Stantec

Technical Memorandum

To:	Mr. Robert Rivera – Public Works Director, City of New Port Richey, Florida	**From:**	Stantec Consulting Services Inc.
Re:	Irrigation Rate and Rate Structure Review	**Date:**	May 13, 2020

PURPOSE

Stantec Consulting Services Inc. (Stantec) has conducted an Irrigation Rate and Rate Structure Review Analysis (Study) for the City of New Port Richey, Florida (City) and its Water and Sewer Enterprise Fund (Utility).

Water systems generally provide three supply options to meet customer's irrigation demands; 1) potable water for on-site irrigation systems through a single-meter that is measured along with indoor domestic and other outdoor uses, 2) potable water through a separate meter specifically for irrigation and therefore no discharge into the wastewater system, and 3) reclaimed water via a separate meter. The availability of each option varies by community. The City currently offers a combination of these three options depending on the location within the Utility's service area to meet the irrigation demands of its customers. However, this analysis is focused specifically on the approximately 350 potable irrigation metered accounts as portrayed by option 2 above.

The Utility's primary objectives for completion of this Study were; 1) to perform a high-level evaluation of the City's potable irrigation rates and rate structure compared to others in the Tampa Bay area and common industry practices, 2) develop recommendations for future considerations regarding potential improvements to the irrigation rate structure, relative to the City's objectives, and 3) determine the impacts of any rate structure changes for potable irrigation service to the needed rates on water, sewer, and reclaimed water customers.

This memorandum outlines the assumptions and key inputs of the Study and provides a detailed description of the approach that was used to arrive at our findings and conclusions.

IRRIGATION SERVICE

Most of the Utility's customers meet their individual irrigation demands through a single meter. That single meter also serves to establish the volume attributed for purposes of determining sewer volumes and charges. However, the Utility has approximately 350 separate irrigation meters in service that are not utilized to bill sewer charges as the water provided through these meters is not returned to the sewer collection system. A separate irrigation meter is often identified as a potential cost saving to these separately metered irrigation customers, who then avoid paying sewer charges from the separate irrigation meter. However, these cost savings benefits can be mitigated based upon the Utility's 10,000 gallons per month cap on residential customer's billed sewer volumes and the payment of another base charge associated with the size of the irrigation meter, and depending on each customer's monthly irrigation demands.

The City's Water Use Permit from the Southwest Florida Water Management District requires the Utility to continue irrigation conservation measures, comply with allocated irrigation quantities, and incorporate best water management practices. In compliance and in alignment with the City's overall objective of efficient water use and conservation, the City has established an on-going water conservation awareness plan that includes conversation awareness communication with customers and citizens, rebates for low-volume toilets and plumbing retrofits and leak testing, twice per week irrigation restrictions, high-consumption notifications, and an inclining block rate structure for potable indoor and irrigation water demands. These programs and efforts have led to reductions in water use per capita over a period of time and compliance with the Water Use Permit.

As such, it is important for a Utility's irrigation rates and rate structure to consider and be aligned with the community's overall conservation objectives.

IRRIGATION CUSTOMER PROFILE

The first component of this Study was to identify the customers utilizing separate irrigation meters and their historical demands for potable irrigation and develop a customer profile so that the Utility can better understand the irrigation demands for a typical customer.

CUSTOMERS & DEMANDS

Upon review of the Utility's historical records from fiscal year (FY) 2018, Stantec found that approximately 350 or 3% of water bills were issued to customers with separate irrigation meters. Of the Utility's approximately 350 irrigation accounts, approximately 70% are residential customers as shown in Figure 1. In addition, with the residential customers, more than 90% have a 5/8" meter" installed for irrigation purposes. Figure 2 provides a summary of irrigation demands by customer class.

