

HC CPA 20-07

Background Data and Analysis*

*This document serves to provide background data and analysis for the One Water Chapter (General Sanitary Sewer, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element). It is intended to meet the requirements of Chapter 163.3177(1)(f) and is non-adopted material.

This document only includes items not already included as part of the One Water Chapter. For example, maps proposed to be adopted are not repeated here, but they were still utilized as part of the data and analysis

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POTABLE WATER

10 Year Water Supply Facilities Work Plan

Hillsborough County complies with the statutory requirements for 10 Year Water Supply Facilities Work Plans. *Although summary information is presented below, additional information regarding potable water may be found in the 10-Year Water Supply Facilities Work Plan (Work Plan) (Appendix B) and incorporated by reference into this data and analysis.* This Work Plan, report and supplemental exhibits include extremely detailed information on facilities, future planning and maps and should be considered part of the background and analysis

The Southwest Florida Water Management District is scheduled to update their Regional Water Supply Plan in 2020. Within 18 months of adoption of the Regional Water Supply Plan, Hillsborough County will update its Work Plan, in accordance with Chapter 163.3177 requirements.

Water Use Permit and Tampa Bay Water Information

The County has a Water Use Permit (WUP) from SWFWMD for wholesale purchase of water from Tampa Bay Water, a regional water supply authority. Tampa Bay Water has an unequivocal obligation to provide potable drinking water to its six member governments, including Hillsborough County. The relationship between the County and Tampa Bay Water is governed by the Amended and Restated Interlocal Agreement (Interlocal Agreement) and Master Water Supply Contract.

The Interlocal Agreement outlines requirements for Tampa Bay Water's Long-Term Master Water Plan, which must contain sufficient water supply projects to meet the Member Governments' water needs. The Long-Term Master Water Plan was most recently updated in December 2018 and extends the planning horizon to 2040. Additional details can be found here: <https://www.tampabaywater.org/future-drinking-water-sources>

County Potable Water Facilities

The following information is summarized from the Work Plan information:

Hillsborough County owns, operates and maintains a central potable treatment and distribution system and a reclaimed water system within large portions of unincorporated Hillsborough County, in the Northwest and South-Central County. A map of the County's potable service area is included within the Work Plan information.

Areas of unincorporated County are served by the City of Tampa, Plant City and Temple Terrace through an interlocal agreement. The data and analysis for these areas of the County was completed and coordinated with the development of 10 Year Water Supply Facilities Work Plans for these jurisdictions. Twelve private utilities also supply water to County residents, as of the date of the Work Plan.

Hillsborough County potable water system is divided into two service areas: Northwest and South-Central Service Areas. The County maintains storage, treatment, pumping and transmission

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facilities for these areas. The following is a summary of the information provided in the Hillsborough County Public Utilities Department's most recent Potable Water Master Plan (Northwest and South Central):

The Northwest Service Area is approximately 76 square miles and serves customers in the Northwest portion of unincorporated Hillsborough County. This includes the areas of Carrollwood, Citrus Park, Westchase, Egypt Lake and portions of Lutz. The potable water infrastructure to serve these areas includes:

- One potable water system
- Two potable water treatment plants
- One potable water booster pump station
- 57 miles of transmission main
- 661 miles of distribution line

The Northwest Potable Water System has a permitted maximum day design capacity of 48 mgd. This is based on the combined capacities of Lake Park, Fawn Ridge and the Tampa-Hillsborough Interconnect. The Fawn Ridge facility and Lake Park Pump station both receive raw groundwater and treated regional water supply from the Tampa Bay Water Tampa-Hillsborough Interconnect.

The South-Central Service Area is approximately 193 square miles and serves customers in the South-Central portion of unincorporated Hillsborough County. This includes the areas of Apollo Beach, Brandon, Gibsonton, Riverview, Ruskin, Seffner, Sun City, Valrico and Wimauma. The potable water infrastructure to serve these areas includes:

- Four potable water systems
- Two potable water treatment plants
 - Lithia Water Treatment Plant
 - Central Hillsborough Water Treatment Facility
- One potable water re-pump station
- 113 miles of transmission main
- 1,464 miles of distribution main

The South-Central Service Area has a permitted maximum day design capacity of 82.6 mgd. This is based on the combined capacity of the Lithia and Central Hillsborough Water Treatment Facilities. The Lithia Water Treatment Plant, located in the eastern portion of the service area, receives both raw groundwater and treated regional water supply from Tampa Bay Water. The Central Hillsborough Water Treatment Facility receives no raw groundwater, only treated regional water supply from Tampa Bay Water. The South County Potable Water Re-Pump Station receives treated water from the distribution system during off-peak demand periods and pumps back into the distribution system during on-peak demand periods.

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Potable Water Flow Rate Capacity (mgd)

Planning Area	2020	2025	2030	2035	2040	2045	Capacity
South-Central	44.3	51.2	57.3	61.9	66.9	72.2	82.6
Northwest	20.4	21.2	21.5	21.7	21.7	21.7	48

Source: Hillsborough County Public Utilities

Water Conservation

The County has a very strong, multifaceted water conservation program that employs numerous operational, educational and policy measures. A full description of the County's conservation initiatives is listed in Work Plan Exhibit E. These measures include the following:

- Implementation of advanced plumbing codes
- Purchase and distribution of lower flow showerhead and faucet aerators
- Fixture retrofits
- Irrigation and landscape evaluations
- Low volume irrigation grants for community associations or neighborhoods
- Toilet rebate/replacement
- Soil moisture sensor rebates
- Promotion and education related to rain harvesting
- Promotion of water use efficiency within the local lodging industry
- Land Development Code requires irrigation system to be designed and constructed to Florida Irrigation Society standards
- Funding of Florida-Friendly Yards Program
- Water conserving rate structures
- Multi-family residential metering
- Educational initiatives at various targeted audiences
- Water restrictions enforcement

Conservation continues to be an important component of the One Water Chapter. A goal targeted at conservation efforts will help ensure these mechanisms continue to be implemented.

Level of Service (LOS):

The LOS for potable water in the Hillsborough County Comprehensive Plan is based on a gross residential usage expressed as gallons per capita per day (GPCD) on an annual average. The adopted LOS is 115 gallons per capita per day and is found in the *Future of Hillsborough Capital Improvements Element*. As the LOS is updated, that per capita number will be modified to reflect something closer to the actual LOS, which is roughly 102. The County uses a 110 per capita for flow projections.

The County Capital Improvement Projects identified in the Water Facilities Work Plan include those required to maintain the adopted County Level of Service (LOS) for delivery of water supply

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within the County distribution system. Each year the Planning Commission reviews the CIP for consistency with the adopted Comprehensive Plan.

WASTEWATER

County wastewater facilities

This background section contains an inventory of the unincorporated County's wastewater facilities and an analysis of current and future demands/capacity.

According to the Northwest and South-Central Wastewater Master Plans (2014), the Hillsborough County Public Utilities Department (PUD) maintains two separate service areas separated by the City of Tampa. Within the Northwest service area, the PUD owns and operates four wastewater treatment facilities, one regional biosolids facility, and over 300 pump stations along with the wastewater collection and transmission system. Within the South-Central service area, the PUD owns and operates three wastewater treatment facilities and over 300 pump stations along with the wastewater collection and transmission system. The wastewater treatment facilities are listed with their current annual average daily flows (AADFs) as follows:

- Dale Mabry Advanced Wastewater Treatment Facility – 3.94 MGD AADF
- River Oaks Advanced Wastewater Treatment Facility – 7.54 MGD AADF
- Northwest Regional Water Reclamation Facility– 5.55 MGD AADF
- Van Dyke Wastewater Treatment Facility – 1.09 MGD AADF
- Falkenburg Advanced Wastewater Treatment Facility – 9.57 mgd AADF
- Valrico Advanced Wastewater Treatment Facility – 6.32mgd AADF
- South County Regional Advanced Wastewater Treatment Facility– 3.73 mgd AADF

The South-Central service area includes Apollo Beach, Brandon, Gibsonton, Riverview, Ruskin, Seffner, Sun City, Valrico, and Wimauma. All of the South-Central service area is within unincorporated Hillsborough County. The area is limited to the area delineated by the Urban Service Area boundary as defined in the Hillsborough County Comprehensive Plan. The South-Central wastewater collection and transmission system includes:

- 3 Advanced Wastewater Treatment Facilities (AWTFs)
- 428 County-owned pump stations
- 648 privately owned pump stations
- 1,206 low pressure grinder stations
- 388 miles of force main
- 80 miles of low pressure force main
- 775 miles of gravity collection pipe
- 17,000 manholes

The Northwest service area includes Town 'N Country, Carrollwood, Citrus Park, Egypt Lake, and Northwest Hillsborough. All of the Northwest service area is made up of unincorporated Hillsborough County. As with the South-Central service area, the Northwest service area is

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limited by the Urban Service Area boundary as defined in the Hillsborough County Comprehensive Plan. The Northwest wastewater collection and transmission system includes:

- 301 County-owned pump stations
- 650 privately owned pump stations
- 225 miles of force main
- 533 miles of gravity collection pipe
- 16,000 manholes

2020 Wastewater Flow Rate Capacity (mgd)

Planning Area	2020	2025	2030	2035	2040	2045	Capacity
Northwest Regional	17.9	18.4	18.7	18.8	18.8	18.8	30
Falkenburg	10.4	10.5	11.3	11.6	11.7	11.7	12
South County	6.9	9.8	13.1	16.1	19.9	24.1	10
Valrico	7.5	10.1	10.7	11.0	11.1	11.2	12
Van Dyke	1.3	1.4	1.4	1.4	1.4	1.4	1.3

Source: Hillsborough County Public Utilities

Reclaimed Water

Hillsborough County owns, operates and maintains a central potable treatment and distribution system and a reclaimed water system within large portions of unincorporated Hillsborough County, in the Northwest and South-Central County. Data on the reclaimed water system can be found in the 10-Year Water Supply Facilities Work Plan.

The One Water Chapter continues to support the County's reclaimed water initiatives.

Level of Service (LOS):

The adopted wastewater LOS is 90 gallons per capita per day in the system service area and is found in the *Future of Hillsborough* Capital Improvements Element. That per capita is used to project flow rate capacity.

The County Capital Improvement Projects identified in the Water Facilities Work Plan include those required to maintain the adopted County Level of Service (LOS) for wastewater within the County system. Each year the Planning Commission reviews the CIP for consistency with the adopted Comprehensive Plan.

Minimizing Adverse Impacts of Septic Tanks

A 2018 study by Hazen and Sawyer found there are approximately 26,000 residential single-family parcels within the Hillsborough Urban Service Area not currently connected to the wastewater collection and transmission systems. Septic tanks are the primary approach for on-site wastewater in the Rural Area, where wastewater is not permitted to be extended. If not properly maintained or sited, septic tanks can cause environmental issues.

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The One Water Chapter supports the County's efforts to continue to minimize the adverse impacts of septic tanks and convert septic to sewer. Future implementation of septic to sewer will take place as part of the CIP.

STORMWATER/DRAINAGE

County Stormwater Infrastructure

Hillsborough County's Stormwater Program provides for the maintenance, rehabilitation, and construction of the public stormwater conveyance and storage systems to address:

- Safety – elimination of flooding on County roadways based on a 25 year storm event. These projects include the replacement of failed pipes and improved roadway drainage systems by cleaning/grading, adding pipes, and rerouting drainage.
- Asset Preservation – routine inspections, maintenance, rehabilitation and replacement of infrastructure; repair of structures, replacement of failing pipes, slip-lining and routine cleaning.
- Regulatory Compliance – response to Federal and State requirements and standards by maintenance and system improvements in surface water detention and retention, treatment, education/outreach, inspections and monitoring/reporting; includes programs such as Adopt-a-Pond, Adopt-a-Stream, outreach to schools and other organizations

In addition to reduction of flooding, projects implemented through the County's stormwater program directly contribute to improved water quality in fresh water wetlands and the improved water quality of Tampa Bay.

Pursuant to Federal and State regulatory requirements, the County's Stormwater Management Program is responsible to regulate, maintain, and manage stormwater run-off within the County. As such, the County's Stormwater Management Program was established to: 1) reduce undesirable stormwater impacts through stormwater runoff reduction and pollution prevention strategies; 2) maintain the integrity of the County's stormwater infrastructure; 3) minimize flooding; 4) plan for and implement future Stormwater System improvements; and 5) ensure compliance with Federal, State and Local stormwater management rules and regulations. These regulatory requirements include federally mandated National Pollution Discharge Elimination System (NPDES) permit requirements. The County's NPDES permit regulates what can be discharged into freshwater areas and delegates compliance enforcement to the County and requires that the County control and reduce pollutants entering the Stormwater System from residential and commercial properties.

The following data on existing stormwater facilities outlines the type and structure of County facilities. This information was provided in the July 2019 Stormwater Management Program Business Plan and Rate Study.

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Type	Total Structures (Count)
Dry Retention Systems	366
Underdrain Filter Systems	167
Wet Detention Systems	1,675
Alum Injection Systems	2
Pollution Control Boxes	25
Pump Stations	36
Major Outfalls	196
Weirs or Other Control Structures	2,667
Pipes and Culverts (miles)	1,252
Inlets and Catch Basins	36,680
Ditches or other (miles)	1,347

Watershed Planning and LOS

The County maintains a Watershed Master Plan that incorporates identified needs for each of its 17 watershed basins. Each of these have separate watershed plans that collectively make up the Countywide plan. A map is included supplemental to this report that outlines each of these areas. Under the plan, the entire County (1,072 sq. miles) is divided into 17 watersheds (basins) and further subdivided into 7,000 sub-basins.

The plan is periodically updated at the watershed level as new development and stormwater improvements are completed throughout the County. When plans are updated, they primarily examine flood delineations, LOS for roadway flooding, and project recommendations to address any flooding concerns. The One Water Chapter supports this approach and supports expanding the WMMP process to include water quality where feasible.

The *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County's* Capital Improvements Element identifies the LOS of each of these 17 watershed basins. It is Hillsborough County's goal to achieve a LOS, relative to all major stormwater conveyance systems, of the 25 year/24 hour/B level, as well as compliance with both the County's NPDES permit and the CCMP of the Tampa Bay Estuary Program.

The individual adopted LOS for each watershed can be found on Table 1 in the Capital Improvement Element. Additionally, the LOS for new and existing private systems is also

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included. As the Capital Improvements Element undergoes a major update, these LOS approaches will be re-examined.

Capital Improvement Projects identified via the Watershed Management Master Plan or other mechanisms are included in the annual CIP. Each year the Planning Commission reviews the CIP for consistency with the adopted Comprehensive Plan.

Water Quality and Stormwater Runoff

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers where they harm water quality. (https://www3.epa.gov/npdes/pubs/nps_urban-facts_final.pdf)

As Beck et. al., (2019) describe, Tampa Bay is the largest open-water estuary in Florida and the second largest estuarine embayment in the Gulf of Mexico. Current water quality in Tampa Bay is dramatically improved from the degraded historical condition. In 1972 a long-term monitoring program was institutionalized through State legislation by the creation of the Environmental Protection Commission of Hillsborough County which has collected water quality data consistently since 1974. Results show Chlorophyll-a in Tampa Bay has decreased over the 40-year record and total nitrogen concentrations have similar trends. The improvement in water quality can be attributed to habitat restoration activities and water infrastructure improvements related to point and non-point source controls. (Beck, Marcus W., Edward T. Sherwood, Jessica R. Henkel, Kirsten Dorans, Kathryn Ireland, and Patricia Varela. "Assessment of the Cumulative Effects of Restoration Activities on Water Quality in Tampa Bay, Florida." *Estuaries and Coasts*, no. 42 (August 5, 2019): 1774-91 <https://doi.org/10.1007/s12237-019-00619> .

Increasing urbanization led to a threefold increase in developed land within the Tampa Bay watershed from 1991-2002. Developed land replaced other land cover classes, which led to a significant increase in impervious land surface and resulted in increased surface rainfall-runoff in a watershed dominated by karst geology that otherwise would allow percolation. (McCarthy, Matthew J., Frank E. Muller-Karger, Daniel B. Otis, and Pablo Menez-Lazaro. "Impacts of 40 years of land cover change on water quality in Tampa Bay, Florida." *Cogent Geoscience* 4, no. 1 (January 4, 2018): 1-21. <https://doi.org/10.1080/23312041.2017.1422956>) .

One Water policy continues to support and improve the health of the Tampa Bay and other surface water sources.

Green infrastructure and Low Impact Development

Green infrastructure practices are stormwater management systems or practices that use or mimic natural process to infiltrate, evapotranspire or utilize stormwater or runoff on the site where it is generated. Low Impact Development is defined as approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible.

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Implementing green infrastructure practices helps attenuate nutrients and other pollutants and reduce runoff volumes and peak flows. Research compiled by the EPA (<https://www.epa.gov/green-infrastructure/performance-green-infrastructure>) shows that many of these practices are effective as conventional on-site detention basins in reducing total suspended solids and total nitrogen being discharged to waterways and they can also reduce runoff volumes and peak flows discharged to urban streams, reducing erosion, sedimentation and flood risks. Green infrastructure is economically beneficial, resulting in substantial savings in both construction and life cycle costs.

As stormwater management objectives expand from peak flows to mitigating water quality/ecosystems, the County will be incorporating green infrastructure and Low Impact Development as part of the One Water Chapter

SOURCE PROTECTION AND AQUIFER RECHARGE

Groundwater Source and Aquifer Recharge

Groundwater is an important part of Tampa Bay Water's system. Hillsborough County is divided into three distinct aquifer systems: the Surficial, Intermediate, and Floridan. Groundwater comes from the Floridan Aquifer, an underground layer of limestone that stores billions of gallons of water that seeps down through the soil.

Portions of Hillsborough County are located within the Southern Water Use Caution Area (SWUCA), designated in 1992 to address declines in aquifer levels primarily due to groundwater withdrawals. Portions of the County are within the Most Impacted Area (MIA) of the SWUCA, where concerns primarily relate to saltwater intrusion in the Upper Floridan aquifer. A large area of the County is located in the Northern Tampa Bay Water Use Caution Area, where issues primarily involve lowered lake levels and wetlands. A portion of the Dover/Plant City Water Use Caution Area, where concerns relate to lowered aquifer levels due to agricultural irrigation for frost/freeze protection, is also in Hillsborough County. The Water Use Caution Area recovery strategies, including rulemaking and project-based solutions, have been implemented by SWFWMD.

The potentiometric surface of a confined aquifer is the elevation that water would rise under greater than atmospheric pressure and is generally an expression of the "hydraulic head" or recharge pressure within the confined aquifer. The potentiometric surface of the Floridan Aquifer varies seasonally, with highest and lowest levels occurring in September and May, respectively. September is normally the end of the wet season, May, the end of the dry season. The amount of rainfall is the most important factor affecting the elevation of the potentiometric surface of the Floridan Aquifer.

Aquifer recharge can generally be defined as the replenishment of water in an aquifer system. There are two basic dimensions to the issue of recharge area protection: water quantity and water quality. From the quantity perspective, it is desirable to ensure enough recharge to sustain projected ground-water requirements for natural systems and the future population of the region. But in terms of water quality, recharge areas are sensitive zones, because water moving downward from the surface can transport contaminants to the aquifer.

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Areas of high recharge represent only about 15% of the entire State of Florida, and in these areas recharge rates are estimated to range from 10 to 20 inches per year. In comparison to the State as a whole, there are no known areas of high recharge in Hillsborough County, although there are areas of relatively high aquifer contamination potential.

