

1. Introduction

On August 6, 2007 Hendry County received the Objections, Recommendations, and Comments Report describing their findings on the County's proposed comprehensive plan amendment.

The following is a summary of the findings and recommendations with respect to water service:

1. Finding: The County quantified the amount of water based on the absorption schedule and not on the maximum development allowed by the amendment. The absorption schedule is not binding since there is no controlling mechanisms or policies in the comprehensive plan to ensure that development occurs according to the schedule. Furthermore, no plan to provide water services to the area, even based on the absorption schedule is provided.

Recommendation: Revise amendment to include public facility analyses based on maximum development proposed for the site, at the adopted level of service standard that identify the short term and long term facility needs and demonstrates that the County has public facility capacity available or planned for water facilities to serve the proposed amendment. The public facility impact analysis should be based on the maximum development allowed identifying the existing capacity of the water facilities that will be relied upon, the amount of water that can be withdrawn as permitted by the Water Management District, and indicate if there is a deficit or a surplus and also, whether there is sufficient water at the identified sources to serve the committed demand and the demands of this amendment.

2. Finding: With respect to water source, the County identifies the Sandstone aquifer as having sufficient water to meet the needs of the amendment area. However, according to the Water Management District, the County should utilize or plan for the utilization of alternative sources as recommended by the District.

Recommendation: Coordinate with South Florida Water Management District (SFWMD) to identify an alternative potable water source for this amendment rather than planning to rely on traditional sources such as Sandstone aquifer. The capital improvement needed to develop alternative sources should be included in the Capital Improvements Elements.

2. Issue Discussion

In order to address the findings and the recommendations of the SFWMD and the other agencies that reviewed the proposed comprehensive plan amendment, a discussion of the

approach that will be used to overcome the water supply and demand to support the comprehensive plan amendment is presented in this proforma.

The purpose of this proforma is to discuss specifically following:

- A. existing potable water supply system,
- B. proposed developments in the West Hendry County Area,
- C. water demand associated with developments,
- D. available raw water capacity and sources,
- E. capital improvement projects to service the area with water,
- F. capital improvement costs associated with water projects, and
- G. funding options.

Also included in this proforma are the policies that will be put in place to control development in such a manner that development would begin closer to the distribution system water main and then progress inland away from the water main.

3. Existing Potable Water Systems

West Hendry County Area will be serviced by the Port LaBelle Utility System (PLUS) water plant, which is owned and operated by Hendry County and located in the Community of Port LaBelle. The Community of Port LaBelle, a 31,000-acre single-family planned housing community with about 13,000 residential lots, three miles east of the city of LaBelle, was originally developed by General Development Corp. in the 1970s. In 1972 the land for the Port LaBelle community was purchased and four community subdivisions have been developed over the last thirty years. In recent years three additional subdivisions were built. There are currently about 5000 residents in Port LaBelle and about 1600 homes. An additional 100 homes are expected to be built each year for the next few years. It has been estimated that a 50% build out of Port LaBelle's 13,000 lots will not take place until 2033 and a complete build out near the end of the 21st Century. In addition, the County has recently completed the installation of a 16-inch water transmission main that extends east to and throughout Banyan Village located off Wellington Parkway. See Figure 1 for the Port LaBelle water service area.

PLUS retrieves raw water from the Sandstone aquifer system with two wells and treats the water in their new three-train reverse osmosis (RO) plant prior to pumping it into their 200 miles of distribution pipes. The current consumptive use permit allows the Utility to extract only an average daily flow of 0.32 million gallons per day (MGD). A new CUP has been applied for to extract up to 1.2 MGD to furnish sufficient water to utilize the three treatment trains and to install a third well for redundancy. Once the CUP is approved, the treatment plant will be able to produce 0.9 MGD of water for consumption. So, a surplus of water would be available to service additional homes once the CUP is approved.

There exists an interconnection between the PLUS distribution system and the City of LaBelle distribution system at the Country Village Subdivision in the Community of Port

LaBelle. This interconnection provides reliability for both systems during critical or emergency periods. So, there exists a potential whereby portions of the West Hendry County Area could be serviced by the City of LaBelle's treated water. Therefore, it is prudent to discuss the City of LaBelle's water system.

The City of LaBelle owns and operates a 1.0 MGD lime softening plant which provides potable water to its current customers within the City limits. Raw water for the existing facility is withdrawn from five (5) Water Table Aquifer wells.