Figure 1 – Irrigation Bills by Meter Size & Class

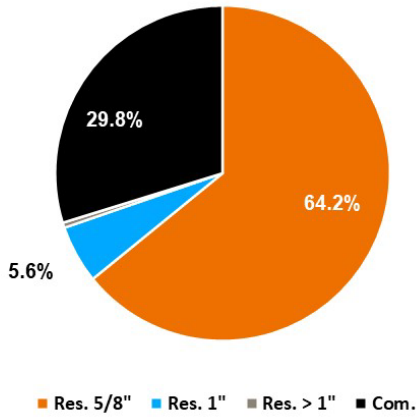
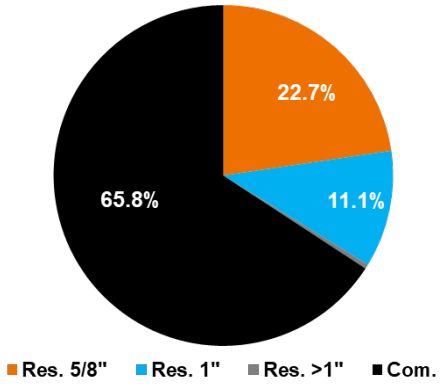


Figure 2 – Irrigation Demands by Customer Class

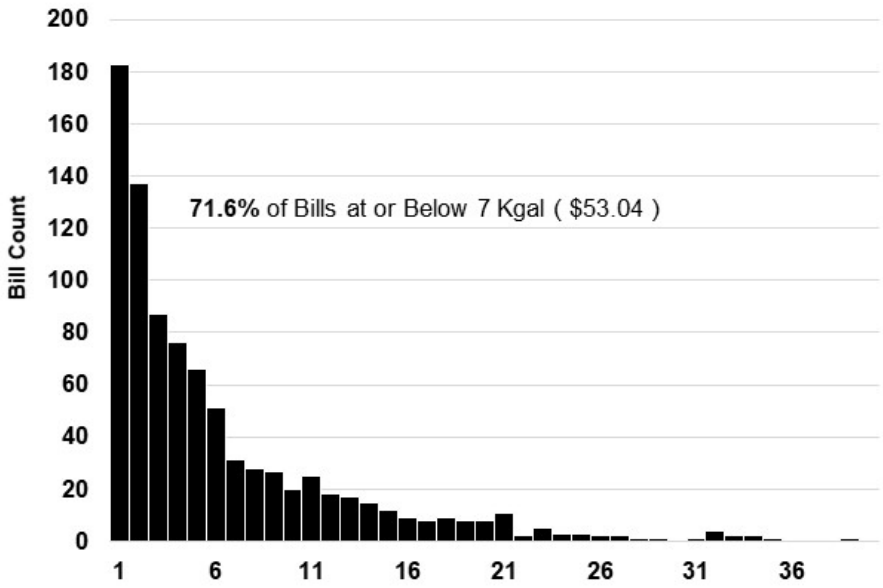


DEMAND PROFILE

Stantec then performed a bill distribution analysis for irrigation customers. The Utility's largest separate irrigation service customer type is residential customers with a 5/8" meter which generally reflects typical irrigation service demands across the industry. Figure 3 provides the bill distribution for this customer segment and demonstrates that these customers, on average, used approximately 7,000 gallons per month with an average bill of $53.04.

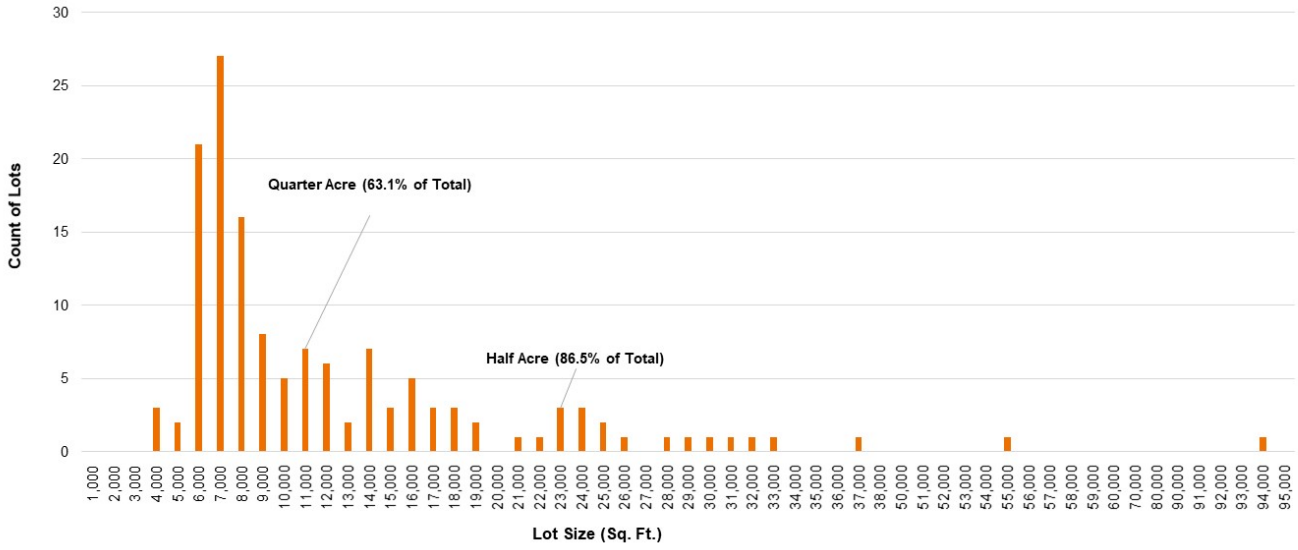
Moreover, approximately 72% of bills from this customer segment (5/8" meter) had monthly demand less than or equal to 7,000 gallons per month.

