

## 18. WASTEWATER MANAGEMENT

- A. Provide, in the table given below, the projected wastewater generation at the end of each phase of development and proposed wastewater treatment. Identify the assumptions used to project this demand.

Table 18.A1 below presents all wastewater generation sources:

Table 18.A1 Wastewater Flows							
Land Use	Number of Units	Sewage Loading (GPD/Unit)	Sewage Flows (MGD)(**)	Sewage Flows (with conservation reduction) MGD(*) (**)	Sewage Flow with 40% irrigation reduction (***)	Sewage Flows (after 25% water recapture for irrigation) MGD(**)	Peak Sewage Flows (MGD)
Single Family, detached	1,257 du	350 gpd/unit	0.440	0.308	0.185	0.139	0.373
Single Family, attached	2,436 du	250 gpd/unit	0.609	0.426	0.254	0.192	0.515
Multi-Family	3,248 du	200 gpd/unit	0.650	0.455	0.273	0.205	0.549
Retail <sup>[1]</sup>	200,000 sf	5/100 gpd/sf	0.010	0.008	0.008	0.006	0.016
Office	100,000 sf	10/100 gpd/sf	0.010	0.008	0.008	0.006	0.016
Industrial – Flex Space	550,000 sf	20/1000 gpd/sf	0.011	0.008	0.008	0.006	0.016
K-8	3,200 stud.	15 gpd/stud	0.048	0.036	0.036	0.027	0.072
High School	1,600 stud.	20 gpd/stud.	0.032	0.024	0.024	0.018	0.048
Staff	360	15 gpd/person	0.005	0.004	0.004	0.003	0.008
Hospital	200 beds	250 gpd/bed	0.050	0.037	0.037	0.027	0.078
Community Uses	50,000 sf	10/100 gpd/sf	0.005	0.004	0.004	0.003	0.008
Parks	67.6 acres	5 gpd/person	0.001	0.001	0.001	0.001	0.003
<b>Total</b>			<b>1.871 MGD</b>	<b>1.319 MGD</b>	<b>0.844 MGD</b>	<b>0.633 MGD</b>	<b>1.702 MGD</b>

Source: Ford Armenteros, Inc.

(\*) Conservation is calculated at 30 percent for residential uses and 25 percent for non-residential uses.

(\*\*) MGD= Millions of Gallons per Day

(\*\*\*) Residential Only; see response to question 17 G above.

<sup>[1]</sup> May include the exchange of up to 2,000 cinema seats for 28,311 sq.ft. of retail use based upon gross PM peak hour trips and the cinema seat exchange calculation as outlined in Table 21.B2 and Table 32.1

The Average Daily Flow (A.D.D.) is 0.844 MGD

The Peak Sewage Flow (268 percent of adjusted A.D.D. less than the 25% recapture) is 1.702 MGD

Rates were obtained from Miami-Dade County sewage flows used by the Miami-Dade County Water and Sewer Department (“WASD”), Miami-Dade County Code Section 24-43(5) “Sewage Loading.”

75 percent of the wastewater flow (0.633 MGD) will discharge into the WASD sewer system and 25 percent (0.211 MGD) will be treated in a developer-built on-site WASD satellite facility and recycled to meet a portion of the project’s irrigation demand.

A proposed 25 percent wastewater reduction will be realized through the use of a satellite reuse treatment facility located on-site. It is anticipated that the reuse facility will be located on a site approximately one-half acre in size and the proposed technology will be membrane filtration. "Purple pipe" will be used to distribute the reuse water to the areas in which the water will be employed for irrigation.

Based on water conservation measures and the commitment of Parkland to reuse a portion of its wastewater generation, the project will represent an approximate 66 percent reduction in wastewater demand. As such, Parkland will represent a model for water conservation and reuse for all future County development.

**B. If applicable, generally describe the volumes, characteristics and pre-treatment techniques if any industrial or other effluents prior to discharge from proposed industrial-related use(s).**

No pretreatments are anticipated.

