

## **FOREWARD**

### **Purpose:**

The purpose of this report is to present information, conclusions, and recommendations for the City of Tarpon Springs to utilize in the planning and possible development of its public water supply, which would minimize and ultimately eliminate its dependency on other water suppliers. Through the evaluation of existing literature, similar experiences of other water suppliers, and specific evaluation of City facilities, this report presents preliminary recommendations for the most feasible water supply plan to meet current and future City needs.

### **History:**

The City of Tarpon Springs has always relied primarily on external suppliers for its potable drinking water supply. For a brief period, between 1926 and 1930, the City made its first attempt at becoming self reliant for its water supply by utilizing surface water from Lake Tarpon as a potable water source. This effort was abandoned due to salt water concentrations that existed in the lake at the time. Since then, the City has been dependent upon outside sources for its water supply.

In the late 1970's, efforts were made to investigate the development of additional water supplies to reduce the dependency on Pinellas County Utilities (PCU) as the City's supplier of water. After a hydrological study that was performed by consultant CH2M HILL (1978), the City contracted with another engineering firm, Glace & Radcliffe, in the mid-1980's to select a location and construct wells within the areas identified by the CH2M HILL report. The area selected was along the Progress Energy high voltage transmission easement on the west side of Disston Avenue between Klosterman Road and Sandy Hollow Drive.

In the late 1980's, test wells were installed along with monitoring wells to determine the possible production capabilities of this area. Testing following construction determined that water could be produced at a rate of 200 gpm to 300 gpm from each well. After data was accumulated from the test wells and monitoring wells, four production wells were installed and were permitted through the SWFWMD. The City never realized the benefit of the production from these wells because these wells have never been brought on line as water sources.

In summary, water supply independence in the City of Tarpon Springs has been a long time in coming considering the first efforts began nearly 80 years ago. Organizational instability has greatly contributed to the lack of progress toward this goal. In contrast, other local area municipalities, such as the City of Dunedin and the City of Oldsmar, with long term City Managers and top level personnel have already achieved water supply independence or are close to achieving this goal, respectively.

### **Events Leading to the Report:**

In 2002, Tampa Bay Water changed the disinfectant in the region's water supply from "free" chlorine to "chloramines." These changes required Tarpon Springs to complete more frequent well checks, special sampling and monitoring – all at increased cost to the City. In early 2003, the City completed testing and re-evaluation of its existing wells. Test results were consistent with data previously collected in the 1980's. These test results, continuing and future quality issues with purchased water and the lack of local control over steadily increasing costs associated with purchased water have all played a role in the prioritization of water supply independence

### **Alternative Water Supply Analysis:**

An extensive study of the City's available alternative water supply resources has been conducted and a cost analysis of various options has been completed. In addition, a thorough review of permitting requirements and other feasibility considerations has been conducted and is presented in this report.

The resulting recommendation consists of three phases that are summarized below and more fully detailed in the report.

Phase I: Development of freshwater resources, including conversion of existing production wells to a chloramines disinfection process; final permitting and completion of existing inactive freshwater wells; testing and commissioning of one remaining existing well should production be feasible;

Phase II: Development of brackish groundwater and treatment using an advanced treatment facility;

Phase III: Development of additional brackish groundwater and advanced treatment.

### **Recommendations:**

This recommended plan prioritizes water sources on the most cost effective basis. This results in fresh groundwater resources followed by the sequential addition of slightly brackish groundwater, then followed by more brackish groundwater, as needed, for the agreed upon capacity.

Current City water supply demand is a peak flow of 4.5 mgd (millions of gallons per day) with an average annual daily demand of 3.3 mgd. Phase I, when complete, will provide 1.37 mgd of average daily capacity. Factoring in seasonal variations in fresh groundwater production, approximately 25% of the City's demand can be met with Phase I. Completion of Phase II provides an additional 5.0 mgd of supply. This would provide the additional water needed to meet the City's current and future demand and would provide approximately an additional 1.5 mgd of surplus water. Phase III of the recommended plan would provide an additional 3.0 mgd, ultimately increasing the total production capacity to 9.37 mgd.



Based on a comprehensive assessment, the following table summarizes the recommended water supply plan for the City of Tarpon Springs.

**Summary of Recommended Water Supply Plan**

<b>Water Supply Source</b>	<b>Phase</b>	<b>Average Daily Capacity (mgd)</b>	<b>Cumulative Average Daily Capacity (mgd)</b>	<b>Estimated Implementation Date</b>
Current Freshwater Wells 1 – 3	I	0.73	0.73	March 2004
Disston Avenue Freshwater Wells 5B, 5D	I	0.43	1.16	July 2004
Additional Disston Avenue Freshwater Well 5A*	I	0.21	1.37	December 2004
Slightly Brackish Wells/RO Plant	II	5.00	6.37	January 2009
Additional Brackish Wells/RO Plant Expansion	III	3.00	9.37	TBD

**Note:** Actual sustained pumping rates of freshwater wells may be less than projected taking into account any required reduced pumping for wellfield management measures during the dry season.

\*Well 5A dependent on capacity determined from testing.

**The Ultimate Goal – Water Supply Independence**

The goal of this plan is to put the City of Tarpon Springs in a self-reliant position in relationship to its water supply needs. This independence would give the City the ability to control many issues to which it is now only in a position of reaction. Water supply independence would provide the City the ability to:

- Plan and control future major projects required to maintain or improve water quality.
- Attain vital control of water quality entering its system and the choice of treatment and/or disinfectant.
- Have more direct control over its rate schedules without subsidizing costly projects from the water supplier, resulting in escalating water costs.
- Plan independently for continued growth, independent from other suppliers.
- Produce water more economically and, as a result, generate additional revenue to offset administrative costs.