Maps on natural recharge and potentiometric contours are included as part of this data and analysis document.

Surface Water Sources

Tampa Bay Water also utilizes surface water and desal for water supply. When available, water is obtained from the Alafia River, Hillsborough River and the Tampa Bypass Canal.

The Alafia River flows westward from Polk County and eastern Hillsborough County into the Hillsborough Bay near Gibsonton; the drainage basin consists of approximately 420 square miles. The Alafia River is comprised of the North and South prongs, which join nearly 20 miles from the mouth at Hillsborough Bay. The Alafia River has numerous tributaries throughout its course, the most notable being Turkey Creek, Fishhawk Creek,

Bell Creek and Rice Creek. Also found along the Alafia are natural springs, the most well-known being Lithia Springs and Buckhorn Springs.

Two reservoirs have been constructed in the Alafia River basin, including the Edward Medard Reservoir and Lake Grady. Lake Grady was built in 1960 by damming Pelleham and Bell creeks for recreation and flood retention, and it remains private. Medard Reservoir was created in 1970 for water management and recreation by damming the Little Alafia River and flooding a phosphate pit. Medard Reservoir has become the most popular Hillsborough County park and has had no significant water quality problems for public recreation. During high-flow periods, Tampa Bay Water pumps water from the Alafia River to help meet water demands at their regional Water Treatment Plant or is pumped to their reservoir in Southeast County for storage and later use.

The Hillsborough River originates in the Green Swamp and flows southwesterly into Hillsborough Bay. The river's drainage basin encompasses approximately 690 square miles of which approximately 120 square miles are located in Hillsborough County.

The Hillsborough has five main tributaries which flow into it at various points. Together, these tributaries account for approximately 65% of the total drainage basin area.

Presently, there are two flow controlling structures on the Hillsborough River. The first is the City of Tampa Water Works Dam, which is located on the river at 30th Street. The Little Tampa Bypass Canal water below the dam is brackish and tidally influenced by Hillsborough Bay. The water above the dam forms a reservoir which contributes to the City's overall potable water supply. The second structure is located just north and east of Interstate 75 in the vicinity of Fletcher Avenue. This structure (S-155) is operated by the Southwest Florida Water Management District to control flooding.

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The upper Hillsborough River is classified as a Class I-A (potable) water, while the remainder of the river is classified as Class III waters (suitable for propagation of fish and wildlife). The portion of the river passing through Hillsborough River State Park is further designated as Outstanding Florida Waters (OFW). The upper Hillsborough is largely publicly owned and as such is not presently available for major land development.

The Tampa Bypass Canal was formed by dredging the original Palm River. The Tampa Bypass Canal System was designed by the U. S. Army Corps of Engineers to provide flood protection for the Tampa metropolitan area. The system has three canal segments with a total length of approximately 37 miles. The canal segments are the Tampa Bypass Canal, the Harney Canal and the Thonotosassa Canal.

Source Protection:

The County has a multi-tiered approach to source water protection, including specific requirements in both the Comprehensive Plan and the Land Development Code. These protections, including aquifer recharge requirements, Surface Water Protection Areas, Potable Water Wellfield Protection Areas and Wellhead Resource Protection Areas, are carried forward as part of the One Water Chapter.

Specific maps pertaining to these areas are included as part of the amendment and not repeated in this background document.

Appendix B

10-Year Water Supply Facilities Work Plan*

* Most recent Work Plan adopted. Within 18 months of the 2020 Regional Water Supply Plan adoption, Hillsborough County will prepare an updated Work Plan.



**Hillsborough County
City-County
Planning Commission**

Resolution

Item: HC/CPA 16-18 – 10-Year Water Supply Facilities Work Plan

	AYE	NAY	ABSENT	DATE: October 10, 2016
Mitch Thrower, Chair	X			<i>Mitch Thrower</i>
Bowen A Arnold, Vice-Chair			X	
Gary Pike, Member-at-Large	X			
Stephanie A Agliano	X			
Matthew D Buzza			X	Mitch Thrower Chair
Derek L Doughty, PE	X			<i>Melissa E Zornitta</i>
Theodore Trent Green, RA			X	
Nigel M Joseph	X			
Jacqueline S Wilds	X			
Melissa E Zornitta, AICP Executive Director				Melissa E. Zornitta, AICP Executive Director
On motion of Commissioner Doughty. Seconded by Commissioner Wilds The following resolution was adopted:				

WHEREAS, the Hillsborough County City-County Planning Commission developed a long-range Comprehensive Plan for Hillsborough County, the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County*; and

WHEREAS, Section 163.3177, Florida Statutes, requires updated comprehensive plans through the 10-Year Water Supply Facilities Work Plan (Work Plan) process within 18 months of when a Water Management District's Governing Board approves a Regional Water Supply Plan; and

WHEREAS, the Southwest Florida Water Management District (SWFWMD) approved an updated Regional Water Supply Plan on November 17, 2015; and

WHEREAS, staff of the Hillsborough County City-County Planning Commission prepared an updated Work Plan report analyzing existing facilities, population and demand projections, and project options in accordance with the requirements of Section 163.3177, Florida Statutes; and



Plan Hillsborough
planhillsborough.org
planner@plancom.org
 813. 272-5940
 601 E Kennedy Blvd
 18th Floor
 Tampa, FL, 33602

WHEREAS, the data and analysis in the Work Plan report indicates Hillsborough County will meet projected water demand through the 10-year planning horizon; and

WHEREAS, updates to the Work Plan table in the Potable Water Section serve as HC/CPA 16-18, and amend the text of the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County* in accordance with the requirements of Section 163.3177, Florida Statutes; and

WHEREAS, the Hillsborough County City-County Planning Commission reviewed the HC/CPA 16-18 text amendment and Work Plan report and found the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County* provides guidance as follows:

Intergovernmental Coordination Element

Policy 3.11 *Coordinate with the Southwest Florida Water Management District to assure consistency between the Future of Hillsborough: A Comprehensive Plan for Unincorporated Hillsborough County and SWFWMD's Regional Water Supply Plan. The 10 Year Water Supply Facilities Work Plan shall be updated every five years and within 18 months of the update of the Southwest Florida Water Management District's Regional Water Supply Plan.*

Potable Water Element

Objective 1: *Maintain a water supply facilities planning program necessary to correct current deficiencies and meet projected potable water demands by maintaining and implementing the 10 Year Water Supply Facilities Work Plan.*

Policy 1.3: *Hillsborough County recognizes that water is a regional resource requiring the formulation and implementation of regional water resource management strategies and the proper role of County government is primarily the planning and implementation of water supply distribution facilities and the conservation and reuse of water resources.*

Policy 8.18: *Hillsborough County, as a member of Tampa Bay Water, shall support new and alternative water sources that will not result in individual or cumulative adverse impacts to natural resources.*

NOW, THEREFORE, BE IT RESOLVED, that the Hillsborough County City-County Planning Commission finds HC/CPA 16-18 **CONSISTENT** with the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County* and recommends that it be approved.

Unincorporated Hillsborough County: HC/CPA 16-18

10-Year Water Supply Facilities Work Plan
Planning Commission Public Hearing: October 10, 2016

Potable Water Text Amendment Summary Information

Application Type	Publicly Initiated
Agency Review Comments	None
Staff Planner	Melissa Dickens, AICP
Staff Recommendation	CONSISTENT
Purpose of Amendment	The purpose of the 10-Year Water Supply Facilities Work Plan (Work Plan) is to comply with the statutory requirements for water supply planning. Section 163.3177, Florida Statutes, requires updated comprehensive plans through the Work Plan process within 18 months of when a Water Management District's Governing Board approves a Regional Water Supply Plan (RWSP). The Southwest Florida Water Management District (SWFWMD) approved an updated RWSP on November 17, 2015.

Proposed Changes

This amendment serves as the official 10-Year Water Supply Facilities Work Plan, and consists of the Water Supply Facilities Work Plan table update, replacing the existing table adopted in the Potable Water Element. A detailed Work Plan report serves as backup and analysis to the amendment.

The text amendment to the Work Plan table is included as Attachment A. Attachment B serves as the data and analysis (Work Plan report). This report, prepared by Planning Commission staff, contains information on existing facilities, population and demand projections, coordination with other agencies (Hillsborough County, Tampa Bay Water and SWFWMD), traditional and alternative water supplies and project options.

Staff Analysis

The Work Plan amendment and report meet the requirements of Section 163.3177, Florida Statutes, including coordination of the Potable Water, Conservation and Aquifer Recharge, and Intergovernmental Coordination Elements with SWFWMD's 2015 Tampa Bay RWSP. The Work Plan report addresses the role of traditional and alternative water supplies, reclaimed initiatives and conservation to serve existing and potential increases in demand for at least a 10-year planning period. The time horizon of the Work Plan is from FY 17 – FY 26.

Hillsborough County, through its status as a member government in Tampa Bay Water, permitted quantities and reclaimed, alternative water supply, and conservation efforts, will meet projected demand through the 10-year planning horizon. The Work Plan amendment and report serve to meet the requirements of Section 163.3177, Florida Statutes, and coordinate the relevant components of the 2015 RWSP with the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County*.

The *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County* provides guidance as follows:

Intergovernmental Coordination Element

Policy 3.11 *Coordinate with the Southwest Florida Water Management District to assure consistency between the Future of Hillsborough: A Comprehensive Plan for Unincorporated Hillsborough County and SWFWMD's Regional Water Supply Plan. The 10 Year Water Supply Facilities Work Plan shall be updated every five years and within 18 months of the update of the Southwest Florida Water Management District's Regional Water Supply Plan.*

Potable Water Element

Objective 1: *Maintain a water supply facilities planning program necessary to correct current deficiencies and meet projected potable water demands by maintaining and implementing the 10 Year Water Supply Facilities Work Plan.*

Policy 1.3: *Hillsborough County recognizes that water is a regional resource requiring the formulation and implementation of regional water resource management strategies and the proper role of County government is primarily the planning and implementation of water supply distribution facilities and the conservation and reuse of water resources.*

Policy 3.3: *Construct County capital improvements which will provide adequate intra-system pumping, storage and transmission of potable water, through the five-year capital improvements program.*

Policy 8.18: *Hillsborough County, as a member of Tampa Bay Water, shall support new and alternative water sources that will not result in individual or cumulative adverse impacts to natural resources.*

Policy 4.1: *Continue to implement the Reclaimed Water Reuse Program for unincorporated Hillsborough County in an effort to maximize the conservation of potable water.*

Conservation and Aquifer Recharge Element

Policy 8.2: *The County shall continue and expand its comprehensive water conservation program, including enhanced public education, enforcement of specific building code requirements, incentives for water saving devices, measures and requirements for controlling and reducing potable water consumption and promoting Florida Friendly Landscaping techniques; the use of the lowest quality water reasonably, safely and feasibly available.*

Recommendation

Planning Commission staff completed its review of all relevant material, including the applicable Comprehensive Plan objectives and policies, and recommends that HC/CPA 16-18 be found **CONSISTENT** with the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County*.

Attachment A

Text Amendment – Work Plan Table

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2012-HILLSBOROUGH COUNTY 10-YEAR WATER SUPPLY FACILITIES WORK PLAN¹

POTABLE WATER PROJECTS							FY 13-22
(in thousands)	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18-22	TOTAL
31982—19 th Ave Water Transmission Main (I-75 to US 41)	\$0	\$4,350	\$0	\$0	\$0	\$0	\$4,350
<i>(funding source)</i>		A					A
31968—Countywide Fire Hydrant Replacement (Master Project)	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$4,000	\$9,000
<i>(funding source)</i>	A	A	A	A	A	A	A
31979—Countywide Non-Urgent Facility R&R (Master Project)	\$300	\$300	\$300	\$300	\$300	\$1,200	\$2,700
<i>(funding source)</i>	A	A	A	A	A	A	A
31981—Countywide R&R of AC & Schedule 40 PVC Pipe (Master Project)	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$6,000	\$10,500
<i>(funding source)</i>	A	A	A	A	A	A	A
31977—Countywide Water Trans/Distribution Line R&R (Master Project)	\$1,000	\$500	\$500	\$500	\$500	\$2,000	\$5,000
<i>(funding source)</i>	A	A	A	A	A	A	A
31983—Environmental Laboratory Replacement	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>(funding source)</i>							
31974—Fawn Ridge Chemical Trim Project	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>(funding source)</i>							
31957—Fire Flow Deficiency (Master Project)	\$2,050	\$2,050	\$2,050	\$2,050	\$2,050	\$8,200	\$18,450
<i>(funding source)</i>	A	A	A	A	A	A	A
31959—Joint Project Agreement SR 574 Utility Relocation	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>(funding source)</i>							
31963—Lithia WTP Hydrogen Sulfide Treatment Integration	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>(funding source)</i>							
31980—Manors of Crystal Lakes & Franchise Interconnection	\$2,300	\$0	\$0	\$0	\$0	\$0	\$2,300
<i>(funding source)</i>	A						A
31976—Old Hillsborough Ave. Water Main Replacement	\$0	\$0	\$0	\$0	\$0	\$0	\$0

<i>(funding source)</i>								
31978—Public Utilities Centralized Operations Control Center	\$750	\$0	\$0	\$0	\$0	\$0	\$0	\$750
<i>(funding source)</i>	A, B							
31969—South County Water Repump Station WTM to 19 th Ave.	\$570	\$2,280	\$0	\$0	\$0	\$0	\$0	\$2,850
<i>(funding source)</i>	A	A						A
31965—Sun City MHP Rehabilitation By Pass/WTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>(funding source)</i>								
31945—Utility Relocation (Master Project)	\$2,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$4,000	\$10,000
<i>(funding source)</i>	A, B	A, B	A, B	A, B	A, B	A, B		A, B
30116—Water Treatment R&R (Master Project)	\$500	\$500	\$1,000	\$1,000	\$1,000	\$1,000	\$4,000	\$8,000
<i>(funding source)</i>	A, B	A, B	A, B	A, B	A, B	A, B		A, B
31971—Williams Road WTM (US 92 to Bartolotti Loop)	\$0	\$0	\$0	\$0	\$0	\$0	\$2,400	\$2,400
<i>(funding source)</i>							A, B	A, B
TOTAL POTABLE WATER	\$11,970	\$13,480	\$7,350	\$7,350	\$7,350	\$31,800		\$76,300

RECLAIMED WATER/CONSERVATION AND ALTERNATIVE WATER SUPPLY PROJECTS <i>(in thousands)</i>	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18-22	FY 13-22 TOTAL
40217—19 th Ave Reclaimed Water Transmission Main	\$0	\$2,000	\$3,000	\$0	\$0	\$0	\$5,000
<i>(funding source)</i>			A				A
40231—Eagle Pointe RWIU Distribution Lines	\$357	\$0	\$0	\$0	\$0	\$0	\$357
<i>(funding source)</i>	A						A
40163—Crosby Road Reclaimed Water Transmission Main	\$0	\$0	\$0	\$0	\$0	\$0	\$0

(funding source)							
10232—Fishhawk Garden RWIU Distribution Lines	\$521	\$0	\$0	\$0	\$0	\$0	\$521
(funding source)	A						A
10233—Fishhawk Town Center 2B RWIU Distribution Lines	\$1,052	\$0	\$0	\$0	\$0	\$0	\$1,052
(funding source)	A						A
10216—Northdale Reclaimed Water Transmission Main	\$3,300	\$0	\$0	\$0	\$0	\$0	\$3,300
(funding source)	A						A
10752—Reclaimed Water Main Extension—FARE Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(funding source)							
19657—Reclaimed Water Pump Station R&R—FARE Account	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(funding source)							
10795—Reclaimed Water Pump Station Refurbishment (Master Project)	\$100	\$100	\$100	\$100	\$100	\$400	\$900
(funding source)	A	A	A	A	A	A	A
10164—River Oaks Reclaimed Water Storage Tank	\$0	\$750	\$2,750	\$0	\$0	\$0	\$3,500
(funding source)		A	A				A
19017—RWTM Ext, to New Development & RWIU's (Master Project)	\$100	\$100	\$100	\$100	\$100	\$400	\$900
(funding source)	A	A	A	A	A	A	A
10218—South Area Limited Seasonal Augmentation Program (SALSA)	\$0	\$3,000	\$0	\$0	\$0	\$0	\$3,000
(funding source)		A					A
10198—South Hillsborough Aquifer Recharge Program (SHARP)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(funding source)							
10644—Sydney/Dover Reclaimed Water Reservoir	\$0	\$0	\$0	\$6,000	\$30,250	\$0	\$36,250
(funding source)				A	A		A
10191—Valrico AWTP 5 Mg RW Storage Tank Rehabilitation	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(funding source)							
10192—Westchase High Density Polyethylene RWTM Replacement	\$0	\$1,700	\$0	\$0	\$0	\$0	\$1,700

<i>(funding source)</i>		A					A
TOTAL RECLAIMED WATER	\$5,430	\$7,650	\$5,950	\$6,200	\$30,450	\$800	\$56,480
Legend: Funding Sources							
<p><i>A. Water Enterprise Fees — charges for services imposed on users of facilities of the two programs funded through enterprise funds — Solid Waste and Water/Wastewater/Reclaimed Water. Use of these revenues is restricted to operating, maintaining or building new infrastructure for the respective service for which the fee is being collected.</i></p> <p><i>B. Financing — includes long and short term borrowing</i></p> <p><i>C. Grants & County Match — Giving of funds by Federal or State government for infrastructure improvement, maintenance or repair.</i></p> <p><i>D. Capacity/Impact Fees — charge for services assessed on new construction in order to support specific new demands on a given type of infrastructure.</i></p>							

Source: Hillsborough County Water Services, Public Utilities Department, September, 2012

