



August 10, 2018

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

Subject: **WATER AND WASTEWATER CAPACITY AVAILABILITY LETTER**  
**527 Orton Avenue, DRC#R18004**  
**527 Orton Avenue, Fort Lauderdale, Florida 33304**

Dear Mr. Isaac,

According to the site plan submitted, the project consists of constructing an 18 unit condominium; an existing 3 unit condominium is to be demolished. The site plan shows the project utilizing existing water connections to City of Fort Lauderdale (City) utilities along Orton Avenue. The applicant is proposing a sewer connection to an existing City sewer along Orton Avenue. According to the calculations submitted, the project will increase water and sewer demand by 0.004 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 calculation.

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: 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

**PUBLIC WORKS DEPARTMENT**

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

**527 Orton Avenue, DRC#R18004**  
**527 Orton Avenue, Fort Lauderdale, Florida 33304**

**PROJECT AND DESCRIPTION**

Constructing an 18 unit condominium; an existing 3 unit condominium is to be demolished.

**DESCRIPTION OF EXISTING UTILITIES**

**Water:** The site is currently served by a 6-inch water main along Orton Avenue which connects to 8-inch water mains along Vistamar Street and Riomar Street. See Figure 1.

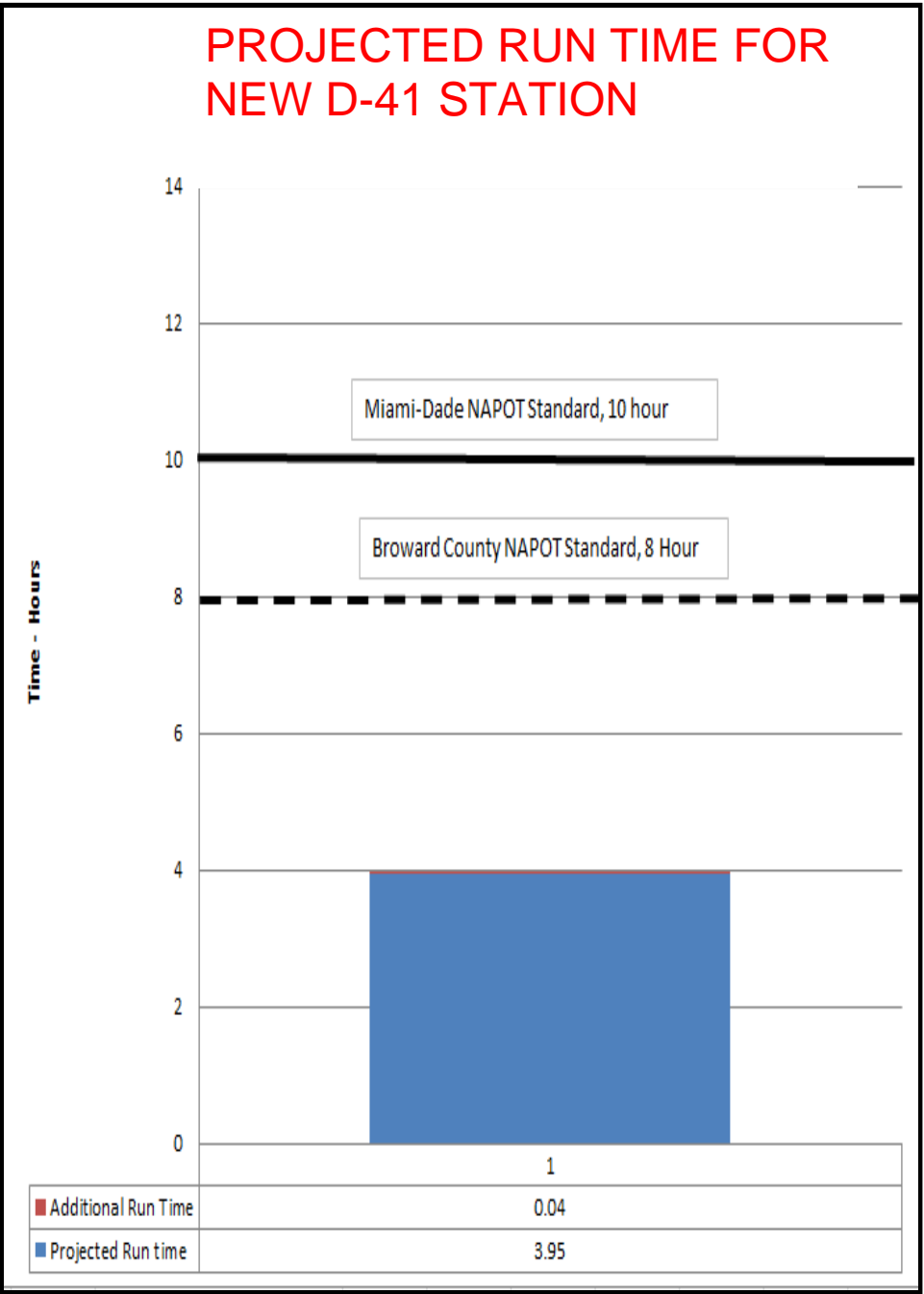
**Wastewater:** The site is currently served by a 10-inch gravity sewer main which conveys flow downstream to a 10-inch sewer on Riomar and to pumping station D-41. See Figure 2. A new 10-inch and 12-inch gravity sewers are to be installed to route flow to the new pumping station D-41 under City Project 12124.

