



PEACE RIVER MANASOTA REGIONAL WATER SUPPLY AUTHORITY

AMWA Platinum Award Application for 2017

The mission statement of the Authority is 'to provide the region with a sufficient, high quality drinking water that is reliable, sustainable and protective of our resources now and into the future.'

PEACE RIVER MANASOTA REGIONAL WATER SUPPLY AUTHORITY
STRATEGIC PLAN
[BOARD APPROVED 2017]

Overview

The Peace River Manasota Regional Water Supply Authority is a regional water supply authority that provides wholesale drinking water to its member counties and the City of North Port supporting the region’s economy and quality of life.

The Authority is an independent special district created and existing pursuant to Florida Statutes and interlocal agreement between Charlotte, DeSoto, Manatee and Sarasota Counties. The boundaries of the Authority consist of all of DeSoto, Manatee and Sarasota Counties and those parts of Charlotte County which are under the jurisdiction of the Southwest Florida Water Management District. The Board of Directors is vested with all the powers of the Authority.

Statutory Requirements

Pursuant to Section 373.713, Florida Statutes, the Authority shall design, construct, operate, and maintain facilities in locations and at the times necessary to ensure that an adequate water supply will be available to all citizens within the Authority. By statute, the Authority is to maximize the economic development of the water resources while supplying water in such a manner as will give priority to reducing adverse environmental effects.

Vision Statement

Through cooperation and collaboration the Authority and its members shall create, maintain and expand a sustainable, interconnected regional water supply system.

Mission

The mission of the Authority is to provide the region with a sufficient, high-quality, safe drinking water supply that is reliable, sustainable and protective of our natural resources now and into the future.

Core Values

I. **Cooperation**

Maintaining a strong spirit of cooperation and addressing regional water supply needs through the leadership of the Authority and its member governments.

Unlike other areas of the state where conflict over water supplies has been intense and protracted, the four-county region of DeSoto, Manatee, Sarasota, and Charlotte Counties has avoided “water wars” by maintaining a strong spirit of cooperation and addressing regional water supply needs through the regional partnership of the Peace River Manasota Regional Water Supply Authority and its members.

II. **Collaboration**

The Authority will seek to develop a significant, constructive role for all local governments in regional water supply planning and management.

The Authority has reached out to non-member local governments through the facilitation of the Water Alliance for communicating and collaborating with all water providers in the region. The Authority will continue to develop a constructive role for non-member local governments in regional water-supply planning and management.

III. Regionalization

The long-term aim of the Authority is to forge a system that is environmentally sensitive and sustainable, highly interconnected, diversified and affordable.

The Authority will continue to expand the regional water-supply system to meet projected demand by undertaking projects that yield mutual benefits for its member counties and customers and maximization of economic development of the water resources within the region. The long-term aim is to forge a system that is environmentally sensitive and sustainable, highly interconnected, diversified, and affordable. In striving to achieve this vision, the Authority will develop benchmarks for monitoring performance and measuring progress.

IV. Diversification

The Authority will work with its members and water providers in the region to further diversify supplies, integrate additional water supplies into the Authority's regional system, and protect and enhance water-dependent natural resources.

The Authority will work with its member counties, customers, and other water providers in the region to further diversify the region's water supplies, increase water conservation and wastewater reuse, interconnect facilities across the four-county region, and integrate additional water supplies into the Authority's regional system to support protection or enhance water dependent natural resources.

V. Financial Stability

The Authority will maintain financial polices to assure its financial stability while providing affordable water rates that are fair and equitable.

The Authority seeks to maintain policies to retain the highest possible credit ratings that can be achieved without compromising the mission of the Authority or its Customers and meeting all contractual obligations. The Authority will keep its rates as reasonable as possible while balancing costs with environmental and source-water protection and infrastructure needs. The Authority will actively seek funding from outside sources for projects to reduce costs to the residents of the region.

VI. Water Advocacy

The Authority will be a leader for water advocacy through participation in legislative water policy and environmental stewardship for water source, water supply and resource protection.

The Authority will actively engage in legislative and regulatory proceedings to promote environmental stewardship through science based regulation and water resource development and coordinate with respective agencies including the Florida Department of Environmental Protection and Southwest Florida Water Management District and with other water users.

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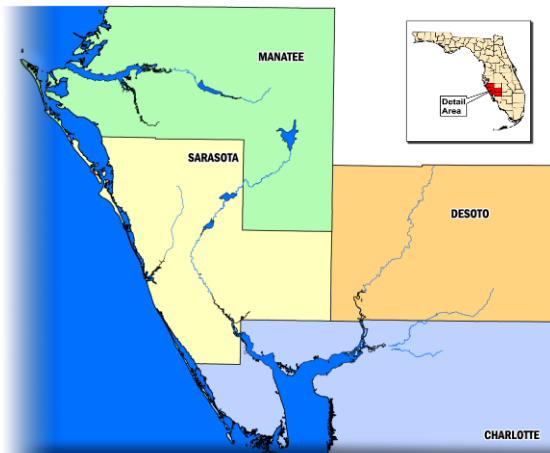
*Peace River Manasota Regional Water Supply Authority
9415 Town Center Parkway
Lakewood Ranch, FL 34202*

Contact:
*Patrick J. Lehman, Executive Director
(941) 316-1776*

AGENCY PROFILE

The Peace River Manasota Regional Water Supply Authority is an independent special district pursuant to Florida Statutes and established by interlocal agreement between Charlotte, DeSoto, Manatee and Sarasota Counties encompassing a population nearing 1 million.

