



# Capacity Availability Analysis





## Capacity Availability Analysis

- When a potential development goes through the Development Review Committee (DRC) process it must exhibit that it can provide fire protection, potable water, and wastewater service once complete per the City's adequacy requirements outlined in the Unified Land Development Code.
- An analysis is performed by the City to determine if the existing water and wastewater infrastructure can provide these services.





## Capacity Availability Analysis – Proposed Demand

- The proposed demand resulting from the development is determined through Equivalent Residential Connection (ERC) calculations using ‘Table A’ from the City’s *Guidelines for the Calculation of Sanitary Sewer Connection Fees*:
  - 1 ERC = 300 **maximum** gallons per day (GPD) of water demand
  - 1 ERC = 175 **average** GPD of sewer demand
  - Credits for existing uses are also calculated resulting in a net demand



Table A

<b>TYPE OF USE</b>	<b>UNIT OF MEASURE</b>	<b>ERC per UNIT</b>	<b>REF. CODE</b>
Equivalent Residential Connection	----	1.000	----
Single Family House, Duplex, Triplex	each	1.000	R01
Condominium, Apartment	each	0.805	R03
Mobile Home	lot	0.559	R04
Vehicular Repair	1000 SF	0.473	C01
Gas Station (fueling only )	fuel pump	0.550	C02
Laundry and/or Dry Cleaning (staff operated machines)	1000 SF	2.773	C03
Laundry (coin operated machines)	1000 SF	8.659	C04
Merchandising	1000 SF	0.550	C05
Warehouse (mixed use)	1000 SF	0.368	C06
Warehouse (homogenous, bulk storage use)	1000 SF	0.177	C07
Self Service Storage	1000 SF	0.068	C08
Restaurant	1000 SF	2.495	C09
Fast Food Service	1000 SF	3.455	C10
Bar, Cocktail Lounge	1000 SF	1.236	C11
Office	1000 SF	0.636	C12
Day Child Care	1000 SF	0.632	C13
Place of Worship	1000 SF	0.523	C14
School	student	0.042	C15
Hotel (with restaurant and/or meeting rooms)	rental room	0.868	C16
Hotel (without restaurant and meeting rooms)	rental room	0.255	C17
Movie Theater	seat	0.009	C18

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# Capacity Availability Analysis – Water/Sewer

## Transmission/distribution networks

- The networks between the connection points at the development to the treatment plants are evaluated to ensure there is enough capacity to handle the proposed and existing demand.
- This includes water mains, gravity sewer mains, wastewater pumping stations, force mains, etc.
- The age/condition of the pipe at the point of connection is also reviewed.

## Treatment Plants

- Proposed demand, previously committed demand, and current demand are reviewed to determine capacity availability at water and wastewater treatment plants.



## Capacity Availability Analysis - Recommended Improvements

- If the existing water and wastewater infrastructure is deemed to lack capacity or beyond its useful life then improvements are recommended.
- Examples include:
  - Upsizing of gravity sewer mains or water mains
  - Rehabilitation or improvement of pump station
  - Replacement of pipe





# Capacity Availability Analysis - Recommended Improvements

Subject: **WATER AND WASTEWATER CAPACITY AVAILABILITY LETTER**  
**Tarpon Lofts – DRC Case No. R19034**  
**400 SE 9<sup>th</sup> Court, Fort Lauderdale, Florida 33316**

Dear Mr. Celenski,

According to the information submitted, the project consists of a 6-story 9-unit residential building. There are proposed water and sewer connections to City of Fort Lauderdale (City) utilities along SE 9<sup>th</sup> Court. This project lies within the City's Pump Station (PS) A-11 basin and will increase the average day water demand by approximately 0.002 million gallons per day (MGD) and the average day sewer demand by approximately 0.001 MGD. PS A-16 currently discharges into the gravity system upstream of PS A-11 and the proposed development. The following is one of the City's major initiatives near the proposed development:

Project #12412 – Pump Station A-16 Upgrade and Force Main Replacement  
Estimated Design Completion: February 2020  
Estimated Construction Completion: July 2021

We believe that once this project is complete there will be sufficient capacity in the sanitary sewer system to accommodate the proposed development. Further, with the understanding that the proposed development would not seek a Certificate of Occupancy prior to July 2021, we are confident that the described infrastructure improvement will be complete and PS A-11 will be able to accommodate the proposed project's calculated demands.

Additionally, the gravity sewer main is approximately 50 years old and is of a vitrified clay material. Due to the material and the age of the pipe, it can be reasonably estimated that the pipe is in poor condition. We recommend replacement of approximately 360 linear feet of gravity sewer main along SE 9<sup>th</sup> Court with a polyvinyl chloride (PVC) pipe.

