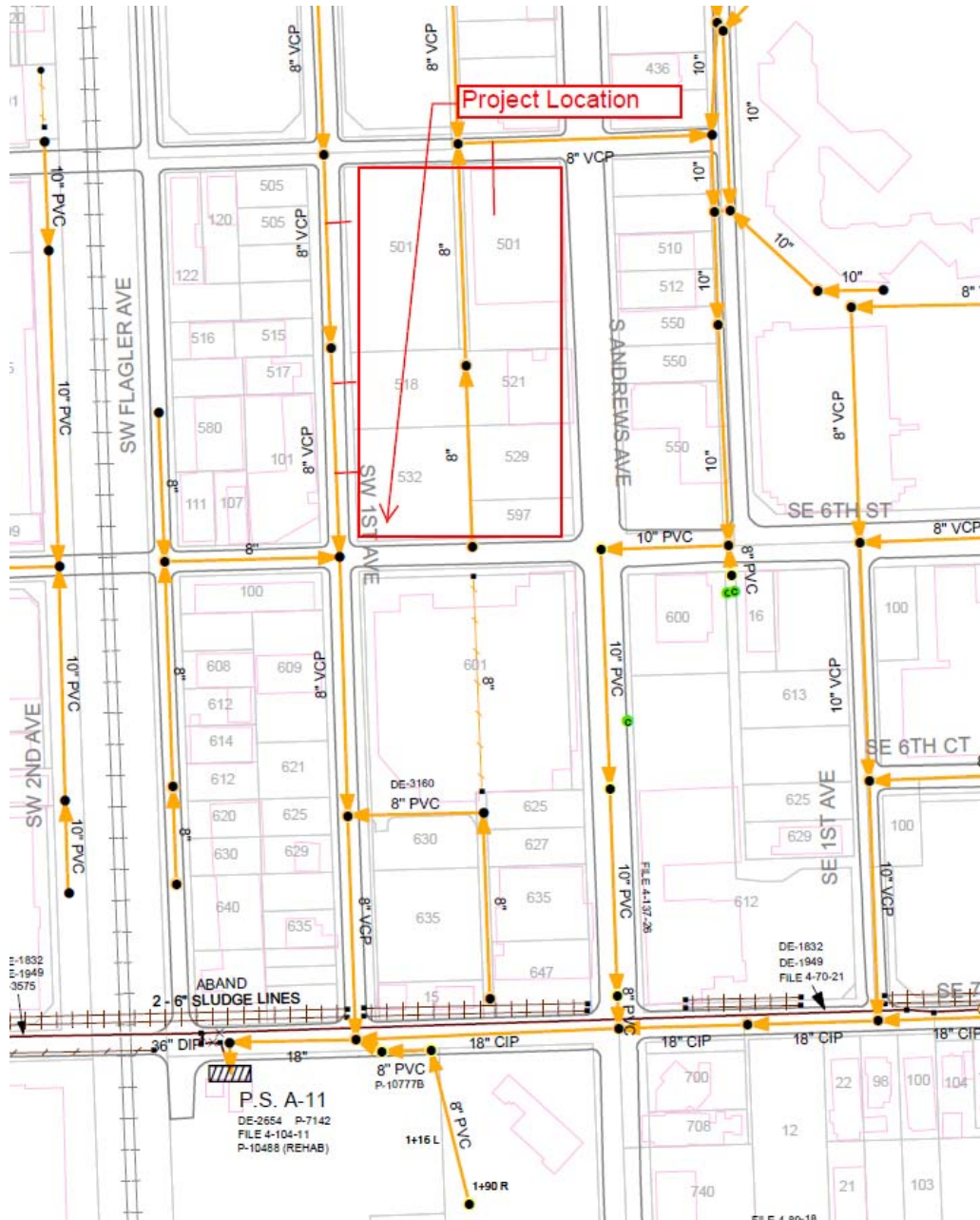


Figure 2 – City Sewer Atlas



WATER CAPACITY ANALYSIS

Requested Demand: Based on the applicant's site plan and building use information the estimated potable water demand is per day (GPD), which equates to 0.262 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 upsize the existing 6-inch water main along SW 1st Avenue and SW 6th Street to an 8-inch water main. The City hydraulic model was used to simulate the proposed improvement. The upsized water main will have adequate 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.

Based on the current 12-month rolling average the current production at the two plants is 38.18 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 0.262 MGD, the required production would be 41.58 MGD. Accounting for approximately 0.05 % loss between aquifer withdrawal and production, the total required withdrawal volume would be 41.79 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: Upsize existing 6-inch water main from SW 5th Street south along SW 1st Avenue then west along SW 6th Street to tie into existing 8-inch water main SW Flager Avenue as proposed by the applicant.

WASTEWATER CAPACITY ANALYSIS

Requested Demand: Based on the applicant's site plan and building use information the estimated additional potable water demand is 0.262 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 pipe (gravity system capacity): The existing site and adjacent buildings are served by 8-inch gravity sewers.

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 determined that the 8-inch sewer cannot convey the flow. The City has used a peak hourly flow factor of 3.0, which is higher than 2.2 as noted in the Reiss Report.

Evaluation of impact on pumping station: Pumping Station A-11 (PS A-11) has a capacity of 2,090 gallons per minute (GPM) as of June 1, 2018, has a Nominal Average Pumping Operating Time (NAPOT) of approximately 7.1 hours per day. Based on projected sewage flows the pumping run times would increase approximately 114 minutes per day for a total of 9.2 hours, which is less than Miami-Dade County's recommended daily average (NAPOT) of 10 hours per day. Therefore the pumping station has adequate 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 current annual average daily flow (AADF) to the plant is was 40.953 MGD. Combining the committed flows for previously approved projects of 3.137 MGD, plus the 0.262 MGD net contribution from the project, provides a total projected flow of 44.35 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: Permit, construct, own, operate and maintain a private gravity sewer and private pumping station. The applicant will also need to permit and construct a forcemain and tie in the City's transmission system. The applicant may propose an alternative solution to the satisfaction of the City.