In order to meet the expanded demand of the recently annexed 5,600 acres South LaBelle Community, the City is in the process of designing a new RO WTP that will have an initial capacity of 2.5 MGD, expandable to a build-out capacity of 8.0 MGD. The new facility is projected to be completed in 2010. Once the new WTP has been placed into service, the existing WTP will be decommissioned. The City's water supply for the new WTP will come from the Floridan Aquifer (Lower Hawthorne) system. The City anticipates utilizing 2-3 wells to supply water to the new facility. The existing LaBelle WTP currently utilizes raw water from the Water Table Aquifer for water supply.

In addition to the City's existing transmission and distribution system, there exists an interconnection to Hendry County's PLUS potable water system. This interconnection provides reliability for both systems during critical or emergency periods.

4. Population Growth and Water Demand

Exact number of subdivisions, their proposed construction start dates, and their construction sequences are unknown. The County plans to develop and implement policies that encourage development to begin on the eastern side of the West Hendry County Area and flourish westward. This successive progressive development pattern will support the logical progressive extension of water services from the existing PLUS system.

The subdivision currently nearing approval for construction is called Murphy's Landing proposed to be located on the western most area of West Hendry County. Although, this sequence of development progress is not consistent with the County's preference, the development was approved because the developer agreed to build a treatment plant and a storage tank to exclusively service the new homeowners of Murphy's Landing.

A study generated by John C. Capece, Ph. D. of Southern Data Stream, LaBelle, Florida, in January 2008, reflects the annual potential growth patterns and water demands that could be expected in community of Port LaBelle, City of LaBelle, and West Hendry County Area. Based on the study Dr. Capece estimates that if the PLUS continues to service the projected growth in the community of Port LaBelle, the projected growth in the City of LaBelle via the interconnection, and new developments in the West Hendry County Area, the 0.9 MGD of water being produced by the PLUS water treatment plant will be sufficient to service the West Hendry Area developments until the year 2012 with a build-out of 850 homes. To reiterate, this study assumes that PLUS will also be

servicing some of the residences of the City of LaBelle, in meeting the City's supplemental water requirements until their new water treatment plant is constructed in 2010.

However, after 2012, the PLUS will not have sufficient plant capacity to service further expansion in the West Hendry County Area nor the new residents of the community of Port LaBelle. Additional measures will have to be implemented to service the new developments expected to flourish in West Hendry County with water. See Table 1, Population Growth and Water Demand.

5. Potable Water System Expansion – Phase I

In order to service the new developments in the West Hendry County Area, with water currently available from the PLUS until the year 2012, a 12-inch water main that exists at the intersection of Cowboys Way (formerly called Garden Road) and Eucalyptus Boulevard will be extended to service these areas. This water main extension will be constructed alongside the successive progressive development pattern of the West Hendry County Area from the east side of the City of LaBelle towards the west until the County borderline. This successive progressive development pattern will be affected by policies that will be enacted by the County's planning department in approving new developments. Upon completion of the water main extension, the treatment plant at Murphy's Landing, built by the developer, would be decommissioned and the distribution system would be connected to the new water main. The storage tank would remain to service residents.

The cost of the waterline extension to the western end of the County is estimated at \$2.5M. See Table 2, Proposed Projects and Capital Cost Summary.

Several funding options are available to the County for constructing this waterline and are discussed below.

See Figure 2 which identifies the potential routing of the completed water main from the existing PLUS to West Hendry County.

6. Potable Water System Expansion – Phase II

After the year 2012, the PLUS treatment plant capacity would be exhausted and alternative measures to service additional developments in the West Hendry County Area will need to be sought. Two options are available to the County depending on cost and SFWMD's approach to additional extraction of raw water from the Sandstone aquifer.

The PLUS treatment plant has the space within its new RO plant to add an additional three more RO units to increase the treated water capacity from 0.9 MGD to 1.8 MGD. With an estimated 75% treatment efficiency, the rate of raw water extraction will be 2.4 MGD. This would be an increase of 1.2 MGD from the current withdrawal rate. Three additional raw water extraction wells will need to be installed to provide sufficient raw

water to the treatment plant to produce the additional 1.2MGD. This plant expansion is planned for the year 2010, although demands indicate that such expansion would not be needed until 2012.