**Pumping Station:** The site is served by Pumping Station D-41 (PS D-41) located near the intersection of North Birch Road and Riomar Street. A new pumping station is being constructed under City Project 12124 to replace the existing D-41; the new station will be located at the intersection of Riomar Street and Bayshore Drive.

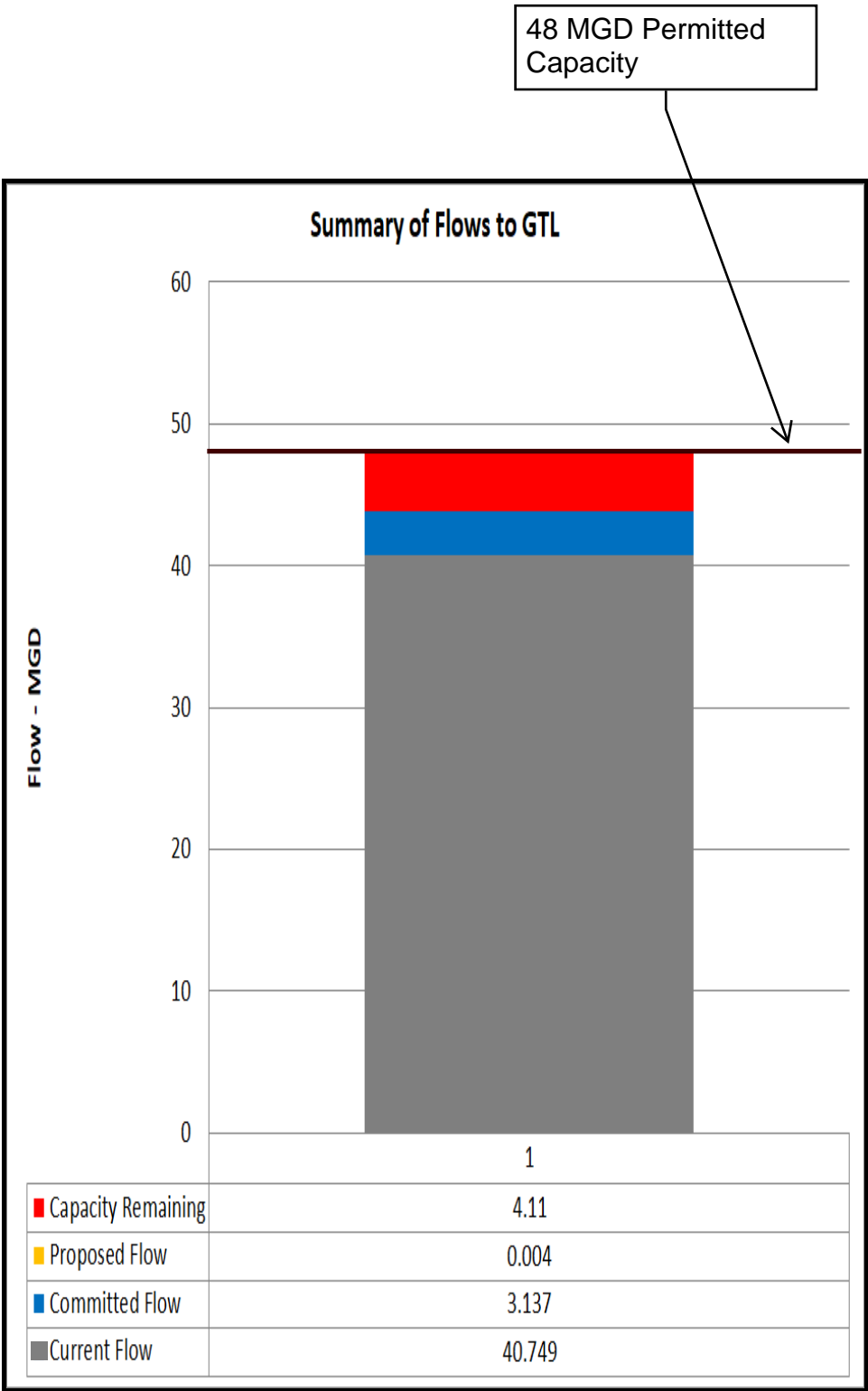
**SUMMARY OF ANALYSIS AND REQUIRED ACTION**