The Authority is a wholesale supplier of drinking water to its member governments. The agency is an 'enterprise fund' operated through revenue collected by water sales.



Peace River Manasota Regional Water Supply Authority location map.

The Authority was created in 1982. Through its initial decade the Authority focused on planning the interconnection of water systems within the region. In 1991 the privately owned water utility in the region, General Development Utilities (GDU), went into bankruptcy that led to acquisition of the existing water treatment plant, the Peace River Facility that provided water to only a small segment of the region.

Through the following two decades the Authority invested over \$300M in the

expansion of the Peace River Facility and extension of the regional transmission pipeline system to provide water service to additional areas within the region.

Today the Authority is a major water supplier for the region. The Peace River Facility treatment capacity was expanded from 12 to 51 million gallons per day (MGD) incorporating a 6.5 billion gallon (BG) off-stream raw water reservoir system and aquifer storage/recovery system (ASR) providing an additional 6 BG of storage. The regional transmission system was extended from 7 miles to 65 miles of large diameter pipeline with 11 miles of new pipeline currently under design and construction.

The Authority is governed by a Board of Directors comprised of one county commissioner from each member county, has a staff of 47 full-time employees and contracted to provide up to 35 MGD of drinking water to the region.

MISSION, VISION, VALUE STATEMENT

The Board of Directors adopted the '*Strategic Plan for the Peace River Manasota Regional Water Supply Authority*' in 2014 and recently approved revisions in 2017 with a focus on:

- Cooperation and Collaboration
- Regionalization and Diversification
- Financial Stability
- Water Advocacy

The Strategic Plan with the mission, vision and core values of the Authority is presented in the preface.

KEYS TO MANAGEMENT SUCCESS

Strategic Business Planning

The development of goals and initiatives to implement the Strategic Plan was completed through focus group meetings with Authority staff, member counties' staffs, administrations and governing bodies and adopted by the Authority Board of Directors in April 2017. The initiatives provide staff the Board direction in establishing priorities in business planning and the budget process.

The Authority maintains a 20 year financial model to plan O&M, R&R and CIP not only in the annual budget process, but forecasting long-term borrowing needs, debt service and rate impact of implementing the Authority's goals through appropriate business planning consistent with the Strategic Plan.

Measurement

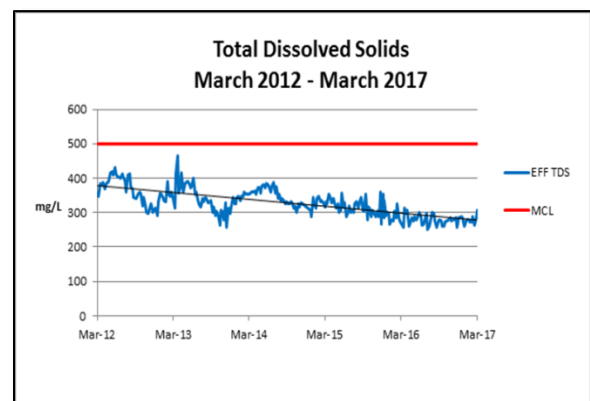
The Authority is responsible for developing a reliable, safe and cost-effective water supply for its member governments while promoting environmental stewardship through its resource enhancement and protection programs. Measurements and performance measures include the following.

Cost Controls: The Authority maintains the goal to optimize annual costs to limit rate impact to the CPI or less. Financial management including debt restructuring and judicious management of power and chemical costs has allowed the Authority to maintain the water rate at a fixed level with no increase for the last 4 years. The water rate remains at the FY 2014 level.

Finished Water Quality: The state of Florida enforces the Safe Drinking Water Act primary and secondary drinking water standards. The annual dry season and extended drought periods experienced in southwest Florida result in higher total dissolved solids (TDS) in the raw water due to groundwater flow to surface waters through springs and agricultural irrigation. Taste and odor issues due to algae seasonal blooms also pose both a regulatory compliance issue and public acceptance issue.

Total Dissolved Solids: The secondary drinking water standard for TDS is 500 mg/L. Finished water TDS is tracked continuously with a goal of finished water TDS < 400 mg/L.

The raw water sources are managed to minimize influent TDS of the raw water to the treatment facility. Raw water in the reservoir and aquifer storage and recovery (ASR) systems are monitored and the pumpage from each adjusted so the blended influent water TDS is maintained to meet the TDS goals and optimize water quality.



Taste and Odor: Reservoir water quality is sampled weekly at numerous locations and depths as an early warning for stratification and potential algal bloom. Aeration system operation promotes homogenization of the

water column within the reservoir. Algae are controlled as-needed through copper sulfate application. Powdered activated carbon is fed in the treatment process and adjusted to prevent taste and odor issues associated with algae.

The goal is manage taste and odor issue to a zero tolerance level in the treated water. No taste and odor complaints have been received over the past year.

Safety: Monthly safety meetings are scheduled of all operational and maintenance staff. These meetings not only promote a safe work environment, but also provide ongoing training and an opportunity for employee questions and input.