± CPA 12-17 — 10-Year Water Supply Facilities Work Plan Update

<u>PROJECT NUMBER</u>	<u>PROJECT TITLE</u>	<u>TOTAL ESTIMATED COST</u>	<u>PRIOR EXPENSES</u>	<u>FY 17</u>	<u>FY 18</u>	<u>FY 19</u>	<u>FY 20</u>	<u>FY 21</u>	<u>FY 22-26 (TOTAL)</u>	<u>PROJECT COMPLETION DATE</u>
C31982000	<u>19th Ave. Water Transmission Main (I-75 to US 41)</u>	<u>\$5,000</u>	<u>\$5,000</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>Dec 2018</u>
C31995000	<u>Backflow Upgrade Program</u>	<u>\$11,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>5,000</u>	<u>Ongoing</u>
C10247000	<u>Boyette And Rhodine Water Transmission Main</u>	<u>\$4,000</u>	<u>4,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Mar 2019</u>
C31986000	<u>Countywide Potable Water Main Extension Program</u>	<u>\$24,000</u>	<u>4,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>10,000</u>	<u>Ongoing</u>
C31987000	<u>Countywide Potable Water Quality Monitoring</u>	<u>\$2,000</u>	<u>2,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
C31981000	<u>Countywide Removal & Replacement Of AC & SCH. 40 PVC Piping Master Proj.</u>	<u>\$18,000</u>	<u>12,000</u>	<u>5,000</u>	<u>1,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
C31977000	<u>Countywide Water Transmission / Distribution Line R&R Master Proj.</u>	<u>\$31,437</u>	<u>18,937</u>	<u>3,500</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>5,000</u>	<u>Ongoing</u>
C31983000	<u>Environmental Laboratory Replacement</u>	<u>\$7,200</u>	<u>7,200</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Mar 2018</u>
C31957000	<u>Fire Flow Deficiency (Master Project)</u>	<u>\$29,461</u>	<u>26,461</u>	<u>3,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
C31988000	<u>Franchise Systems Acquisition and Improvements</u>	<u>\$24,404</u>	<u>20,904</u>	<u>3,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Sep 2020</u>
C31997000	<u>Gibsonton Area Potable Water Main Replacement</u>	<u>\$11,000</u>	<u>0</u>	<u>1,000</u>	<u>5,000</u>	<u>5,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Sep 2020</u>
C31989000	<u>Kings Point Potable Water Valve Installation/Replacement</u>	<u>\$5,000</u>	<u>5,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Mar 2019</u>
C31985000	<u>Large Water Meter Replacement</u>	<u>\$4,700</u>	<u>2,700</u>	<u>1,000</u>	<u>1,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
C31998000	<u>Linebaugh Ave. HDPE Potable Transmission Main Replacement</u>	<u>\$2,000</u>	<u>500</u>	<u>1,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Sep 2019</u>
C31992000	<u>Palm River Utility Expansion Program</u>	<u>\$10,500</u>	<u>10,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Sep 2021</u>
C31978000	<u>Public Utilities SCADA Operations Support Center</u>	<u>\$5,052</u>	<u>5,052</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Sep 2018</u>
C31969000	<u>South County Water Repump Station Water Transmission Main To 19Th Ave</u>	<u>\$6,750</u>	<u>6,750</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
C31945000	<u>Utility Relocation (Master Project)</u>	<u>\$38,012</u>	<u>13,012</u>	<u>2,500</u>	<u>2,500</u>	<u>2,500</u>	<u>2,500</u>	<u>2,500</u>	<u>12,500</u>	<u>Ongoing</u>
C30116000	<u>Water Treatment R&R (Master Project)</u>	<u>\$31,089</u>	<u>15,089</u>	<u>2,500</u>	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>	<u>7,500</u>	<u>Ongoing</u>
	<u>Lithia Emergency Connection</u>	<u>\$700</u>	<u>0</u>	<u>700</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2017</u>
	<u>US Hwy 41 Water Transmission Main Replacement</u>	<u>\$10,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2,000</u>	<u>8,000</u>	<u>0</u>	<u>0</u>	<u>Dec 2020</u>
	<u>Lutz Franchises Water Main Extensions</u>	<u>\$5,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,000</u>	<u>4,000</u>	<u>0</u>	<u>0</u>	<u>Dec 2020</u>
	<u>South County Repump Station Expansion</u>	<u>\$5,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,000</u>	<u>4,000</u>	<u>0</u>	<u>0</u>	<u>Dec 2020</u>
	<u>East Brandon Area Potable Water Main Replacement</u>	<u>\$30,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5,000</u>	<u>10,000</u>	<u>15,000</u>	<u>0</u>	<u>Dec 2022</u>
	<u>Apollo Beach Potable Water Main Replacement</u>	<u>\$30,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>30,000</u>	<u>Dec 2025</u>

PROJECT NUMBER	PROJECT TITLE	TOTAL ESTIMATED COST	PRIOR EXPENSES	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22-26 (TOTAL)	PROJECT COMPLETION DATE
	<u>Williams Rd Transmission Main from US 92 to Dove Field PI</u>	<u>\$3,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3,500</u>	<u>Dec 2025</u>
	<u>New South County Treatment Facility</u>	<u>\$25,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>25,000</u>	<u>Dec 2025</u>
	<u>Balm Transmission Mains</u>	<u>\$22,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>22,000</u>	<u>Dec 2025</u>
<u>C10217000</u>	<u>19th Avenue Reclaimed Water Transmission Main</u>	<u>\$5,000</u>	<u>5,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
<u>C10234000</u>	<u>Bloomingtondale Avenue Reclaimed Water Transmission Main Extension</u>	<u>\$1,000</u>	<u>1,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Jul 2018</u>
<u>C10237000</u>	<u>Dale Mabry Diversion Reclaimed Water Transmission Main (NWRWRF to DM)</u>	<u>\$17,119</u>	<u>17,119</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
<u>C10216000</u>	<u>Northdale Reclaimed Water Transmission Main</u>	<u>\$3,300</u>	<u>3,300</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Apr 2017</u>
<u>C10238000</u>	<u>Northwest Hillsborough Area Recharge Project (NHARP)</u>	<u>\$4,250</u>	<u>4,250</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Apr 2019</u>
<u>C10795000</u>	<u>Reclaimed Water Pump Station & Remote Telemetry Monitoring</u>	<u>\$13,400</u>	<u>3,400</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>5,000</u>	<u>Ongoing</u>
<u>C19017000</u>	<u>RWTM Ext. To New Developments & RWIU'S (Master Project)</u>	<u>\$8,946</u>	<u>3,946</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>2,500</u>	<u>Ongoing</u>
<u>C10259000</u>	<u>South Hillsborough Aquifer Recharge Expansion (SHARE)</u>	<u>\$21,700</u>	<u>12,700</u>	<u>0</u>	<u>3,000</u>	<u>2,500</u>	<u>3,500</u>	<u>0</u>	<u>0</u>	<u>Sep 2020</u>
<u>C10270000</u>	<u>Sun City Center Golf Courses Reclaimed Water Expansion</u>	<u>\$7,900</u>	<u>1,000</u>	<u>3,900</u>	<u>3,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Sep 2019</u>
<u>C10260000</u>	<u>Tate Lane Reclaimed Water Main Relocation</u>	<u>\$3,000</u>	<u>3,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Mar 2018</u>
<u>C10242000</u>	<u>Waterset Sports Complex Reclaimed Water Pump Station/Storage Tank</u>	<u>\$6,500</u>	<u>6,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>Dec 2018</u>
<u>C10192000</u>	<u>Westchase High Density Polyethylene RWTM Replacement</u>	<u>\$3,791</u>	<u>3,791</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>May 2019</u>
	<u>North Hillsborough Aquifer Recharge Expansion (NHARE)</u>	<u>\$5,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5,000</u>	<u>Dec 2025</u>
	<u>South County Transmission Mains</u>	<u>\$20,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>20,000</u>	<u>Dec 2025</u>
	<u>South County Reclaimed Pump Station Expansion</u>	<u>\$5,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5,000</u>	<u>Dec 2025</u>
	Totals Per Fiscal Year(s)	\$539,009	\$225,109	\$33,900	\$22,500	\$28,000	\$47,000	\$24,500	\$158,000	

Note: Source: Hillsborough County Public Utilities Department, June 2016. Funding amounts are in thousands. Blue = potable water projects. Purple = reclaimed water projects.

This WSWFP table includes significant potable and reclaimed water capital projects at the time of plan preparation, and reflects information from the adopted Hillsborough County FY16-FY21 CIP. Project funding listed beyond FY 20-21 is not confirmed and is subject to approval by the Hillsborough County Board of County Commissioners. Please note that the projects and funding in this table may be modified over time. The funding source for all the projects in this table are Enterprise funds.

Attachment B

10-Year Water Supply Facility Work Plan Report

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**Hillsborough County
10-Year Water Supply Facilities Work Plan
Report**

I. Introduction

The purpose of the Hillsborough County 10-Year Water Supply Facilities Work Plan (Work Plan) is to comply with the statutory requirements for water supply planning, specifically Section 163.3177, Florida Statutes, which requires updates to comprehensive plans are within 18 months of when a Water Management District's Governing Board approves a Regional Water Supply Plan. The Southwest Florida Water Management District (SWFWMD) approved an updated Regional Water Supply Plan (RWSP) on November 17, 2015.

Listed below is a summary of statutory requirements, according to the Department of Economic Opportunity (DEO) publication *A Guide to the Preparation of the Water Supply Facilities Work Plan*:

1. Coordinate appropriate aspects of the comprehensive plan with the appropriate Water Management District's RWSP (s.163.3177(4)(a), Florida Statutes).
2. Revise the Potable Water Element considering the RWSP of the appropriate water management district (s. 163.3177(6)(c), Florida Statutes).
3. Revise the Potable Water Element to include a Water Supply Facilities Work Plan for at least a 10-year planning period, addressing the water supply facilities necessary to serve existing and new development and for which the local government is responsible (s. 163.3177(6)(c), Florida Statutes).
4. Revise the Conservation Element to assess projected water needs and sources for at least a 10-year planning period considering the appropriate regional water supply plan or, in the absence of an approved RWSP, the district water management plan (s. 163.3177(6)(d), Florida Statutes).
5. Revise the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with the applicable RWSP (s. 163.3177(6)(h)1, Florida Statutes).
6. During adoption of Evaluation and Appraisal Report based amendments, revise the Potable Water Element to include the Work Plan (s.163.3191(2), Florida Statutes).

In summary, the Work Plan and related goals, objectives and policies must address the development of traditional and alternative water supplies, as well as conservation and reuse programs to serve existing and potential increased demand for at least a 10-year planning period. The Work Plan must also be coordinated with SWFWMD's 2015 RWSP. This Work Plan has been developed in accordance with these requirements and serves as data and analysis for the Water Supply Facilities Work Plan Table, which will be included in the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County*.

II. Coordination Effort

Planning Commission staff worked with Hillsborough County Public Utilities Department, Tampa Bay Water and SWFWMD staff to gather and analyze the appropriate data for preparation of this Work Plan. Information in this Work Plan was provided by all three entities, and significant coordination occurred throughout the planning process.

III. Existing Conditions

A. Service Areas

Hillsborough County owns, operates and maintains a central potable treatment and distribution system and a reclaimed water system within large portions of unincorporated Hillsborough County, in the Northwest and South-Central County. A map of the County's potable service area and reclaimed service area is included as Exhibit A.

Areas of unincorporated County are served by the City of Tampa, Plant City and Temple Terrace through an interlocal agreement. There are also twelve private utilities that supply water to County residents. A full list of these private utilities is included in Exhibit B¹. Approximately 106,000 County residents are estimated to be served by domestic-self supply.

B. Water Use Permit and Tampa Bay Water Information

The County has a Water Use Permit (WUP) (#20141) from SWFWMD for wholesale purchase of water from Tampa Bay Water, a regional water supply authority. This WUP expires in 2021, within the planning horizon of this Work Plan. Per the SWFWMD Water Use Permit Evaluation Manager, public supply permit renewals are typically not received until the year prior to permit expiration.

Tampa Bay Water has an unequivocal obligation to provide potable drinking water to its six member governments, including Hillsborough County. The relationship between the County and Tampa Bay Water is governed by the Amended and Restated Interlocal Agreement (Interlocal Agreement) and Master Water Supply Contract. The Interlocal Agreement outlines requirements for Tampa Bay Water's Long-Term Master Water Plan, which must contain sufficient water supply projects to meet the Member Governments' water needs.

Tampa Bay Water is required to update its Long-term Master Water Plan every five years. The current plan was approved in 2013 and provides water demand projections out to the year 2035 (Exhibit C). Tampa Bay Water is currently updating its existing plan which extends the planning horizon to 2040. The updated plan will include long-term demand projections to the year 2040 and potential new water supply projects, and will be presented to Tampa Bay Water's Board in December 2018. Additional details on the active project concepts and updated status of projects can be found in Exhibit D, the official letter from Tampa Bay Water. This letter also confirms sufficient supplies to meet the County's future water needs and outlines the permitted quantity for each water source.

Areas of the County are served by the City of Tampa (WUP#2062), Plant City (WUP #1776) and Temple Terrace (WUP #450) through an interlocal agreement. These Work Plans have also been prepared by the Planning Commission. There are also twelve private utilities with their own WUPs that supply water to County residents. A full list of these private utilities, their WUP numbers and their associated demand projections is included as Exhibit B.¹

C. County Potable Water Facilities

The Hillsborough County potable water system is divided into two service areas: Northwest and South-Central Service Areas. The County maintains storage, treatment, pumping and transmission facilities for these areas. The following is a summary of the information provided in the Hillsborough County Public Utilities Department's 2014 Potable Water Master Plan (Northwest and South Central):

¹ Hillsborough County Public Utilities has provided updated information regarding some of the utility information on the SWFWMD Community Sheet. Permits #8440 and #12994 have been transferred to the County and these areas are now served by the County's wholesale permit (#20141). SWFWMD Water Supply staff has been informed of this information.

The Northwest Service Area is approximately 76 square miles in size and serves customers in the Northwest portion of unincorporated Hillsborough County. This includes the areas of Carrollwood, Citrus Park, Westchase, Egypt Lake and portions of Lutz. The potable water infrastructure to serve these areas includes:

- One potable water system
- Two potable water treatment plants
- One potable water booster pump station
- 57 miles of transmission main
- 661 miles of distribution line

The Northwest Potable Water System has a permitted maximum day design capacity of 48 mgd. This is based on the combined capacities of Lake Park, Fawn Ridge and the Tampa-Hillsborough Interconnect. The Fawn Ridge facility and Lake Park Pump station both receive raw groundwater and treated regional water supply from the Tampa Bay Water Tampa-Hillsborough Interconnect.

The South-Central Service Area is approximately 193 square miles and serves customers in the South-Central portion of unincorporated Hillsborough County. This includes the areas of Apollo Beach, Brandon, Gibsonton, Riverview, Ruskin, Seffner, Sun City, Valrico and Wimauma. The potable water infrastructure to serve these areas includes:

- Four potable water systems
- Two potable water treatment plants
 - Lithia Water Treatment Plant
 - Central Hillsborough Water Treatment Facility
- One potable water re-pump station
- 113 miles of transmission main
- 1,464 miles of distribution main

The South-Central Service Area has a permitted maximum day design capacity of 82.6 mgd. This is based on the combined capacity of the Lithia and Central Hillsborough Water Treatment Facilities. The Lithia Water Treatment Plant, located in the eastern portion of the service area, receives both raw groundwater and treated regional water supply from Tampa Bay Water. The Central Hillsborough Water Treatment Facility receives no raw groundwater, only treated regional water supply from Tampa Bay Water. The South County Potable Water Re-pump Station receives treated water from the distribution system during off-peak demand periods and pumps back into the distribution system during on-peak demand periods.

D. Reclaimed Water

The County is divided between the Northwest and South-Central Reclaimed Water Service areas. There are four interconnected wastewater treatment plants in the Northwest Area of Hillsborough County: Van Dyke Wastewater Treatment Plant, Dale Mabry Advanced Wastewater Treatment Plant, Northwest Regional Water Reclamation Facility, and the River Oaks Advanced Wastewater Treatment Plants. There are three interconnected wastewater treatment plants in the South-Central area of the County – Falkenberg Advanced Wastewater Treatment Plant, Valrico Advanced Wastewater Treatment Plant and South County Advanced Wastewater Treatment Plant.

Two goals drive Hillsborough County's Reclaimed Water Program. The first is to minimize the amount of wastewater discharged so as lower the amount of nitrogen loading in area surface waters. The second, which relates to water supply, is to maximize the use of available reclaimed water for beneficial use. This reduces potable water consumption and groundwater and surface water withdrawals. Reclaimed water is used to serve industry, golf courses, residential subdivisions, schools, and along roads rights-of-way.

Per SWFWMD, in 2015, the wastewater treatment plant (WWTP) flow was 39.4 mgd, the reuse flow was 19.54 mgd and the reuse benefit was 13.27 mgd. The five-year average is 37.46 mgd (WWTP flow), 19.24 mgd (reuse flow) and 12.14 mgd (reuse benefit). Beneficial reuse does not include most internal use at treatment plants, sprayfields or rapid infiltration basin disposal.

E. Conservation Initiatives

The County has a very strong, multifaceted water conservation program that employs numerous operational, educational and policy measures. A full description of the County's conservation initiatives is listed in Exhibit E (Hillsborough County 5-Year Water Conservation Plan (2016-2020)), which is incorporated by reference into this report. These measures include the following:

- Implementation of advanced plumbing codes
- Purchase and distribution of lower flow showerhead and faucet aerators
- Fixture retrofits
- Irrigation and landscape evaluations
- Low volume irrigation grants for community associations or neighborhoods
- Toilet rebate/replacement
- Soil moisture sensor rebates
- Promotion and education related to rain harvesting
- Promotion of water use efficiency within the local lodging industry
- Land Development Code requires irrigation system to be designed and constructed to Florida Irrigation Society standards
- Funding of Florida-Friendly Yards Program
- Water conserving rate structures
- Multi-family residential metering
- Educational initiatives at various targeted audiences
- Water restrictions enforcement

F. Cooperative Funding Initiative Projects

The County currently has five Cooperative Funding Initiative (CFI) water supply-related projects with SWFWMD. Details of these projects are discussed in Section V and VI.

- N601/N755 (Hillsborough County/Tampa/Plant City/Temple Terrace Reclaimed Water Recharge Feasibility Study)
- N287 (Aquifer Recharge SHARP project)
- N776 (19th Avenue Reclaimed Water Transmission Main – FY 2017 proposed)
- N804 (Reclaimed Water Sun City Golf Course Expansion – FY 2017 proposed)

- N817 (Reclaimed Water Tournament Players Club and Summertree Crossings Golf Club – FY 2017 proposed)

G. Water Use Caution Areas

Portions of Hillsborough County are located within the Southern Water Use Caution Area (SWUCA), designated in 1992 to address declines in aquifer levels primarily due to groundwater withdrawals. Portions of the County are within the Most Impacted Area (MIA) of the SWUCA, where concerns primarily relate to saltwater intrusion in the Upper Floridan aquifer. A large area of the County is located in the Northern Tampa Bay Water Use Caution Area, where issues primarily involve lowered lake levels and wetlands. A portion of the Dover/Plant City Water Use Caution Area, where concerns relate to lowered aquifer levels due to agricultural irrigation for frost/freeze protection, is also in Hillsborough County. The Water Use Caution Area recovery strategies, including rulemaking and project-based solutions, have been implemented by SWFWMD. Hillsborough County is in compliance with all Water Use Caution Area rules.²

Recently, Hillsborough County participated in a stakeholder workgroup responsible for exploring additional options for meeting the saltwater intrusion minimum aquifer level (SWIMAL), in order to slow the rate of saltwater intrusion in the MIA. As outlined previously, the County actively pursues reclaimed, alternative water supply and conservation projects in order to reduce potable water demand and withdrawals. As a result of these efforts, Hillsborough County Public Utilities has a five year per capita water use of 98 gallons per day, which is below the average for the utilities under SWFWMD's jurisdiction.

IV. Future Population and Demand Projections

SWFWMD's population and demand projections were used to project potable water demand for this Work Plan. A copy of the 2015 SWFWMD Community Sheet, developed for population and demand projections for Work Plan technical assistance, is provided as Exhibit B and is incorporated by reference into this report. This Community Sheet incorporates all areas of the County. This includes portions served by Hillsborough County Public Utilities, County residents served by the Cities of Tampa, Plant City, and Temple Terrace, portions served by twelve small, private utilities³ and those County residents served by domestic self-supply. The data on the Community Sheet comprises the population and demand projections utilized for the County's Work Plan. A summary of this data has been included in the County's Potable Water Element.

It should be noted that the population projections reflected in SWFWMD's Community Sheet differ from population projections elsewhere in the Comprehensive Plan. This is due to a difference in the calculation methodology - functional population and service area population are used by SWFWMD to calculate the population projections and potable water demands. The population projections listed in Exhibit B should only be utilized for this Work Plan and not for larger County-wide projections.

