

**Ormond Crossings
Utility Master Plan Considerations
February, 2009**

INTRODUCTION

The City of Ormond Beach has reviewed the development plan for Ormond Crossings and has prepared this Utility Master Plan to identify utility infrastructure improvement that the City will require be installed by the Developer of Ormond Crossings at no cost to the City. The City has relied on information contained within its Utility Master Plan Update (2007) prepared by Quentin L. Hampton Associates, Inc. (QLH) in order to determine the infrastructure needs associated with the Ormond Crossings Development.

A. DEMANDS/FLOWS

The Ormond Crossing's D.R.I. represents a significant addition within the City's utility service area and demands resultant from proposed development will impact existing systems. This technical memorandum summarizes development potential and estimates potable water demand, wastewater flow and reclaimed water demand for the D.R.I. Information regarding development density and classification is based upon information provided by the Developer. A summary of estimated flows/demands is included with Table 1. At this time there is no phasing plan for the Development.

Table 1
Ormond Crossings
Estimated Water and Sewer Demands
Land Use

Land Use Type	Quantity	units	Potable Water Usage Rate (gpd/unit)	Additional Base Flow (gpd)	Potable Water Demand (gpd)	Wastewater Usage Rate (gpd/unit)	Additional Base Flow (gpd)	Wastewater Demand (gpd)
Commercial Buildings	200,000	square feet	0.17	0	34,000	0.10	0	20,000
Office Buildings	900,000	square feet	0.17	0	153,000	0.10	0	90,000
Business/Flex Space	350,000	square feet	0.17	0	59,500	0.10	0	35,000
Industrial	800,000	square feet	0.10	0	80,000	0.10	0	80,000
Storage	240,000	square feet	0.01	30	2,430	0.01	30	2,430
Warehouses	560,000	square feet	0.01	30	5,630	0.01	30	5,630
Public/Institutional	165,000	square feet	0.38	0	62,700	0.38	0	62,700
School (with gym showers)	720	capita	25	0	18,000	25	0	18,000
Residential	2,950	DU	350	0	1,032,500	300	0	885,000
				Total	1,447,760			1,198,760

Reviews of demand estimates indicate that the total potable water demand is approximately 1.45 MGD. Total wastewater flow is estimated to be 1.20 MGD. Table 2, below, summarizes this demand. Peak demands and flows are also calculated. Peaking factors of 2.0 and 3.0 are used for water and wastewater, respectively.

Table 2
Ormond Crossings
Water and Sewer Demand Summary

	Water Demand		Wastewater Demand	
	Avg. Day (gpd)	Peak Hour (gpm)	Avg. Day (gpd)	Peak Hour (gpm)
Total	1,447,760	2,011	1,198,760	2,497

A reclaimed water demand of 0.60 MGD was estimated by the Developer in a letter dated 1/14/09 from Singhoffen and Associates, Inc. (copy attached). Reclaimed water is addressed in greater detail within this technical memorandum.

B. POTABLE WATER SYSTEM REQUIREMENTS

Table 2 indicates an average day demand of 1.45 MGD and peak flow of 2,011 GPM. In order to meet the long term needs of the development and provide adequate volume and flow to meet fire flow requirements, storage and pumping within the D.R.I. is recommended. A fire flow demand of 1,000 GPM for residential, 1,500 GPM for multi-family and 2,000 GPM for commercial/industrial was used. Additionally, looped water transmission mains are necessary to serve the region.

The following potable water projects identified in the "December 2007 Quentin L. Hampton Associates Ormond Beach Utility Master Plan Update" are the responsibility of the Developer to construct in order to serve the Ormond Crossings D.R.I.:

Project PW-11, Ormond Crossings 1 MG Storage Tank and Pumping Station

A 1 MG storage tank and pump station are also required to satisfy peak demand and fire flow pressure and volume requirements. The storage tank and pump station should be built concurrently with first phase of construction. The station will be sited within the development on the east side of I-95.

Project PW-18, Tymber Creek Road Water Main Extension – Southern Pines PUD to Durrance Lane

A minimum 16" potable water main will serve the D.R.I. and provide redundancy within the water system. This project will be designed

and built by the Developer and reviewed for approval by the City prior to starting construction.