Figure 3 – Residential 5/8" Irrigation Meter Bill Distribution



In addition, Stantec was able to further evaluate the Utility's residential irrigation demands based upon parcel data provided by the City which identified that the average parcel size serviced by a 5/8" irrigation meter is 15,590 square feet or 0.36 acres and the median is 0.17 acres. The distribution of lot size for residential customers with a 5/8" meter is provided in Figure 4.

Figure 4 – Residential 5/8" Irrigation Meter Lot Size

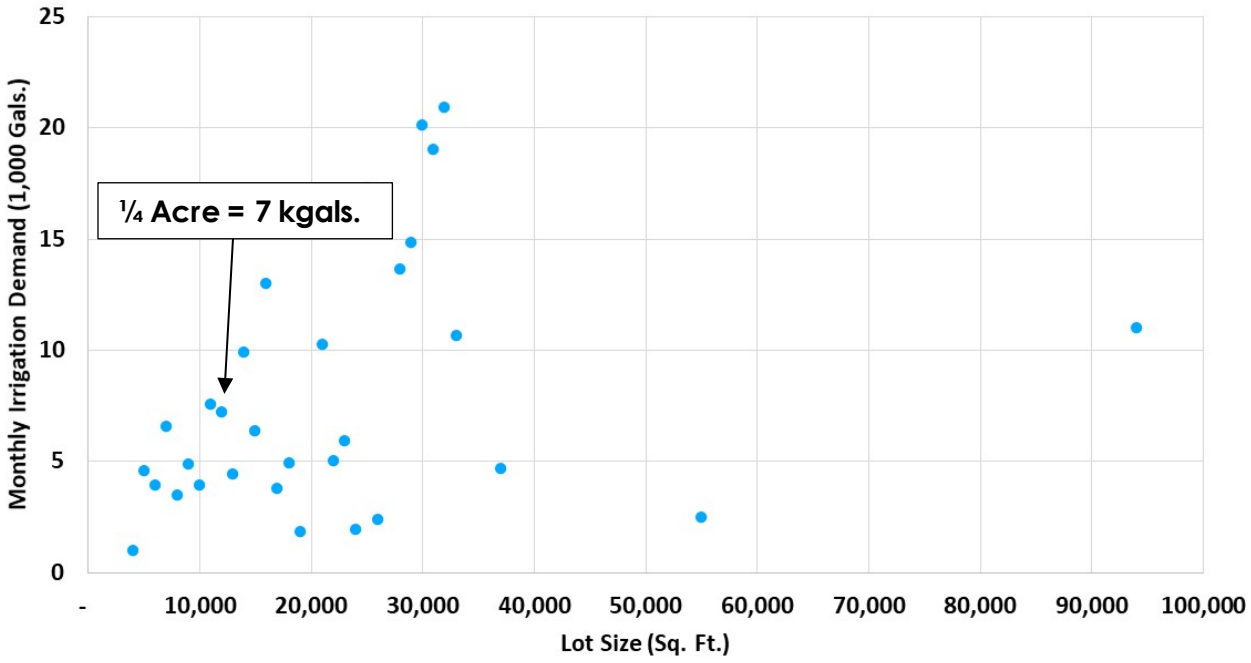


Stantec also evaluated the lot sizes of the Utility's 18 residential customers served during FY 2018 with a 1" irrigation meter and found the average parcel size was 24,867 square feet or 0.57 acres, but found that there

is overlap between the parcel sizes between parcels served by a 5/8" or 1" meter. As demonstrated in Figure 4, a 5/8" meter is typically able to service the irrigation demands for most residential parcels.

