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# **Miami-Dade Water and Sewer Department**

**Miami-Dade Consolidated PWS  
Water Use Permit No. 13-00017-W**

## **Compliance Highlights**

**July 7, 2008**

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Miami-Dade Water and Sewer Department  
P.O. Box 33-0316  
Miami, FL 33233-03

On November 15, 2007, the South Florida Water Management District Governing Board approved the Miami-Dade Consolidated Public Water Supply Water Use Permit (WUP). Below are the highlights of Miami-Dade County's efforts to comply with the WUP.

## **WATER CONSERVATION**

In April 2006, the Miami-Dade Board of County Commissioners (BCC) adopted the Miami-Dade Water-Use Efficiency Plan (Plan) as part of a larger effort to improve management of traditional water supplies while encouraging the development of alternative water supplies and improving the efficiency of the County's current water use. The Miami-Dade Water and Sewer Department (MDWASD) developed the Plan using the Department of Environmental Protection Conserve Florida Guide (Guide), a web based application for goal based water conservation planning. MDWASD was the first utility in the State to use the Guide in the development of a goal-based conservation plan. MDWASD's wholesale customers are required to develop a conservation plan using the same application. MDWASD is assisting the wholesale customers in preparing their plan.

On May 7, 2007, the District approved the Twenty-Year Water Use Efficiency (WUE) Plan. The approved Plan is a condition of the 20-Year WUP. The quantifiable water saving data for each of the implemented Best Management Practices (BMP) provides cumulative savings of over 19.6 million gallons a day (MGD) by 2026.

The Plan includes residential, industrial/commercial/institutional and landscape irrigation as well as water use audits for targeted county-owned buildings and other government facilities. Also included in the program are the Green Lodging projects for hotels and restaurants, and an in-school educational project "WET in

Gallons of water saved per day (GPD) by Water Use Efficiency Program



the City" which trains teachers through workshops and provides educational materials for the students. In addition to the specific requirements of the plan, the WUE program is actively engaged in state and national water conservation efforts including mentor

designation for EPA's WaterSense Program. The quantifiable BMPs were implemented in April 2007. The program's first year's water saving goal was established at 963,000 GPD, the goal was exceeded by 193,446 GPD for a total first year savings of 1,156,446 GPD.

On October 31, 2007, MDWASD informed the District of the County's Ordinance on Water Use Efficiency Standards for new residential and commercial developments. The ordinance was adopted by the BCC on February 5, 2008 and a proposed amendment was approved on first reading on May 20, 2008. The ordinance serves to strengthen the requirements of the Florida Building Code, to meet the County's water conservation goals, and to provide the public with information and education on all water use efficiency standards and water conservation programs. The ordinance consists of a technical amendment to the Building Code, which requires maximum water conservation flow rates for plumbing fixtures (such as showerheads, water closets, dishwashers, and washing machines), and the publication of a "Water Use Efficiency Standards Manual" on January, 1, 2009, with annual updates each year thereafter. The ordinance also requires evaluations of applications for "Developments of Regional Impact" with a projected water demand of one million gallons per day or more, to determine the feasibility of an alternative water supply project. Additionally, beginning, January, 1, 2009 all multi-family residential developments will be required to include a sub-meter for each individual unit.

More details about the program and the documents referenced above are available at: <http://www.miamidade.gov/conservation/home.asp>

## **ALTERNATIVE WATER SUPPLIES AND WATER RECLAMATION PROJECTS**

### **Hialeah Floridan Aquifer Reverse Osmosis Water Treatment Plant**

On July 26, 2007, the Miami-Dade BCC approved a Joint Participation Agreement (JPA) between Miami-Dade County and the City of Hialeah for this project. On October 25, 2007, the City of Hialeah provided MDWASD with a tentative schedule for the construction of the RO plant. Miami-Dade County Mayor Carlos Alvarez and City of Hialeah Mayor Julio Robaina signed the JPA on December 27, 2007.

On February 7 and February 8, 2008, MDWASD attended a workshop hosted by the City of Hialeah's consultant, Parsons, regarding the design and construction of the Hialeah Floridan Aquifer Reverse Osmosis Water Treatment Plant.

On March 26, 2008, the City issued a Request for Proposals (RFP) for the drilling, construction and testing of Floridan Aquifer test well systems for the Project. On April 24 and May 13, 2008, the City extended the deadlines for the RFP submittals.

Parsons and other City consultants are currently working to obtain a permit for the discharge of drilling, well development and pump test water.

