Hazen and Sawyer
999 Ponce de Leon Blvd, Suite 1150
Coral Gables, FL 33026 • 305.443.4001

October 2, 2024

Cristina Ortega Castineiras, PE, ENV SP
City Engineer
City of Miami Beach Public Works
1700 Convention Center Drive
Miami Beach, Florida, 33139

Re: Ordinance 2024-4582 – Process for Future Increases in Floor-to-Area Ratio (FAR)
Water and Sewer Impact Analysis – Revision 1
1250 West Avenue

Dear Ms. Ortega Castineiras:

Hazen and Sawyer has reviewed the documents provided by the City of Miami Beach (City) for 1250 West Ave, these are included in **Appendix A**. A preliminary analysis was performed on the impacts of the additional demands on the City's water and sewer system due to the potential increase in Floor-to-Area Ratio (FAR) from 1250 West Ave. This preliminary analysis is based on the information provided in **Appendix A**. Should there be any changes to the information provided, this preliminary hydraulic analysis will need to be updated/redone. A figure showing the location and extent of the area is included in **Appendix B**.

The results of this preliminary analysis indicate the following:

- The potential increase in FAR could be supported by the City's water infrastructure system.
- The potential increase in FAR may require improvements to the City's wastewater infrastructure system.
    - Review of hydraulic sewer model results from previously completed developer requests (no new sewer modeling was performed as part of this analysis) indicates that the existing downstream gravity main interceptor along Alton Road and continuing along 11th Street (from SWR_MNH_19111 to SWR_MNH_18031) that will serve 1250 West Avenue at present has capacity issues. The potential increase in FAR from 1250 West Ave could lead to further capacity issues in this gravity main segment, depending on when the development connects to the City's sewer system and other factors. A more detailed sewer analysis will be needed to determine the precise impact on the downstream gravity system.

Please refer to **Appendix C** for details on this preliminary water and sewer analysis. A future complete water and sewer hydraulic analysis, once details of the development are defined and finalized, will indicate any specific improvements that may be needed to the City's sewer system. The gravity sewer capacity considering the increase in sewer demands from 1250 West Ave was not analyzed as part of this effort; only previous modeling results in this area were reviewed.

49000-020

A future complete water and sewer hydraulic analysis may conclude that the water and sewer infrastructure serving said development will require upgrades due to age and/or capacity issues, regardless of the conclusions reached in this FAR water and sewer impact analysis.

This analysis is preliminary and it is not intended for permitting or construction. A complete water and sewer hydraulic analysis will be required when the final design of the proposed development is complete and ready for permitting.

The assumptions made for connection to adjacent infrastructure are general and do not indicate approval to connect to specific main lines. Additional coordination with the City and other governing entities with jurisdiction are required once an agreement for water and sewer has been requested by the developer.

The City receives potable water from Miami-Dade County through four (4) interconnects that traverse four (4) main causeways to Miami Beach and one interconnect along Byron Avenue at the northern end of the transmission system. The City transmits sewer flows to Miami-Dade County for treatment via a force main that travels under Government Cut. The City's redevelopment and population growth is ultimately limited by the County's ability to provide potable water to the City and by the County's capacity to treat sewer flows received from the City.

Very truly yours,

Beth A Waters, PE
Senior Associate

Enclosure

Appendix A – Reference Documents

THOMAS ENGINEERING GROUP

THOMAS ENGINEERING GROUP
6300 NW 31ST AVENUE
FORT LAUDERDALE, FL 33309
P: 954-202-7000
F: 954-202-7070

September 13, 2024

Aaron Osborne
Miami Beach Public Works Department
Engineering Division
1700 Convention Center Drive
Miami Beach, FL 33139

RE: 1250 West Avenue
Folio Number 02-3233-048-0001
Multifamily and Commercial Development
Demand Flow Letter for Hydraulic Analysis

