



---

Miami-Dade  
Water and Sewer Department

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

**Alternative Water Supply Plan  
and Reuse Feasibility Plan  
Annual Progress Report**

**Progress November 15, 2007  
Through December 31, 2007**

---

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

# TABLE OF CONTENTS

|  |   |
|--|---|
| SECTION I EXECUTIVE SUMMARY .....  | 1 |
| SECTION II STATUS OF REUSE DISTRIBUTION SYSTEM CONSTRUCTION .....                | 2 |
| SECTION III SUMMARY OF UNCOMMITTED REUSE SUPPLIES .....                          | 3 |
| SECTION IV STATUS OF ALTERNATIVE WATER SUPPLY AND REUSE PLAN IMPLEMENTATION..... | 4 |
| Hialeah Floridan Aquifer Reverse Osmosis (RO) Water Treatment Plant .....        | 4 |
| Floridan Aquifer Blending at Hialeah/Preston.....                                | 4 |
| South District Water Reclamation Plant .....                                     | 5 |
| West District Water Reclamation Plant .....                                      | 5 |
| North District Wastewater Treatment Plant Reuse Projects .....                   | 5 |
| Central District Wastewater Treatment Plant Reuse Projects.....                  | 5 |
| FP&L Turkey Point 14 MGD and 70 MGD.....   | 6 |
| Aquifer Recharge Pilot Project.....  | 6 |
| Coastal Wetlands Rehydration Demonstration Project.....                          | 6 |
| SECTION V STATUS OF REUSE ORDINANCES .....                                       | 7 |
| SECTION VI PROPOSED CHANGES TO EXHIBIT 29 AND 30 .....                           | 8 |
| APPENDIX A ANNUAL REUSE REPORTS.....   | 9 |

## **SECTION I EXECUTIVE SUMMARY**

On November 15, 2007, the South Florida Governing Board (SFWMD) approved the Miami-Dade Consolidated PWS Water Use Permit (WUP).

Limiting Condition 37 of the WUP requires that the permittee provide annual updates per limiting condition 47 of the status of all alternative water supply (AWS) projects. The status report shall include work completed to date, expenditures and any anticipated changes in the timelines. Although the annual update is not required until March 15, 2009, MDWASD is herein providing an update to the SFWMD on the status of AWS projects.

Limiting Condition 50 of the WUP requires that the Miami-Dade Water & Sewer Department (MDWASD) provide the District with annual updates by March 15th of each year, describing the activities associated with the implementation of the approved reuse feasibility plan including the following information: (1) the status of distribution system construction, including location and capacity of a) existing reuse lines b) proposed reuse lines to be constructed in the next five years; (2) a summary of uncommitted supplies for the next five years; (3) the status of reuse plan implementation including status of pilot projects, plan design construction, volume of reuse available, volume of wastewater disposed of ; and (4) the status/copies of any ordinances related to reuse (5) any proposed changes to the reuse plan set forth in Exhibit 30.

MDWASD hereby submits the first Alternative Water Supply Plan and Reuse Feasibility Plan Annual Progress Report summarizing the County's actions and efforts to comply with Limiting Conditions 37 and 50 of the WUP.

## **SECTION II STATUS OF REUSE DISTRIBUTION SYSTEM CONSTRUCTION**

**The status of distribution system construction, including location and capacity of a) existing reuse lines b) proposed reuse lines to be constructed in the next five years:**

Currently MDWASD has a distribution line to Florida International University's (FIU) Biscayne Bay Campus located at 3000 N.E. 151st Street, North Miami, Florida. The capacity of the existing reuse system for FIU irrigation is 1.5 MGD. MDWASD currently delivers an annual average flow of 0.09 MGD for irrigating 40 acres of landscape.

MDWASD is in the process of selecting a consultant that will design the reclaimed water distribution piping from the Central District Water Reclamation Plant to the northern boundary of the Village of Key Biscayne. It is estimated that the consultant will be on-board in May 2008. The final location and capacity of the pipeline will be determined during the design process. Construction of the pipeline will be completed by January 2012.

Installation of reclaimed water piping was initiated on June 29, 2007 in the Village of Key Biscayne. The Village of Key Biscayne is in the process of preparing bid documents for the selection of a contractor to finalize the purple pipe, which will be installed within the Village limits. Installation of the Key Biscayne purple pipe is scheduled to be completed by August 2008.

The Department is also in the process of selecting a consultant for the design of a 36" diameter reclaimed water distribution pipeline from the South District Water Reclamation Plant to the Metro Zoo. It is estimated that the consultant will be hired in May 2008 and the pipeline will be installed by December 2013.

