



## *Reclaimed Water and Alternative Sources*

### **BACKGROUND**

In mid-1988, Pinellas County Utilities ceased surface water discharge of secondarily treated effluent at its treatment plants as the means of wastewater disposal. Deep well injection replaced surface water discharge as the means effluent disposal. Due to environmental concerns, and because Pinellas County Utilities recognizes the value and benefit of reusing wastewater, Pinellas County Utilities phased out deep well injection and began its multi-year commitment to achieving a complete system of water reclamation. Today, following an extensive capital commitment and program, Pinellas County (re)uses 100 percent of its existing reclaimed wastewater resource, operating two state-of-the-art water reclamation facilities – the William E Dunn Facility in north county and the South Cross Bayou Facility in south county.

A significant portion of Pinellas County Utilities' strategy for reducing potable water demand and thereby providing an environmental benefit, is its reclaimed water transmission and distribution system. The total projected effect currently of the reclaimed water system is a reduction in potable demand of 6 million gallons per day. The County's reclaimed water system has reached maturity, thanks to the commitments of the mid-90s to aggressively implement a reclaimed program. Therefore, additional options for offsetting potable water demand through the use of reclaimed water are generally limited at this time to interconnections, more efficiency studies and seasonal storage project concepts.

Pinellas County is currently investigating purchasing surplus reclaimed water from neighboring municipalities in order to meet the now high demand for reclaimed water during times when there are reclaimed water shortages. Pinellas County Utilities is also looking into supplementing reclaimed water with surface water from Lake Tarpon. Aquifer Storage & Recovery (ASR) is another current concept under investigation by Pinellas County Utilities to allow the underground storage of surplus water during the rainy season for use during the dry season. Pinellas County Utilities currently uses 100% of its reclaimed water during the dry season. During the wet season, however, when irrigation demand decreases, 100% use is not always possible.

In 2006, approximately 7.1 million gallons of wastewater reuse was used for irrigation purposes in the northern section of the County and 7.5 mgd was used in the south county service area. The ultimate capacity of the system will be approximately 24 mgd. The ability to utilize 100 percent of the wastewater resource is expected to reduce potable water withdrawal by at least 6 mgd.

### **The Lifecycle of Reclaimed Water**

Reclaimed water starts as wastewater (water from toilets, sinks, laundries, tubs and showers) which is then cleaned and purified through an advanced wastewater treatment process that

eliminates harmful by-products while retaining beneficial elements, such as nitrogen, for irrigating purposes. Reclaimed water then travels from the wastewater treatment plant to houses and businesses through a separate, purple-colored reclaimed water pipe system. The water is generally used mostly for irrigation purposes before returning to the hydrologic cycle. Pinellas County maintains the highest residential distribution of reclaimed water in Florida. Reclaimed water reduces the demand for potable water sources used for drinking water, reduces the cost of landscape irrigation, reduces fertilizer costs due to the nitrogen and phosphorous in reclaimed water, and beautifies our community by enhancing the appearance of landscaping. Pinellas County's reclaimed water meets all the state requirements for utilization of reclaimed water for irrigation of public access areas (parks, playgrounds, school sites, golf courses, etc.), and irrigation of residential lawns and landscapes.

## **Safety Considerations**

To ensure safety, the highest standards established by the Florida Department of Environmental Protection are followed. System controls utilized by Pinellas County Utilities are among the most stringent in the nation. Locally, Pinellas County Utilities, St. Petersburg, Largo, St. Pete Beach, South Pasadena, Pinellas Park, Clearwater, Dunedin, and Tarpon Springs safely operate reclaimed water systems. The level of treatment received by reclaimed water makes it **acceptable** for the following uses:

- Irrigating lawns and most landscaping.
- Washing of cars, boats, or heavy equipment. It is recommended that after the use of reclaimed water, vehicles are rinsed with potable water and towel dried to prevent spotting.
- Washing of roofs and buildings.
- Use in fountains and decorative pools (they must be clearly marked as containing reclaimed water).

The degree of treatment required for the use of reclaimed water makes it **unsuitable** for the following purposes:

- Consumption by humans.
- Bathing, cooking or toilet flushing in residential dwellings.
- Any interconnection with another water source.
- Recreational use involving body contact (i.e. swimming pools or outdoor showers).
- Irrigation of vegetables or other edible crops which are not peeled, cooked, or thermally processed before being consumed.
- Run off into or filling of swimming pools.

Pinellas County Utilities complies with all of the regulations of the federal Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (DEP) regarding discharge of wastewater effluent.

## **INCREASING RECLAIMED WATER USE EFFICIENCY BY END USERS**

Pinellas County is working on increasing efficiency by end users of reclaimed water by using a combination of reclaimed water use restrictions and educational programs. Pinellas County has begun limiting the use of reclaimed water by end users via watering restrictions. As of June 11, 2007, the South County reclaimed water system was continuing to operate on a restricted basis to allow extended periods of recovery time to meet increased demand. Such restrictions generally last until the system stabilizes.