² Dover/Plant City Water Use Caution Area rules only apply to agricultural permit holders

³ Hillsborough County Public Utilities has provided updated information regarding some of the utility information on the SWFWMD Community Sheet. Permits #8440 and #12994 have been transferred to the County and these areas are now served by the County's wholesale permit (#20141). SWFWMD Water Supply staff has been informed of this update.

Comparison of Future Demand and Supply

Interpolating the projections above, in 2027, Hillsborough County Public Utilities will have a potable water demand of approximately 72.26 mgd.⁴ The bulk of the future demands are anticipated in the South-Central Area, where the County's South-Central Potable Water Master Plan identifies the needed distribution and capacity enhancements. The total demand for all residents of unincorporated County, including those served by other municipalities, private utilities and domestic self-supply, is estimated to be 111.68 mgd in 2027. Please see Exhibit B for a breakdown of the numbers.

Hillsborough County Public Utilities' wholesale permit is not assigned specific quantities from SWFWMD. Rather, through the Amended and Restated Interlocal Agreement and Master Water Supply Contract, Tampa Bay Water has an unequivocal obligation to meet the demands of its member governments, including Hillsborough County. Tampa Bay Water has confirmed there is sufficient water to meet future demands (Exhibit D).

According to SWFWMD Community Sheet information, all private utilities serving residents of unincorporated County have sufficient permitted quantities to meet their respective demands during the 10-year planning horizon.⁵ Additionally, the City of Tampa (WUP #2062), Plant City (WUP #1776) and Temple Terrace (WUP #450) have sufficient water for County residents served by these other municipal utilities. This ability to serve has been confirmed through recent completion of these Water Supply Facility Work Plans by Planning Commission staff.

While future demand can be met by permitted quantities and Tampa Bay Water, the County will continue to employ multiple reclaimed and conservation projects and consider future options to help reduce/offset future potable demand.

V. Future Project Options - RWSP

As part of the RWSP process, SWFWMD is required to identify water supply options from which water users in the planning region can choose to meet their individual needs. SWFWMD's 2015 RWSP identifies several potential future project options for Hillsborough County and the private utilities located in the County. Per conversations with SWFWMD Water Supply Staff there is no obligation for local governments to implement these projects: the costs/benefits of which are estimates from SWFWMD staff. Projects identified for Tampa Bay Water in the RWSP would benefit Hillsborough County indirectly, however, as these projects are the responsibility of Tampa Bay Water, they are not listed in this Work Plan.

⁴ This number considers the quantities and permits discussed in Footnote #1

⁵ WUP #7002 in SWFWMD's Community Sheet is shown as currently having a demand greater than its permitted quantities. In discussing this issue with SWFWMD Water Supply staff, this is likely due to modeling and data margins of error as that WUP is not on the overpumpage list. It can be assumed that WUP #7002 has sufficient quantity to meet demand.

Table 1: Hillsborough County Reclaimed Water Supply Options (Public and Private Utilities) Listed in SWFWMD RWSP				
Option Name and Entity	Type	Supply (mgd)	Benefit (mgd)	Capital Cost (millions)
Reuse Expansion Country Meadows WWP 2016-2035, CW Utilities	System Expansion	.05	.04	0.4
Reuse NSE CAX Riverside 2016-2035, Rice Creek Utilities	Rehydrate/Wetland/NSE	.06	.60	.5
Reuse NSE Rice Creek 2016-2035, Rice Creek Utilities	Rehydrate/Wetland/NSE	.06	.60	.5
Reuse Expansion Windermere 2016-2035, Scarecrow Utilities	System Expansion	0.1	.07	.8
NW Hillsborough Reuse Expansion, Hillsborough County	System Expansion	4	2.8	32.2
South Hillsborough County Recharge/Saltwater Intrusion Barrier, Hillsborough County, City of Tampa & Others	Recharge	20	TBD	161.2
Industrial Reclaimed Exchange (Lithia Springs), Hillsborough County	Exchange	1	1	8.1
Reuse Expansion Hillsborough County South County System 2016-2035, Hillsborough County	System Expansion/Rehydrate Wetland/NSE	6	4.2	48.4
Interconnect with Tampa/Hillsborough County East 2016-2035, City of Tampa and Hillsborough County	Interconnect	32	TBD	84.0

The Hillsborough County/City of Tampa Interconnect listed in Table 1 is being considered as part of a three-phase project jointly funded with the Hillsborough County, Plant City and Temple Terrace.

The phases are:

- N471: Phase 1 - A “big picture” modeling study examining the quantities and rough costs for developing a regional reuse system in Eastern Hillsborough (Completed).
- N601: Phase 2 - A more refined study of recharge options to site recharge of 25 mgd of reclaimed water and examine areas, options, benefits and more refined costs (Ongoing).
- N755: Phase 3 - A specific modeling study examining specific options, likely benefits and preliminary costs for developing recharge options (Proposed – FY 2017 Funding).

The South Hillsborough County Recharge/Saltwater Intrusion Barrier (South Hillsborough Area Recharge Project (SHARP)) project is shown as part of the FY 2017 cycle as a reimbursement to Hillsborough County for the completed project. This study examined the effect of using up to 2 mgd of excess treated reclaimed water to directly recharge a non-potable zone of the Upper Floridan aquifer at the County’s Big Bend ASR test well site.

VI. Proposed SWFWMD CFI Projects

Hillsborough County continues to pursue reclaimed water projects and has three CFI applications slated for the FY17 funding cycle:

- N776, which funds the Hillsborough County 19th Avenue Reclaimed Water Transmission Main. This project would supply 1.2 mgd of reclaimed water for residential irrigation and enable the future supply of up to 8.60 mgd to the South Hillsborough Area Recharge Project (SHARP) and additional residential irrigation customers in the SWUCA MIA. Expected resource benefit (offset) includes 0.60 mgd in the SWUCA and potential to enable a future benefit of up to 4.3 mgd related to the SHARP recharge system and additional residential irrigation customers that may connect after 2023.
- N804, which funds the Sun City Golf Course Reclaimed Expansion. This project would supply 2.0 mgd of reclaimed water to seven existing golf courses in the SWUCA MIA. Expected water resource benefit (offset) is 1.47 mgd.
- N817, which funds reclaimed water for golf courses located at the Tournament Players Club and the Summertree Crossings Golf Club. This would supply 0.15 mgd of reclaimed water at golf courses located in the NTBWUCA and the SWUCA MIA. Expected water resource benefit (offset) is .09 mgd.

VII. Future Capital Projects – 10 Year Water Supply Facilities Work Plan

Please see Exhibit F for the 10 Year Water Supply Facilities Work Plan table. This table incorporates the existing Schedule of Capital Improvements as well as those potable and reclaimed water projects that are needed to the year 2027. This table will also be adopted in the Potable Water Element of the Hillsborough County Comprehensive Plan.

Additional details on these projects can be found in the County’s CIP, Potable Water Master Plan and Reclaimed Water Master Plan. These documents are incorporated by reference into this report. Copies are available upon request.

VIII. Future Quantifiable Savings from Reclaimed and Conservation Projects

Reclaimed water projects and conservation initiatives will continue to be County strategies to offset future potable use and reduce future potable demand. The County’s Reclaimed Water Master Plan identifies the future benefit/offset for reclaimed water as follows:

Table 2: Estimated Benefit/Offset for Reclaimed Water Projects (mgd)						
	2015	2020	2025	2030	2035	2040
Northwest	11.33	12.73	13.26	13.73	13.97	14.08
South Central	16.02	20.21	23.62	26.95	TBD	TBD
Total	27.35	32.94	36.88	40.68	TBD	TBD

Source: Hillsborough County Reclaimed Water Master Plan (Northwest and South Central)

Information prepared by Tampa Bay Water indicates the projected annual and cumulative savings for conservation measures in Hillsborough County.

Table 3: Projected Water Savings from Indoor & Outdoor Conservation Measures (mgd)												
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Annual Savings	0.11 mgd	0.11 mgd	0.11 mgd	0.11 mgd	0.11 mgd	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Cumulative Savings	5.65 mgd	5.76 mgd	5.87 mgd	5.98 mgd	6.10 mgd	TBD	TBD	TBD	TBD	TBD	TBD	TBD

IX. Relevant Goals, Objectives and Policies from the Comprehensive Plan

The following goals, objectives and policies from the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County* support and meet the Work Plan statutory requirements.

Intergovernmental Coordination Element

Policy 3.9 *Hillsborough County shall coordinate with the Southwest Florida Water Management District, Tampa Bay Water, the Cities of Tampa, Plant City and Temple Terrace and the Hillsborough County City-County Planning Commission to assure consistency of water supply and demand projections and population data.*

Policy 3.10 *The County will encourage the participation of all sectors of the community in the development and update of its Water Supply Facilities Work Plan.*

Policy 3.11 *Coordinate with the Southwest Florida Water Management District to assure consistency between the Future of Hillsborough: A Comprehensive Plan for Unincorporated Hillsborough County and SWFWMD's Regional Water Supply Plan. The 10 Year Water Supply Facilities Work Plan shall be updated every five years and within 18 months of the update of the Southwest Florida Water Management District's Regional Water Supply Plan.*

Potable Water Element

Objective 1: *Maintain a water supply facilities planning program necessary to correct current deficiencies and meet projected potable water demands by maintaining and implementing the 10 Year Water Supply Facilities Work Plan.*

Policy 1.3: *Hillsborough County recognizes that water is a regional resource requiring the formulation and implementation of regional water resource management strategies and the proper role of County government is primarily the planning and implementation of water supply distribution facilities and the conservation and reuse of water resources.*

Policy 3.3: *Construct County capital improvements which will provide adequate intra-system pumping, storage and transmission of potable water, through the five-year capital improvements program.*

Objective 4: *Maintain the "adjusted gross" per capita demand as defined by the SWFWMD below 110 gallons per capita per day (gpcd), and continue to implement the County water conservation program to further reduce per capita demand.*

Policy 4.1: *Continue to implement the Reclaimed Water Reuse Program for unincorporated Hillsborough County in an effort to maximize the conservation of potable water.*

Policy 4.2: *Continue to enforce and improve building codes that ensure the efficient use of potable water, including funding of low-volume plumbing fixtures for retrofitting of inefficient equipment installed under older building codes.*

Policy 4.3: *Provide public education programs encouraging the conservation of potable water and the reuse of reclaimed water, and continue to evaluate the effectiveness and efficiency of proposed conservation projects for inclusion in the County's overall program.*

Policy 4.4: *Continue to implement and evaluate the effectiveness of the water conservation inclined user fee rates which are designed to encourage conservation of and discourage non-essential uses of potable water.*

Policy 4.5: *Explore the increased use of stormwater or other appropriate water source to protect and expand the potable water supply whether by pursuing increased retention within wellfield protection areas or by Aquifer Storage and Recovery or aquifer recharge.*

Conservation and Aquifer Recharge Element:

Objective 8: *The County, as a member of Tampa Bay Water, shall meet its potable water demands under all future supply and demand scenarios through the expansion of reuse and the conservation and appropriate use of groundwater, surface water, desalination and other alternative sources; while preventing significant environmental degradation due to excessive groundwater, surface, desalination and other alternative source withdrawals.*

Policy 8.2: *The County shall continue and expand its comprehensive water conservation program, including enhanced public education, enforcement of specific building code requirements, incentives for water saving devices, measures and requirements for controlling and reducing potable water consumption and promoting Florida Friendly Landscaping techniques; the use of the lowest quality water reasonably, safely and feasibly available.*

Policy 8.3: *The County shall continue to implement a comprehensive Water Reuse Program that maximizes the use of treated sewage effluent for residential and recreational irrigation purposes.*

Policy 8.4: *The County shall, through the development review process, ensure compliance with state law regarding irrigation and recommend the use of the most practical, economically feasible and efficient irrigation methods available for new residential, recreational and agricultural irrigation systems; and shall promote the replacement of less efficient systems with more efficient ones through educational efforts. This policy should not be interpreted to require replacement of existing systems.*

Policy 8.5: *The County shall assist the Southwest Florida Water Management District in enforcing water conservation measures.*

Policy 8.8: *The County shall continue its inverted block rate structure to discourage non-essential uses of potable water. Information stressing the need for conservation, and providing conservation tips, will be included in the billing process.*

Policy 8.12: *The County shall promote the evaluation and use of the Aquifer Storage and Recovery (ASR) concept and other means of minimizing the adverse environmental impacts of peak demand for ground and surface water resources.*

Policy 8.13: *The County will protect water quality and quantity by restricting activities and land uses which would adversely affect the quality and quantity of identified water sources used as a source of public water supply.*

Policy 8.17: *In meeting future demands for potable water while minimizing impacts on natural resources, Hillsborough County, as a member of Tampa Bay Water, shall support the use of fiscal cost/benefit analysis, as well as the environmental, social and general welfare costs and benefits of water management projects, programs and new potable water sources.*

Policy 8.18: *Hillsborough County, as a member of Tampa Bay Water, shall support new and alternative water sources that will not result in individual or cumulative adverse impacts to natural resources.*

X. Conclusion

Hillsborough County, through its status as a member government of Tampa Bay Water and its reclaimed and conservation efforts, will meet projected demand through the 10-year planning horizon. This Work Plan serves to meet the requirements of Section 163.3177 and coordinate the relevant components of the 2015 RWSP with the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County*.

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TAMPA BAY PLANNING REGION

HILLSBOROUGH COUNTY (UNINCORPORATED)

DEMAND ANALYSIS

UTILITY NAME	2015	2020	2025	2030	2035	WUP (MGD)	PER CAPITA WATER USE (2008-2012)
ALLIED UTILITIES, INC. (8986)							
County Population Served	85	85	85	85	85	0.014	150
Demand (MGD)	0.013	0.013	0.013	0.013	0.013		
Total Utility Service Area Population	85	85	85	85	85		
Demand (MGD)	0.013	0.013	0.013	0.013	0.013		
C W UTILITY SYSTEMS LLC (6879)							
County Population Served	2,106	2,106	2,106	2,106	2,106	0.236	100
Demand (MGD)	0.211	0.211	0.211	0.211	0.211		
Total Utility Service Area Population	2,106	2,106	2,106	2,106	2,106		
Demand (MGD)	0.211	0.211	0.211	0.211	0.211		
C.S. WATER CO. INC. (964)							
County Population Served	107	108	109	120	130	0.136	106
Demand (MGD)	0.011	0.012	0.012	0.013	0.014		
Total Utility Service Area Population	913	932	952	979	1,006		
Demand (MGD)	0.097	0.099	0.101	0.104	0.107		
CHARLES SPRINGER (2285)							
County Population Served	1,226	1,308	1,346	1,348	1,349	0.150	104
Demand (MGD)	0.127	0.135	0.139	0.140	0.140		
Total Utility Service Area Population	1,226	1,308	1,346	1,348	1,349		
Demand (MGD)	0.127	0.135	0.139	0.140	0.140		
CITY OF PLANT CITY UTILITIES (1776)							
County Population Served	2,437	2,827	3,379	3,840	4,331	9.852	137
Demand (MGD)	0.334	0.387	0.463	0.526	0.594		
Total Utility Service Area Population	40,417	46,369	53,979	67,776	82,499		
Demand (MGD)	5.540	6.356	7.399	9.290	11.309		
CITY OF TAMPA WATER DEPT (2062)							
County Population Served	201,825	214,923	225,808	230,936	234,815	82.000	113
Demand (MGD)	22.835	24.317	25.548	26.128	26.567		
Total Utility Service Area Population	631,788	662,512	686,862	697,108	705,252		
Demand (MGD)	71.481	74.958	77.713	78.872	79.793		
CITY OF TEMPLE TERRACE (450)							
County Population Served	6,940	8,561	10,488	11,130	11,678	5.150	106
Demand (MGD)	0.735	0.906	1.110	1.178	1.236		
Total Utility Service Area Population	31,786	34,321	37,038	37,998	38,818		
Demand (MGD)	3.365	3.634	3.921	4.023	4.110		
HILLSBOROUGH COUNTY UTILITIES (20141)							
County Population Served	582,725	648,521	708,229	754,869	794,526	0.000	98
Demand (MGD)	57.188	63.645	69.504	74.081	77.973		
Total Utility Service Area Population	582,725	648,521	708,229	754,869	794,526		
Demand (MGD)	57.188	63.645	69.504	74.081	77.973		
HILLSBOROUGH COUNTY UTILITIES (8440)							
County Population Served	400	400	400	400	400	0.060	150
Demand (MGD)	0.060	0.060	0.060	0.060	0.060		
Total Utility Service Area Population	400	400	400	400	400		
Demand (MGD)	0.060	0.060	0.060	0.060	0.060		
LITTLE MANATEE ISLE MHP (2888)							
County Population Served	210	210	210	210	210	0.022	0
Demand (MGD)	0.000	0.000	0.000	0.000	0.000		
Total Utility Service Area Population	210	210	210	210	210		
Demand (MGD)	0.000	0.000	0.000	0.000	0.000		
MALCO INDUSTRIES INC. (7002)							
County Population Served	1,082	1,082	1,082	1,082	1,082	0.097	133
Demand (MGD)	0.144	0.144	0.144	0.144	0.144		
Total Utility Service Area Population	1,082	1,082	1,082	1,082	1,082		
Demand (MGD)	0.144	0.144	0.144	0.144	0.144		

TAMPA BAY PLANNING REGION

HILLSBOROUGH COUNTY (UNINCORPORATED)

DEMAND ANALYSIS

UTILITY NAME	2015	2020	2025	2030	2035	WUP (MGD)	PER CAPITA WATER USE (2008-2012)
PARADISE LAKES UTILITY, LLC (1787)							
County Population Served	221	222	223	224	224	0.031	121
Demand (MGD)	0.027	0.027	0.027	0.027	0.027		
Total Utility Service Area Population	221	222	223	224	224		
Demand (MGD)	0.027	0.027	0.027	0.027	0.027		
PLURIS PCU INC (12994)							
County Population Served	3,487	3,487	3,487	3,487	3,487	0.000	118
Demand (MGD)	0.411	0.411	0.411	0.411	0.411		
Total Utility Service Area Population	3,487	3,487	3,487	3,487	3,487		
Demand (MGD)	0.411	0.411	0.411	0.411	0.411		
RIVERSIDE GOLF COURSE COMM LLC (7637)							
County Population Served	1,039	1,039	1,039	1,039	1,039	0.514	463
Demand (MGD)	0.481	0.481	0.481	0.481	0.481		
Total Utility Service Area Population	1,039	1,039	1,039	1,039	1,039		
Demand (MGD)	0.481	0.481	0.481	0.481	0.481		
UNIPROP INCOME FUND II (PARADISE VILLAGE) (7790)							
County Population Served	830	830	830	830	830	0.128	65
Demand (MGD)	0.054	0.054	0.054	0.054	0.054		
Total Utility Service Area Population	830	830	830	830	830		
Demand (MGD)	0.054	0.054	0.054	0.054	0.054		
UTILITIES, INC. (2707)							
County Population Served	2,991	3,001	3,015	3,022	3,030	0.306	66
Demand (MGD)	0.198	0.198	0.199	0.200	0.200		
Total Utility Service Area Population	2,991	3,001	3,015	3,022	3,030		
Demand (MGD)	0.198	0.198	0.199	0.200	0.200		
WILDER CORPORATION (4757)							
County Population Served	1,422	1,422	1,422	1,422	1,422	0.065	32
Demand (MGD)	0.046	0.046	0.046	0.046	0.046		
Total Utility Service Area Population	1,422	1,422	1,422	1,422	1,422		
Demand (MGD)	0.046	0.046	0.046	0.046	0.046		
WINDEMERE UTILITY COMPANY (10443)							
County Population Served	2,783	2,789	2,798	2,801	2,804	0.447	102
Demand (MGD)	0.285	0.286	0.287	0.287	0.287		
Total Utility Service Area Population	2,783	2,789	2,798	2,801	2,804		
Demand (MGD)	0.285	0.286	0.287	0.287	0.287		
DOMESTIC SELF SUPPLY							
Population Served	106,397	128,956	155,311	190,819	225,933		68
Demand (MGD)	7.256	8.795	10.592	13.014	15.409		
COUNTY POPULATION							
	905,763	1,009,311	1,108,776	1,197,169	1,276,869		98 *
TOTAL DEMAND (COUNTY)							
	88.941	98.652	107.824	115.536	122.388		
TOTAL DEMAND (UTILITIES)							
	138.254	149.282	159.233	166.966	173.887		

* Weighted mean per capita of utilities serving within community jurisdiction

Long-Term Master Water Plan 2013

December, 2013



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Executive Summary

Tampa Bay Water is a regional water supply authority that provides wholesale water for its six Member governments: Hillsborough, Pasco and Pinellas counties, and the cities of New Port Richey, St. Petersburg and Tampa.