The City of Hialeah held a non-mandatory Pre-Request for Qualifications (Pre-RFQ) meeting for interested firms for the design, construction, start-up, testing, commissioning and operation of the Reverse Osmosis Water Treatment Plant and Wellfield System, on June 5, 2008. At this meeting, representatives of the

City provided a short presentation, distributed a draft RFQ document, including a draft services agreement terms and conditions outline, and allowed time for questions and answers. Following this meeting, the City received comments and suggestions from attendees for final RFQ consideration over the following 2 week period.

The final RFQ will be issued after July 4, 2008. The document will be available from the web site of the City of Hialeah, FL. Statements of qualifications resulting from the solicitation of the RFQ are due by 4:00 p.m. EDT, on July 31, 2008. The City will open publicly and announce the names of the Respondents for all statements of qualifications in response to the RFQ that have been timely received.

The City of Hialeah expects to short-list of up to four (4) DBO Teams from the issuance of the RFQ in mid to late August, 2008 and is anticipating the issuance of the RFP to short-listed DBO Teams in January 2009.

All documents issued by the City are available at:  
<http://www.hialeahfl.gov/watertreatmentInfo.html>

### **Floridan Aquifer Blending at Hialeah/Preston Water Treatment Plant**

The design of the Floridan Aquifer Blending Wells has been completed and the plans were submitted to the permitting agencies on February 1, 2008. The design drawings and contract specifications were submitted to start the procurement process and an internal bid review meeting was held on February 22, 2008. A construction application with engineering report was submitted to the Department of Health on April 22, 2008. MDWASD has received verbal comments on the permit application and the design has been modified to address their comments.

Value Engineering (VE) was conducted on the blending well design. The Final Value Engineering report has been submitted to MDWASD and the recommendations have been incorporated into the drawings and specifications. It is expected that the final bid documents will be completed and submitted, to begin the procurement process, in mid-June 2008.

### **Upper Floridan Blending at Alexander Orr Water Treatment Plant**

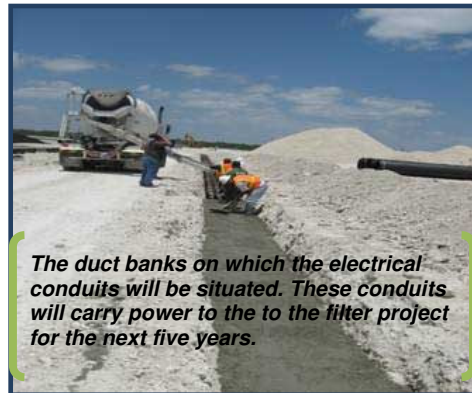
Since 2006, MDWASD has been blending water from the Floridan aquifer with Biscayne aquifer water at the Alexander Orr Water Treatment Plant. In the past six months, an average of 4.44 MGD of Floridan Water has been blended. Some concerns about the finished water quality have arisen since blending started. The sodium and chloride levels have almost tripled, and the total dissolved solids (TDS) have doubled. It appears that this change in water quality is having an effect on areas of the water distribution system that are serviced by 40 to 60 year old 2" galvanized water mains. The baseline number of water quality complaints has risen from 27 complaints per month to 107 per month. The common thread

is red water with rusty sediment and turbidity in homes served by 2" galvanized pipe. The number of complaints for the Hialeah/Preston service area, which is not blending yet, remains unchanged at 17 per month. MDWASD will continue evaluating the water quality impacts and will report to the District when the evaluation is completed.

The water quality issues were discussed with District's staff at a meeting on June 26, 2008. It was agreed that MDWASD could temporarily stop use of the blending wells while conducting further investigation on the water quality issues. In addition, MDWASD will prepare an Action Plan for the next six months and submit it to the District.

### **High Level Disinfection (HLD)**

On April 1, 2008, Miami-Dade County's High Level Disinfection (HLD) Project at the County's South District Wastewater Treatment Plant, kicked off with a groundbreaking for the 14 projects that compose HLD. High-level disinfection of wastewater will remove a much larger amount of pathogens than the current treatment process does, and is a precursor to the water reclamation plant which is under design.



Site preparations are moving rapidly and are on schedule.

### **South District Water Reclamation Plant**

On June 26, 2007, the BCC approved the Request to Advertise for the design and construction management services for the water reclamation project associated with the South District Wastewater Treatment Plant. The award contract for the design of the new South District Water Reclamation Plant (SDWRP) was approved by the BCC on December 4, 2007.