Existing water infrastructure has sufficient capacity to serve the project with no improvements required. PS D-41 is being replaced under City Project 12125 and expected to be completed and placed into service by the end of August 2018. As Project 12124 will be completed prior to completion of the proposed project, the sewer system will have capacity to serve the project.

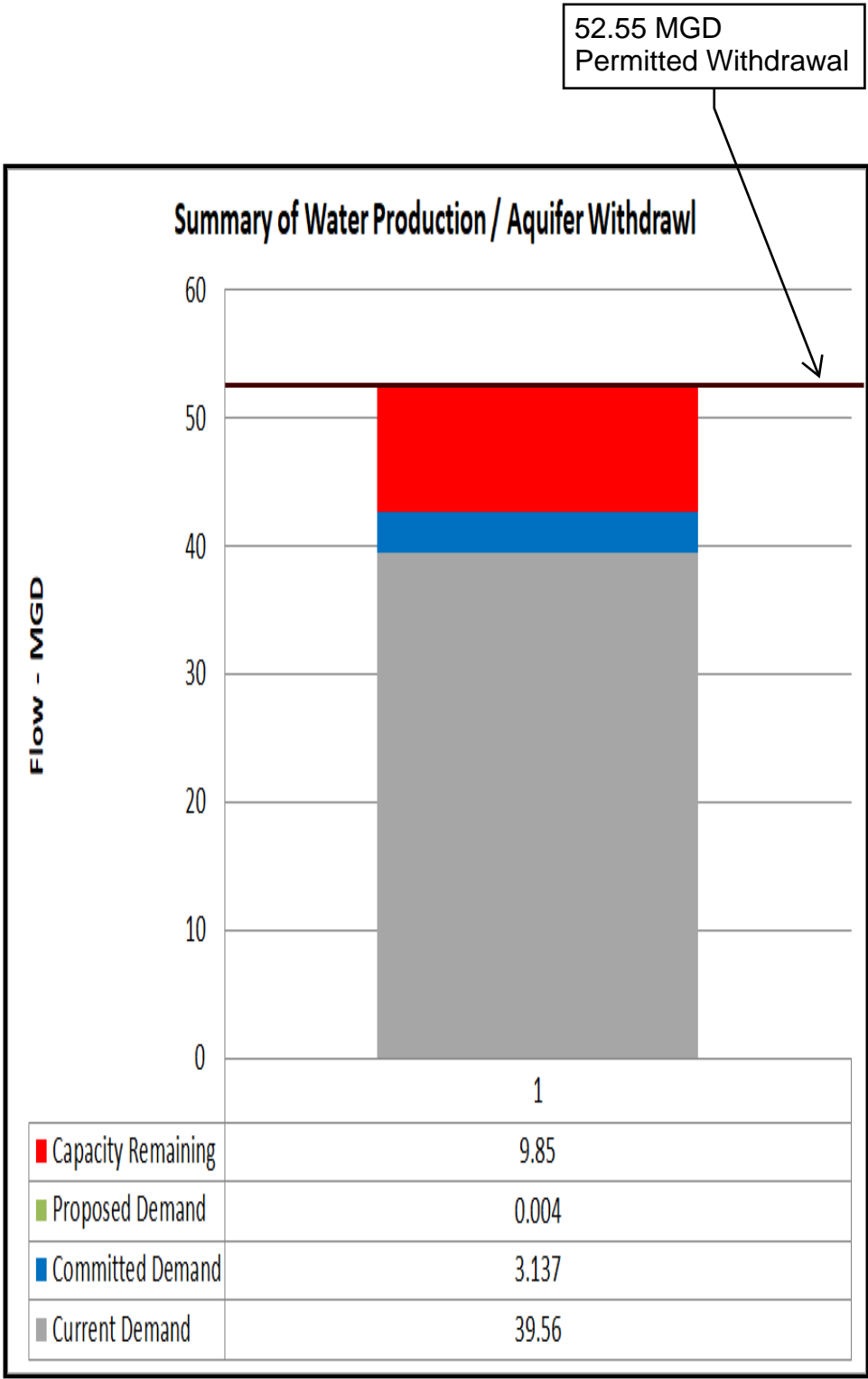
# Graphical Summary of Analysis



\* All units in time - Hours



\* All units in Flow - MGD



\* All units in Flow - MGD

The map displays a grid of streets in a residential area. Key streets include Vistamar St, Orton Ave, Breakers Ave, Antioch Ave, and Bayshore Dr. A red rectangle labeled "Site" is located on Orton Ave, between Antioch Ave and Breakers Ave. The map shows various property numbers, street names, and street layouts, including intersections and street names like Bayshore Dr, Mar St, and Capri Dr. The map also shows various street layouts, including intersections and street names like Bayshore Dr, Mar St, and Capri Dr.

The map displays a sanitary sewer system with several key features:

- Proposed New Infrastructure:**
  - New 10-inch, redirect flow to new station:** Indicated by a red line and arrow pointing from the existing 10" VCP line to the new pumping station.
  - New 12-inch:** Indicated by a red line and arrow pointing to a new 12" VCP line.
  - New Pumping Station:** A red rectangle located near the intersection of the new 12" VCP line and the existing 18" DIP line.
  - New 18-inch DIP:** A new line running parallel to the existing 18" DIP line, indicated by a red line and arrow.
- Existing Infrastructure:**
  - 10" VCP:** Vertical Clay Pipe.
  - 8" VCP:** Vertical Clay Pipe.
  - 18" DIP:** Ductile Iron Pipe.
  - 12" FM ABAND:** 12-inch Fire Main, Abandoned.
  - 18" DIP:** Existing Ductile Iron Pipe.
- Property and Landmarks:**
  - MIRABELLA TOWNHOMES:** Located on the right side of the map, with File 4-129-56.
  - P.S. D-41:** Existing Pumping Station, located near the intersection of the new 12" VCP line and the existing 18" DIP line.
  - Lot Numbers:** Various lot numbers are shown, including 550, 533, 528, 508, 505, 501, 519, 520, 524, 527, 539, 543, 545, 548, 555, 561, 563, 537, 529, 524, 538, 525, 2900, 2901, 3000, 3003, 3016, 3041, 3043, 3055, 3061, 3063, 3065, 3067, 3069, 3071, 3073, 3075, 3077, 3079, 3081, 3083, 3085, 3087, 3089, 3091, 3093, 3095, 3097, 3099, 3101, 3103, 3105, 3107, 3109, 3111, 3113, 3115, 3117, 3119, 3121, 3123, 3125, 3127, 3129, 3131, 3133, 3135, 3137, 3139, 3141, 3143, 3145, 3147, 3149, 3151, 3153, 3155, 3157, 3159, 3161, 3163, 3165, 3167, 3169, 3171, 3173, 3175, 3177, 3179, 3181, 3183, 3185, 3187, 3189, 3191, 3193, 3195, 3197, 3199, 3201, 3203, 3205, 3207, 3209, 3211, 3213, 3215, 3217, 3219, 3221, 3223, 3225, 3227, 3229, 3231, 3233, 3235, 3237, 3239, 3241, 3243, 3245, 3247, 3249, 3251, 3253, 3255, 3257, 3259, 3261, 3263, 3265, 3267, 3269, 3271, 3273, 3275, 3277, 3279, 3281, 3283, 3285, 3287, 3289, 3291, 3293, 3295, 3297, 3299, 3301, 3303, 3305, 3307, 3309, 3311, 3313, 3315, 3317, 3319, 3321, 3323, 3325, 3327, 3329, 3331, 3333, 3335, 3337, 3339, 3341, 3343, 3345, 3347, 3349, 3351, 3353, 3355, 3357, 3359, 3361, 3363, 3365, 3367, 3369, 3371, 3373, 3375, 3377, 3379, 3381, 3383, 3385, 3387, 3389, 3391, 3393, 3395, 3397, 3399, 3401, 3403, 3405, 3407, 3409, 3411, 3413, 3415, 3417, 3419, 3421, 3423, 3425, 3427, 3429, 3431, 