The next step was to overlay the total monthly irrigation demands to determine the average monthly irrigation demand by parcel size. Because of the distribution of parcel sizes shown in Figure 4, for purposes of this analysis it was determined that a "typical" residential customer has a parcel size ranging between 7,000 and 11,000 square feet (0.16 and 0.25 acres). As shown in Figure 5, the monthly irrigation demand for a "typical" residential parcel was approximately 5,000 to 7,000 gallons.

Figure 5 – Residential 5/8" Irrigation Demand Profile by Lot Size



IRRIGATION RATES

Common practice in Florida and throughout the industry is an irrigation rate structure comprised of both fixed and variable charges. Generally accepted patterns in the water industry include recovery of a portion of the costs of the system in a fixed readiness-to-serve charge. This pattern recognizes that utilities have substantial investments in capital related costs and other fixed costs that are incurred year-round to maintain a state of readiness to meet peak demands of their customers when they occur and do not vary based on customer usage. Some water and wastewater utilities also have a separate fixed charge for or include a portion of customer related costs (i.e. billing, meter reading, etc.) that generally do not differ for various meter sizes in the fixed charge component of the rate structure.

NEW PORT RICHEY IRRIGATION RATE STRUCTURE

The Utility currently has a three-part irrigation rate structure including the following components:

- Customer Charge – fixed charge covering billing costs to each customer regardless of meter size
- Base Charge – fixed charge based upon meter size regardless of demand
- Volumetric Charge – 3-tier inclining block variable charge based upon metered demand

BENCHMARKING

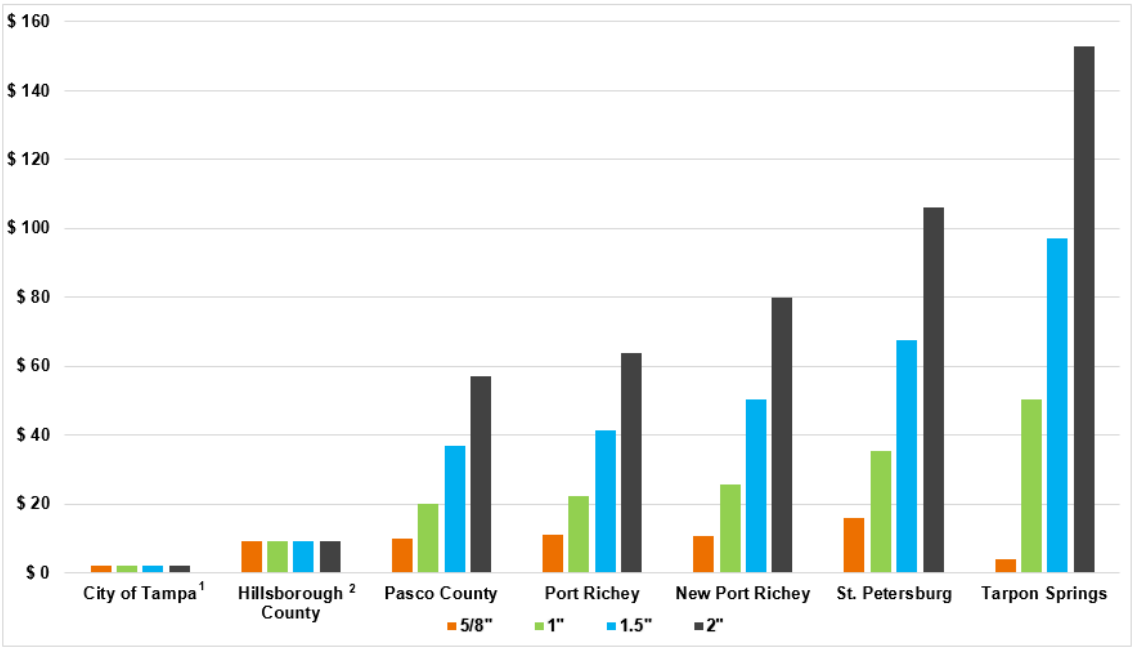
Stantec performed a review and comparison of residential irrigation rate structures for the Utility compared to eight other water utilities in the Tampa Bay area, the results are summarized in Table 1.