Pinellas County publishes educational brochures for the public such as “Conserve Our Valuable Water Resources: Reclaimed Water”, “Reclaimed Water in Pinellas County” and “Landscaping with Reclaimed Water”, which all educate consumers about how to conserve and use reclaimed water wisely. Pinellas County also provides educational information to residents about saving potable and reclaimed water through brochures, the internet, and even by telephone. Pinellas County Utilities produces brochures like the “Pinellas County Utilities Outdoor Water Conservation Action Guide”, the “Indoor Water Saver’s Guide”, “Your Lawn May Have A Drinking Problem!” and “Your Guide to Home Water Conservation: Leak Detector Guide”. Increasing efficiency by end-users is another major reclaimed water goal of the SWFWMD as stated in the RWSP, and Pinellas County is already making great progress in this area.

## **RECLAIMED WATER INTERCONNECTIONS AND SURFACE WATER TO AUGMENT THE SUPPLY**

Pinellas County is looking into the possibility of a reclaimed water interconnection with other municipalities and counties in order to provide an exchange of surplus reclaimed water to areas requiring more reclaimed water. Another project Pinellas County is looking at is supplementing the reclaimed water supplies during the dry season with surface water from Lake Tarpon. Both of these projects are also recommended by the SWFWMD in its RWSP.

## **RECLAIMED WATER SERVICE AREAS**

**Table 25 identifies** Pinellas County Utilities’ wholesale and retail reclaimed water service customers, as well as municipal providers and relationships. **Figures 11 and 12** depict Pinellas County Utilities’ reclaimed service areas.

## **RECLAIMED WATER CAPITAL IMPROVEMENTS**

The capital improvements required to support, maintain and enhance the County’s reclaimed system are included under the Wastewater portion of this Element.

TABLE 26

PROVIDER/SERVICE RECIPIENT RELATIONSHIP RECLAIMED SYSTEMS								
<i>Jurisdiction</i>	<i>Pinellas County Retail Reclaimed Water</i>	<i>Pinellas County Wholesale Reclaimed Water</i>	<i>Clr</i>	<i>Dun</i>	<i>Larg</i>	<i>Olds</i>	<i>St. Pete</i>	<i>Tarp.</i>
Belleair	x <sup>4</sup>							
Belleair Beach	x <sup>3</sup>							
Belleair Bluffs								
Belleair Shore	x <sup>3</sup>							
Clearwater	x <sup>3</sup>		x					
Dunedin				x				
Gulfport								
Indian Rocks Beach	x <sup>3</sup>							
Indian Shores	x <sup>3</sup>							
Kenneth City								
Largo					x <sup>2</sup>			
Madeira Beach	x							
N. Redington Beach	x							
Oldsmar						x		
Pinellas Park		x						
Redington Beach	x							
Redington Shores	x							
Safety Harbor								
St. Petersburg							x <sup>2</sup>	
St. Pete Beach		x						
Seminole	x							
South Pasadena		x						
Tarpon Springs								x
Treasure Island	x							
Palm Harbor (Uninc.)	x <sup>1</sup>							
East Lake Tarpon (Uninc.)	x <sup>1,5</sup>							
Greater Seminole (Uninc.)	x							
Lealman (Uninc.)								
Tierra Verde (Uninc.)	x							
Remaining Unincorporated Pinellas Co.								

Source: Service Delivery In Pinellas County: An Inventory and Assessment of Service Delivery Agreements, January 29, 2004.

<sup>1</sup> Pinellas County Utilities (PCU) buys surplus reclaimed water from Clearwater and Oldsmar to use in PCU's reclaimed distribution system.

<sup>2</sup> St. Petersburg and Largo supply reclaimed water to PCU's Solid Waste Operations.

<sup>3</sup> Will be retail customers of PCU when transmission line construction is completed. Will also include Sand Key area of the City of Clearwater.

<sup>4</sup> PCU provides reclaimed water on a retail basis to areas around and south of 54<sup>th</sup> Ave. that are in the City of St. Petersburg sanitary sewer district, but unincorporated county. Mutual understanding between PCU and the City of St. Petersburg does this, there is no agreement in place. Areas include: Five Towns Condos, Parkside Condos, Townhomes of Park Place, 6000 Park Place, Bonnie Bay Villas, and Club Charlet MHP. Master meters in place. Source: Pinellas County Utilities, 2003.

<sup>5</sup> Golf courses only except Lansbrook, which also includes residential customers.