3433, 3435, 3437, 3439, 3441, 3443, 3445, 3447, 3449, 3451, 3453, 3455, 3457, 3459, 3461, 3463, 3465, 3467, 3469, 3471, 3473, 3475, 3477, 3479, 3481, 3483, 3485, 3487, 3489, 3491, 3493, 3495, 3497, 3499, 3501, 3503, 3505, 3507, 3509, 3511, 3513, 3515, 3517, 3519, 3521, 3523, 3525, 3527, 3529, 3531, 3533, 3535, 3537, 3539, 3541, 3543, 3545, 3547, 3549, 3551, 3553, 3555, 3557, 3559, 3561, 3563, 3565, 3567, 3569, 3571, 3573, 3575, 3577, 3579, 3581, 3583, 3585, 3587, 3589, 3591, 3593, 3595, 3597, 3599, 3601, 3603, 3605, 3607, 3609, 3611, 3613, 3615, 3617, 3619, 3621, 3623, 3625, 3627, 3629, 3631, 3633, 3635, 3637, 3639, 3641, 3643, 3645, 3647, 3649, 3651, 3653, 3655, 3657, 3659, 3661, 3663, 3665, 3667, 3669, 3671, 3673, 3675, 3677, 3679, 3681, 3683, 3685, 3687, 3689, 3691, 3693, 3695, 3697, 3699, 3701, 3703, 3705, 3707, 3709, 3711, 3713, 3715, 3717, 3719, 3721, 3723, 3725, 3727, 3729, 3731, 3733, 3735, 3737, 3739, 3741, 3743, 3745, 3747, 3749, 3751, 3753, 3755, 3757, 3759, 3761, 3763, 3765, 3767, 3769, 3771, 3773, 3775, 3777, 3779, 3781, 3783, 3785, 3787, 3789, 3791, 3793, 3795, 3797, 3799, 3801, 3803, 3805, 3807, 3809, 3811, 3813, 3815, 3817, 3819, 3821, 3823, 3825, 3827, 3829, 3831, 3833, 3835, 3837, 3839, 3841, 3843, 3845, 3847, 3849, 3851, 3853, 3855, 3857, 3859, 3861, 3863, 3865, 3867, 3869, 3871, 3873, 3875, 3877, 3879, 3881, 3883, 3885, 3887, 3889, 3891, 3893, 3895, 3897, 3899, 3901, 3903, 3905, 3907, 3909, 3911, 3913, 3915, 3917, 3919, 3921, 3923, 3925, 3927, 3929, 3931, 3933, 3935, 3937, 3939, 3941, 3943, 3945, 3947, 3949, 3951, 3953, 3955, 3957, 3959, 3961, 3963, 3965, 3967, 3969, 3971, 3973, 3975, 3977, 3979, 3981, 3983, 3985, 3987, 3989, 3991, 3993, 3995, 3997, 3999, 4001, 4003, 4005, 4007, 4009, 4011, 4013, 4015, 4017, 4019, 4021, 4023, 4025, 4027, 4029, 4031, 4033, 4035, 4037, 4039, 4041, 4043, 4045, 4047, 4049, 4051, 4053, 4055, 4057, 4059, 4061, 4063, 4065, 4067, 4069, 4071, 4073, 4075, 4077, 4079, 4081, 4083, 4085, 4087, 4089, 4091, 4093, 4095, 4097, 4099, 4101, 4103, 4105, 4107, 4109, 4111, 4113, 4115, 4117, 4119, 4121, 4123, 4125, 4127, 4129, 4131, 4133, 4135, 4137, 4139, 4141, 4143, 4145, 4147, 4149, 4151, 4153, 4155, 4157, 4159, 4161, 4163, 4165, 4167, 4169, 4171, 4173, 4175, 4177, 4179, 4181, 4183, 4185, 4187, 4189, 4191, 4193, 4195, 4197, 4199, 4201, 4203,