Table 1 – Irrigation Rate Structure Comparison

	New Port Richey	City of Tampa	St. Petersburg	Pasco County	Pinellas County	Hillsborough County	Port Richey	Tarpon Springs
Irrigation Rates								
Separate Potable Irrigation Service Offered?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Separate Rates for Irrigation Service?	Yes	No	Yes	Yes	No	No	Yes	Yes
Irrigation Fixed Charges								
Customer Charge	✓						✓	✓
Readiness-to-Serve (Base Charge)	✓	✓	✓	✓		✓	✓	✓
Irrigation Variable Charges								
Tiers Scaled by Meter Size	Yes	No	Yes	Yes	N/A	No	Yes	No
Inclining Block	✓	✓	✓	✓		✓	✓	✓

Relative to base charges, the Utility and most water utilities, both from overall industry observed practices and in the local benchmarking review, assess a fixed charge for irrigation service that increases by meter size. Figure 6 provides a comparison of residential fixed charges by meter size for utilities that offer separate potable irrigation service and includes the customer charge for those systems where applicable.

Figure 6 – Residential Irrigation Fixed Charges

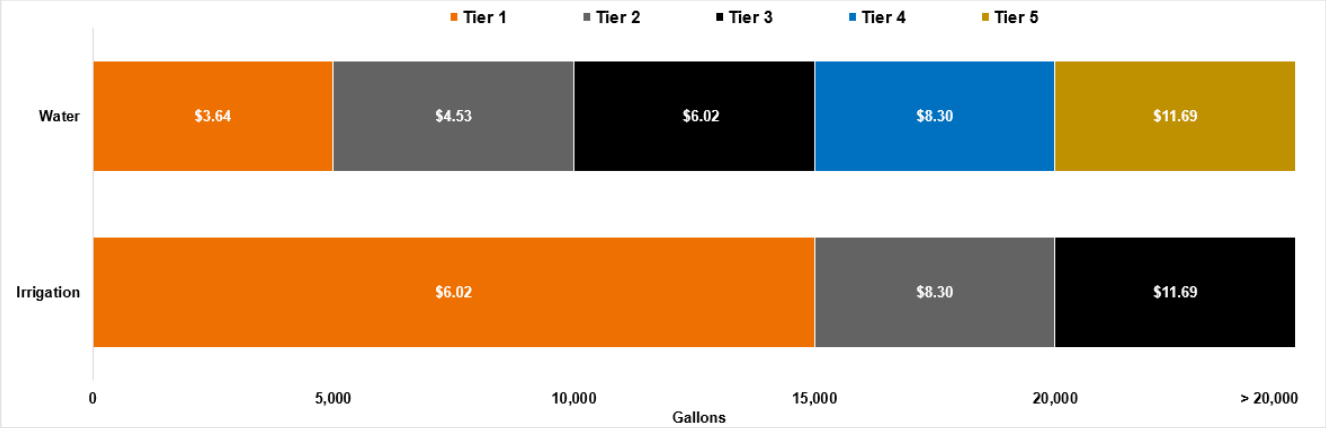


[1] *Single-family residential irrigation monthly water base charges for the City of Tampa equal the 5/8" meter charge of $2.00.*

[2] Hillsborough County single-family residential fixed charges for irrigation service are the same as for water service and represent a readiness to serve charge of $9.18 per ERC (all single-family residential customers charged at 1 ERC of 300 gallons per day).

The City's current irrigation volumetric rate structure includes three tiers with increasing prices as usage increases and are aligned with its potable water rates, except that irrigation rates combine potable water tiers 1 through 3 as shown in Figure 7. This effectively recognizes that any demand through an irrigation meter is for outdoor purposes only whereas the customer's primary water meter will provide reasonable amounts of indoor use in tiers 1 and 2 and irrigation usage in tier 3 -5.