Workplace accidents, although infrequent, are dealt with through immediate medical attention if needed, accident reports and follow-up to correct causal conditions. The Authority employs a zero tolerance policy for workplace drug and alcohol abuse to protect employee, co-workers and the public.

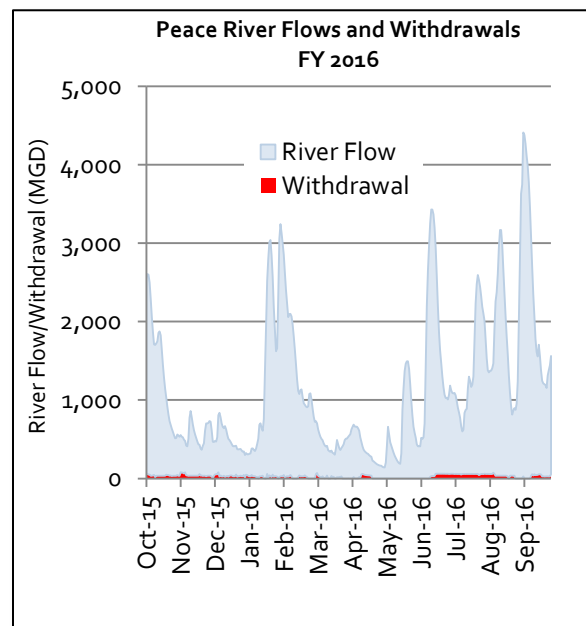
Water Storage: The southwest Florida coastal area has experienced salt water intrusion due to over-pumping of groundwater and the state has identified the region as a 'water critical area' limiting future groundwater development and mandating the utilization of alternative water supply such as surface water for public supply.

Although the region receives about 52-inches of average annual precipitation, rainfall and river flow vary on a seasonal basis. With the majority of rainfall and associated high river flows in the summer 'wet season', storage is necessitated to provide for supply during the winter and spring 'dry season'.

The Authority maintains both off-stream reservoir system and Aquifer Storage and Recovery (ASR) system. Raw water in storage in the 6.5 BG reservoir system, and 6 BG ASR system is tracked continuously.

Storage and raw water quality projections are evaluated weekly through the dry season. Results are used as a management tool to adjust recovery of water from the raw water reservoir system and ASR system to maintain water quality TDS less than the goal of 400 mg/L in the treated water.

Resource Protection: The Authority's Peace River Facility raw water source is the Peace River. The river experiences high flows during the summer wet season months. Flow during the remainder of the year is often low when rainfall is less. Permitted withdrawals from the Peace River are based on daily river flow upstream of the intake. River flow must exceed a specified flow rate set by the state to protect the downstream estuary for the Authority to begin harvest of a regulated percentage of the river.



Most water is harvested during the high-flow summer months. During the low-flow months in the winter and spring dry season withdrawal from the river is often prohibited to assure adequate flow to the downstream estuary environment and Charlotte Harbor.

The facility can experience extended periods of no withdrawals from the river. The typical dry season duration when river withdrawal is often prohibited is 3 months, although the region recently experienced the longest dry season in over 100 years with extreme dry conditions for almost 6 months (October 2016 – May 2017). Storage goal is approximately 365 days, which exceeded the operational needs of the recent historic dry season of 180 days.

This strategy protects the downstream environment by reserving flow in the river to support that estuarine system and Charlotte Harbor. This withdrawal schedule and environmental philosophy is a model for other areas of the state of storage facilities and management needed to develop and operate a reliable and sustainable public water supply based on surface water in Florida.

The Authority monitors the lower river through a hydrobiological monitoring program. Data from monitoring program validates and provides data for refinement of the withdrawal schedule to assure the downstream environment.

Customer Feedback: As a wholesale water supplier the Authority's customer are the four county members. The Authority conducts formal bi-monthly meetings involving our members' water utility staffs and managers. An annual day-long retreat including member administrative staff provides feedback utilized in operational decisions (such as adjusting

deliveries), resource management (such as source rotation), CIP Project scheduling and funding, budget development, rate making and policy development.



Arcadian; May 25, 2017

1. CONTINUAL IMPROVEMENT MANAGEMENT FRAMEWORK

One of the challenges in utilities management is communicating organizational values which establish a culture of excellence that embraces change while still preserving a sense of security for the organization's most valued asset – its employees.

Maslow's *Hierarchy of Needs* describes security as one of people's most basic needs; changes to the status quo can be disruptive and unsettling to employees. This requires management provide transformative leadership which helps the organization negotiate the troubled waters of change successfully. Key to this strategy is instilling within employees the mindset of continuous improvement and fearlessness to change which can only be fully realized when employees feel secure, valued and appreciated.

Consultant Management/Process Reviews: Expert management consultants are retained to periodically evaluate management methods

and approaches as well as operations and maintenance processes and activities in search of the potential for improvement. These evaluations included solicitation of input from employees at all levels via questionnaires to gain valuable perspective and impart to each employee how valued their opinions are.

Organizational Restructuring: Growth and change can result in bloated and outdated departmental or organizational hierarchies and structure. The Authority has aggressively pursued change to its organizational chart to tear down vertical silos that subdivided the organization and streamline the management structure.

