



**SEXTON ENGINEERING ASSOCIATES, INC.**

Consulting Engineers and Surveyors

# WATER & SEWER DEMAND ANALYSIS

*for*

**THE WELLINGTON NORTH**

**WELLINGTON, FLORIDA**

*Prepared by*

**SEXTON ENGINEERING ASSOCIATES, INC.**

**110 PONCE DE LEON STREET, SUITE 100**

**ROYAL PALM BEACH, FLORIDA 33411**

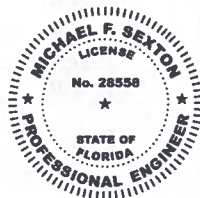
**TELEPHONE: (561) 792-3122**

**ENGINEERING BUSINESS: #7864**

**SEA PROJECT NO: 2242T15**

**April 7, 2023**

**Rev. May 8, 2023**



THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

**Michael F Sexton**

Digitally signed by Michael F  
Sexton  
Date: 2023.05.08 09:25:35 -04'00'

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## WATER & SEWER DEMAND ANALYSIS

*Introduction:*

The 59-acre property was formerly the Palm Beach Polo Stadium, has been redeveloped into the World Dressage Complex, also known as Equestrian Village, which includes equestrian arenas, a covered equestrian arena (which will remain), parking areas, buildings, concrete vendor decks, and equestrian support facilities. The property drains to dry detention areas and exfiltration trenches for water quality treatment prior to discharging into the ACME Improvement District canal system.

In addition, the adjoining 59-acre equestrian commercial recreation property has been added to this property to increase the size to 101.74- acres. This 32.8-acre property is currently improved as polo fields.

*Water Demand Analysis:*

The Village of Wellington currently provides water service to the property via an onsite 6" watermain. There is also an 8" watermain on the east side of South Shore Blvd. along the west side of the property and a 16" watermain on the north side of Pierson Road along the south side of the property.

The Comprehensive Plan Amendment proposes a residential development incorporating 300 residential units comprised of 22 single-family and 278 multi-family units. The project will also include an administration building, a member's clubhouse, a pools deck with four pools, tennis, and pickleball courts, a golf range, a golf clubhouse, and drive shack, an open grand grass lawn with a covered stage, a dog park, a Field House incorporating the existing covered arena, that will serve the residential units on this project as well as 148 additional single-family residential units at the proposed Wellington South project and a maximum of 200 social members, honorary members or similar seasonal membership from outside the proposed development.

These uses will add the following water demand, per the attached Potable Water and Sanitary Sewer Request for Confirmation of Available Capacity letter from The Village of Wellington (the multiplier of 3.02 persons per house shall be utilized for the calculations of residents and members that will use the facilities at The Wellington North development):

**Water Demand Table**

Use	Units	Unit Average Daily Demand	Total Average Daily Demand
<b>Residential</b> Single & Multi-Family Dwellings)	300	988 gpd	130,052 gpd
<b>Country Club</b> (Residents)	906	130 gpd	117,780 gpd
<b>Country Club</b> (Members)	647	33 gpd	21,028 gpd
<b>Country Club</b> (Employees)	50	20 gpd	975 gpd
<b>Office Building</b> (Sales & Admin. Office)	90 (per 100 sq. ft.)	20 gpd	1,755 gpd
<b>Warehouse</b> (Back of House)	10	20 gpd	195 gpd
<b>Warehouse</b> (Loading Bay)	1	130 gpd	130 gpd
<b>Park, Public Picnic</b> (Grand Lawn, Field House, Fields, Dog Park)	1,553	5 gpd	8,076 gpd

*Sewer Demand Analysis:*

The Village of Wellington currently provides sewer service to the property via an onsite 8" gravity sanitary sewer collection system and a private lift station.

The Comprehensive Plan Amendment proposes a residential development incorporating 300 residential units comprised of 22 single-family and 278 multi-family units. The project will also include an administration building, a member's clubhouse, a pools deck with four pools, tennis, and pickleball courts, a golf range, a golf clubhouse, and drive shack, an open grand grass lawn with a covered stage, a dog park, a Field House incorporating the existing covered arena, that will serve the residential units on this project as well as 148 additional single-family residential units at the proposed Wellington South project and a maximum of 200 social members, honorary members or similar seasonal membership from outside the proposed development

These uses will add the following sewer demand, per the attached Potable Water and Sanitary Sewer Request for Confirmation of Available Capacity letter from The Village of Wellington (the multiplier of 3.02 persons per house shall be utilized for the calculations of residents and members that will use the facilities at The Wellington North development):