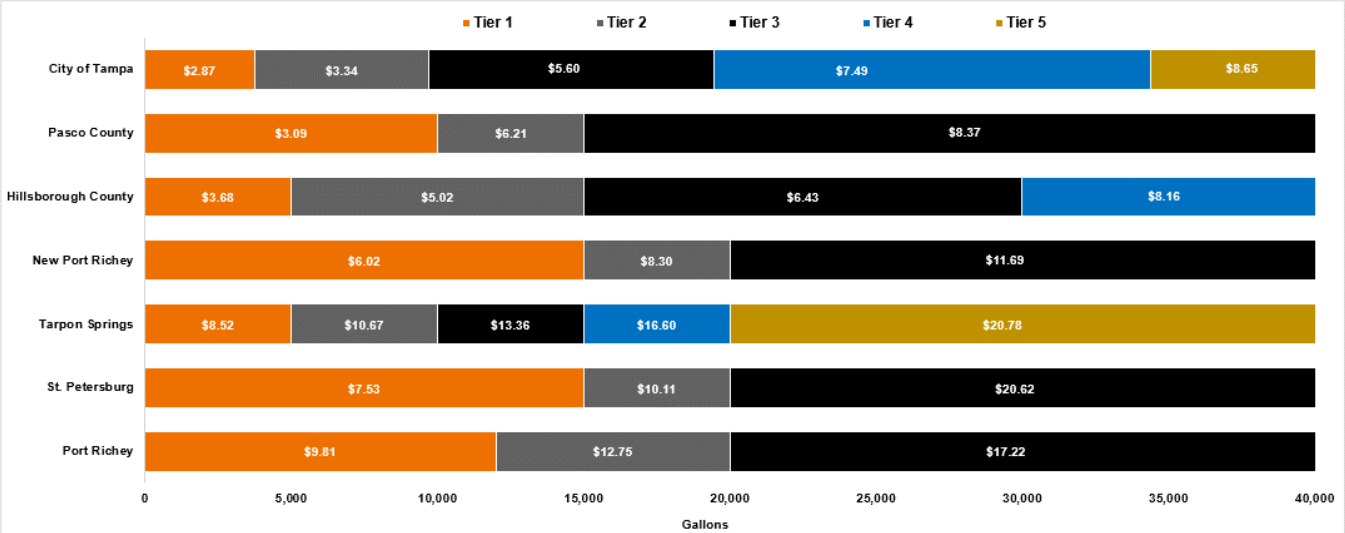
Figure 7 – Irrigation & Water Volumetric Charges [1]



[1] Includes the TBW pass-through of $0.49 per 1,000 gallons.

While the sizing and number of tiers and price differentials between the rates in each tier may vary between community, this structure generally conforms to current local practice and conservation initiatives. Figure 8 provides a local comparison of volumetric rates and tiers for residential irrigation service as of April 2020. The average observed rate per 1,000 gallons for the local communities in Figure 8 at the City's average monthly irrigation demand of 7,000 gallons is $6.58, which is higher than the City's rate of $6.02. Rate structures attempting to encourage stronger conservation reflect steep inverted pricing between blocks, especially in those blocks where the pricing signal is being sent. The City's highest tier for irrigation demand is $11.69 per thousand gallons for any usage above 20,000 gallons per month for a 5/8" meter, which falls towards the middle of comparison relative to the highest tiered rate.