Creating Opportunities: Continuous quality improvement is embedded within the organization's culture in terms of personal development and improvement. Each employee's annual evaluation includes consideration of additional certifications and/or licenses which the employee is encouraged to attain. Personal development not only makes the employee more valuable to the organization but it helps the employee achieve a personal degree of fulfillment and satisfaction.

Incentives including tuition assistance is offered to assist employees seeking self-improvement and has even been used to secure advanced certificates and degrees. Certified operators and other licensed trades receive full reimbursement of tuition and training costs, testing costs and study materials.

Employees at all levels are encouraged to join and participate in professional organizations, attend applicable conferences and tradeshows to learn about the latest tools, techniques and trends in the industry. The organization pays

these costs as recognition that employees become more valuable through participation.

ATTRIBUTES OF EFFECTIVE UTILITY MANAGEMENT

1. PRODUCT QUALITY

The Authority produces potable water in full compliance with regulatory and reliability requirements and consistent with customer, public health and ecological needs using a global approach to serve the region.

The source of raw water is the Peace River regulated by a scientifically flow-based withdrawal schedule as established by the state to protect the environment and natural habitat in the downstream estuary and Charlotte Harbor. An off-stream raw water reservoir system and ASR system provide the storage requirements to meet water supply demands when withdrawal from the river is prohibited due to low flow conditions.

The Authority's goal is to produce consistent, high quality water year round to our members' water systems. To maintain consistency throughout the year, several operational protocols are used which go above and beyond regulatory requirements.

The use of Powdered Activated Carbon (PAC) to control taste and odor is performed year round even though the majority of taste and odor issues occur in the late spring/early summer time period when water conditions favor algae growth. By maintaining a maintenance dose year round, finished water quality (specifically taste) to the customer is consistent.

Total Dissolved Solids (TDS) are actively managed by Authority staff on a continuous basis. Source water TDS values from the Peace River vary widely throughout the year based on rainfall and river flow at Peace River Facility intake. River withdrawal is based on both available flow in the river and water quality. When TDS values are low in the river, river withdrawals are maximized to store high quality water in the off-stream reservoir system. As TDS values rise, river pumping is decreased even if the permit withdrawal schedule would allow more to be withdrawn.

The Authority operates 21 ASR wells that are used to supplement water supply during the dry season when river withdrawal may be prohibited. As stored water is withdrawn from the ASR system, the TDS values increase due to higher TDS concentration in the native groundwater. ASR wells are rotated in and out of production to maintain a consistent water quality.

In addition to the operational protocols to increase overall water quality, education and training of staff plays an important role in consistent plant production. This integrated management approach of staff involvement, training, and evaluating source water quality parameters in conjunction with source water quantities has served the Authority well in providing the highest quality, consistent drinking water possible with no regulatory violations in the past 5+ years.

2. CUSTOMER SATISFACTION

The Authority is a wholesale drinking water provider responsible to develop and supply water to four member counties. Consequently, the customers of the Authority are the four member counties, making it unique to the

typical water utility. In turn their respective water utilities serve their respective service areas.

The Authority provides reliable, responsive, and affordable services in line with explicit, customer accepted service levels and receives timely customer feedback to maintain responsiveness to customer needs and emergencies.

Level of service is established in a Master Water Supply Contract with Authority members. Water quality is required by the contract to meet all state and federal drinking water standards. Delivery quantities and pressures are also established in the contract. Meters at all delivery points are continuously monitored and calibrated semi-annually to ensure accurate billing.

Water samples are collected weekly at all delivery points, and tested for disinfection residual, TDS and other parameters to ensure high quality supply to customers.

Since completion of the expansion program in 2009, there have no water shortage declarations in the region which were common place before. In addition, drinking water supply from the Peace River Facility has met all primary and secondary drinking water standards on a continuous basis for the past 5+ years.

In April 2013 water from the Authority won the award as Florida's 'Best Tasting Drinking Water' so as one might imagine, complaints regarding water quality delivered by the Authority non-existent. The Florida Department of Environmental Protection recently presented the 'Outstanding Water Treatment Plant Class A Award' for 2016 to the Authority.

3. EMPLOYEE & LEADERSHIP DEVELOPMENT

The Authority maintains a relatively small staff of 47 employees. The size of the staff provides the opportunity for first-hand involvement at all levels and to emphasize opportunities for professional growth and development.

The Senior Management team of the Authority is dedicated to maximizing the potential of each employee by providing both educational opportunities and career advancement through well defined, goal oriented job descriptions.

Tuition Reimbursement: Employees are encouraged to advance their level of certification and education to maximize their value and potential to themselves and the Authority.

The agency's tuition re-imbursement program allows employees to pursue technical degrees and certifications related to their current job duties, or attend technical school and college level courses in pursuit of an advanced degree which is applicable to the water industry. The Authority also funds all employees for classes required to maintain or advance their current level of certification such as exam preparatory or CEU courses for operators and backflow repair and testing for maintenance staff.

Performance Evaluations: Annual employee performance evaluations are completed for all staff. These evaluations include a supervisor/employee discussion of future training and career development. Employees are encouraged to advance their level of licensure and questioned on potential training the employee desires.

Job Descriptions: Routine review and revision of job descriptions and creation of new job classifications creates a clear path for advancement by an employee.