The Consultant is on schedule and is currently developing the preliminary design and project schedule. The new SDWRP will be constructed west of the South District Wastewater Treatment Plant on a parcel of land which MDWASD is currently in the process of acquiring.

On May 20, 2008, the BCC approved a contract with A&P Consulting Transportation Engineers Corp. to design the pipeline from the SDWRP to the Metrozoo moat, where the reclaimed water will replenish the ground water. Currently, the consultant is preparing the basis of design report and will submit a permit package to the SFWMD for pre-approval of proposed route along the canal right of way.

MDWASD is proceeding with Phase 1 and Phase 2 Environmental Site Assessments for the Metrozoo site. Environmental Site Assessments will also be conducted for property that will be purchased for the SDWRP.

On June 18, 2008, MDWASD and CDM met with representatives from FDEP and Miami-Dade County Department of Environmental Resources to address the permitting of the project, regulatory issues, piloting, and overall project schedule.

Currently, the South District Wastewater Treatment Plant (SDWWTP) has a capacity to reuse more than 4 MGD of reclaimed water. Current on-site irrigation and in-plant use of reclaimed water resulted in 4.920 MGD of water reclamation at the SDWWTP in FY2007

#### **West District Water Reclamation Plant**

On January 30 and May 13, 2008, MDWASD met with the District to discuss potential available lands where the West District Water Reclamation Plant (WDWRP) could be located. MDWASD has conducted basic site screening of potential locations for the WDWRP and is in the process of hiring a consultant to conduct more detailed site evaluations.

MDWASD staff continues to work on preliminary sizing and design for the proposed WDWRP. Currently various alternatives, including plant capacity associated with reclaimed water opportunities, are being developed in conjunction with system-wide wastewater transmission and treatment facilities planning and the outfall legislation implementation.

#### **North District Water Reclamation Plant**

On June 26, 2007, the BCC approved the Request to Advertise, for design and construction management services for the water reclamation project at the North District Wastewater Treatment Plant (NDWWTP). On November 6, 2007 the BCC approved a Professional Services Agreement to design the North District Water Reclamation Facility. A Notice to Proceed was issued to the Consultant on December 7, 2007. Currently, the Consultant has prepared a technical report evaluating different treatment alternatives. The Water Reclamation Plant is being sized for 10 MGD. The consultant currently is preparing the Basis of Design Report which is due by the end of June. Survey and geotechnical investigations have been completed.

The pipeline to bring the water from the NDWRP to proposed users is currently under design by MDWASD staff. This project however may be placed on hold if the Cities of North Miami and North Miami Beach do not commit to accepting reclaimed water for their respective cities. Additionally, MDWASD is evaluating water reclamation projects for the NDWWTP in light of the recently passed outfall legislation.

In FY2007, 2.46 MGD of wastewater was treated and reused for in-plant processes at NDWWTP. Irrigation at Florida International University's Biscayne

Bay campus accounted for an additional 0.090 MGD of reuse from the NDWWTP.

### **Central District Water Reclamation Plant**

On June 26, 2007, the BCC approved the Request to Advertise, for design and construction management services of the Water Reclamation Plant at the Central District Wastewater Treatment Plant (CDWWTP). The Consultant for the design of the Central District Water Reclamation Plant (CDWRP) was approved by the BCC on December 4, 2007. The Notice to Proceed was issued on December 28, 2007 and on January 15, 2008, a kick-off meeting with the Consultant was held to discuss the initial work order for the project. The Consultant has submitted a "Regulatory and Practical Reviews" technical report, along with technical memorandums discussing distribution pipe diameter, plant storage and treatment options. It has been determined that a 1 MGD reverse osmosis plant will be constructed. The consultant is currently starting the Basis of Design and surveying and geotechnical work.

On May 20, 2008 the BCC approved a Professional Services Agreement to design the pipeline from the CDWRP to the Village of Key Biscayne, with a connection to the Crandon Golf Key Biscayne. The Consultant will perform a Phase 1 contamination assessment and will present to the department the basis of design report by the end of August 2008.

Installation of reclaimed water piping was initiated on June 29, 2007 in the Village of Key Biscayne. On May 13, 2008, MDWASD gave a presentation to the Village of Key Biscayne Council on the CDWRP and the associated Piping Project. Additionally, on May 13, 2008, the Village Council awarded a contract to Conquest Engineering Group, for the construction of the reclaimed water distribution system within the Village, utilizing funding from Miami-Dade County and Alternative Water Supply Funding from the SFWMD.