The Amended and Restated Interlocal Agreement (referred to as the Interlocal Agreement) requires that the Master Water Plan be updated every five years. Tampa Bay Water was formed in 1998, the first revision to the Master Water Plan was approved by the board of directors in 2003, the second was approved by the Board in 2008, and the third revision is required to be completed by the end of 2013. This document, entitled Long-Term Master Water Plan 2013, has been developed to meet this requirement and to ensure that Tampa Bay Water meets the unequivocal obligation to provide quality water to the member governments now and in the future.

A. Section 1 – Introduction and Overview

Tampa Bay Water owns and operates a diversified water supply system. The Agency's Long-Term Master Water Plan documents how Tampa Bay Water meets its unequivocal obligation to provide quality water to the member governments now and in the future. The Amended and Restated Interlocal Agreement requires that the Long-Term Master Water Plan be updated every five years. Since its creation in 1998, the Agency has completed three revisions of the Plan. This document, entitled *Long-Term Master Water Plan 2013*, is the latest revision.

The objectives of this update are to meet the requirements set forth in the Interlocal Agreement. According to the Agreement, the five-year update shall, to the extent deemed necessary or advisable by the board:

- Identify current customers, projects and future customers
- Review and generally inventory existing Tampa Bay Water facilities
- Identify a Capital Improvement Program
- Review current Tampa Bay Water permits along with existing and projected regulations
- Identify proposed new water supply facilities
- Evaluate staffing
- Provide hydraulic analysis of both existing and proposed systems
- Evaluate present and future sources and treatment requirements in terms of capacity, reliability and economy
- Update the list of water supply facilities required to meet the anticipated water quality needs of the member governments for the next twenty years

During the 2008 update, the comprehensive project list was updated and approximately 300 potential water supply projects were evaluated based on public input and with the advice of the Planning Advisory Committee. The Tampa Bay Water board approved the update to the Plan in December 2008. As the result of the update, the Board directed that seven project concepts and three policy planning areas be further studied. The seven project concepts are: Small Footprint Reverse Osmosis-Pinellas County; Gulf Coast Seawater Desalination Plant; Tampa Bay Seawater Desalination Plant Expansion; Thonotosassa Wells; Additional Potable Groundwater from Existing Northern Wells; Surface Water Expansion Project; and Aquifer Recharge Project. The three policy planning areas were: Source Water Protection Program; Regional Reclaimed Water Planning Assistance; Demand Management and Water Use Efficiency. The studies for all three of the policy planning areas have been completed.

Tampa Bay Water’s existing supply should meet the region’s demands for the next decade and the Long-Term Master Water Plan includes projects to meet the agency’s 20-year planning horizon needs. For the 2013 update, no new water supply facilities are recommended for selection and implementation in the next five years due to lower regional demand projections. For planning purposes, future project(s) selection and preparation of water use permits should be based on the supply capacity under average hydrologic conditions since these projects are in development to meet long-term water supply needs. The project concepts approved by the board in the 2008 plan update should be studied further over the next few years to provide information for the board to select the next water supply project(s) for construction when needed. Tampa Bay Water will continue to implement and enhance its planning and management activities to address seasonal and severe drought events and long-term future supply needs. These activities will be conducted along with study of the project concepts in the Long-Term Master Water Plan to ensure that Tampa Bay Water continues to meet its unequivocal obligation to provide quality water to the member governments.

B. Section 2 - Existing Facilities Inventory

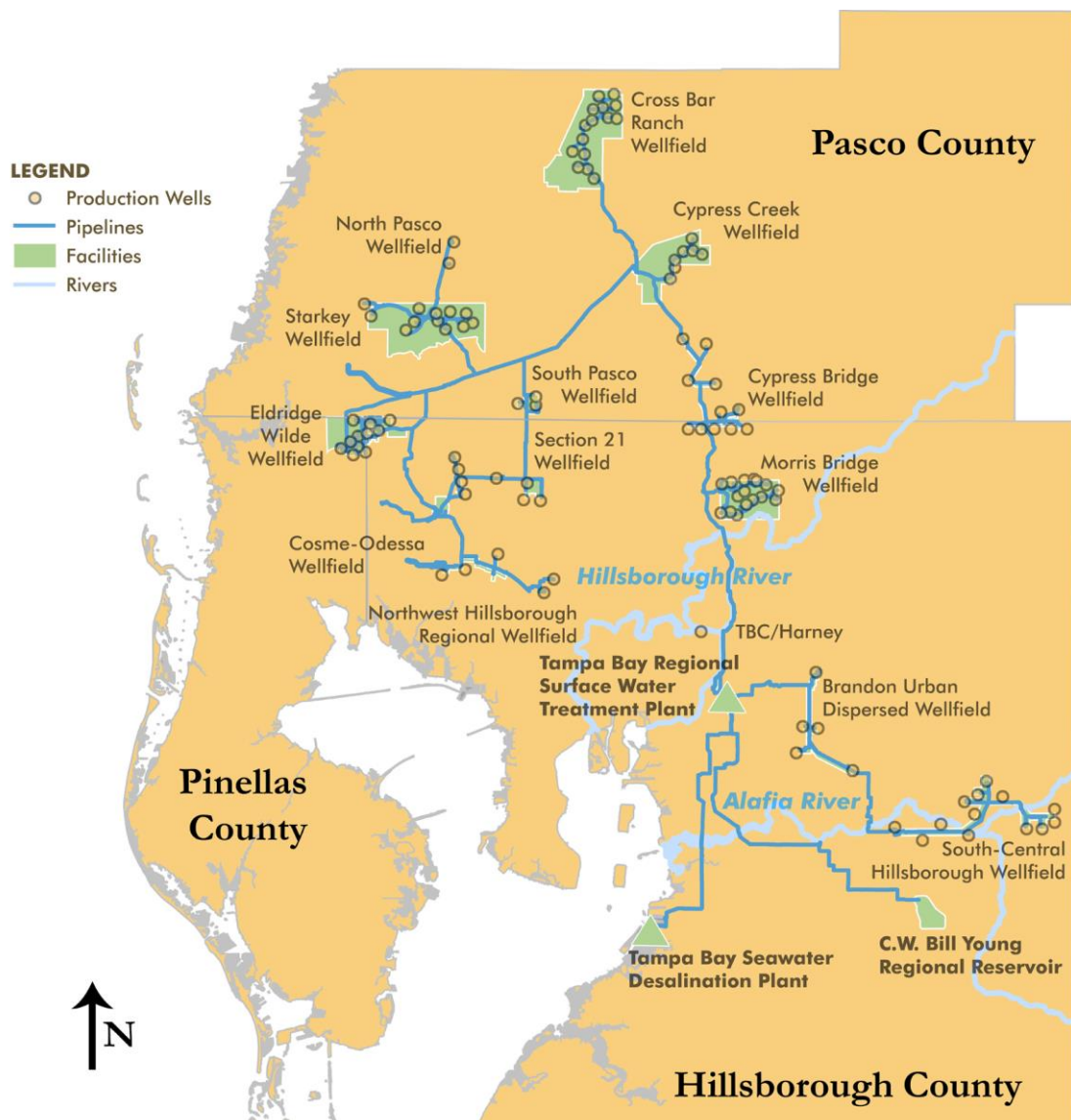
Tampa Bay Water constructed a regional water delivery system that is comprised of groundwater and surface water sources, an off-stream storage reservoir, a seawater desalination plant and a collection of pipes and pumps that distribute quality drinking water to the six member governments. The regional system facilities currently in service are summarized below:

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> ● <u>Distribution:</u> ● 3 booster pumping stations ● 21 points of connection ● ~115 miles of raw water pipeline ● ~156 miles of finished water pipeline ● 2 alkalinity adjustment | <ul style="list-style-type: none"> ● <u>Groundwater Facilities:</u> ● 13 wellfields ● 177 wells ● 5 individual wellfields ● 6 groundwater treatment facilities ● 2 groundwater | <ul style="list-style-type: none"> ● <u>Surface Water Facilities:</u> ● 2 river withdrawal points; 1 desalination withdrawal point ● 1 re-pump station ● 1 15-billion gallon surface water storage reservoir ● 1 surface water treatment plant ● 1 seawater desalination plant |
|---|--|--|

- facilities
 - 4 interconnections where the Agency can purchase water from member governments
- hydrogen sulfide removal facilities
 - 1 booster pump station
 - 1 reservoir pump station
 - 1 augmentation pump station (Harney Canal)

The location of these facilities is shown in figure ES-1.

Figure ES-1 Tampa Bay Water Regional Water Supply and Delivery System



Tampa Bay Water has completed adding additional water treatment facilities, an expanded surface water system, piping and pumping to form a flexible and adaptable water supply system. These sources are sufficient to meet the region’s drinking water demands over the next decade. Due to slowed regional demands for drinking water, Tampa Bay Water does not need to select new supply projects during this update cycle. All potential new water supply projects will be carried into the Master Water Plan feasibility program and will be evaluated over the next 3-4 years.

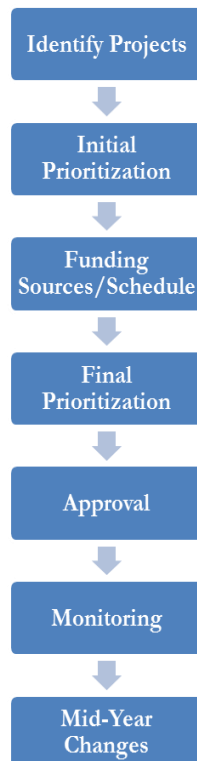
C. Section 3 – Capital and Systems Programs

Tampa Bay Water’s Capital and System Programs includes the Capital Improvement Program, Renewal and Replacement Program, and Energy Management Program.

A. Capital Improvement Program

Tampa Bay Water’s Capital Improvement Program (CIP) is a comprehensive five-year plan of approved and proposed capital projects. The CIP is updated annually, as the need and timing for specific projects change. Figure ES-2 shows the process followed for developing the annual update to the Capital Improvement Program Plan:

Figure ES-2 Capital Improvement Program Annual Update Process



A capital project is defined as planned activities that result in a distinct capital asset owned by the Agency and/or a major repair, improvement, renovation or expansion that extends an existing asset’s useful life. Table ES-1 outlines the criteria a project has to meet in order to be considered a capital improvement project:

Table ES-1 Capital Improvement Project Criteria

Criterion	Definition		
<u>Compliance</u>	Project needed to meet: <ul style="list-style-type: none"> • Legal settlement • Regulatory agency action (e.g., consent order, administrative order) • Permit requirements 		
<u>Level of Service</u>	<ul style="list-style-type: none"> • Project is critical to the existing level of service (i.e., existing operating conditions) • Project improves the reliability of the regional system components or extends the components’ useful life (e.g., pressure, flow, metering equipment) 		
<u>Contractual Obligations</u>	Project needed to meet one or more of the following: <ul style="list-style-type: none"> • Memorandum of understanding • Joint project Agreement • The Amended and Restated Interlocal Agreement production failure requirements • Future water demands; and has been identified in the Master Water Plan • Exhibit C & D of the Master Water Supply Contract 		
<u>Security and Safety</u>	<ul style="list-style-type: none"> • The project is critical to the facility security • The project is recommended by the vulnerability assessment • The project addresses a hazard or safety issue to the workforce, public, or water supplies • The project addresses State & Federal safety regulations 		
<u>Outside Funding</u>	<table border="0"> <tr> <td> <ul style="list-style-type: none"> • Outside Funding possible such as: <ul style="list-style-type: none"> ▪ State & Federal grants ▪ Co-funding agreements ▪ Member government contributions </td> <td> <ul style="list-style-type: none"> • Existing Funding agreement in place such as: <ul style="list-style-type: none"> ▪ Co-funding agreement ▪ State & Federal grants ▪ Member government contributions </td> </tr> </table>	<ul style="list-style-type: none"> • Outside Funding possible such as: <ul style="list-style-type: none"> ▪ State & Federal grants ▪ Co-funding agreements ▪ Member government contributions 	<ul style="list-style-type: none"> • Existing Funding agreement in place such as: <ul style="list-style-type: none"> ▪ Co-funding agreement ▪ State & Federal grants ▪ Member government contributions
<ul style="list-style-type: none"> • Outside Funding possible such as: <ul style="list-style-type: none"> ▪ State & Federal grants ▪ Co-funding agreements ▪ Member government contributions 	<ul style="list-style-type: none"> • Existing Funding agreement in place such as: <ul style="list-style-type: none"> ▪ Co-funding agreement ▪ State & Federal grants ▪ Member government contributions 		
<u>Annual O&M</u>	<ul style="list-style-type: none"> • Effects to Operating (i.e., chemicals & power) and/or Maintenance Costs) 		

B. Renewal and Replacement Program

Tampa Bay Water’s Renewal and Replacement Program is intended to maintain a sustainable infrastructure. This program helps Tampa Bay Water manage its assets in a cost-effective manner while ensuring that the agency meets its goals of delivering safe and reliable drinking water. The Renewal and Replacement Program development process is shown in Figure ES-3.

Figure ES-3 Renewal and Replacement Program Annual Update Process

C. Energy Management Program

Tampa Bay Water’s Energy Management Program includes energy efficiency, conservation and alternative/renewable energy capital project ideas for our water supply system. This program follows an Energy Roadmap, which was developed to provide a 10-year look at the issues related to energy consumption at our facilities. The Energy Roadmap provides an action plan that sets expectations and principles along with measurable targets; it identifies the elements of technology and energy infrastructure to enhance financial stability and sustainability; and it provides a basis to analyze the relationship between decisions that affect annual operations and maintenance capital budgeting. Figure ES-4 shows the Energy Roadmap.

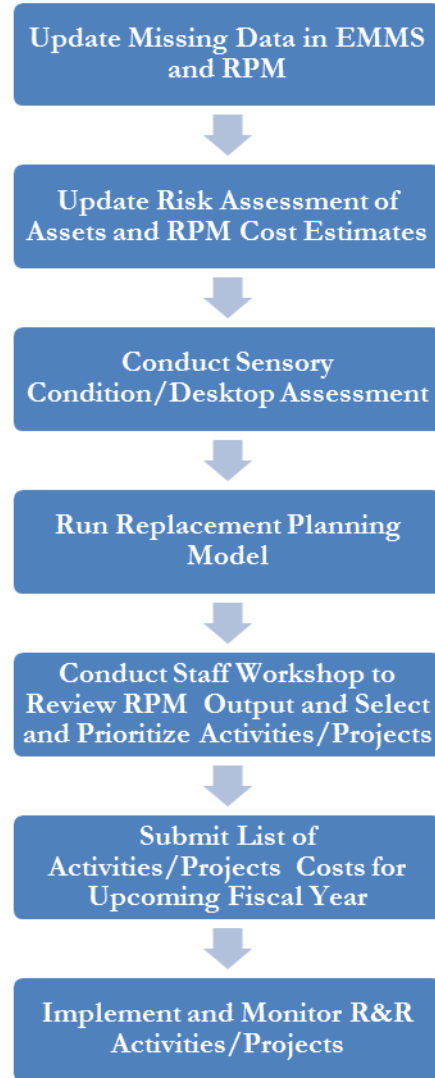


Figure ES-4 Energy Program Roadmap



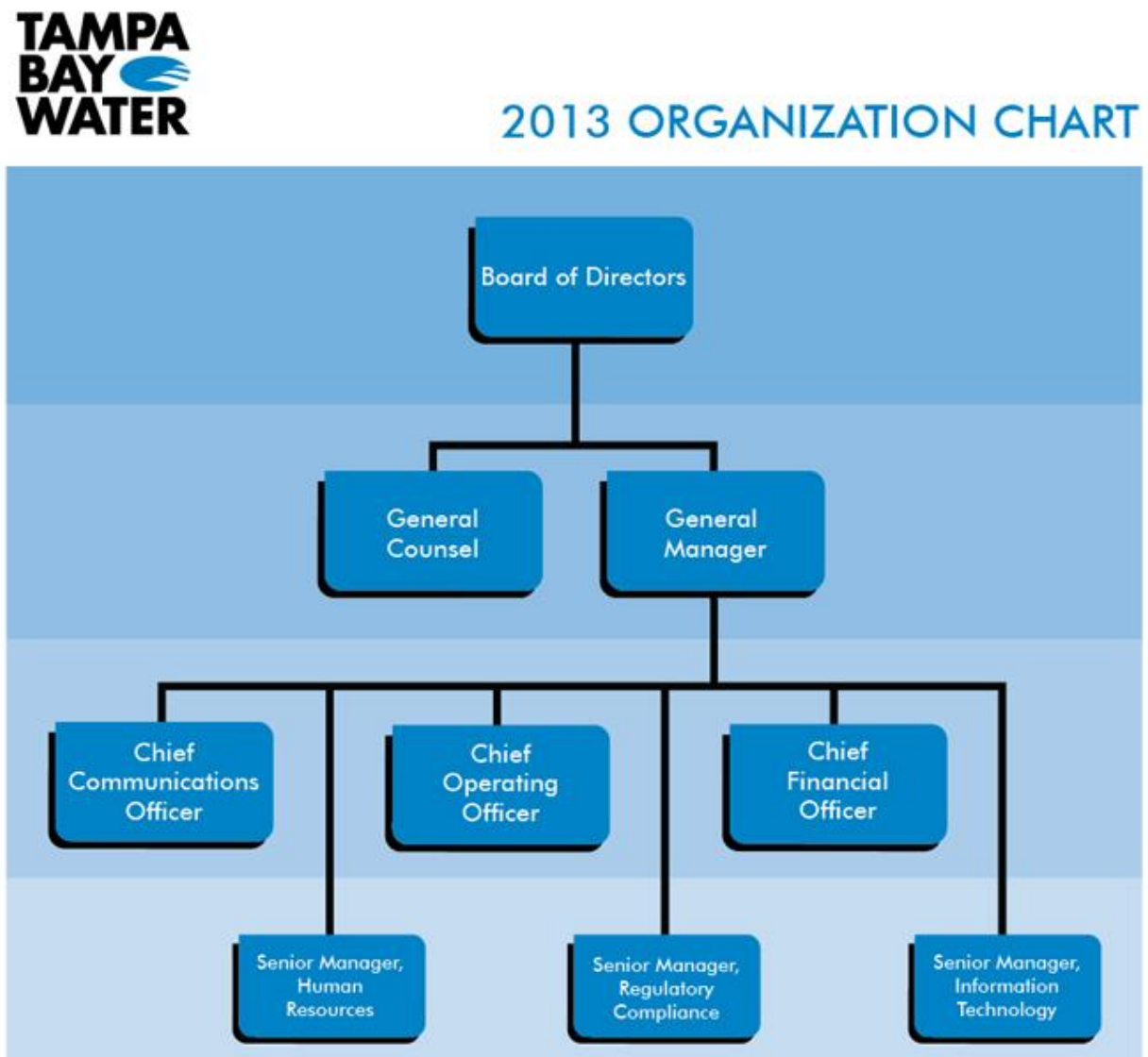
D. Section 4 – Staffing

Tampa Bay Water reviews staffing periodically through formal audits and pay plan and benefit package reviews. The board approved the latest pay and classification plan for the Agency in April 2013. The Agency maintains a lean staff of 132 full-time equivalent positions to fulfill the Agency’s mission while maintaining a fiscally responsible program to serve its member governments.