Project PW-20, Tymber Creek Road Water Main Extension – Durrance Lane to Ormond Crossings

A minimum 16" potable water main will serve the D.R.I. and provide redundancy within the water system. This project will be designed and built by the Developer and reviewed for approval by the City prior to starting construction.

C. WASTEWATER SYSTEM

Table 2 indicates that average day sewage flows from the development are approximately 1.20 MGD, estimated peak hour flows are 2,497 GPM. As few as possible regional sewage lift stations are recommended to serve the D.R.I. However, a minimum of one regional or two sub-regional stations will be required. All local stations within the development should discharge into the regional stations for pumping to the City's treatment facility.

Any regional station(s) must have sufficient wetwell volume to handle projected flows. Triplex stations (or variable speed drives), climate control and odor control are required. A minimum 0.25 acre site (100' x 100') is also needed for all regional lift station sites. All lift stations will be built to City minimum design standards.

The following wastewater project identified in the "December 2007 Quentin L. Hampton Associates Ormond Beach Utility Master Plan" is the responsibility of the Developer to construct in order to serve the Ormond Crossings D.R.I.:

Project WW-8, US-1 Force Main (Airport Road to Ormond Crossings)

A minimum 12" force main (which will operate in parallel with the existing force mains) from Airport Road to Ormond Crossings will be required to provide sewer service to the D.R.I. until a second wastewater treatment plant is built.

D. RECLAIMED WATER

The Flows section of this memorandum indicates that the average daily flow demand for Reclaimed Water is 0.60 MGD, which is to be supplied by the City's reclaimed system. In the event the City is unable to supply Reclaimed Water to the Development, Ormond Crossings reserves the right to install wells to supplement the Reclaimed Water Supply.

The following reclaimed water project identified in the "December 2007 Quentin L. Hampton Associates Ormond Beach Utility Master Plan" is the responsibility of the Developer to construct in order to serve the Ormond Crossings D.R.I.:

Project RW-8, US-1 Transmission Main to Ormond Crossings

An appropriately sized reclaimed water main, based upon end use, will be built to serve the D.R.I. This project will be designed and built by the Developer and reviewed for approval by the City prior to starting construction.

The Developer shall be responsible for design and construction of the on-site reclaimed water distribution system within the D.R.I. The reclaimed water distribution system shall be designed and operated in accordance with pertinent City Codes and Ordinances and State regulatory requirements in force at the time of application and as amended from time to time. The City reserves the right to provide

the D.R.I. with either retail or bulk reclaimed water service. Retail and bulk service rates and charges will be negotiated with the Developer unless otherwise established in City Codes and Ordinances.