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# Capacity Availability Analysis – Recommended Improvements

**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 35.942 MGD. Combining the committed flows for previously approved projects of 4.593 MGD plus the 0.115 MGD net contribution from the project results in a total projected flow of 40.65 MGD. This is less than the permitted treatment plant capacity of 48 MGD. Therefore, the treatment plant has sufficient capacity to serve this project. See Figure 6 below.

**Recommended Wastewater Infrastructure Improvements:** Approximately 1,270 linear feet (LF) of 10-inch sewer along NW 7<sup>th</sup> Terrace needs to be upsized to at least a 12-inch sewer, 440 LF of 12-inch sewer along NW 4<sup>th</sup> Street needs to be upsized to at least a 14-inch sewer, and 40 LF of 12-inch sewer immediately upstream of PS A-36 needs to be upsized to at least a 16-inch sewer. Additionally, improvements to PS A-36 are needed to prevent excessive runtimes.

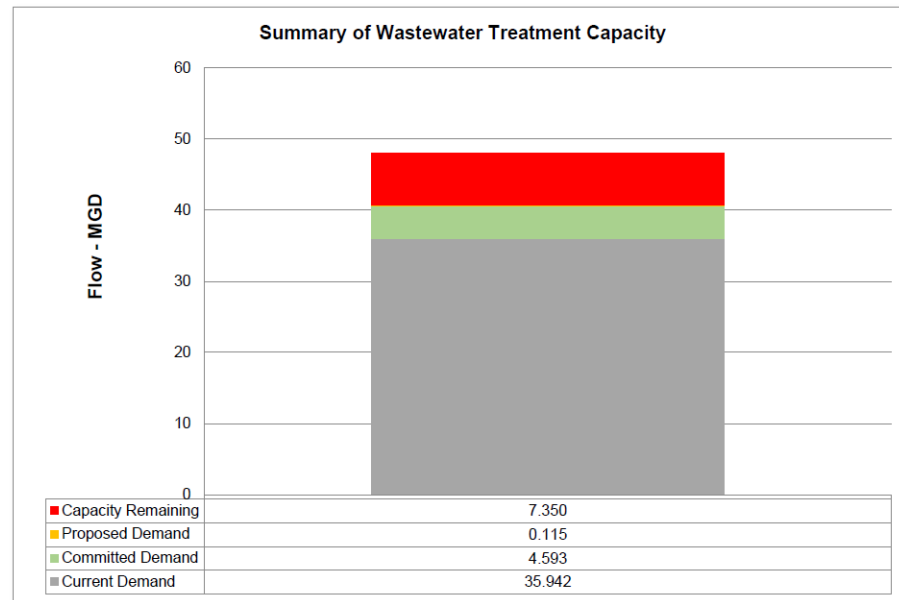


Figure 6

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# Capacity Availability Analysis – Recommended Improvements



## WATER CAPACITY ANALYSIS

**Requested Demand:** Based on the applicant's site plan and building use information, the estimated potable water demand will increase approximately 28,442 gallons per day (GPD) which equates to 0.028 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 existing water mains and existing service connections along SE 17<sup>th</sup> Street to the south of the property. The InfoWater hydraulic model was analyzed to determine the impact of this project on the local distribution network and the results showed that the existing network could handle the proposed flow. However, after discussing the development and proposed service connections with City Utilities staff, various improvements to the local distribution network are recommended to accommodate the desired service connections. These improvements would replace aging CIP water mains, improve redundancy of the network, and improve constructability of proposed services (meters, fire service lines, etc.). The specifics of these improvements are described below.

**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 rolling average production at the two plants is 39.57 MGD. The previously committed demand from the development projects in the permitting or the construction stage is 4.402 MGD. Combining these figures with the demand from the proposed project of 0.028 MGD, the required production would be 44.00 MGD. This is less than the allowable withdrawal limit of 52.55 MGD. Therefore, the water plants have sufficient capacity to serve this project. See Figure 5 on the next page.

**Recommended Water Infrastructure Improvements:** The 16-inch CIP water main on the south side of SE 17<sup>th</sup> Street should be replaced with DIP from the connection with the 24-inch main and should be extended to connect to the 12-inch CIP main to the east replacing roughly 620 LF of aging CIP and installing a total of 1200 LF of DIP. Additionally, the 180 LF 8-inch service main on the west side of the site should be upsized to a 16-inch main and the 10-inch service main on the east side of the site should be disconnected from the 12-inch CIP main and reconnected to the proposed 16-inch DIP main.

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