In April 2011, the board approved an Agency Strategic Plan, which consists of four main goals intended to guide the Agency in fulfilling the mission of providing clean, safe and reliable water. During 2012, the

Agency underwent a reorganization process in order to meet the goals of the Strategic Plan. Tampa Bay Water is shifting its focus from building new supplies to maintaining its existing supplies and facilities. As such, the Agency has reorganized to better reflect the new focus and be more efficient in its organizational structure. Figure ES-5 shows current organizational structure.

Figure ES-5 Tampa Bay Water Organizational Structure



E. Section 5 - Customers and Water Demands

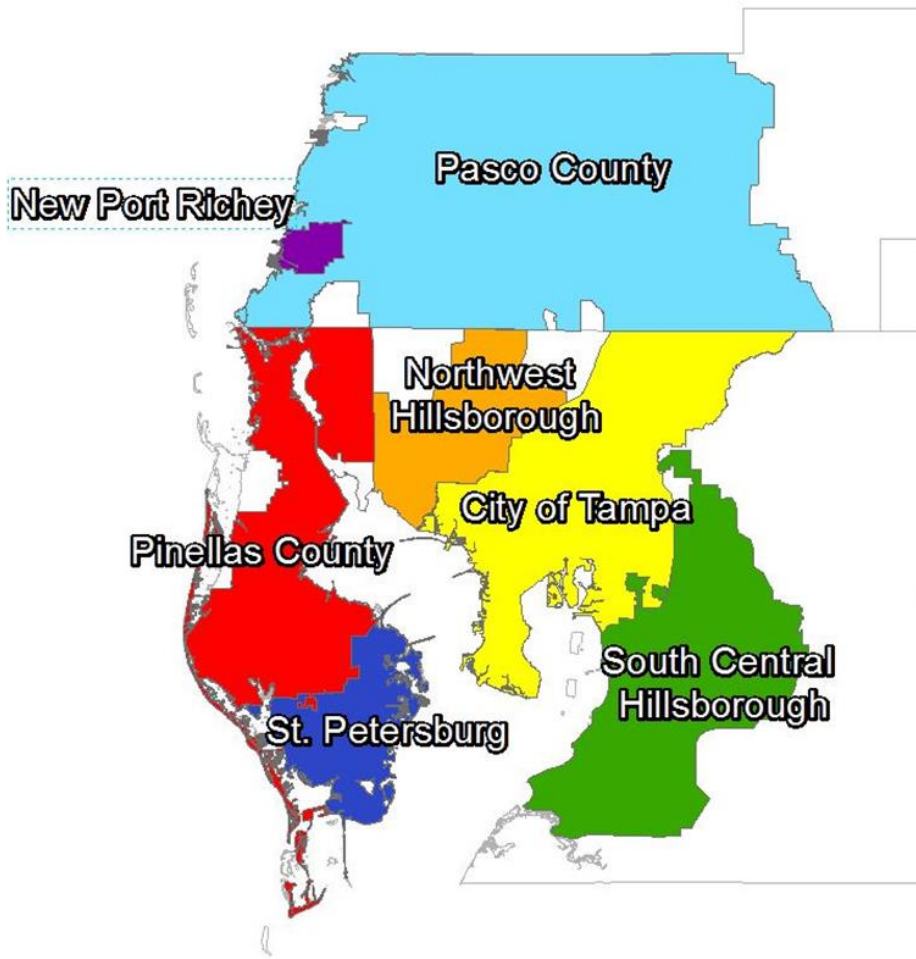
Tampa Bay Water has the unequivocal obligation to meet the water demands of its six member governments. A major component in developing new potable water supplies is the ability to accurately determine future demands so that new projects can be implemented when needed, avoiding the risk of under-or over-estimating when supply is needed. As stated by the American Water Works Association's *Manual of Water Supply Practices M 50* (2007), a sound water demand forecast allows utilities and regional suppliers to provide the following:

- Adequacy of supply
- Optimum facility location and size
- Sound transmission and distribution design

Tampa Bay Water provides regional water demand forecasts for its member governments specifically to project the amount of water supply needed within Tampa Bay Water's service area. The regional demand forecasts include the total water demand for the City of Tampa. The Agency's Long-term Demand Forecasting models are designed primarily for the purpose of longer-term planning and forecasting over 20-30 year time horizons. The models provide monthly and annual water demand forecasts for the seven water demand planning areas (WDPAs) of the six member governments through the 2035 planning horizon. This demand planning ensures that adequate supply will be made available to member governments in the future and that supplies are added in such a way as to minimize member government wholesale water rate impacts.

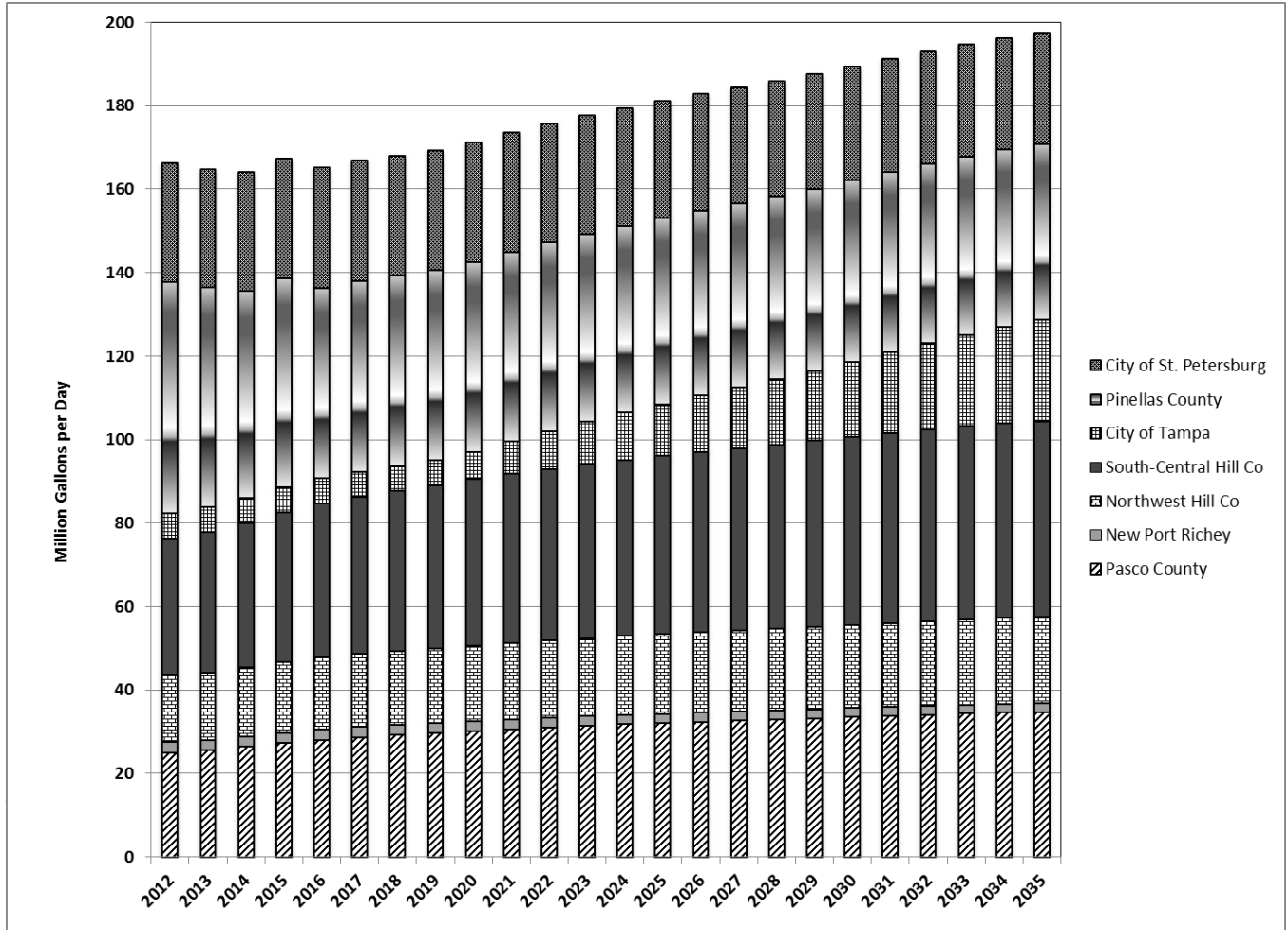
Seven water demand planning areas are established which reflect the current service area boundaries for the six member governments. These areas are illustrated in figure ES-6.

Figure ES-6- Tampa Bay Water Member Government Water Demand Planning Areas



Tampa Bay Water updated its Long-Term Demand Forecasting models and developed two long-term water demand forecasts through 2035. Each model generates demand forecasts based on water demand planning area specific weather and socioeconomic projections. Annual water demands within Tampa Bay Water's service area have been impacted by the economic recession since 2008. Figure ES-7 shows Tampa Bay Water demand projections by water demand planning area through 2035.

Figure ES-7- Tampa Bay Water Demand Projections by Water Demand Planning Area



F. Section 6 - System Analysis

Tampa Bay Water regularly performs hydraulic analyses for its regional supply and transmission system to study current system operating conditions and to evaluate plans for projected future operating conditions. Tampa Bay Water uses a number of tools to perform modeling and analysis. A detailed description of these models can be found in Section 6 of the Long-Term Master Water Plan.

In 2006, Tampa Bay Water’s system engineer completed the *System Analysis Update* document, which was performed to determine regional transmission system improvements. As a result of this analysis, 25 recommendations were made to Tampa Bay Water on overall system improvement. Most of the 25 recommendations have been completed.

The future water supply options identified in the 2008 Long-Term Water Supply Plan were evaluated in a hydraulic model for the demands projected for the year 2035. The results showed certain hydraulic

limitations in the Morris Bridge Transmission Main, Cypress Bridge Transmission Main, Brandon Transmission Main and Brandon South Central Connection. The analysis also determined that the hydraulic limitations would be improved by the addition of new supply capacities downstream of the Cypress Creek Pump Station at the Lithia Water Treatment Facility. The addition of new supply could require parallel or increased diameter piping to be installed. As the decision regarding which long-term water supply projects will be considered for further evaluation and eventual implementation, additional analyses should be completed to evaluate the need for additional operational flexibility and potential system operating restrictions.

Tampa Bay Water will update the *Tampa Bay Water 2025 System Analysis* document completed by Black & Veatch in 2006, based on the expanded surface water system infrastructure and projected future demands. The improvements that were recommended from the last analysis that have not been completed will also be re-evaluated to determine if they are still necessary. The summary of current System Analysis Recommendations is:

- Regional System and Enhanced Surface Water System Surge Models
 - Complete the database of system surge features.
 - Field verify the equipment and settings.
 - Update and run the system surge models to verify that the system has adequate surge protection.
 - Update the surge analysis for any major changes to the system.
- Regional Supply and Transmission System and Enhanced Surface Water System Hydraulic Models
 - Evaluate system improvements at the Odessa and US 41 Pump Stations resulting from an increase in system pressure from Cypress Creek.
 - Evaluate options for lowering system pressures in the transmission main between the High Service pump Station and the Cypress Creek Pump Station.
 - Evaluate the benefits of adding finished water storage.
 - Update the 2025 Analysis and determine if the previously recommended projects are still necessary.
 - Evaluate long-term water supply options.
- Hydraulic Grade Tools (with chemical and electrical cost estimates)

- Project monthly chemical and electrical costs for annual budgeting.
- Enhanced Surface Water System Operational Model
 - Project supply availability based on projected regional rainfall forecasts.
 - Evaluate future surface water system expansion options.
- Regional System Performance Model
 - Update the analysis of system reliability in the Regional System Performance Model whenever any changes to supply sources and/or changes demand projections.
 - Evaluate the improved system reliability with each of the long-term water supply options.

G. Section 7 - Regulatory Review

As a part of planning to meet the water needs of the member governments, it is important for Tampa Bay Water to consider existing and proposed regulations at the State and Federal levels. Drinking water standards are established at the Federal and State levels to protect human health. The Florida Department of Environmental Protection typically adopts drinking water standards as mandated at the federal level; however, State standards may be more stringent than the Federal standards. The Florida Department of Environmental Protection is also responsible for permitting water treatment facilities and distribution systems.

Tampa Bay Water is required to provide water that meets all State and Federal drinking water standards as well as Exhibit D Standards, which are established in the Master Water Supply Contract to further refine the definition of a “Quality Water” to be provided to the member governments. Table ES-2 summarizes major water-related regulations under development at the Environmental Protection Agency.

Table ES-2 Projected Environmental Protection Agency Regulations

Regulation	Proposal	Final	Notes
<u>Bisphenol A (BPA)</u>	TBD	TBD	Advanced Notice of Proposed Rulemaking published on July 26, 2011. EPA is considering environmental testing for BPA under the Toxic Substances Control Act (TSCA), including potential testing of drinking water and its sources.
<u>Carcinogenic Volatile Organic Compounds (VOCs)</u>	2014 (projected)	June 2015 (projected)	On February 2, 2011, EPA announced plans to develop a single National Drinking Water Regulation (NPDWR) covering up to 16 carcinogenic VOCs. EPA is conducting evaluations and developing supporting materials for proposal.
<u>Clean Water Protection Rule</u>	TBD	TBD	The Clean Water Protection Rule would codify requirements currently set forth in the EPA/Army Corps of Engineers "Draft Guidance on Identifying Waters Protected by the Clean Water Act." The guidance was submitted to the Office of Management and Budget for review on February 21, 2012.
<u>Lead and Copper Rule (LCR): Regulatory Revisions</u>	2014 (projected)	May 2014 (projected)	EPA has announced its intention to engage in a series of public meetings/workshops to discuss potential rule revisions.
<u>Perchlorate</u>	2014 (projected)	August 2014 (statutory deadline)	EPA is awaiting the final Science Advisory Board report on setting a Maximum Contaminant Level Goal (MCLG) and continues to evaluate revised modeling approaches to set an MCLG.
<u>Radon</u>	November 2, 1999	TBD	Long-term prospects for a radon rulemaking are uncertain. EPA's Spring 2011 Regulatory Agenda lists final action for this rule as "to be determined." However, it is not listed at all in the Fall 2012 Regulatory Agenda.
<u>Revised Total Coliform Rule (RTCR)</u>	June 17, 2010	February 13, 2013	The final RTCR was published in the <i>Federal Register</i> on February 13, 2013. Compliance begins on April 1, 2016.
<u>RTCR - Finished Water Storage Facility Inspection Requirements</u>	TBD	TBD	EPA is evaluating options for a potential regulation.
<u>Effluent Guidelines and Standards for Unconventional Oil and Gas Extraction Including Coalbed Methane and Shale Gas Extraction</u>	October 2014 (projected)	February 2016 (projected)	
Fluoride	TBD	TBD	EPA has completed and peer-reviewed a quantitative dose-response assessment based on the available data for severe dental fluorosis as recommended by National Research Council (NRC). EPA has also completed and peer-reviewed a document on environmental exposure to fluoride and the relative source contribution (RSC) for water. The RSC is needed in order to derive the Maximum Contaminant Level Goal (MCLG) from the dose-response assessment.

In operating its facilities and planning for future supply sources, Tampa Bay Water should continue to participate in Federal and State regulatory policy initiatives in order to understand their effect on operations and future water supply development options. At the State level, Tampa Bay Water can provide constructive input on initiatives such as the Florida Department of Environmental Protection's Consumptive Use Permitting Consistency effort to help improve the permitting process. At the Federal level, things such as source water quality based upon established Maximum Contaminant Levels and Maximum Contaminant Guidance Levels, as well as potential emerging contaminants and Contaminant Candidate List constituents that might become regulated in the future will need to be followed. The research being performed on such constituents, their potential effects on public health, the environment, and related treatment aspects will continue to provide new information and a better understanding on how they might affect water supply. The research process is expected to occur over a long time span and thus will allow Tampa Bay Water time to adapt should any new regulatory limits be set. In the meantime, Tampa Bay Water can continue to participate in the regulatory development process to ensure that any proposed legislation is supportive of Tampa Bay Water's goal to provide safe clean drinking water.

H. Section 8 - Source Water Protection

Protecting the sources of drinking water supply in our region is essential to protecting the public health and maintaining a sustainable water supply in the future. Protecting the sources of the region's drinking water supplies also protects the water supply investment made by the board.

Source water protection is the first step in a multi-barrier approach to drinking water protection. Tampa Bay Water has a diversified water supply portfolio, consisting of groundwater, surface water and desalinated water. The Agency relies on 13 consolidated wellfields, 2 isolated wells, the Hillsborough River, Alafia River, Tampa Bypass Canal, Regional Reservoir and the Seawater Desalination Plant to meet the daily demand for quality drinking water.

During the 2008 Long-Term Master Water Plan update, the board approved the creation of a source water protection program. In 2009-2010, the agency undertook this effort and developed an Integrated Source Water Protection Program which was approved by the board in 2011. This Program contains several source water protection options. Detailed information regarding each of those options can be found in Appendix B.

Tampa Bay Water's Integrated Source Water Protection Program employs a range of initiatives to prevent and reduce source water pollution, such as education and outreach programs, participation in regulatory initiatives as well as partnerships and monitoring programs. As a wholesale water provider, Tampa Bay Water does not have regulatory purview over the land areas that influence the sources of

supply. Collaboration with member governments, regulatory agencies and stakeholders are important components of a successful source water protection program for Tampa Bay Water.

Tampa Bay Water staff will continue to examine the Agency's source water protection needs and recommend to the board an annual budget for source water protection activities. This will help ensure that the efforts most beneficial to the Agency's program are funded and implemented each year.

I. Section 9 - Climate Variability and Long-Term Climate Change

Use of surface water supplies imposes a new level of uncertainty in our water supply system and makes the region more susceptible to extremes of weather and climate. Because Tampa Bay Water has become more reliant on surface water sources, it is important to examine the relationship between climate change and water quality and quantity issues.

Important effects of climate change that will potentially affect Tampa Bay Water include:

- Impacts of increasing temperature on evapotranspiration and seasonal rainfall patterns;
- Increasing rainfall variability and frequency of extreme events (e.g. more hurricanes, more droughts);
- Source water quality changes due to temperature changes or increased runoff; and
- Changes in rainfall patterns and temperatures affecting water use patterns and future water needs.