Note: PCU provides reclaimed water on a retail basis to areas around and south of 54 Ave. that are in the City of St. Petersburg sanitary sewer district, but unincorporated county. Mutual understanding between PCU and the City of St. Petersburg does this, there is no agreement in place. Areas include: Five Towns Condos, Parkside Condos, Townhomes of Park Place, 6000 Park Place, Bonnie Bay Villas, and Club Chalet MHP. Master meters in place. Source: Pinellas County Utilities, 2003



**W.E. DUNN  
WASTEWATER RECLAMATION  
FACILITY (WRF)**

**RECLAIMED EXPANSION  
STORAGE TANK /  
PUMPING STATION**

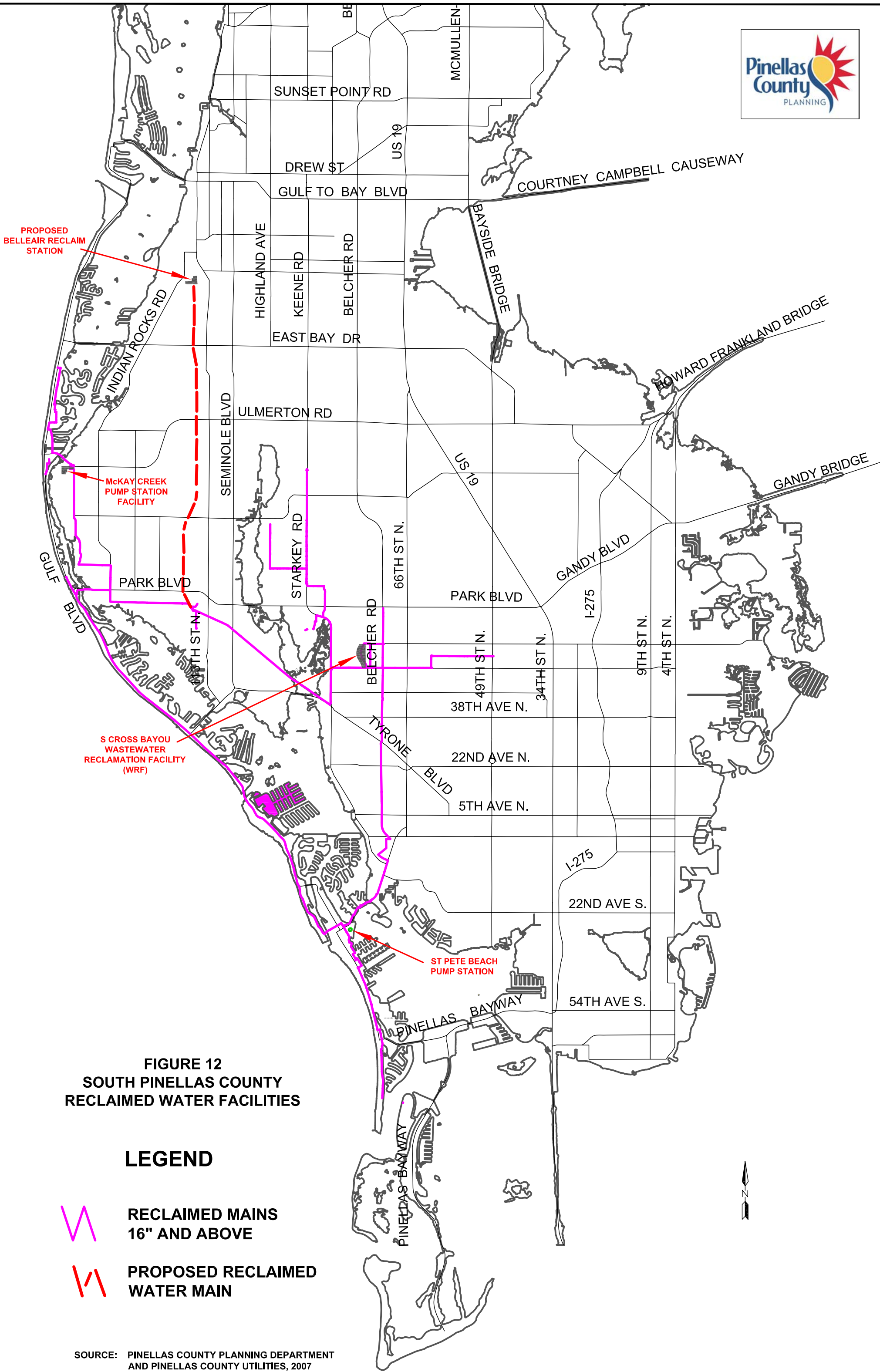
**CITY OF  
CLEARWATER  
PROPOSED  
INTERCONNECT**

**FIGURE 11  
NORTH PINELLAS COUNTY  
RECLAIMED WATER FACILITIES**

**LEGEND**



-  RECLAIMED MAINS  
16" AND ABOVE
-  PROPOSED RECLAIMED  
WATER MAIN

SOURCE: PINELLAS COUNTY PLANNING DEPARTMENT  
AND PINELLAS COUNTY UTILITIES, 2007



**FIGURE 12  
SOUTH PINELLAS COUNTY  
RECLAIMED WATER FACILITIES**

**LEGEND**

-  **RECLAIMED MAINS  
16" AND ABOVE**
-  **PROPOSED RECLAIMED  
WATER MAIN**

SOURCE: PINELLAS COUNTY PLANNING DEPARTMENT  
AND PINELLAS COUNTY UTILITIES, 2007