The cost of the plant upgrade to produce 1.8 MGD is estimated at \$1.5M. The cost of installing three additional raw water extraction wells would be an additional \$0.9M, thus bringing the total sum for plant expansion to \$2.4M. A new CUP to extract the additional raw water must be applied for and granted prior to plant expansion. See Table 2, Proposed Projects and Capital Cost Summary.

However, if SFWMD refuses to grant a CUP to extract the additional raw water from the Sandstone aquifer and forces PLUS to resort to the Lower Hawthorne aquifer, the cost to install new wells and plant upgrade could escalate to over \$8M. The plant expansion option would be cost prohibitive and PLUS will have to resort to the City of LaBelle's treated water from their new 5MGD brackish water treatment plant which is planned to be online by 2009. This option to use water from the City of LaBelle's system has been discussed with the City Commissioners and agreed upon.

Hendry County may decide to exercise the option to use water from the City of LaBelle system instead of expanding the PLUS treatment plant, regardless of SFWMD's position on allowing the use of the Sandstone aquifer.

Also, as more homes are constructed in the Port LaBelle community, Hendry County also has the option to service the West Hendry County Area homes using more water from the City of LaBelle system and diverting its treated water to service the Port LaBelle community instead.

Several funding options are available to the County for constructing the plant expansion and/or installing the infrastructure to resort to using the City of LaBelle's water.

7. Capital Investment Funding Options

The County must first consider using cash held in reserves for capital expansion. If reserve cash is not available at the time of the project, the County may need to seek debt and grants.

Various debt instruments exist that give low cost financing to municipalities. The Florida Department of Environmental Protection (FDEP) provides the State Revolving Fund (SRF) for municipal utilities needing financing for water and wastewater expansion projects. The Environmental Protection Agency (EPA) and United States Department of Agriculture (USDA) also provide various grants that the County may qualify for.

Aside from the state and federal grant/loan options, the County may seek traditional debt from a bank qualified loan or municipal bonds. All debt must be funded adequately from user rates and other utility revenue. The County may also consider a split financing option to pay for capital expansions with debt and cash from operations. This would

keep debt obligations lower, but would require higher rates than a 100% debt funded project.

The County could also fund capital improvement projects by imposing an equitable impact fee on the developers sufficient to cover the cost of water main construction or plant expansion and require developers to pay these fees prior to granting the approval to develop the properties.

Finally, the County could negotiate with the developers to construct the water main extension for the County to own and operate in order to service the developments as they progress eastward from the existing PLUS system, in exchange for the impact fees that would otherwise have to be imposed on the developers.

TABLE 1
Projected Population Growth and Water Demand

	2008	2010	2012	2015	2020
Total Homes Served ¹	2,009	2,556	2,895	4,185	6,465
Demand per household ¹	396	396	396	396	396
Average Daily Demand ¹ (Raw water)	795,564	1,016,136	1,146,420	1,657,260	2,560,140
Average Daily Demand (Treated water) ²	716,008	762,102	859,815	1,242,945	1,920,105
Available Facility Capacity (GPD)	900,000	900,000	1,800,000	1,800,000	1,800,000
Facility Capacity Surplus (Deficit) –Treated water	183,992	137,898	940,185	557,055	(120,105)
Raw Water Permitted	1,200,000	1,200,000	2,400,000	2,400,000	2,400,000
Raw Water Permitted Surplus (Deficit)	404,436	183,864	1,253,580	742,740	(160,140)

Notes

1. ¹ Numbers in these rows were obtained from Dr. Capece's Report
2. This table reflects plant expansion in the year 2012, even though the County may decide to construct the plant in 2010.
3. Households serviced include those in the Port LaBelle Community, City of LaBelle, and West Hendry County Area, combined.
4. This table assumes that plant will be upgraded to be able to produce 1,800,000 GPD treated water in 2012. No homes from the City of LaBelle will be added after 2011.
5. ² Average Daily Demand (Treated water) equals 0.75 x Average Daily Demand (Raw water)

TABLE 2
Proposed Projects and Capital Cost Summary

Year	Project Description	Project Cost
2008	Renew CUP to extract 1.2 MGD, add third well, and extend water line to West Hendry County Area	\$2,810,000 \$310,000 for third well and \$2,500,000 for water line extension)
2012	Expand WTP from 0.9 MGD to 1.8 MGD and add three new raw water extraction wells	\$2,400,000 \$1,500,000 for WTP expansion and \$900,000 for wells