Risk-based decision making is one approach that can be used to balance risks and costs and incorporate the uncertainties associated with climate change. Risk assessment includes evaluating the likelihood of a climate change impact occurring. Adaptive management supports action in the face of uncertainty and limited scientific knowledge. Tampa Bay Water's current mix of supplies is diverse. This diversity offers opportunities for adaptive planning and adaptive management which can offset some of the effects associated with climate uncertainties. Tampa Bay Water's board has approved the incorporation of adaptive management into long-range planning activities. The key components of adaptive management are defined as follows:

- Implementation- water supply planning, construction programs and operations feedback
- Feedback- monitoring and review of economic and environmental outcomes of management actions
- Re-evaluation- conceive new strategies (planning and operational) as information accumulates and understanding improves

- Repeat Loop- continuous improvement process

Tampa Bay Water is moving forward with its risk assessments to understand the uncertainties associated with climate change and variability and how this may affect long-term water supply planning activities and implementation of adaptive management strategies.

J. Section 10 - Demand Management

Through the six member governments, Tampa Bay Water meets the drinking water demands of more than 2.3 million people. According to member governments' actual and projected 5-year water conservation plans, it is estimated that the member governments collectively saved approximately 26 million gallons per day (mgd) of potable water by the end of the water year 2011, and will save up to approximately 30 million gallons per day (mgd) by the end of water year 2016.

The Demand Management Plan investigates the benefits and costs of water demand management as a quantifiable, alternative water supply source. The Demand Management Plan is one way to further the Agency's strategic goals to achieve reliability of its water supply and delivery system to its member governments.

Demand Management Plan efforts are intended to serve as a complement to the traditional water supply planning process in meeting current and future water demands. Demand management encompasses a set of activities designed to:

- Provide a better understanding of how and why water is used
- Forecast human demands for water supplies
- Develop prospective water-using efficiency (demand reduction) measures
- Identify programmatic and project goals, evaluation criteria, performance measures and monitoring mechanisms
- Define and evaluate program effectiveness and goal achievement
- Evaluate the benefits and costs of efficiency measures as an alternative or a complement to supply development

The demand management effort includes an analysis of past and present water savings, as well as an analysis of avoided supply costs related to improved water use efficiency. The Demand Management Plan examines things such as distribution of water use, an evaluation of achieved water savings from existing member governments' programs, and the analysis of new and upcoming water technologies designated to lower water use.

In February 2013, the Board adopted a Water Efficiency resolution, which gives Tampa Bay Water a direction on activities that need to be included in the Demand Management planning efforts. The Water Use Efficiency resolution incorporates water use efficiency evaluation efforts into the Agency long-term planning process. The resolution is based on the following findings:

- Develop and implement data collection, management and analysis protocols and procedures for the continued assessment of passive water use efficiency within Tampa Bay Water service area
- Integrate passive water-use efficiency into the Agency's Long-Term Demand Forecast and Future Needs Analysis
- Include the Water Use Efficiency Evaluation as an element of the Long-Term Master Water Plan
- Include an updated evaluation of potential active measures for implementing efficient water-use products as part of future options for the next Long-Term Master Water Plan update

Incorporation of the effects of increased water-use efficiency into the Agency's long-term planning process provides the board with more supply policy options, affords Tampa Bay Water and its member governments a supply buffer, and allows Tampa Bay Water to prepare and plan for the effects due to changes in water use efficiency.

K. Section 11 - Potential Future Water Supply Sources

As required by the Interlocal Agreement, Tampa Bay Water must update its Long-Term Master Water Plan every five years to ensure that the Agency has adequate supply to meet the region's demand for quality drinking water. During the 2008 Long-Term Master Water Plan, Tampa Bay Water looked at approximately 300 potential water supply projects. The board approved seven project concepts for the Master Water Plan. Current demand projections show that the existing water supply facilities are sufficient to meet the demand for quality drinking water over the next decade. Due to the slow regional demand growth, no project has to be chosen from the Master Water Plan list for implementation during this plan update. The seven project concepts can be carried into the 2013 Long-Term Master Water Plan and included in a planning-feasibility program over the next five years. The seven project concepts approved by the board are:

- Small Footprint Reverse Osmosis
- Desalination Plant Expansion
- Gulf Coast Desalination Plant

- Additional Potable Groundwater from Existing Northern Wellfields
- Thonotosassa Wells
- Surface Water Expansion
- Aquifer Recharge

The board's goals for Master Water Plan projects include: environmental stewardship, cost and reliability. These are described as follows:

Environmental Stewardship: Tampa Bay Water delivers high quality drinking water in an environmentally responsible manner. The Partnership Plan and the Interlocal Agreement that drove the creation of Tampa Bay Water had environmental stewardship as one core motivation. Tampa Bay Water continues to monitor and optimize its operations to ensure that its water production operations incorporates the responsibility to develop and implement future sustainable water supplies, minimizing electrical power consumption, greenhouse gas production, chemical usage, and other factors involving environmental consequences.

Cost: Balancing fiscal responsibility with reliability and environmental stewardship is also important in Tampa Bay Water's water supply approach. Minimizing the cost of all operations, from source to tap, helps minimize rate impacts, consistent with meeting reliability and environmental stewardship goals. This focus on efficiency helps fulfill Tampa Bay Water's mission of public service, ensuring the region's water needs are met in the most economical manner.

Reliability: Because Tampa Bay Water is unequivocally committed to meeting the needs of its member governments continuously, reliability of its supply sources is of primary importance. Water supply source reliability addresses the challenges Tampa Bay Water faces in accomplishing its mission, including source water protection, drought resistance, diversification, adequate supply, source optimization, storage, and transmission flexibility. Furthermore, the potential impacts of future climate effects, particularly increased climatic variability, can affect source water quantity and quality. System reliability is also critical to ensure that the public health responsibility of water supply is continuously maintained, as well as providing the flexibility to maintain environmental stewardship.

Figure ES-8 shows the location of the 7 project concepts:

Figure ES-8 Project Concept Location Map

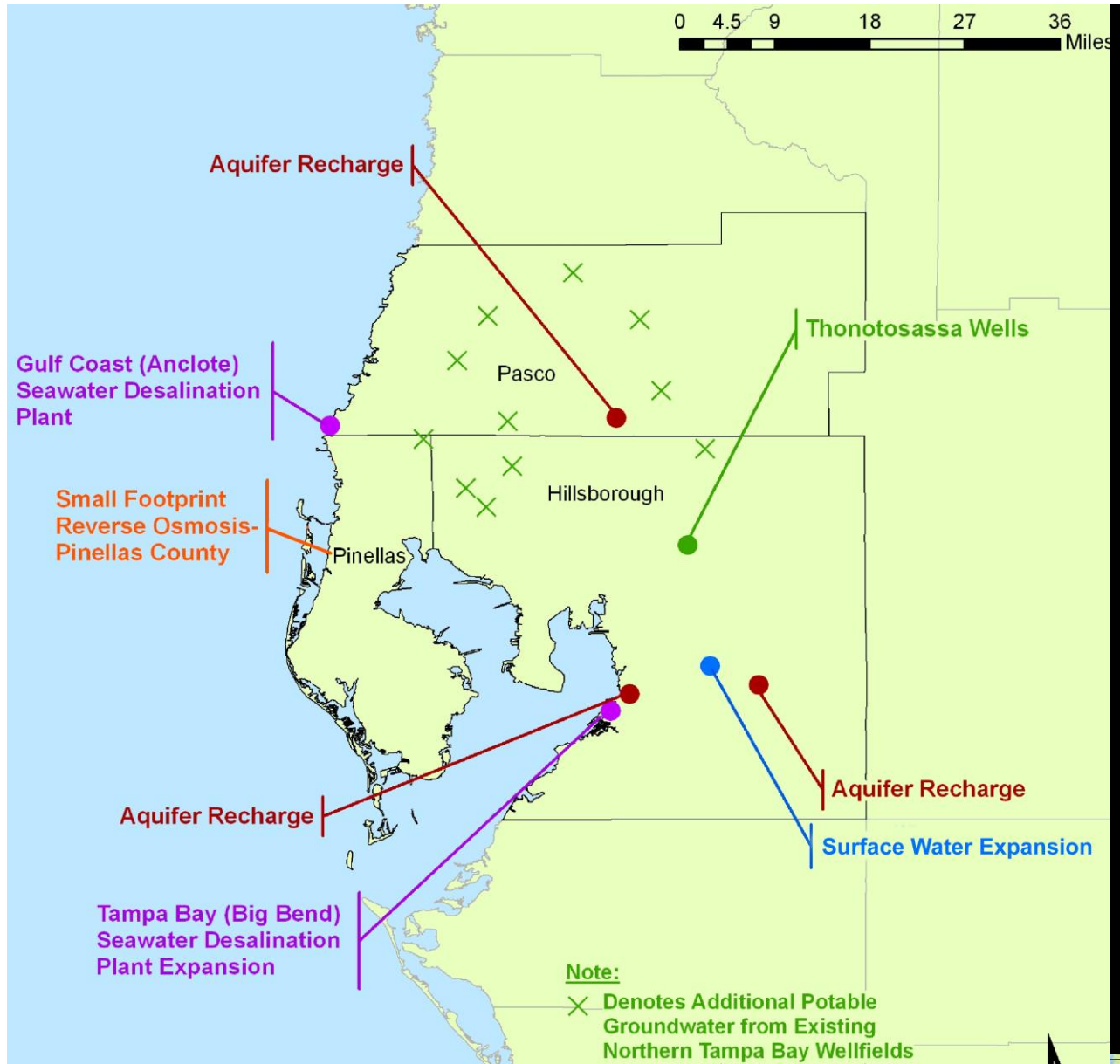


Table ES-3 summarizes the seven project concept costs and yield information.

Source Type	Project	Potential Annual Average Yield (million gallons per day)	Capital Cost (\$ million)	Unit Cost (\$ per 1,000 gallons)
Brackish Groundwater	¹ Small Footprint Reverse Osmosis- Pinellas County	To be monitored	To be monitored	To be monitored
Seawater	Tampa Bay Seawater Desalination Plant Expansion	10 mgd	\$216,100,000	\$8.11
Seawater	Gulf Coast (Anclote) Seawater Desalination Plant	25mgd/9mgd(phase I)/21 mgd(phase II)	\$551,100,000/\$262,000,000/ \$252,200,000	\$7.00/ \$9.00/ \$7.00
Fresh Groundwater	Additional Potable Groundwater from Existing Northern Tampa Bay Wellfields	10mgd/15 mgd	\$21,784,000/\$28,011,000	\$0.58/ \$0.52
Fresh Groundwater	Thonotosassa Wells	10 mgd	\$44,674,000	\$0.98
Surface Water	² Surface Water Expansion	³ 0.3 mgd-17.3 mgd	\$11,559,000-\$612,514,000	\$3.93- \$12.85
Reclaimed Water	Aquifer Recharge	22 mgd	\$234,348,000-rapid infiltration basin/ \$406,463,000-direct recharge wells	\$2.41/ \$5.58

¹Tampa Bay Water will continue to monitor the efforts of the City of Clearwater as they expand their Brackish reverse osmosis plant. The City of Oldsmar has constructed the plant, which is operational and the City of Tarpon Springs is currently in construction; therefore, the costs and yields of the projects are not applicable at this time.

²This project was formerly known as the “Alafia Expansion Project”.

³ This project concept consists of 7 potential configurations

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June 17, 2016

Ms. Melissa Dickens, AICP
Community Planner II
Hillsborough County Planning Commission
601 E Kennedy Blvd
Tampa, FL 33602

Re: Hillsborough County Comprehensive Plan Ten-Year Regional Water Supply Plan Amendment

Dear Ms. Dickens:

Tampa Bay Water is a regional water supply authority that provides wholesale water to its six Member Governments, including Hillsborough County. Tampa Bay Water is governed by two agreements with its Member Governments: the Amended and Restated Interlocal Agreement (Interlocal Agreement), and the Master Water Supply Contract, which were established in 1998. The Interlocal Agreement outlines requirements for Tampa Bay Water's Long-Term Master Water Plan, which must contain sufficient water supply projects to meet the Member Governments' water needs. The Long-Term Master Water Plan identifies sufficient supply projects to meet the 20-year planning horizon needs of the Members, including Hillsborough County.

In order to meet the Member Governments' future water needs, Tampa Bay Water must understand projected water demands. The Long-Term Plan reviews and evaluates the Member Governments' Annual Reports, Tampa Bay Water's Demand Forecast System, and the Southwest Florida Water Management District's Regional Water Supply Plan (RWSP) projections for this purpose.

The permitted quantity withdrawal limit for the 11 consolidated wellfields as stated in the Consolidated Permit is listed below, along with the permitted quantities for the remaining four wellfields and the surface water facilities:

Water Supply Facilities

Permitted Capacity in mgd

Consolidated Permit Wellfields- Total*	90.000
South-Central Hillsborough Regional Wellfield	24.100
Brandon Urban Dispersed Wells	6.000
Carrollwood Wells	0.820
Eagles Wells	0.198
Enhanced Surface Water System (consisting of Tampa Bypass Canal/Hillsborough River, Alafia River, C.W. Bill Young Regional Reservoir)	85.00
Tampa Bay Regional Seawater Desalination Plant	25.00

* Consolidated Permit Wellfields- Cross Bar Ranch, Cypress Creek, Cypress Bridge, Morris Bridge, Starkey, North Pasco, South Pasco, Eldridge-Wilde, Cosme/Odessa, Section 21, and Northwest Hillsborough. These wellfields are permitted as a single system and there is no annual withdrawal quantity assigned to any individual wellfield. These wellfields are operated in accordance with the Optimized Regional Operations Plan.

** The Water Use Permits for the Tampa Bypass Canal/Hillsborough River and the Alafia River facilities do not have assigned average annual quantities. The permit authorizes the harvest of a percentage of river flows after either a threshold flow or pool stage has been achieved in each river system.

Tampa Bay Water is currently updating its Long-Term Master Water Plan, which is due to be presented to the Board of Directors in December 2018. Six future water supply project concepts have been identified that could meet the regional drinking water demand in the next 20 years. The table below lists those options per source:

	Source Water			
	Reclaimed Water	Surface Water	Groundwater	Seawater
Project concepts	1. Aquifer Recharge ➤ South Hillsborough County Wellfield ➤ SHARP	2.a. Surface Water Expansion ➤ Alafia River ➤ Reservoir	Additional groundwater from existing wellfields	Small footprint reverse osmosis
	2.b. Surface Water Expansion - TBC ➤ TAP ➤ Purified			
	4.b. Tampa Bay Desal. w/reclaimed water			5. Gulf Coast Desalination

Feasibility evaluations are underway for the projects listed above. Over the next two years, Tampa Bay Water staff will complete demand forecast projections which will determine the quantity and need of new water supplies. At that time, one or more of the project concepts will be moved into further feasibility studies before the Plan is presented for approval.

Tampa Bay Water continues to adequately plan, so that we are able to meet our region's drinking water demands today, as well as in the future. Tampa Bay Water has sufficient supply to meet Hillsborough County's drinking water needs for the next 10-15 years.

Please feel free to contact me should you have any questions.

Thank you,

Ivana Kajtezovic

Ivana Kajtezovic
Planning Program Manager

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5-Year Water Conservation Plan (2016 – 2020)

Continued Implementation of the U. S. Energy Policy Act of 1994

Hillsborough County has adopted an advanced plumbing code, prior to the effective date of the U. S. Energy Policy Act of 1994 (EPACT), and continues to support efforts at facilitating further implementation, such as “WaterSense”, similar to the Energy Star labeling program. The Hillsborough County Public Utilities/Water Resources Division became a promotional member of EPA’s WaterSense Program during FY2014, and routinely distributes replacement showerheads and faucet aerators with water use efficiencies exceeding the requirements of EPACT. For example, whereas the EPACT limits the water use for showerheads, bathroom and kitchen faucet aerators to 2.5 gallons per minute (gpm), Hillsborough County currently purchases showerheads with a flow rate of 2.0 gpm, and aerators with maximum flow rates of 0.5 gpm for bathrooms and 2.2 gpm for kitchens. For Fiscal Years 2011 and 2012, the County awarded a bid to purchase 30,000 showerheads and bath aerators, and 15,000 kitchen aerators. This inventory is continued to provide will-call needs through 2015. Additional showerhead purchasing is budgeted in Fiscal Years 2016-2017.

Fixture Retrofit

In cooperation with the Alafia River, Hillsborough River and Northwest Hillsborough Basin Boards of the Southwest Florida Water Management District, Hillsborough County conducted a retrofit program through neighborhood canvassing during the 1994-1996 period. 47,000 retrofit kits were distributed door-to-door during this campaign with the District. The County continues to provide faucet aerators, showerheads and toilet tank leak detection tablets to interested parties during community events where the Public Utilities Department may have a display table set up, and for walk-in customers at its service centers. The Public Utilities Department has progressed from the distribution of in-tank volume displacement devices for toilets to providing incentives in the form of rebates for the voluntary replacement of higher volume toilets with new toilets using no more than 1.6 gallons per flush (see the next section). The Public Utilities Department plans to conduct a commercial kitchen pre-rinse sprayer replacement program during this plan’s timeframe, and has purchased 1,000 fixtures to do so with. The first emphasis of this project is through the Department’s FOG (Fats, Oils and Grease) monitoring program in commercial establishment venues, although this is a difficult venue as the FOG team is typically visiting an establishment regarding regulatory infractions. A second venue presented itself in FY 14, in the form of outreach through the Extension Office Nutritional Health Education program.

Motion Sensor Faucet and Toilet Flush Mechanism Research

In cooperation with the California Urban Water Conservation Council, as an agent for the American Water Works Association’s Water Use Efficiency Division, the Public Utilities Department funded a study of pre- and post-installation of motion sensor operated faucets and toilet flush mechanisms in an office building in Tampa. This type of equipment, while highly acceptable due to its hygienic nature, is questionable as to its water conservation benefit. Manufacturers are touting the water savings of the equipment meanwhile, and pressuring water conservation professionals (and their respective senior management officials) to include retrofit of facilities with the equipment as a facet of their conservation programs. This one-of-a-kind research will provide much needed information about the efficiency of the equipment. The study concluded in 2008 and results were published in 2010. See the March 2010 report entitled “Sensor-Operated Plumbing Fixtures. Do they Save Water?” for a summary of the work. Report attached hereto.



5-Year Water Conservation Plan (2016 – 2020)

Irrigation and Landscape Evaluation

Hillsborough County utilizes the services of the Cooperative Extension Service to augment its water conservation staff to conduct irrigation and landscape evaluations. Water consumption data is provided to the Extension Office for those properties undergoing these evaluations. This service is announced on the utility billing occasionally. The County participates in Tampa Bay Water's annual Water Wise Awards program.

Irrigation/Landscape Rebate

Hillsborough County Public Utilities Department funds low volume irrigation grants to neighborhood associations through the Office of Neighborhood Relations (ONR). This funding is to provide for the installation of, or conversion to low volume irrigation at neighborhood entries or within community association common areas. Use of this funding is currently restricted from private properties. Participation requires the use of a licensed irrigation contractor holding membership in the Florida Irrigation Society, and registered with the County as an approved vendor, carrying appropriate levels of insurance. Annual budget of \$67,500 for this effort, accommodating twenty-seven (27) or more installations, at a maximum of \$2,500.00 each. The ONR has been funding landscape mini-grants in addition to this.