MDWASD's Engineering Division is designing the North District reclaimed water pipeline. The pipeline design is scheduled for completion at the end of 2008. The pipeline will run from the south entrance gate of the North District Wastewater Treatment Plant (NDWWTP), heading south along the FIU Stadium Road, turning west along NE 151<sup>st</sup> Street and continuing west along NE 151<sup>st</sup> Street to just west of the railroad tracks near NE 21<sup>st</sup> Avenue. The capacity of the pipeline has not yet been determined, pending confirmation from the cities of North Miami and North Miami Beach of the amount of reclaimed water they are committed to take.

## **SECTION III SUMMARY OF UNCOMMITTED REUSE SUPPLIES**

### **Summary of uncommitted supplies for the next five years:**

MDWASD has met with representatives from the cities of North Miami and North Miami Beach to establish the amount of reclaimed water that each city will utilize. A draft reclaimed water service agreements has been drafted and provided to the cities.

Additionally, MDWASD has met with retail customers including Biscayne Landings, Miami-Dade Parks and Recreation Department, Fisher Island, and the Village of Key Biscayne to discuss the use of reclaimed water.

The consultant selected to design the Central District Water Reclamation Plant will evaluate the feasibility of adding reclaimed water users along the pipeline from the Plant to the Village of Key Biscayne, as well as Fisher Island.

It is not anticipated that MDWASD will have any uncommitted supplies in the next five years.

## **SECTION IV STATUS OF ALTERNATIVE WATER SUPPLY AND REUSE PLAN IMPLEMENTATION**

**The status of both the alternative water supply plan, and the reuse plan implementation including status of pilot projects, plan design construction, volume of reuse available, volume of wastewater disposed of, is described below:**

On July 14, 2005, MDWASD issued a Notice to Proceed to Ecology & Environment, Inc. to update the Reuse Feasibility Study (RFS). On June 13, 2006, the MDWASD received joint comments from the Florida Department of Environmental Protection (FDEP) and the South Florida Water Management District (SFWMD) on the draft RFS Update. On September 18, 2006, the MDWASD held a workshop with the regulatory agencies to further discuss their comments. On May 3, 2007, the MDWASD submitted the Final RFS Update to the FDEP. On June 13, 2007, MDWASD received comments from the FDEP on the Update. On July 13, 2007 MDWASD sent a request for a 30-day time extension to reply to FDEP's letter. On August 13, 2007, MDWASD responded to the FDEP's comments regarding the RFS Update. On September 24, 2007, FDEP sent comments on MDWASD's response. On October 5, 2007, MDWASD responded to FDEP's comments, indicating that MDWASD has committed to 170 MGD of water reclamation by 2026. A meeting to discuss the Reuse Feasibility Study was held on November 28, 2007 in Tallahassee with FDEP and MDWASD. On December 19, 2007 MDWASD submitted an updated Project Implementation Schedule for MDWASD's Water Reclamation Projects to the FDEP.

On June 7, 2006, MDWASD authorized CDM to develop a long range alternative water supply plan to submit to the District for review and approval. On September 18, 2006 MDWASD and their consultants held a workshop with the SFWMD, FDEP and DERM to discuss MDWASD's Alternative Water Supply Master Planning effort. A follow-up meeting with MDWASD, SFWMD, FDEP and DERM, was held on October 2, 2006, to clarify issues that were not clearly defined during the workshop.

On October 20, 2006, MDWASD submitted to the SFWMD for review, two conceptual groundwater replenishment/recharge concepts for the reuse of South District Wastewater Treatment Plant (SDWWTP) effluent. On January 9, 2007, MDWASD met with the SFWMD to discuss the proposed projects and implementation schedule of the Alternative Water Supply (AWS) Plan.

On May 10, 2007, MDWASD submitted an AWS Plan to the SFWMD. On November 1, 2007, MDWASD submitted the final AWS Plan and schedule to the SFWMD.

### **Hialeah Floridan Aquifer Reverse Osmosis (RO) Water Treatment Plant**

The Joint Participation Agreement (JPA) was approved by the BCC on July 26, 2007. 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. A workshop between the City and MDWASD will be scheduled in the near future.

### **Floridan Aquifer Blending at Hialeah/Preston**

MDWASD has completed the design of the Floridan blending wells for the Hialeah-Preston Water

Treatment Plants and will be starting the permitting process. Three blending wells will be installed at the Northwest wellfield and two blending wells will be installed in Miami Springs. Contract documents are being prepared for the construction of the blending wells.

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

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 (see Appendix A). In FY2007, the SDWWTP disposed of an average annual flow of 92.10 MGD of wastewater.

On June 26, 2007, the Board of County Commissioners (BCC) approved the Request to Advertise, for design and construction management services for the water reclamation project at the South District Wastewater Treatment Plant. The contract with CDM, Inc., for the design of the South District Water Reclamation Plant, Groundwater Recharge Phase 1, was approved by the BCC on December 4, 2007.