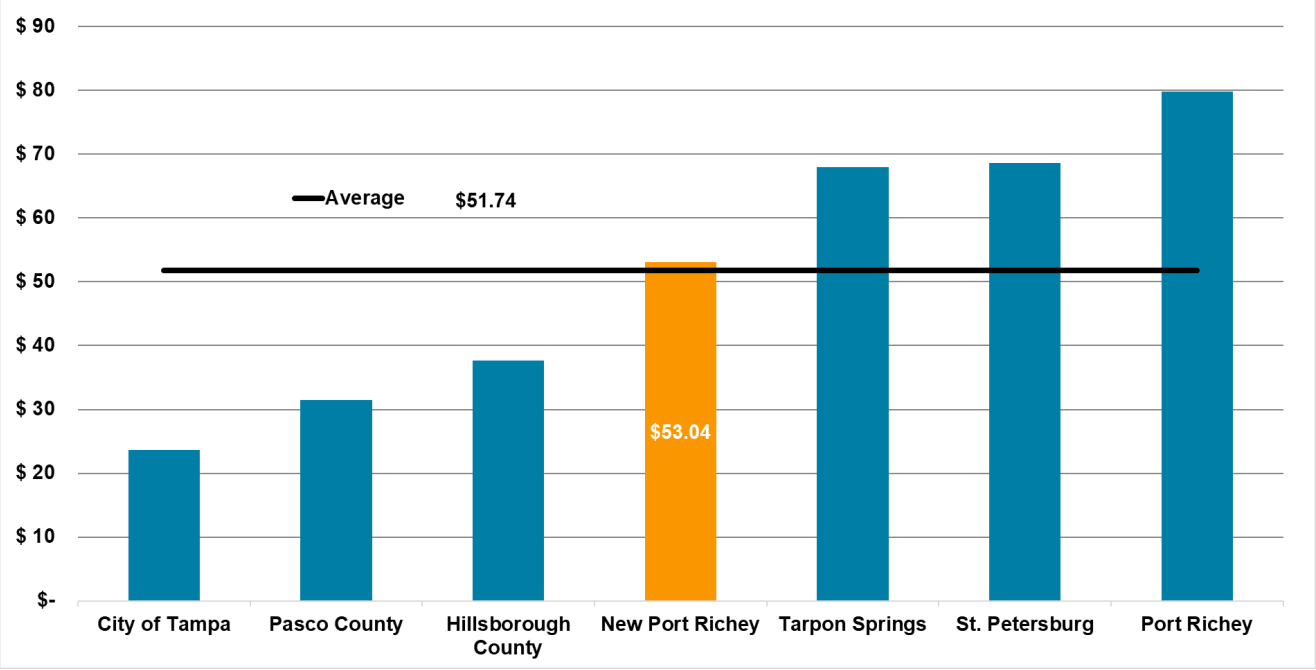
Figure 8 – Residential Irrigation Volumetric Charges



RESIDENTIAL BILL COMPARISONS

Stantec also completed a local comparative residential monthly bill analysis for communities that offer separate irrigation meters based upon FY 2020 rates for the City's average residential irrigation demand of 7,000 gallons per month. As shown on Figure 9, an average residential customer's bill from the City falls towards the middle of the comparison with other water service providers.

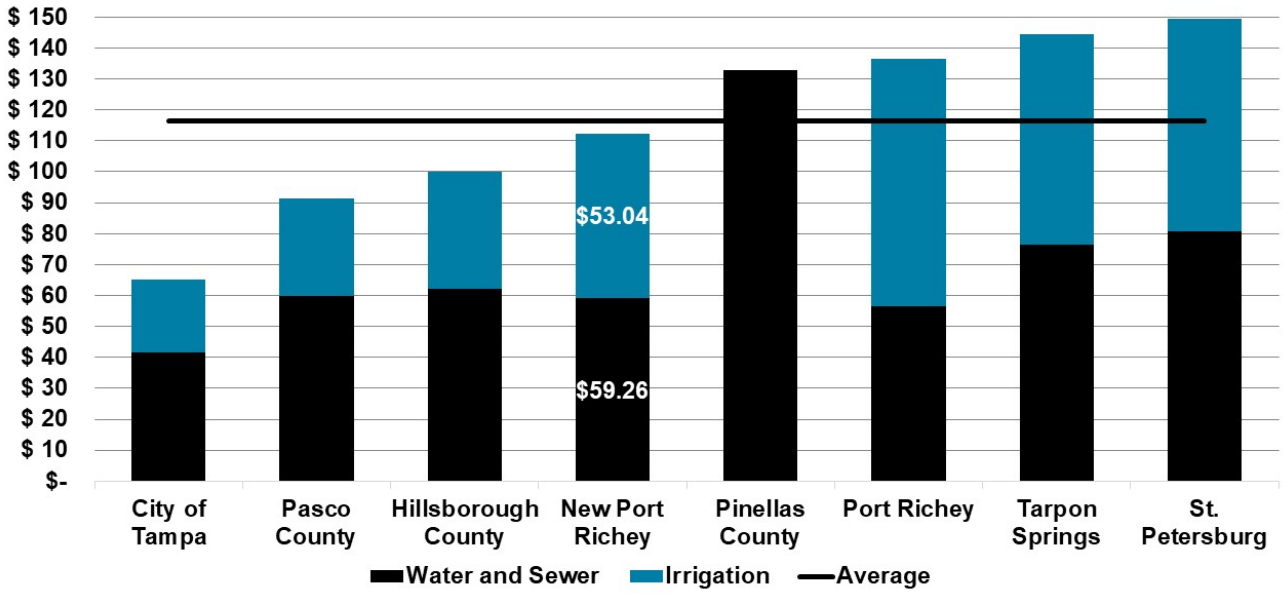
Figure 9 – Residential 5/8" Monthly Irrigation Bill Comparison @ 7,000 Gallons