Toilet Rebate/Replacement

Hillsborough County has had a successful ULV Toilet Rebate Program since 1994, providing incentives to accelerate the voluntary replacement of 83,774 older, higher volume fixtures at 58,481 locations through September 2015. Qualifications for participation are that; 1) property must be a water customer (as opposed to a wastewater-only customer) of the Hillsborough County Public Utilities Department, 2) the property must be older than 1995 (with few exceptions where a construction permit may have been pulled earlier), and 3) any and all rebates are subject to limitation by previous rebates issued to the same property. The participation rate had dropped off considerably in 2007, to the point where the program was discontinued with the termination of contract with an outside vendor, effective December 21, 2007.

Upon discontinuation of the program, public outcry suggested that rekindling the program would be in the best interest of furthering easily attainable water savings; thus, after obtaining Board of County Commissioners support in June, 2008, the Public Utilities Department renewed the program, running it internally, with a budget to issue 500 rebates annually. Having issued 4,473 separate rebates since then, the County has realized a savings of \$203,521.50 in management fees. Staff intends to continue budgeting for this program as indications are there remain a significant number of properties yet to participate, including large multi-family locations. Furthermore, as the County takes over franchise utilities (having done so with Calm Harbor, Cypress Cove, East Lake, Fairview Village, Pebble Creek and San Remo in FY2015), many of those new customers will be eligible to participate in the program. During FY2014, the County registered this program with EPA WaterSense.

The following chart details rebates by year and user classification (SF = Single-Family; MF = Multi-Family; Comm = Commercial Properties) through September 2015. The rebate dollars of \$9,435,418.31 do not include management fees paid to the independent contractor for their services (an additional \$2,457,364.00), nor do the costs include any advertising, staff time, postage, promotional activities or disposal of old toilets.



5-Year Water Conservation Plan (2016 – 2020)

Hillsborough County Toilet Rebate Activity by Year and User Classification									
	Toilets			Units (locations)			Rebate Dollars		
	SF	MF	Comm	SF	MF	Comm	SF	MF	Comm
1994	410	0	0	268	0	0	\$41,000.00	\$0.00	\$0.00
1995	6,176	235	154	4,159	176	75	\$707,105.55	\$22,006.70	\$14,936.31
1996	16,803	3,160	497	11,589	2,345	377	\$2,021,598.89	\$306,811.47	\$45,929.38
1997	10,543	3,684	290	7,449	2,498	281	\$1,295,808.08	\$356,843.08	\$28,604.18
1998	9,989	1,648	272	6,945	1,299	241	\$1,156,321.11	\$164,815.92	\$26,688.54
1999	6,004	511	97	4,188	336	89	\$675,986.95	\$38,387.08	\$9,680.06
2000	2,989	1,322	27	2,231	904	17	\$350,629.43	\$132,255.00	\$2,700.00
2001	3,430	807	840	2,534	561	323	\$408,130.17	\$80,717.08	\$83,888.15
2002	1,800	12	82	1,231	11	68	\$191,047.62	\$1,146.58	\$8,168.89
2003	1,657	8	148	1,158	4	127	\$179,552.64	\$640.54	\$14,782.77
2004	1,445	61	239	1,026	61	209	\$154,631.50	\$6,100.00	\$23,893.63
2005	1,231	13	147	858	11	108	\$128,519.52	\$1,267.05	\$14,692.56
2006	645	78	46	435	76	33	\$66,895.92	\$7,400.00	\$4,600.00
2007	1070	53	254	736	43	207	\$113,038.22	\$5,300.00	\$25,328.21
2008	294	37	212	208	6	11	\$31,733.10	\$3,825.00	\$21,000.00
2009	619	3	0	453	1	0	\$65,105.66	\$270.00	\$0.00
2010	682	1	2	472	1	2	\$70,473.28	\$125.00	\$216.97
2011	617	19	19	429	1	5	\$62,947.45	\$1,900.00	\$1,896.00
2012	333	0	0	203	0	0	\$33,321.44	\$0.00	\$0.00
2013	377	2	47	259	2	3	\$53,690.12	\$213.32	\$4,700.00
2014	479	515	0	331	357	0	\$48,105.95	\$51,500.00	\$0.00
2015	629	7	3	439	5	6	\$65,542.11	\$554.13	\$450.00
	68,222	12,176	3,376	47,601	8,698	2,182	\$7,921,184.71	\$1,182,077.95	\$332,155.65
	Total Toilets		83,774	Total Rebates		58,481	Total Rebate Dollars		\$9,435,418.31
							mgmt fees: 54,008 @ \$45.50:		\$2,457,364.00
							Total Program Hard Costs		\$11,892,782.31

Soil Moisture Sensor Rebate

In preparation of the budget for FY16/FY17, the Public Utilities Department is including a measure to incentivize the installation of soil moisture sensors in irrigation systems. It has been since 1998 that a rebate program to install technology in an irrigation system to gain water saving has been offered by the County, prior to the research efforts of the University of Florida Institute of Food and Agricultural Sciences on rain sensors and soil moisture sensors. Initial planning of this measure is to offer rebates at up to \$200.00 with a goal of issuing 120 rebates annually.



5-Year Water Conservation Plan (2016 – 2020)

Clothes Washer Rebate/Replacement & Dishwasher Rebate/Replacement

Hillsborough County remains concerned about the portability of these appliances and the uncertainty that rebated appliances will remain installed at the location after the occupant relocates, eroding water savings if removed. There is no mandated water use efficiency for these white goods, as there is for toilets, faucets and showerheads; therefore it is not a requirement that the public meet these non-existent standards. Given the considerable price differential to purchase models of these appliances with greater water use efficiencies, it may be more cost effective to provide incentives to the manufacturers or retailers to leverage the cost to the consumer. This would best be done on a National level.

Cisterns/Rain Water Harvesting Rebate

In cooperation with the water management district, Hillsborough County has developed a Homeowners Guide to Rainbarrels brochure and companion VHS video, with an intention to re-release on DVD. This is provided to interested parties. The Extension Office routinely conducts rain barrel workshops where attendees gain knowledge of the basic principles of rain water harvesting and have the opportunity to purchase rain barrels at a discounted price. The County's Stormwater Management Division has also, in cooperation with the District, constructed an operational cistern at the County Courthouse in downtown Tampa. This is the extent to which the County currently promotes rain water harvesting.

Conversion to Automated Meter Reading

During 2008 the Public Utilities Department gained approval to implement a ten-year program to convert its entire customer base to AMR/AMI. As this program rolls out, the Public Utilities Department will be enabled to identify potential leaks and inefficiencies of use at its customer premises. This program remains on hold for 2016.

Industrial/Commercial/Institutional Audits and Repair

Hillsborough County funds Project C.H.A.M.P. aimed at promoting water use efficiency within the local lodging industry. The planned replacement of commercial kitchen pre-rinse spray valves will gain further water savings within the hospitality industry and additional water savings within the local school district. As a condition of SWFWMD Emergency Order SWF 01-14, the County hired the John Daily Florida Institute of Government (FIOG) to conduct water audits of the 30 largest ICI customers of the Water Department. Even though the Emergency Order was subsequently rescinded, FIOG completed the work and developed water conservation plans for the participating facilities. It is the intention of Hillsborough County to maximize implementation of recommended actions identified by FIOG as resources allow.

Florida-Friendly Landscape Principles

Hillsborough County's Land Development Code (LDC) addresses landscaping of improved lots within the County. During 2002, the LDC was amended to require irrigation systems to be designed and constructed to Florida Irrigation Society standards. Hillsborough County Public Utilities Department supplements Tampa Bay Water's funding of the Florida-Friendly Yards (FFY) Program at approximately \$61,230 annually.



5-Year Water Conservation Plan (2016 – 2020)

The FFY Program anticipates conducting 10-15 Rain Barrel Workshops annually, reaching from 500-750 clients and distributing 1,000 – 1,500 rain barrels. The FYN Program forecasts 10-15 Landscape Design Workshops each year, reaching 200-300 clients annually. The FYN Program plans on conducting 15-20 Water-Wise Workshops to promote micro-irrigation annually, reaching 375 – 500 clients and distributing 150 – 200 micro irrigation kits.

Water Conserving Rate Structures

Potable and Wastewater Charges

Hillsborough County continues the use of a four-tier water rate structure as implemented June 2003. The rate structure is as follows, effective June 1, 2015:

<u>Water use</u>	<u>Charge/unit*</u>	<u>Base Charge</u>	<u>Waterwater Charge/Unit**</u>	<u>Wastewater Base</u>
Tampa Bay Water	\$2.93			
0 – 5,000	\$0.69	\$8.42	\$4.38	\$13.61
5,001 – 15,000	\$1.92		\$4.38 to 8,000 gallons	
15,001 – 30,000	\$3.21	* Does not Include Tampa Bay Water pass through charge		
30,001 >	\$4.80			

** Capped at 8,000 gals (8 units)/ equivalent residential connection

Additionally, there is a \$4.05 bill charge per billing.

<u>SF Reclaimed Water Committed Class</u>	<u>SF Residential Metered Reclaimed Water Charges</u>		
Monthly Charge: \$9.00	<u>Water use</u>	<u>Charge/unit</u>	<u>Base Charge</u>
	0 - 5,000	\$0.26	\$4.00
	5,001 – 15,000	\$0.42	
	15,001 >	\$0.57	

Multi-Family Residential Metering

Hillsborough County assumes liabilities when entering private properties, therefore, the Public Utilities Department will not provide incentives for multi-family properties to individually meter the housing units. Notwithstanding this, in discussions with property managers of such locations, the Departmental staff encourages sub-metering of those properties in the interest of conservation, when the reading of the sub-meters is conducted by a third party and the main property remains master-metered for billing purposes from the County. The Public Utilities Department participated in the National Multiple Family Submetering and Allocation Billing Program Study, available as a downloadable report at <http://www.aquacraft.com/sites/default/files/pub/Mayer-%282004%29-National-Submetering-and-Allocation-Billing-Study.pdf>.

Weather-Based Irrigation Controller Research

Following a presentation from Hydropoint Data Systems in August 2004, the Water Conservation Technical Advisory Committee recommended that Public Utilities Department undertake a local study of these irrigation controllers to evaluate their effectiveness in local weather conditions and soil structures. Negotiating with the University of Florida Institute of Food and Agricultural Sciences through the Florida Department of Consumer Affairs, a two phased project was designed, conducted and is now completed at the UF Gulf Coast Research and Education Center and within the existing customer base of



5-Year Water Conservation Plan (2016 – 2020)

the utility in three separate neighborhoods. The first phase tested three different technologies against a time-based controller, and a time-based controller set at 60% ET deficiency, with four replications of each treatment in side-by-side landscape plots. The second phase looked at existing high to excessive customers, and matched pair landscapes to study the equipment in the real world. The work is complete and results suggest that while the technologies may be viable for larger landscapes with continual monitoring, it is not practical for the Public Utilities Department to develop a rebate program to encourage widespread installation of these technologies.

Educational

The Hillsborough County Public Utilities Department supports numerous educational initiatives aimed at imparting knowledge of Florida's water resources amongst various targeted audiences including the following:

- Cooperation with the Arts Council's In-School Water Theatre Arts Program
- Speakers Bureau
- Radio Advertisements
- Project Water CHAMP (Water Conservation in Hotels And Motels Program)
- Senior Citizen Water Education Training
- Printed Brochures
- Attendance w/Display at Town Hall Meetings
- Attendance w/Display at Community Events
- Annual Neighborhood Conference
- Annual Earth Day Events
- Website presence
- Annual Newspapers In Education Publication
- Promotion of Conservation Through Artwork
- 4-H Youth Water Camp
- Annual Great American Teach-In Event
- Bi-annual Condo & Homeowner Association Exposition
- Fix-A-Leak Week
- Hillsborough School District – Nature's Classroom
- FS/AWWA Drop Savers Poster Contest
- FS/AWWA Model Water Tower Competition

Water Restrictions Enforcement

Hillsborough County continues enforcement of mandatory water use restrictions for all properties within the unincorporated county area, regardless of that property's water source. Although we have not yet disaggregated this measure from all others, we feel strongly that this is an effective measure at managing demand. Such a disaggregation is expressly too costly, unless undertaken by a student working on thesis material. During Fiscal Year 2006, the Public Utilities Department gained BOCC approval to redirect processing of violations from the Clerk of the Circuit Court to Code Enforcement/Special Magistrate. The implementation of that change occurred in the first quarter of Fiscal Year 2007, which restores collected penalties and fees to the Water Conservation Reserve Fund. Collected penalties are deposited into a water conservation trust fund, available to further water conservation efforts as approved by the



5-Year Water Conservation Plan (2016 – 2020)

Board of County Commissioners. Assuming this responsibility, the development of an accurate tracking system for enforcement activity and revenue collection was necessary.

During 2013 the enforcement activity was transferred from the Public Utilities Department to the Code Enforcement Department. At time of necessity, the entire Code Enforcement staff can be made available to concentrate on water restrictions enforcement.

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Exhibit F

PROJECT NUMBER	PROJECT TITLE	TOTAL ESTIMATED COST	PRIOR EXPENSES	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22-26 (TOTAL)	PROJECT COMPLETION DATE
C31982000	19th Ave. Water Transmission Main (I-75 to US 41)	\$5,000	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	Dec 2018
C31995000	Backflow Upgrade Program	\$11,000	1,000	1,000	1,000	1,000	1,000	1,000	5,000	Ongoing
C10247000	Boyette And Rhodine Water Transmission Main	\$4,000	4,000	0	0	0	0	0	0	Mar 2019
C31986000	Countywide Potable Water Main Extension Program	\$24,000	4,000	2,000	2,000	2,000	2,000	2,000	10,000	Ongoing
C31987000	Countywide Potable Water Quality Monitoring	\$2,000	2,000	0	0	0	0	0	0	Dec 2018
C31981000	Countywide Removal & Replacement Of AC & SCH. 40 PVC Piping Master Proj.	\$18,000	12,000	5,000	1,000	0	0	0	0	Dec 2018
C31977000	Countywide Water Transmission / Distribution Line R&R Master Proj.	\$31,437	18,937	3,500	1,000	1,000	1,000	1,000	5,000	Ongoing
C31983000	Environmental Laboratory Replacement	\$7,200	7,200	0	0	0	0	0	0	Mar 2018
C31957000	Fire Flow Deficiency (Master Project)	\$29,461	26,461	3,000	0	0	0	0	0	Dec 2018
C31988000	Franchise Systems Acquisition and Improvements	\$24,404	20,904	3,500	0	0	0	0	0	Sep 2020
C31997000	Gibsonton Area Potable Water Main Replacement	\$11,000	0	1,000	5,000	5,000	0	0	0	Sep 2020
C31989000	Kings Point Potable Water Valve Installation/Replacement	\$5,000	5,000	0	0	0	0	0	0	Mar 2019
C31985000	Large Water Meter Replacement	\$4,700	2,700	1,000	1,000	0	0	0	0	Dec 2018
C31998000	Linebaugh Ave. HDPE Potable Transmission Main Replacement	\$2,000	500	1,500	0	0	0	0	0	Sep 2019
C31992000	Palm River Utility Expansion Program	\$10,500	10,500	0	0	0	0	0	0	Sep 2021
C31978000	Public Utilities SCADA Operations Support Center	\$5,052	5,052	0	0	0	0	0	0	Sep 2018
C31969000	South County Water Repump Station Water Transmission Main To 19Th Ave	\$6,750	6,750	0	0	0	0	0	0	Dec 2018
C31945000	Utility Relocation (Master Project)	\$38,012	13,012	2,500	2,500	2,500	2,500	2,500	12,500	Ongoing
C30116000	Water Treatment R&R (Master Project)	\$31,089	15,089	2,500	1,500	1,500	1,500	1,500	7,500	Ongoing
	Lithia Emergency Connection	\$700	0	700	0	0	0	0	0	Dec 2017
	US Hwy 41 Water Transmission Main Replacement	\$10,000	0	0	0	2,000	8,000	0	0	Dec 2020
	Lutz Franchises Water Main Extensions	\$5,000	0	0	0	1,000	4,000	0	0	Dec 2020
	South County Repump Station Expansion	\$5,000	0	0	0	1,000	4,000	0	0	Dec 2020
	East Brandon Area Potable Water Main Replacement	\$30,000	0	0	0	5,000	10,000	15,000	0	Dec 2022
	Apollo Beach Potable Water Main Replacement	\$30,000	0	0	0	0	0	0	30,000	Dec 2025

PROJECT NUMBER	PROJECT TITLE	TOTAL ESTIMATED COST	PRIOR EXPENSES	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22-26 (TOTAL)	PROJECT COMPLETION DATE
	Williams Rd Transmission Main from US 92 to Dove Field PI	\$3,500	0	0	0	0	0	0	3,500	Dec 2025
	New South County Treatment Facility	\$25,000	0	0	0	0	0	0	25,000	Dec 2025
	Balm Transmission Mains	\$22,000	0	0	0	0	0	0	22,000	Dec 2025
C10217000	19th Avenue Reclaimed Water Transmission Main	\$5,000	5,000	0	0	0	0	0	0	Dec 2018
C10234000	Bloomington Avenue Reclaimed Water Transmission Main Extension	\$1,000	1,000	0	0	0	0	0	0	Jul 2018
C10237000	Dale Mabry Diversion Reclaimed Water Transmission Main (NWRWRF to DM)	\$17,119	17,119	0	0	0	0	0	0	Dec 2018
C10216000	Northdale Reclaimed Water Transmission Main	\$3,300	3,300	0	0	0	0	0	0	Apr 2017
C10238000	Northwest Hillsborough Area Recharge Project (NHARP)	\$4,250	4,250	0	0	0	0	0	0	Apr 2019
C10795000	Reclaimed Water Pump Station & Remote Telemetry Monitoring	\$13,400	3,400	1,000	1,000	1,000	1,000	1,000	5,000	Ongoing
C19017000	RWTM Ext. To New Developments & RWIU'S (Master Project)	\$8,946	3,946	500	500	500	500	500	2,500	Ongoing
C10259000	South Hillsborough Aquifer Recharge Expansion (SHARE)	\$21,700	12,700	0	3,000	2,500	3,500	0	0	Sep 2020
C10270000	Sun City Center Golf Courses Reclaimed Water Expansion	\$7,900	1,000	3,900	3,000	0	0	0	0	Sep 2019
C10260000	Tate Lane Reclaimed Water Main Relocation	\$3,000	3,000	0	0	0	0	0	0	Mar 2018
C10242000	Waterset Sports Complex Reclaimed Water Pump Station/Storage Tank	\$6,500	6,500	0	0	0	0	0	0	Dec 2018
C10192000	Westchase High Density Polyethylene RWTM Replacement	\$3,791	3,791	0	0	0	0	0	0	May 2019
	North Hillsborough Aquifer Recharge Expansion (NHARE)	\$5,000	0	0	0	0	0	0	5,000	Dec 2025
	South County Transmission Mains	\$20,000	0	0	0	0	0	0	20,000	Dec 2025
	South County Reclaimed Pump Station Expansion	\$5,000	0	0	0	0	0	0	5,000	Dec 2025
	Totals Per Fiscal Year(s)	\$539,009	\$225,109	\$33,900	\$22,500	\$28,000	\$47,000	\$24,500	\$158,000	

Note: Source: Hillsborough County Public Utilities Department, June 2016. Funding amounts are in thousands. Blue = potable water projects. Purple = reclaimed water projects.

This WSFWP table includes significant potable and reclaimed water capital projects at the time of plan preparation, and reflects information from the adopted Hillsborough County FY16-FY21 CIP. Project funding listed beyond FY 20-21 is not confirmed and is subject to approval by the Hillsborough County Board of County Commissioners. Please note that the projects and funding in this table may be modified over time. The funding source for all the projects in this table are Enterprise funds.