**C. 1. If off-site treatment is planned, identify the treatment facility and attach a letter from the agency or firm providing the treatment outlining present and projected excess capacity of the treatment and transmission facilities through build-out, any other commitments that have been made for this excess and a statement of ability to provide service at all times during or after development.**

Once the UDB expansion has been approved, offsite treatment will be provided by WASD Conditions and commitments relating to provision of service have been listed in a letter received from WASD, and included as **Exhibit 18.1**.

**2. If service cannot be provided, identify the required capital improvements, cost, timing, and proposed responsible entity necessary to provide service at all times during and after development.**

It is currently anticipated by WASD that adequate treatment capacity will exist to serve the Project through buildout. Please see **Exhibit 18.1** for details.

**Design Specifications:**

The sanitary sewer collection, pumping and transmission system will be designed and built in accordance with WASD and Miami-Dade County Public Works Department standard details and specifications, as shown in **Figure 18.1**. Force mains will be Ductile Iron Pipe and sized according to the estimated pumping rate from each sewage pump station. Gravity sewer lines will be a minimum of 8-inch in diameter. It is initially estimated that the project will require a minimum of six sewage pumping stations. Each pump station will include an emergency generator building and generator. The sewage collection / transmission system will be owned and operated by WASD.

**Preliminary Cost Estimate:**

**Table 18.C1** is the Applicant's cost estimate for sewer service, which will be borne entirely by the Applicant.

<b>Table 18.C1 Sewer Service Cost Estimate</b>	
<b>02530 Sanitary Sewer</b>	
Section and half-section line roads	\$ 6,398,800
Parcels	\$ 11,113,708
<b>Subtotal</b>	<b>\$ 17,512,508</b>
Contingency (15%)	\$ 2,626,876
<b>Total</b>	<b>\$ 20,139,384</b>

*Source: Ford Engineers, Inc.*

- D. If septic tanks will be used on site, indicate the number of units to be served, general locations and any plans for eventual phase-out.**

No septic tanks are proposed. The Project in its entirety will be served by public sanitary sewer lines.

- E. Indicate whether proposed wastewater service will be provided within an established service area boundary.**

WASD will be the utility providing sewer services to the Project area. Conditions and commitments relating to provision of service has been listed in a letter received from WASD, and included as **Exhibit 18.1**.

**Exhibit 18.1**  
**Letter from**  
**Miami-Dade County Water and Sewer Department**



Water & Sewer  
P.O. Box 330316 • 3071 SW 38th Avenue  
Miami, Florida 33233-0316  
T 305-665-7471

[miamidade.gov](http://miamidade.gov)

September 5, 2006

Ms. Jo Sesodia, AICP, DRI Coordinator  
SFRPC  
3440 Hollywood Blvd., Suite 140  
Hollywood, FL 33021

Re: Parkland Development of Regional Impact (DRI)

Dear Ms. Jo:

The Miami-Dade Water and Sewer Department (MDWASD) hereby submits the following comments on the Parkland DRI application:

**WATER:**

The Parkland project is located outside the Urban Development boundary (UDB), and the MDWASD's Water and Wastewater Master Plans do not include infrastructure outside the UDB. However, if the UDB changes to include the Parkland project within its limits, the MDWASD will be the utility providing water services subject to the following conditions:

- Adequate transmission and Plant capacity exist at the time of the owner's request.
- Adequate water supply is available prior to approval of a building permit.
- Approval of all applicable governmental agencies having jurisdiction over these matters are obtained.

**SEWER:**

The Parkland project is located outside the Urban Development boundary (UDB), and the MDWASD's Water and Wastewater Master Plans do not include infrastructure outside the UDB. However, if the UDB changes to include the Parkland project within its limits, the MDWASD will be the utility providing sewer services subject to the following conditions:

- Adequate transmission and plant capacity exist at the time of the owner's request. Capacity evaluations of the plant for average flow and peak flows will be required,

Ms. Jo Sesodia, SFRPC  
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depending on the compliance status of the United States Environmental Protection Agency (USEPA) Second and Final Partial Consent Decree.

- Approval of all applicable governmental agencies having jurisdiction over these matters are obtained.

Thank you for the opportunity to provide comments. Should you have any questions, please call me at (786) 552- 8120.