The implementation of the new job descriptions has improved moral of employees by clearly defining their objectives towards promotion, and created a more cohesive working environment by improving the organizational structure within the disciplines.

Cross Training: The Authority is a very lean organization in terms of personnel (47 total budgeted positions) which requires employees to have good general knowledge of other job positions in the agency. Routinely, trades will work together on repair and maintenance tasks to insure equipment is operating properly. Mechanics and electricians assist each other while at the same time, learning the basic elements of each position. Operations staff is assigned to shifts on a rotating basis to insure proper cross training on all shift duties.

Succession: The Authority recognizes the need to manage succession of key personnel in the long term. Key personnel within the retirement window have been identified and the agency has a projection on scheduled departures. The agency also has a well balanced mix of experienced staff with 5-10 years of service who are encouraged to improve their skillsets through continued education and training opportunities and seek the opportunity for advancement.

Organization Involvement: The Authority encourages and supports both financially and time commitment of staff involvement in industry associations. Employees are active in AWWA, FSAWWA, AMWA, and Florida Water & Pollution Control Operator's Association.

Several staff members also serve in leadership roles including FSAWWA.



Florida Section AWWA 'Outstanding Water Treatment Plant Class A Award' for 2016

Wellness at Work: The Authority participates in W@W (Wellness at Work) program that offers various initiatives promote and participate in exercise and fitness classes, weight loss programs, smoking cessation and better nutrition at no cost to the employee.

Personal Financial Advisor: financial security of our employees is beneficial to their quality of life and reflects in the workplace. The Authority provides seminars on a quarterly basis on personal financial planning, investment and retirement planning by a financial advisor. Easy access for one-on-one discussions with the financial adviser is also provided on a quarterly basis.

4. OPERATIONAL OPTIMIZATION

The Authority ensures ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations.

The infusion of technology during the expansions over the past decade with SCADA (supervisory control and data acquisition) and

ADAS (automated data acquisition system) has allowed the Authority to quadruple the size of its treatment facility, add remote pump stations and extension of large diameter transmission pipelines without adding significant staffing. The Authority is able to operate an extensive treatment facility campus on an around-the-clock continuous operation with just 2 licensed operators on duty.

This lean approach has not been achieved through sacrifices in quality - automated sensors and alarms provide feedback help operators continuously monitor quality and proactively make adjustments or flow or chemical dose. Graphical interfaces also improve pattern recognition which allows operators to recognize trends and often anticipate problems before they arise.

The Authority has developed advanced budgetary models to forecast unit chemical and power costs as a step towards optimizing these major expenses. These models also help the utility place into full perspective the impact of optimizing chemical dosages. For example, reducing the aluminum sulfate dose by 1 mg/L not only saves \$11,000 per year in chemical costs but reduces annual sludge production and saves an additional \$850 in associated sludge handling and disposal costs.

Another aspect of optimization pertains to the processes in place to identify and implement needed improvements. Annually, as a part of the budgeting process, a broad, cross functional team composed of senior and mid-level management methodically steps through 30 geographic cost centers to plan needed improvements. These needs are segregated into O&M, R&R and CIP categories based upon cost thresholds and logical tests. R&R and CIP projects are prioritized based on the following

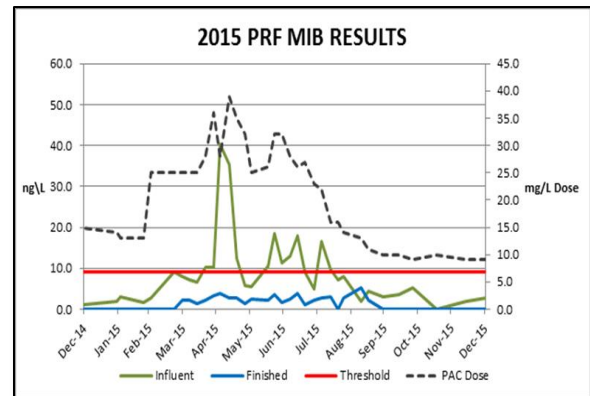
five evaluation criteria: Safety, Quality, Urgency, Vulnerability and Efficiency. This results in a ranked and prioritized enterprise-wide list of needs which feeds directly into budget formulation.

The Peace River Facility consists of treatment trains which were constructed over a period of approximately 35 years. The expansions over time created inconsistencies within the operational processes and process control methods due to changing technologies over time. To correct these inconsistencies, staff implemented chemical flow paced controls throughout the facility to create a uniform control scheme for all plants which eliminated the need for manual field adjustments.

Automation of the filter backwashing procedure has also improved operations and reduced manpower requirements associated with filter washing. Historically, filter backwashing was performed by manually operating individual filter valves locally at each filter cell. The steps of the filter wash process were not formally timed; rather each operator initiated the procedures based on visual observation. Automation of the backwash steps has removed the subjectivity from the process and created a uniform procedure for each event. This allows the operator to focus on the quality of the backwash instead of focusing on timing each step.

Optimization of chemical feeds is an ongoing process within plant operations. Powdered Activated Carbon (PAC) is the single most expensive chemical used at the facility. Historically, feed doses were determined based on the results of operator test results for raw water odor. A weekly sampling protocol has been initiated to record levels of the taste and

odor causing compounds MIB and Geosmin in the raw and finished water.