Reclaimed water from the CDWWTP is currently substituted for potable water for in-plant processes. The average annual flow of reuse water at CDWWTP was 5.130 MGD for FY2007

### **Aquifer Recharge Pilot**

The Aquifer Recharge Pilot at the former US Coast Guard the Richmond Heights Complex was evaluated for its possible use for the full scale South District Water Reclamation Plant (SDWRP), however it was decided it would best to conduct the pilot at the South District Wastewater Treatment Plant.

### **Biscayne Bay Coastal Wetlands Rehydration Pilot Project**

MDWASD has met with Biscayne National Park, the District and DERM Staff and other stakeholders on numerous occasions to discuss the revised scope of work for the Biscayne Bay Coastal Wetlands Rehydration Pilot Project. On November 10, 2007 MDWASD submitted a conceptual plan and basis of design for the

revised project to the SFWMD. The Notice to Professional Consultants requesting project proposals was advertised on May 12, 2008. On May 27, 2008 Miami-Dade County held a RFP Pre-Submittal Project Briefing for the Project.

On May 22, 2008, MDWASD received comments on the Conceptual Plan from the SFWMD. On June 26, 2008, MDWASD met with District's staff to address the comments. It was agreed that MDWASD will complete the portion of the pilot project that addresses the water quality that can be obtained from the treatment process by January 15, 2011, in accordance with limiting condition 43 of the WUP.

### **FPL Turkey Point**

MDWASD staff is meeting monthly with representatives from Florida Power and Light (FPL) to discuss the feasibility of providing 70 MGD of reclaimed water for cooling the proposed nuclear power plant at Turkey Point and 14 MGD to cool the existing power generating unit which was placed in service in 2007.

Initially, four (4) main alternatives have been considered. One alternative is to bring treated reclaimed water from a new water reclamation plant at the Central District Wastewater Treatment Plant to Turkey Point, which will require approximately thirty (30) miles of pipeline. The second alternative is to divert sufficient wastewater flows to be treated at the WDWRP for FPL use, thus increasing the WDWRP's water reclamation capacity from the original 50 MGD necessary for groundwater recharge. The third alternative is to modify MDWASD's sewage collection system to divert more flow to the SDWWTP and expand treatment in the south. The fourth alternative is to bring treated reclaimed water from the SDWWTP without flow diversion, in the event the Biscayne Bay Coastal Wetlands Rehydration Project is not feasible. MDWASD developed cost estimates for these alternatives, which were discussed with FPL representatives on June 30, 2008. At the meeting, it was decided to look at an alternative that takes part of the flow from SDWWTP and the other part from CDWWTP.

A Joint Participation Agreement between the County and FPL is being drafted. It is anticipated that a final agreement will be presented to the County's Government Operations and Environment (GOE) Committee in October 2008 and to the BCC in November 2008.

### **TWENTY-YEAR WATER SERVICE AGREEMENTS**

The WUP requires that MDWASD execute 20-year service agreements with the Cities of Hialeah and Miami Beach by May 15, 2008. On May 14, 2008, the Miami Beach City Council approved a 20-year water service agreement with Miami-Dade County. The City of Hialeah 20-year water service agreement was approved by the City Council on June 24, 2008. Both Agreements will be heard at the July GOE Committee meeting and it is anticipated that they will be presented to the BCC in September 2008.