## **WATER CAPACITY ANALYSIS**

**Requested Demand:** Based on the applicant's site plan and building use information the estimated net potable water demand is 3,623 per day (GPD), which equates to 0.004 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 on Orton Avenue. The InfoWater hydraulic model was analyzed to determine the impact of this project on the existing 6-inch water. The existing water main has 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 12-month average production at the two plants is 39.56 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 0.004 MGD is 42.70 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 3,623 gallons per day (GPD), which equates to 0.004 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*". The total flow of 4,347 GPD will be used to evaluate the gravity sewers.

**Evaluation of impact on existing collection pipe (gravity system capacity):** The existing site and adjacent buildings are served by 10-inch gravity sewer mains.

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 10-inch diameter pipe will flow 4% full from the projected flow, which less than ASCE is recommended 50%. The City has used a peak hourly flow factor of 3.0, which is higher than 2.2 as noted in the Reiss Report. Therefore, the 10-inch pipe is adequate to serve the project.

**Evaluation of impact on pumping station:** PS-D41 has a capacity of 350 gallons per minute (GPM) and a current Nominal Average Pumping Operating Time (NAPOT) of approximately 10 hours per day. The station is currently being replaced under City Project 12124. The new pumping station is designed based on an average daily flow of approximately 263 GPM and pumping capacity of 1,600 GPM., therefore the projected pumping run time is approximately four hours per day once the station is operational. Therefore the new pumping station has sufficient 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 40.749 MGD. Combining the committed flows for previously approved projects of 3.137 MGD, plus the 0.04 MGD net contribution from the project, provides a total projected flow of 43.89 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.