Stantec then completed a local comparative residential monthly bill analysis based upon FY 2020 rates for the Utility's typical residential customer with water and sewer service and usage of 4,000 gallons per month and an assumed additional 7,000 gallons for irrigation demand. For those communities that do not offer separate

potable water irrigation meters, the 7,000 gallons of irrigation demand was added as additional demand on the primary water meter, to create an equivalent comparison of the cost for the same amount of indoor and outdoor water demand. As demonstrated in Figure 10, the City currently falls towards the middle as compared to other local community service providers for a typical residential user in the surrounding area.

Figure 10 – Residential 5/8" Monthly (Water & Sewer 4,000 Gallons & Irrigation 7,000 Gallons) Bill Comparison



CUSTOMER IMPACT ANALYSIS

One of the Utility's objectives from this analysis is to evaluate how changes in irrigation rates would impact current water, sewer, and reclaimed water rates. As such, upon review of the Utility's irrigation objectives, customer profile, and rate structure, Stantec performed several sensitivity analyses on the Utility's irrigation rates and revenues to determine how changes in overall irrigation rates would impact the Utility's existing water and sewer customers.

In order to perform this analysis, a review of the Utility's FY 2018 billing records and reported revenues was performed and indicated revenue from separate irrigation meters was approximately $0.25M or 1.9% of overall Utility rate revenues. Due to the amount of the Utility's revenues from potable irrigation service as compared to water and sewer revenues, even a 10% reduction to potable irrigation rates with no corresponding decrease to water rates would result in a 0.2% increase or ($0.12) to the typical bill for a customer with water and sewer service using 4,000 gallons per month.

RECLAIMED WATER

Recent trends in Florida have led to the expansion and availability of reclaimed water service. The Utility has reclaimed water service available to approximately 3.0% of its customers. Significant expansion of the reclaimed water system would have significant implications to the Utility's overall financial management plan and to its ratepayers, not only due to the level of expansion capital investment required, but also related to the potential reduced potable irrigation demands/revenues lost, which can be higher than the new reclaimed water revenues recovered. This would negatively impact the Utility's ability to meet its annual revenue requirements. As such, detailed rate and further financial analysis should be performed to evaluate these implications, if considered by the City.

FINDINGS & RECOMMENDATIONS

Upon completion of this Study, Stantec has developed the following findings and recommendations:

- The City's existing potable irrigation rates and rate structure are consistent with the Utility's conservation objectives and our industry experience and are comparable to others in the Tampa Bay area.
- Based on the sensitivity analyses described herein, any reductions specifically to the irrigation volumetric or base charges would require increases to the Utility's water, sewer, and reclaimed water rates to ensure recovery of the Utility's revenue requirements. However, because revenues associated with separate irrigation meters represent less than 2% of the Utility's overall rate revenues, any reduction to irrigation rates would have impacts on water, sewer, and reclaimed water rates ranging up to 2%.
- The City should consider periodic reviews of its irrigation rates along with the Utility's other rates and charges as part of on-going financial and rate management practices. Any changes to the irrigation rate structure should be considered only within the context of a comprehensive rate study and through careful consideration of costs to provide service and the City and Utility's objectives.
- To address stakeholder concerns about irrigation rates and high-bills, the Utility should consider additional stakeholder engagement outlining steps to improve the efficiency of individual irrigation systems, continued conservation requirements, educating customers on the effects/costs of appropriate irrigation meter sizes, and monthly irrigation needs based on property size and characteristics, and providing bill comparison analyses to determine if a separate potable water meter for irrigation demands is the most cost effective approach for their individual irrigation demands.

If you or others at the City have any questions, please do not hesitate to call me at (813) 204-3311. We appreciate the opportunity to be of service to the City and look forward to the possibility of doing so again soon.

Sincerely,

Jeff Dykstra
Managing Consultant, Financial Services

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