Sincerely,



Bertha M. Goldenberg, P.E.  
Associate Director  
Planning and Performance Measurement

Cc: Mark Woerner, DP&Z

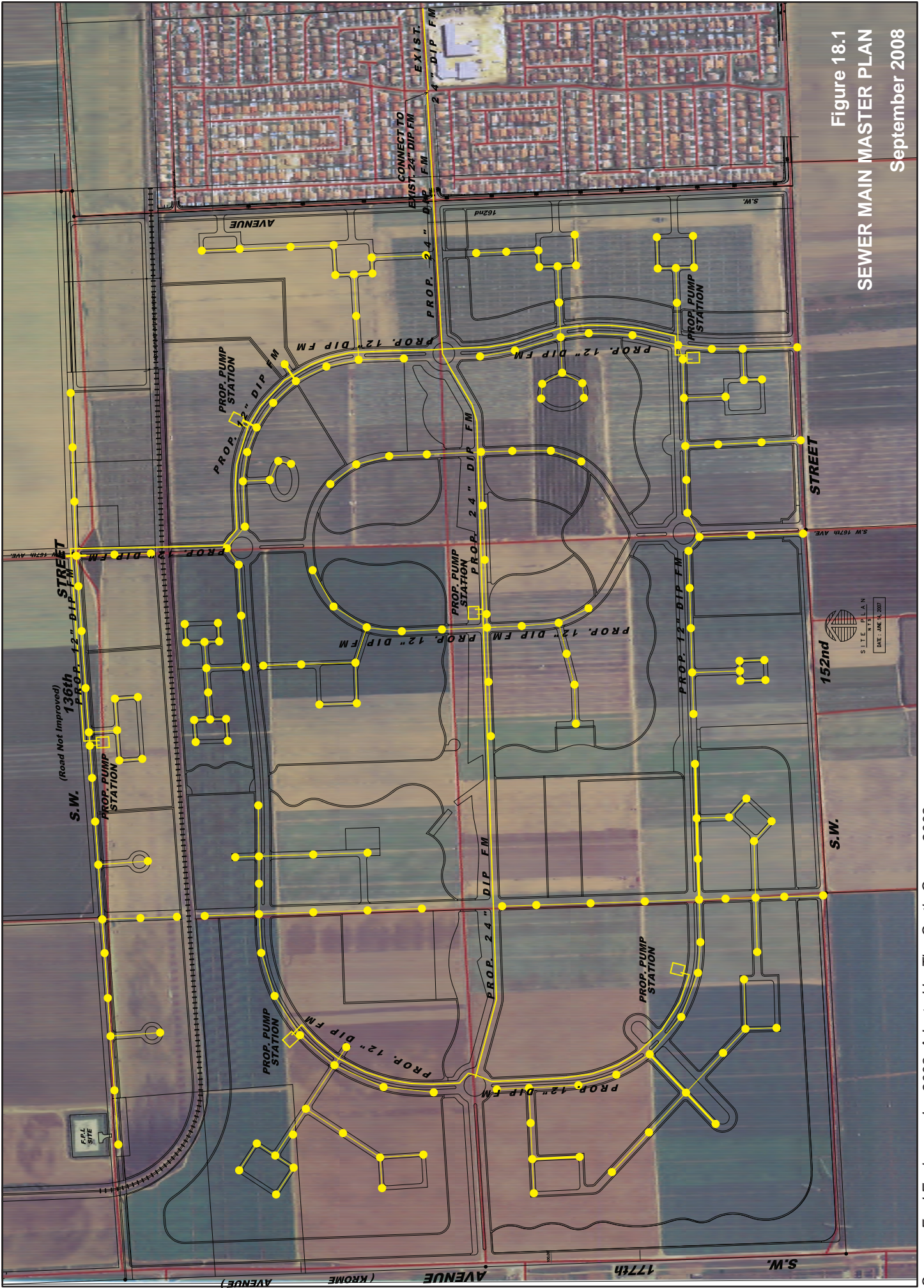



Figure 18.1  
SEWER MAIN MASTER PLAN  
September 2008


  
 SITE PLAN  
 DATE: JUNE 14, 2007

Source: Ford Engineers, Inc 2008; Adapted by The Curtis Group, 2008