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

MDWASD staff continues to work on preliminary sizing and design for the proposed West District Water Reclamation Facility. A meeting has been scheduled with the District to discuss potential available lands where the West District Water Reclamation Plant could be located.

### **North District Wastewater Treatment Plant Reuse Projects**

The North District Wastewater Treatment Plant (NDWWTP) currently has a capacity to reuse 4.44 MGD of reclaimed water. In FY2007, 2.46 MGD of wastewater was treated and reused for in-plant processes at NDWWTP. Irrigation at FIU's Biscayne Bay campus accounted for 0.090 MGD of reuse from the NDWWTP (see Appendix A). In FY 2007, the NDWWTP disposed of an average annual flow of 93.63 MGD of wastewater.

On June 26, 2007, the Board of County Commissioners (BCC) approved the Request to Advertise, for design and construction management services for the water reclamation project at the North District Wastewater Treatment Plant. On November 6, 2007 the BCC approved the contract award with Parsons Water & Infrastructure, Inc. to design the North District Water Reclamation Plant. A Notice to Proceed was issued to the consultant on December 7, 2007. The consultant is currently preparing a technical report evaluating different treatment alternatives. The Water Reclamation Plant is being sized for 10 MGD.

### **Central District Wastewater Treatment Plant Reuse Projects**

The Central District Wastewater Treatment Plant (CDWWTP) has a capacity to treat an estimated 7.878 MGD of wastewater for reuse. Reclaimed water at 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 (see Appendix A). In FY2007, the CDWWTP disposed of an average annual flow of 110.90 MGD of wastewater.

Installation of reclaimed water piping was initiated on June 29, 2007 in the Village of Key Biscayne. On

June 26, 2007, the Board of County Commissioners (BCC) approved the Request to Advertise, for design and construction management services for the water reclamation project at the Central Wastewater Treatment Plant. The contract with MWH, Americas Inc., for the design of the Central District Water Reclamation Plant was approved by the BCC on December 4, 2007. A Notice to proceed was issued to the consultant on December 28, 2007. The consultant is preparing a "Regulatory and Practical Reviews" technical report. The consultant will confirm by the end of the task assignment, initial as well as future plant size, storage requirements and reclaimed water distribution pipe diameter.

### **FP&L Turkey Point 14 MGD and 70 MGD**

MDWASD staff is meeting monthly with representatives from 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 of cooling water for the existing Unit # 5, which was placed in service in 2007.

Currently, two alternatives are being considered for providing reclaimed water to Turkey Point. One alternative is to bring reclaimed water from a new water reclamation plant at the Central District Wastewater Treatment Plant, in Virginia Key, which will require approximately thirty (30) miles of pipeline. The second alternative is to modify MDWASD's sewage collection system to divert more flow to the South District Wastewater Treatment Plant and expand the treatment at the SDWWTP and the South District Water Reclamation Plant. MDWASD is developing cost estimates for both alternatives, which will be discussed with FPL.

### **Aquifer Recharge Pilot Project**

On May 4, 2007, MDWASD completed 90% design and submitted permit applications to the FDEP and to Miami-Dade County, for the Aquifer Recharge Pilot project. On June 4, 2007, FDEP and Miami-Dade County Department of Environmental Resources Management (DERM) provided comments on the application and plans. Parsons addressed the FDEP and DERM comments in a July 2, 2007 response addressed to the FDEP. On September 6, 2007, MDWASD received approval, with conditions, from the Miami-Dade County Environmental Quality Control Board, for the Aquifer Recharge Pilot project. On September 24, 2007, MDWASD provided additional information regarding the project to FDEP. On October 26, 2007, MDWASD in coordination with the Miami-Dade General Services Administration (GSA) applied for a Government Facilities Hearing for a zoning change for the property that will house the pilot project. On December 17, 2007, GSA in conjunction with MDWASD, submitted an application for a waiver of plat for the property.

### **Coastal Wetlands Rehydration Demonstration Project**

MDWASD has met with Biscayne National Park, the SFWMD, and the DERM to discuss the revised scope of work for the Coastal Wetlands Rehydration Demonstration Project. Additional meetings with stakeholders were held on October 12 and 19, 2007. On November 10, 2007, MDWASD submitted a conceptual plan and basis of design for the revised project to the SFWMD. MDWASD is currently awaiting comments from the SFWMD on the conceptual plan in order to finalize the Request for Proposal documents for the detailed design contract.



## **SECTION V STATUS OF REUSE ORDINANCES**

MDWASD is currently evaluating reuse rates for both wholesale and retail customers.

## **SECTION VI PROPOSED CHANGES TO EXHIBIT 29 AND 30**

MDWASD is not proposing any changes to either Exhibit 29 or Exhibit 30 at this time.

## **APPENDIX A ANNUAL REUSE REPORTS**