E. SUMMARY

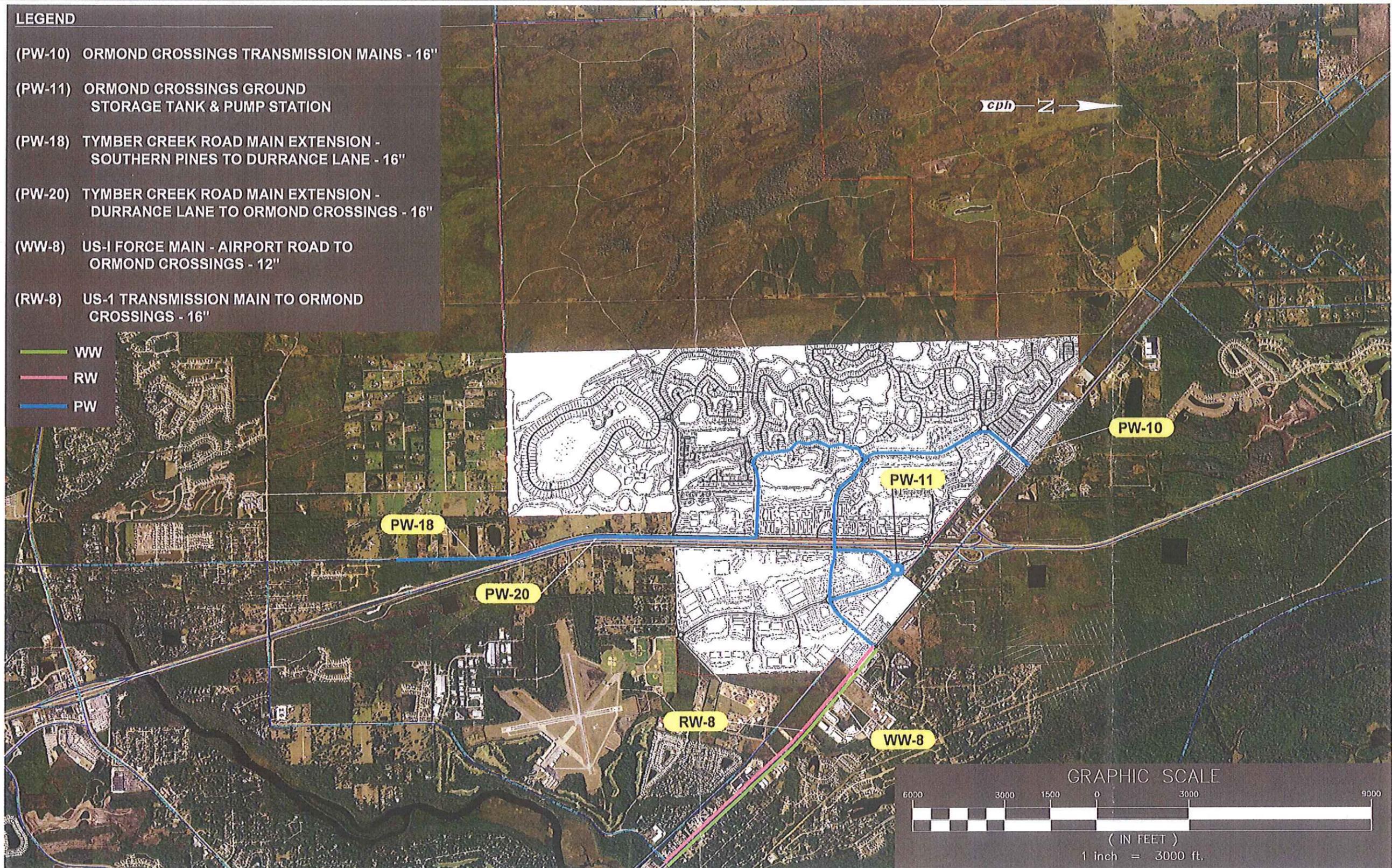
The above projects for potable water, wastewater, and reclaimed water encompass all off-site utilities required to be completed by Ormond Crossings based on the current development plan and are detailed in Figure 1. The City reserves the right to revise this Utility Plan should any changes to the development occur.

As these improvements may have benefits to the City's system outside the Ormond Crossings development, the improvements may be eligible for cost sharing with the City. Any cost sharing would require further study and a future agreement between the Developer and City.

LEGEND

- (PW-10) ORMOND CROSSINGS TRANSMISSION MAINS - 16"
- (PW-11) ORMOND CROSSINGS GROUND STORAGE TANK & PUMP STATION
- (PW-18) TYMBER CREEK ROAD MAIN EXTENSION - SOUTHERN PINES TO DURRANCE LANE - 16"
- (PW-20) TYMBER CREEK ROAD MAIN EXTENSION - DURRANCE LANE TO ORMOND CROSSINGS - 16"
- (WW-8) US-1 FORCE MAIN - AIRPORT ROAD TO ORMOND CROSSINGS - 12"
- (RW-8) US-1 TRANSMISSION MAIN TO ORMOND CROSSINGS - 16"

- WW
- RW
- PW



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Designed by:	GLP	Date:	11/17/08
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Checked by:	GLP	File:	T5801 Ormond.dwg
Approved by:	GLP		
Scale:	1" = 3000'		© 2008



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ORMOND CROSSINGS OFFSITE UTILITIES
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 ORMOND BEACH /VOLUSIA /FLORIDA

FIGURE
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