This data is graphed and used to determine the correct PAC dosage for the facility. This has resulted in reduced chemical costs for PAC by reducing the average mg/L applied during the year.

5. FINANCIAL VIABILITY

The Authority maintains an effective balance between long-term debt, asset values, operations, and maintenance expenditures, and operating revenues. Established predictable rates – consistent with member expectations and acceptability – adequate to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs.

The Authority has adopted policies to strengthen its financial status into the future. The Authority has adopted budget and financial policies to maintain reserves at balances exceeding the norm, maintaining a minimum of 6 months operating reserve, establishing debt service coverage goal of 1.5 to assure long-term financial stability and maintaining a rate stabilization fund in excess of \$1 million to absorb any

unanticipated rate shock (current balance is \$2 million equal to 10% of the O&M budget).

Financial strengthening and stability has resulted in continued upgrading of the ratings from Moody's, Fitch and Standard and Poor's. Since its initial bond issuance 20 years ago the Authority has bond rating in the AA category by all three major bond rating agencies. The continued upgrading is reflective of the sound policies, management and operations of the Authority.

	Fitch	Moody's	S&P
2015	AA-	Aa3	AA-
2010	AA-	Aa3	A+
2005	A+	A2	A+
1998	(1)	(1)	(1)

(1) MBIA insured

The Authority maintains a 20 year financial model to plan O&M, R&R and CIP not only in the annual budget process, but forecasting over the long-term borrowing, debt service and rate impact of implementing the Authority's objectives through appropriate business planning.

The Authority participated in AMWA's Utility Financial Information (UFI) program survey and utilizes the results to benchmark its policies and financial surety on an on-going basis.

6. INFRASTRUCTURE STRATEGY AND PERFORMANCE

The Authority understands the condition of and costs associated with critical infrastructure assets to maintain a reliable system to minimize disruptions and other negative consequences.

The organization's objective with respect to critical assets necessary for delivery of water to customers is to achieve 100 percent reliability. Layered redundancy is designed into all treatment and pumping systems. Any major rehabilitation work which could possibly effect productive capacity is planned and coordinated with customers up to a year in advance.

Assets are managed through use of a computerized maintenance management system (CMMS). Every mechanical device requiring preventative maintenance (PM) attention is entered into the system including detailed specifications on consumables and where to procure more. In addition to the preventative maintenance function, the CMMS facilitates scheduling of both planned and unplanned Corrective Maintenance (CM) activities as they arise.

The network based system allows staff to enter work requests reporting mechanical and electrical malfunctions in the system. Maintenance managers use these requests to assign corrective maintenance tasks to respective trades for repair. Other benefits of the system include workload leveling and prioritization features, the ability to derive assessments of accountability and productivity and warehouse inventory management.

Upon device failure, staff considers the costs of repair against the cost of replacement. As a rule, significant devices are repaired if feasible or unless advances in technology bring efficiency increases that would result in a five year payback period on the differential cost. Smaller elements such as fractional horsepower chemical pumps with plastic housings are treated as disposable if they have served at least 5 years due to age, wear and tear.

Another element of asset management involves annual enterprise-wide resource planning efforts associated with budgeting. This process begins by subdividing the organization's assets into 30 geographic cost centers. The identified needs are segregated into O&M, R&R and CIP categories based upon cost thresholds and answers to these questions:

- Is this a new capital item?
- Is this a recurring or one-time expense?
- Will the investment significantly enhance the value or useful life of the asset?

R&R and CIP projects are then prioritized based on the following five evaluation criteria: Safety, Quality, Urgency, Vulnerability and Efficiency. This effort results in a ranked, prioritized enterprise-wide list of needs which feeds directly into budget formulation.

Condition Assessment Reports (CARs) by professional engineering consulting firms are another tool the organization uses to gather intelligence on needed repair and replacement projects. The results of the recent CAR lead to the need for, and successful completion of, a thorough rehabilitation of the existing facilities to replace coatings, filter media, process piping and chemical storage consolidation.

7. ENTERPRISE RESILIENCY

The Authority ensures leadership and staff work together to anticipate and avoid problems. Proactively identifies, assesses, establishes tolerance levels for, and effectively manages a full range of business risks (including legal, regulatory, financial, environmental, safety, security, and natural disaster-related) in a proactive way consistent with industry trends and system reliability goals.

The Authority takes a proactive approach to identifying and managing all types of risk that potentially affect our ability to provide a reliable, sustainable and affordable water supply.

Emergency Preparedness/Natural Disasters:

The Authority maintains an Emergency Response Plan (EAP) and updates it annually prior to the start of Hurricane season. The EAP contains emergency procedures for a wide variety of potential events such as hurricanes and other natural disasters, major transmission line ruptures, electrical outages and man-made events such as sabotage.

The updates include modifying procedures as needed, verifying and updating emergency contacts both internal and external, and reviewing equipment and location changes from the previous year.

A site specific Emergency Action Plan is also updated annually for the off-stream reservoir system. This document provides a detailed plan of action in the event of a reservoir related emergency such as a leak, breach, natural disaster, or intentional act.