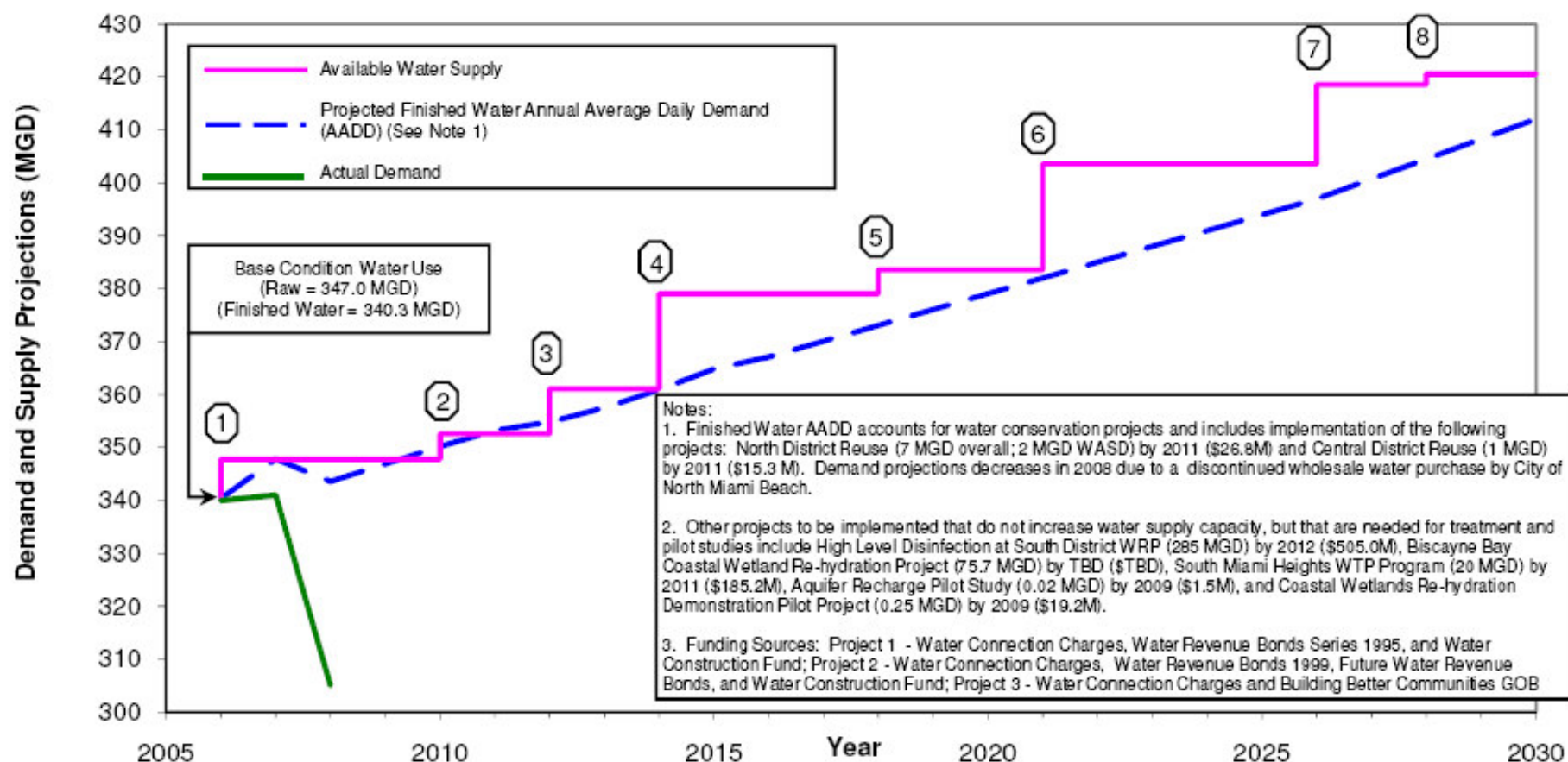
### **METERED VS HISTORICAL WATER FLOW COMPARISON**

On July 1, 2008, MDWASD submitted to the District a report addressing water flow measurement in accordance with Limiting Condition 48. The report recommended that MDWASD continue to evaluate the differences between measurements from individual water supply well meters and the total flows measured at the influent of the plant. A WUP modification is not recommended at this time. This report was discussed with District's staff at a meeting on June 26, 2008.

### **STATUS OF ACTUAL WATER DEMANDS**

The following chart shows MDWASD's 20-year Alternative Water Supply Program and the actual finished water demand as of the end of April 2008. The lower demands are the result of the Water Restrictions and the successful implementation of the Water Efficiency Program.

## MDWASD Finished Water Demand and Water Supply Projections



### Project Names:

1. Floridan Aquifer Blending at Alex-Orr WTP (7.2 MGD, \$7.7M)
2. Floridan Aquifer Blending Wellfield at Hialeah/Preston (4.7 MGD, \$19.2M)
3. New Upper Floridan RO WTP Phase 1 (8.5 MGD, \$93.0M) (WTP Capacity = 10 MGD)
4. Phase 1 SDWRP Groundwater Recharge (SMH WTP) (18 MGD, \$357.5M)

5. New Upper Floridan RO WTP Phase 2 (4.5 MGD, \$25.0M) (WTP Capacity = 15.0 MGD)
6. Phase 2 WDW RP Canal Recharge (Alex-Orr WTP) (20 MGD, \$482.0M)
7. Phase 3 WDW RP Canal Recharge (Alex-Orr WTP) (15 MGD, \$317.5M)
8. New Upper Floridan RO WTP Phase 3 (2.0 MGD, \$9.7M) (WTP Capacity = 17.5 MGD)