**Sewer Demand Table**

Use	Units	Unit Average Daily Demand	Total Average Daily Demand
<b>Residential</b> (Single & Multi-Family Dwellings)	300	760 gpd	100,040 gpd
<b>Country Club</b> (Residents)	906	100 gpd	90,600 gpd
<b>Country Club</b> (Members)	647	25 gpd	16,175 gpd
<b>Country Club</b> (Employees)	50	15 gpd	750 gpd
<b>Office Building</b> (Sales & Admin. Office)	90 (per 100 sq. ft.)	15 gpd	1,350 gpd
<b>Warehouse</b> (Back of House)	10	15 gpd	150 gpd
<b>Warehouse</b> (Loading Bay)	1	100 gpd	100 gpd
<b>Park, Public Picnic</b> (Grand Lawn, Field House, Fields, Dog Park)	1,553	4 gpd	6,212 gpd



**Potable Water and Sanitary Sewer Request for Confirmation of Available Capacity**

**Date:**     \_May 8, 2023\_    

**To:** Anjuli K. Panse, P.E.  
Interim Utility Director  
Village of Wellington Utility Department  
12300 Forest Hill Blvd.  
Wellington, FL 33414

**From:**     Sexton Engineering Associates, Inc.      
    110 Ponce de Leon Street, Suite 100      
    Royal Palm Beach, Florida 33411      
      
    

**Project Address:**     The Wellington North      
      
    

**PCN:**     See attached.    

**Project Summary (Include all applicable land use, zoning, and density information)**

**Demand Summary**

(Submit Potable Water and Sanitary Sewer Average Day Projected Demand Table Worksheet as backup)

<b>Average Day Water Demands (MGD) =</b>	<b>0.280</b>	<b>MGD</b>
<b>Peak Day Water Demands (MGD) =</b>	<b>0.392</b>	<b>MGD</b>
<b>Average Day Wastewater Demands (MGD) =</b>	<b>0.215</b>	<b>MGD</b>
<b>Peak Day wastewater Demands (MGD) =</b>	<b>0.302</b>	<b>MGD</b>

By submittal of this document and backup information, the applicant requests that the Village of Wellington review the information provided in order to confirm that Wellington can meet the proposed demands for water and sewer service as noted above. The applicant is advised that no guarantee of available capacity is expressed or implied, until such a time that the Owner has reserved capacity through payment of all applicable fees and charges. **The capacity letter shall be considered expired 90 days from the date of issuance.**

Potable Water and Sanitary Sewer Average Day Projected Demand Table Worksheet- July 2022

TYPE OF ESTABLISHMENT	Number of Units	WW demand per unit (GPD)	Water demand per unit (GPD)	Avg WW Demand (GPD)	Avg Water Demand (GPD)
Complete Green Cells to Calculate Projected Average and Peak Demands					
Water to Wastewater average day Demand Factor (12 month rolling average) Updated October 1, 2018	1.30				
<b>COMMERCIAL:</b>					
Barber & beauty shops per service chair		75	98	0	0
Bowling alley bathroom waste only per lane		50	65	0	0
<b>Country Club</b>					
(a) Per resident	906	100	130	90600	117780
(b) Add Per member or patron	647	25	33	16175	21027.5
(c) Add Per employee per 8 hour shift	50	15	20	750	975
<b>Doctor and Dentist offices</b>					
(a) Per practitioner		250	325	0	0
(b) Add per employee per 8 hour shift		15	20	0	0
<b>Food operations</b>					
(a) Restaurant operating 16 hours or less per day per seat		40	52	0	0
(b) Restaurant operating more than 16 hours per day per seat		60	78	0	0
(c) Restaurant using single service articles only and operating 16 hour or less per day per seat		20	26	0	0
(d) Restaurant using single service articles only and operating more than 16 hours per day per seat		35	46	0	0
(e) Bar and cocktail lounge per seat		20	26	0	0
1. add per pool table or video game		15	20	0	0
(f) Drive - in restaurant per car space		50	65	0	0
(g) Carry out only, including caterers					
1. Per 100 square feet of floor space		50	65	0	0
2. Add per employee per 8 hour shift		15	20	0	0
(h) Institutions per meal		5	7	0	0
(i) Food Outlets excluding deli's, bakery, or meat department per 100 square feet of floor space		10	13	0	0
1. Add for deli per 100 square feet of deli floor space		40	52	0	0
2. Add for bakery per 100 square feet of bakery floor space		40	52	0	0
3. Add for meat department per 100 square feet of meat department floor space		75	98	0	0
4. Add per water closet		200	260	0	0
<b>Hotels</b>					
(a) Regular per room		100	130	0	0
(b) Resort hotels, camps, cottages per room		200	260	0	0
(c) Add for establishments with self-service laundry facilities per machine		750	975	0	0
<b>Office building</b>					
1. per employee per 8 hour shift or		15	20	0	0
2. per 100 square feet of floor space, whichever is greater	90	15	20	1350	1755