Both plans are reviewed annually with staff during monthly safety meetings. Due to the potential for extreme weather in Florida, the Authority is a signatory to the State of Florida Mutual Aid Agreement and monitors the FLAWARN which provide a network of assistance to utilities in the event of a widespread emergency or disaster. The Authority also receives Water ISAC notices to stay informed as to potential risks.

Security: The Authority participates in WaterISAC and recently completed with Homeland Security the Enhanced Critical

Infrastructure Protection ECIP) Security Surveys. Implementation of security safeguards to improve the Authority's indexes from the ECIP is a top budget priority.

Facility access to both the water treatment plant and reservoir systems are restricted by electric gates and camera surveillance 24 hours per day. Access is granted by Authority staff by way of 2 way communication from the gates only after proper identification.

The general public is not permitted access without a pre-arranged appointment and escorted by staff. A state of the art security camera system was installed in late 2012. The system has the ability to activate video based upon motion detection, record 90 days of video for review, and allows departments to customize camera views based on need.

Safety: The Authority maintains a Safety Committee made up of representatives from each agency department. Team members participate in safety inspections, accident reviews, and organizing safety meetings. Recently the committee updated the agency Employee Safety Manual and provided each employee with a new copy.

Staff conducts monthly safety meetings on various topics such as ladder safety, lock out/tag out, electrical safety, heat stress, driving safety or hurricane preparedness. Chemical safety risks are addressed through requiring employees to use proper PPE, safety awareness through safety meetings, and chemical delivery and spill procedures. Chemical delivery risks are mitigated by separate, clearly marked off-loading locations and vendor education.

Sea Level Rise: The lower Peace River empties into Charlotte Harbor, an important brackish estuary which supports a vibrant and economically vital local commercial and sports fishery. This rich ecological system relies upon seasonal variations in salinity coming from the summertime fresh water influx from the river.

The topography of Florida is fairly flat and, as a result, when river flows are low it is common for brackish water quality conditions to migrate significantly upstream. Even though the Authority's river intake pump station is located almost 35 miles from the Gulf of Mexico, the utility must be mindful to avoid capturing brackish water during the dry season. As a consequence, the Authority's water supply program has evolved to harvest and store fresh water primarily during the rainy season in that window when river flows are bountiful, when salinity is pushed far downstream and water quality is excellent.

However, sea level has risen 8 inches in the past 120 years due to thermal expansion of the oceans and the melting of global landward ice reserves. Most experts project sea level to continue to rise with projections ranging from an additional 1 – 3 feet by the end of this century. As sea level rises, dry season salinity excursions will push further upriver with greater frequency and could impact the viability of river diversion as currently practiced.

The agency has worked over the past 8 years to develop and refine decision science tools to map and understand the interrelationships between component sizes, operational decision points and system reliability. The current system reliability model platform is labeled 'SUMDAT' (***S**ystem **U**tility **M**anagement **D**ecision **A**nalysis **T**ool*) and it is a daily mass and solute balance model which projects water

quantity and quality reliability. The model includes 120 user input variables along with 40 years of daily hydrologic sequence data for three streams.

The agency's current reliability levels from the Peace River Water Treatment Facility are projected to be 99.5% for quantity reliability and 96.5% for quality reliability (*ability to meet the secondary drinking water standard of 500 mg/L total dissolved solids*). This provides a comparison baseline to analyze future alternative water supply strategies, varying component sizes or altering water management policies involving quantitative decision trigger points. SUMDAT includes five alternate sea level rise scenarios ranging from current conditions to as much as 24-inches of rise based upon an analysis of tidally relevant and water quality and flow relationships for the Peace River.

The Authority is also a charter member of the Florida Water and Climate Alliance (<http://floridawca.org/>) which is comprised of a collection of water utilities, regulators, researchers and social scientists. The group is focused on the unique challenges facing water utilities in Florida and effective communication strategies/channels for messaging efforts. The nexus of connections made available through this network have played a valuable role in providing information, getting feedback and formulating policy objectives related to adaptation strategies.

8. COMMUNITY SUSTAINABILITY

The Authority is attentive to the impacts its decisions have on current and long-term future community and watershed health and welfare. The Authority recognizes the value and need to be good stewards of the water

resource as provided in the mission statement, '*...protective of our resources now and into the future.*'

The Authority maintains an extensive hydrobiological monitoring system on the lower Peace River, providing value data to multiple agencies, including the Charlotte Harbor National Estuary Program which the Authority participates. Through partnership with other significant users in the river basin, a Horse Creek Stewardship program was established with Mosaic Phosphate Mining. Horse Creek is a major tributary to the Peace River and the data collected over the past decade since its inception has added greater understanding to the flow and water quality in the Peace River.

Water utilities are significant user of electric power and concern of carbon footprint that high power usage leave on the environment. The Authority retained a consultant investigating potential for implementing a solar strategy to reduce energy costs.

Through partnership with the Southwest Florida Water Management District (SWFWMD), the Authority was granted easement to the RV Griffin Reserve, over 6,000 acres of land, owned by the District for water supply development including the site for the off-stream reservoir system. In return, the Authority accepted land management of the RV Griffin Reserve which includes mitigation site, cattle grazing lease, passive trails open to the public for horseback riding or hiking, and a model airplane club.