Dear Mr. Osborne,

The owner of the property at the address 1250 West Avenue is proposing the construction of a mixed-use development consisting of 100 apartment units and 9,598 SF of retail/commercial space. The developer would like to request a hydraulic analysis to be performed for the proposed water and sewer connections for the development. The demand calculations are provided below:

i. Commercial Water Demand:

Retail/Commercial = 9,598 SF @ 10 gpd/100 SF =	960 gpd
Total Commercial Demand =	**960 gpd**

ii. Residential Water Demand:

Apartment Units = 100 units @ 135 gpd/unit =	13,500 gpd
Total Residential Demand =	**13,500 gpd**

iii. Fire Flow Demand:

Per NFPA 18.4.4.2, the square footage of the three (3) largest floors can be utilized for construction type I-B (II(222))
Fire Flow Building Area (Floors 1, 2, 3) = 73,903 SF
Minimum Required Fire Flow per Table 18.4.5.2.1: 3,000 gpm for 3 hours

NFPA 18.4.5.3.2 states that the required fire flow can be reduced by 75% if the building has automatic sprinkler with a minimum required flow of 1,000 gpm

3,000 gpm X (100%-75%) = 750 gpm → 1,000 gpm minimum
Fire flow demand = 1,000 gpm for 3 hours

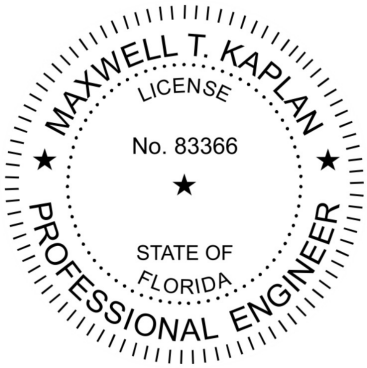
iv. Irrigation Demand

½" over Irrigated Area per day per IFAS recommendations

½" x 19,051 square feet (open space) = 793.79 cubic feet x 7.48 gallons/cubic foot = 5,938 gallons per day
Total Irrigation Demand = 5,938 gpd

Should you have any questions, please do not hesitate to contact me at 954-202-7000 or mkaplan@thomaseg.com. Thank you for your time and kind consideration with regards to this matter.

Sincerely,



9/13/2024

Maxwell Kaplan, P.E.
Florida Professional Engineer License No. 83366
Florida Business Certification of Authorization No. 27528

This item has been digitally signed and sealed by Maxwell T. Kaplan on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Appendix B – Location Map


1250 West Ave
1250 West Ave
Legend
1250 West Ave
Water Main
Sewer Gravity Main
Sewer Manhole
PS Sewer Pump Station
0 80 160 320 Feet
N
Pump Station 01
PS
14th St
13th St
10th St
Meridian Ave
Michigan Ave
Jefferson Ave
FLAMINGO PARK
MIAMIBEACH

Appendix C – Analysis Details

This evaluation was based on the following:

- Miami-Dade County – Pump Station Capacity Estimator (https://www.miamidade.gov/APPS/RER/PumpStationCapacityEstimator/)
- InfoWater hydraulic water model developed and calibrated by Hazen under a previous task order, as described in *City of Miami Beach Water System Master Plan* (Hazen, 2019)
- The City's hydraulic water model flows from the following proposed developments:
  - 500 and 600 Alton Road
  - Symphony Park Hotel (1685 Washington Avenue)
  - 6985 and 6988 Abbott Avenue
  - 72nd and Park (7125, 7135 and 7145 Carlyle Avenue; 7118, 7134 and 7144 Byron Avenue)
  - Collins Park Artist Workforce Housing (224 23rd Street)
  - 3900 and 4000 Alton
  - 6747 Collins Avenue
  - 7140 Abbott Avenue
  - Convention Center Hotel
  - 1901 Shore Club
  - Citizen M Hotel
  - Town Center Gateway

  A concurrent FAR analysis was conducted for the 6701 Collins Avenue development and those demands are included in this analysis.