TYPE OF ESTABLISHMENT	Number of Units	WW demand per unit (GPD)	Water demand per unit (GPD)	Avg WW Demand (GPD)	Avg Water Demand (GPD)
<b>Service stations per water closet</b>					
(a) Open 16 hours per day or less		250	325	0	0
(b) Open more than 16 hours per day		325	423	0	0
<b>Shopping centers without food or laundry per square foot of floor space</b>		0.1	0.13	0	0
<b>Stadiums, race tracks, ball park per seat</b>		4	5	0	0
<b>Stores per bathroom</b>		200	260	0	0
<b>Theatres and Auditoriums, per seat</b>		4	5	0	0
<b>Veterinary Clinic</b>					
(a) Per practitioner		250	325	0	0
(b) Add per employee per 8 hour shift		15	20	0	0
(c) Add per kennel, stall or cage		20	26	0	0
<b>Warehouse</b>					
(a) Add per employee per 8 hour shift	10	15	20	150	195
(b) Add per loading bay	1	100	130	100	130
(c) self-storage, per unit(up to 200 units)		1	1	0	0
1. Add 1 gallon for each 2 units or fraction thereof, for over 200 units, and shall be in addition to employees, offices or living quarters flow rates.		1	1	0	0
<b>INSTITUTIONAL:</b>					
<b>Churches per seat which includes kitchen wastewater flows unless meals prepared on a routine basis</b>		3	4	0	0
1. If meals served on a regular basis add per meal prepared		5	7	0	0
<b>Hospitals per bed which does not include kitchen wastewater flows</b>		200	260	0	0
1. add per meal prepared		5	7	0	0
<b>Nursing, rest homes, adult congregate living facilities per bed which does not include kitchen wastewater flows</b>		100	130	0	0
1. add per meal prepared		5	7	0	0
<b>Parks, public picnic</b>					
(a) With toilets only per person	1553	4	5	6212	8075.6
(b) With bathhouse, shower & toilets per person		10	13	0	0
<b>Public Institutions other than schools and hospitals per person which does not include kitchen wastewater flows</b>		100	130	0	0
1. add per meal prepared		5	7	0	0
<b>Schools per student</b>					
(a) Day-type		10	13	0	0
(b) Add for shower		4	5	0	0
(c) Add for cafeteria		4	5	0	0
(d) Add for day school workers		15	20	0	0
(e) Boarding -type		75	98	0	0

TYPE OF ESTABLISHMENT	Number of Units	WW demand per unit (GPD)	Water demand per unit (GPD)	Avg WW Demand (GPD)	Avg Water Demand (GPD)
<b>RESIDENTIAL</b>					
(a) Single or multiple family per dwelling Unit					
1 Bedroom with 750 sq. ft. or less of building area		100	130	0	0
2 Bedroom with 751 - 1200 sq. ft. of building area		200	260	0	0
3 Bedroom with 1201 - 2250 sq. ft. of building area	238	300	390	71400	92820
4 Bedroom with 2251 - 3300 sq. ft. of building area	62	400	520	24800	32240
For each additional bedroom or each additional 750 square feet of building area or fraction thereof in a dwelling unit, system sizing shall be increase by 60 gallons per dwelling unit	64	60	78	3840	4992
(b) Other per occupant		50	65	0	0
OTHER CATEGORY NOT LISTED (ENGINEER TO PROVIDE BACKUP)				0	0
OTHER CATEGORY NOT LISTED (ENGINEER TO PROVIDE BACKUP)				0	0
OTHER CATEGORY NOT LISTED (ENGINEER TO PROVIDE BACKUP)				0	0
<b>Summary of Average Day Wastewater and Water Demands (GPD) =</b>				<b>215377</b>	<b>279990</b>
<b>Summary of Average Day Wastewater and Water Demands (MGD) =</b>				<b>0.215</b>	<b>0.280</b>

<b>Summary of Peak Day Wastewater and Water Demands (MGD) = Average Daily Demand x 1.4 =</b>	<b>0.302</b>	<b>0.392</b>
	(WW)	(Water)

[1] Systems serving high volume establishments, such as restaurants, convenience stores and service stations located near interstate type highways and similar high-traffic areas, require special sizing consideration due to expected above average volumes. The minimum estimated flows for these facilities shall be 3 times the volumes determined from the Demand Table Figures.