9. WATER RESOURCE SUSTAINABILITY

The Authority ensures water availability consistent with current and future water needs through long-term resource supply and demand analysis, conservation, reuse, and public education. Our member governments provide annually their 20-year projections for planning purposes to program the need, timing and financing for increased water supply.

The Authority is within a 'water critical area' designated by the state known as the Southern Water Use Caution Area. The traditional groundwater source has been over-pumped causing salt water intrusion. Consequently, alternative water supply sources are mandated by the state to meet future public water supply demands. These new supplies are much more expensive to develop than the past traditional supply sources.

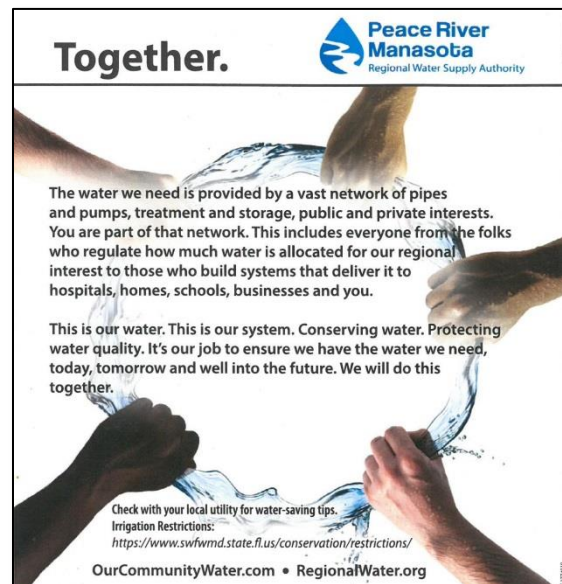
Together with new supply development, a fiscal approach to regional water resource adequacy is to interconnect existing supplies in the region. Interconnecting multiple diverse sources and lessening dependence on a single source can be more fiscally prudent than development of new supplies. The Authority has identified interconnection of the major supply sources within the region as one of its primary goals.

Regional Connectivity: Increasing system connectivity throughout the region is a key with the following benefits.

- Enhances the ability to manage water resources through the region based on sustainability and safe yield, with less reliance on the proximity to the source.
- Increase redundancy in the water delivery routes between supply and demand

locations, which significantly increases reliability during emergency scenarios.

- Avoids over development of new water supply sources (and associated costs). This is especially important considering water demand uncertainties and the time to develop new sources.
- Increase operational flexibility to allow for regional optimization strategies.



Sarasota Herald-Tribune; May 21, 2017

ASR Development: The Authority's Aquifer Storage and Recovery (ASR) System includes 21 ASR production wells with a design storage capacity of 6.3 BG is a critical storage component for the Peace River Facility. It is operationally expensive; water in ASR is fully treated twice to drinking water standards; first on injection in accordance with our existing operations permit for ASR; and again on recovery to remove naturally occurring arsenic picked up during storage in the limestone aquifer.

Converting to a partially treated (minimal filtration and possibly disinfection prior to

injection) ASR system has the potential to offer considerable cost savings, improve ASR recovery efficiency, and may also provide opportunities to obtain groundwater credits for over-recharging the Floridan Aquifer supporting environmental improvements in the Southern Water Use Caution Area.

The Authority has initiated a full-scale pilot project investigating the potential for partially treated ASR. If results are favorable the ASR system would be re-permitting to enable use of partially treated water for recharging the system.

Modification of the ASR system operating permit was completed in December 2016 and cycle 1 (cycle = recharge+storage+recovery) for the pilot testing was initiated on February 9, 2017 and completed on April 10, 2017.

10. STAKEHOLDER UNDERSTANDING & SUPPORT

The Authority seeks to educate the public and business community to further support from oversight bodies, community and watershed interests, and regulatory bodies.

Award Recognition: Achievements of the Authority and its partnerships are recognized by awards that have been received from technical, environmental and business organizations.

Community Involvement: The promotion of the value of water to the public and political leadership is critical to assuring a reliable, sustainable and affordable public water supply for the residents and businesses in the region. A group of local business leaders have recognized the value of water and need for economic growth and prosperity. These business leaders formed an organization,

Friends of Peace Water, Inc. for the purpose to advance educational opportunities for communities to learn about their water supply. The organization is incorporated as a not-for-profit 501(c) (6) organization in the state of Florida.

The Authority works with this organization to educate the public, business community and elected officials on the understanding and need for water supply for economic prosperity of the region.

- Florida Section AWWA 'Outstanding Water Treatment Plant Class A Award' (2016)'
- Florida Department of Environmental protection '2015 Plant Operations Excellence Award'
- AMWA Gold Award (2014)
- Florida Section AWWA 'Best Tasting Drinking Water in Florida' (2013)
- Florida Institute of Consulting Engineers: 'Engineering Excellence Grand Conceptor Award' (2010)
- 1000 Friends of Florida: 'Better Community Award - for Model Intergovernmental Coordination to Address Regional Water Issues' (2010)
- Audubon of Florida: 'Alternative Water Supply Award - 'Balancing the Environment and Humane Use' (2006)
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Media Relationship: Creating a relationship with the news media provides the accurate flow of information and provides the basis to bolster public opinion and promote political leadership. Management maintains the goal to meet with the two major newspaper editorial boards two times per year. These meetings provide the opportunity to update the media of upcoming issues, provide accurate information, answer questions and build public support.