The scenarios described below were analyzed to assess the impacts of the 1250 West Ave development on the sewer distribution.

Pump Station Capacity Estimation

- The development's impact on the receiving pump station's runtime was analyzed using the Miami-Dade County – Pump Station Capacity Estimator online tool in which the sewer flows from the proposed development were input and the expected proposed pump station runtime was provided.

The scenarios described below were modeled to assess the impacts of the 1250 West Ave development on the water distribution.

Fire Flow at Maximum Day Demand 2045 with Proposed Master Plan Improvements

- Fire flow scenario was simulated for all hydrants in the distribution system with concurrent maximum day demand for 2045 and the proposed demand for the new development. The fire flow simulations were run with (a) low WASD pressure (50 psi) with booster pump stations in

operation and (b) with high WASD pressure (65 psi) and no booster pumps in operation. Maximum available fire flow from both these scenarios was considered and compared against the needed fire flow based on land use.

- The fire flows were analyzed with the hydraulic improvements proposed in the City of Miami Beach Water System Master Plan (2019) to verify that the available fire flow at the hydrants is adequate with the new development.
- Maximum day demand peaking factor of 1.27 was used for this analysis.

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Calculations are based on the criteria stipulated in Section 24-42.3, Miami-Dade Code, and Federal Consent Decree (Case: No. 1:12-cv-24400-FAM)

Please be aware that the information obtained with this Application is for general information only, and it is only correct as of the time and date in which the search was executed. Consequently, the information obtained with this application DOES NOT CONSTITUTE AN OFFICIAL DEPARTMENTAL DETERMINATION or APPROVAL for your project. For any additional information about the **Pump Station Capacity Estimator** application, please refer to the Application Guidelines or contact the **RER–DERM Wastewater Permitting Section** at 305-372-6600 or via email at PSO@miamidade.gov

* Required fields

Search Criteria	
Sanitary Sewer Utility *	02 - CITY OF MIAMI BEACH
Pump Station Number *	0001
Proposed Projected Flow (GPD) *	14460 GPD *(Only numbers are allowed)*
Project will require, or is part of, a Sewer Extension *	No
Submit Clear	

Pump Station Capacity Estimator Result
→ UNCONDITIONAL ALLOCATION ALLOWED ←

Search Criteria Detailed Result	
Sanitary Sewer Utility	02 - CITY OF MIAMI BEACH
Pump Station Number	0001
Proposed Projected Flow (GPD)	14,460 GPD
Project will require, or is part of, a Sewer Extension	No

Pump Station Downstream	Pump Station Owner	Pump Station Number	Moratorium Code	Projected NAPOT	Proposed Hrs (Δt)	Proposed Projected Hrs
Receiving PS	02	0001	OK	2.34	0.02	2.36
↓	30	CD	--	--	--	--

Treatment Plant Codes

CD	Central District Treatment Plant
ND	North District Treatment Plant
SD	South District Treatment Plant
TP	Homestead Treatment Plant
AV	Americana Village

Pump Station Acronyms

GDP	Gallons Per Day
HAMA	High Annual Monthly Average
NAPOT	Nominal Avg. Pump Operating Time
MART	Monthly Average Run Time

Moratorium Codes

AC	Approved And Corrected
AH	Approved And Corrected - HAMA Limited
AM	Absolute Moratorium - NAPOT Above 10. Plan Submitted
CH	Conditional Moratorium - HAMA Limited
CM	Conditional Moratorium
CN	Conditional Moratorium - New Collection System
DE	Decommissioned - Removed
FH	No Allocations - Last Mart > 10 Hrs. HAMA Limited
FN	No Allocations - Last Mart > 10 Hrs.
IM	Initial Moratorium
IN	Incomplete - Information Missing
OH	OK - HAMA Limited
OK	OK
RM	Restricted Moratorium
TH	No Allocations - Due To High Hours With HAMA
TM	Temporary Moratorium

For Additional Moratorium Code Details Select this Link