



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 Through December 31, 2010

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

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SECTION I INTRODUCTION

On November 1, 2010, the South Florida Water Management District Governing Board approved the reissuance of the Miami-Dade Consolidated Public Water Supply Water Use Permit (WUP).

Limiting Condition 40 of the WUP requires that the permittee provide annual updates per Limiting Condition 50, 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.

Limiting Condition 42 of the WUP requires that the permittee provide the District with annual updates, 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.

Miami-Dade Water & Sewer Department (MDWASD) hereby submits the Alternative Water Supply Plan and Reuse Feasibility Plan Annual Progress Report summarizing the County's actions and efforts to comply with Limiting Conditions 40 and 42 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:

Existing Reuse Lines

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 0.11 MGD for irrigating 40 acres of landscape.

Installation of reclaimed water piping in the Village of Key Biscayne has been completed. The maximum capacity of the Village of Key Biscayne piping is 3 MGD.

Appendix A contains maps of the existing reuse lines.

Proposed Reuse Lines

The proposed reuse line for the South District Water Reclamation Plant (SDWRP) is being re-evaluated during the next 90 days, along with the future water needs for the South Dade System, to determine the scope and timing of the reuse project.

SECTION III SUMMARY OF UNCOMMITTED REUSE SUPPLIES

Summary of uncommitted supplies for the next five years:

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

To ensure commitment to reclaimed water supplies, on July 20, 2010 MDWASD and FPL signed a Joint Participation Agreement for the delivery of reclaimed water from the South District Wastewater Treatment Plant to the FPL Turkey Point Plant.

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 SFWMD on the draft RFS Update. On September 18, 2006, the MDWASD held a workshop with the regulatory agencies to further discuss their comments and on May 3, 2007, the MDWASD submitted the Final Reuse Feasibility Study Update. On May 10, 2007, MDWASD submitted an Alternative Water Supply (AWS) Plan to the SFWMD and the FDEP. On November 1, 2007, MDWASD submitted the AWS Plan and schedule to the SFWMD, incorporating comments from FDEP and the SFWMD. On November 1, 2010, the SFWMD Governing Board approved the reissuance of the Miami-Dade WUP containing the revised AWS Plan.

Details on the volume reuse available and the volume of the wastewater disposed of, is contained in Appendix B.

Individual projects are described below:

Hialeah Floridan Aquifer Reverse Osmosis (RO) Water Treatment Plant

On July 26, 2007, the Miami-Dade Board of County Commissioners (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.

On June 5, 2008, the City of Hialeah held a non-mandatory Pre-Request for Qualifications 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 September 3, 2008, the Committee met for the ranking of the companies who responded to the Request for Qualifications. On September 5, 2008, Mayor Julio Robaina recommended that the City Council select three responding companies, American Water-Pridesa, LLC, Inima USA Corp. and Veolia Water North American-South, LLC, as sufficiently qualified to respond to the forthcoming RFP for the Design/Build/Operate (DBO) contract.

On November 19, 2008, the City of Hialeah received the RFPs for Drilling, Construction, and Testing of the Floridan Test Wells. The contract was approved by the City Council on December 23, 2008, and awarded to Diversified Drilling Corporation.

On January 22, 2009, the Miami-Dade BCC approved Amendment 1 to the JPA which included the conveyance of the property on which the RO WTP will be constructed from Miami-Dade County to the City of Hialeah.

On March 16, 2009, the City received draft injection well permits from the Florida Department of Environmental Protection (FDEP), for the RO brine disposal. On May 18, 2009, FDEP held a public meeting to receive comments on the permits. On March 12, 2009, final permits were received from the SFWMD for the test and production wells.

The Request for Proposals (RFP) for the *Hialeah Reverse Osmosis Water Treatment Plant Design, Build, Operate (DBO) Project* was issued on October 15, 2009. Pilot testing with the three potential DBO contractors is continuing.

Proposals for the *Drilling, Construction and Testing of Class 1 Test/Injection Wells and Dual Zone Monitor Well* were received by the City of Hialeah on September 17, 2009. On November 7, 2009, the selected contractor began drilling Injection Well 1. Injection wells 1 and 2 were completed on May 31, 2010.

The City issued a RFP clarification/change on April 19, 2010, in the form of an additional procurement step entitled the *Addendum and Request for Best and Final Offers* (BAFO) for the DBO contract. The City also issued Addenda on April 21, 2010 and May 4, 2010 to provide additional clarification to the BAFO process.

On May 25, 2010, the Selection Committee evaluated the BAFO Non-Price Proposals and ranked the DBO Teams. The BAFO Price Proposals were opened on May 26, 2010, and were scored and ranked. On June 1, 2010 the Selection Committee met to determine the overall rankings based on the combined scores and provided the City of Hialeah Mayor with their recommendations. On June 6, 2010 the Mayor provided the recommendations to the City Council and requested approval to authorize negotiations.

On September 7, 2010, Inima, the selected DBO contractor began mobilization. On September 28, 2010, the City of Hialeah received 40/50% design drawing and a Basis of Design Report from the contractor. On December 6, 2010, Inima and AECOM submitted minor design changes to the Florida Department of Health. On December 17, 2010, 90% design drawings were submitted to the City.

On September 14, 2010 FDEP issued the Environmental Resource Permit (ERP) for the site. On October 12, 2010 the City of Hialeah approved the payment for wetland mitigation bank credits and on November 5, 2010, a final permit was issued for wetland impacts, by the Army Corps of Engineers.

On October 14, 2010, the City received as-built drawings for the injection wells. On November 22, 2010 Schlumberger submitted the final Deep Well report to the City.

On November 23, 2010, the City authorized the Site Preparation contractor to begin work, and on December 7, 2010, a pre-construction meeting and field review was held with the selected contractor.

The City of Hialeah is tracking all expenditures.

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.

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 Zoo Miami, where the reclaimed water will replenish the groundwater. The consultant has prepared the Basis of Design Report (BODR) for the pipeline and the pipeline route has been selected.

The results of the ammonia model were presented to the Miami-Dade Department of Environmental Resources Management (DERM) in January 2009. Based on the model results, DERM is requiring additional treatment for ammonia. Further removal of ammonia will require that an additional treatment process be added to the original treatment design. The final nutrient removal technical memorandum has been issued and Ion exchange has been chosen for additional removal of ammonia.

A general regulatory meeting with DERM, FDEP, the Miami-Dade Health Department, and the SFWMD was held on November 9, 2009 to discuss issues pertaining to water quality, monitoring, and the groundwater modeling which was performed for the aquifer recharge options. A follow-up meeting on the water budget analysis was held with SFWMD on November 12, 2009. Based on this meeting the consultant CDM compared the modeling results from the three recharge options in more detail to see the impact on the C-1W canal north of structure S-148. It was decided that the injection wells recharge option provided the necessary water budget offset for the regional system,

The geotechnical field work and surveying work, which are required to support the preliminary design of the recharge facilities and the groundwater modeling at the Zoo Miami site, has concluded. The groundwater flow model and the development of design criteria for the recharge are also finished.

The Task Authorization for the design of the recharge system was approved by MDWASD on June 1, 2010. The Consultant is progressing on the design of the injection well system for recharge along the Zoo Miami moat.

On November 1, 2010, MDWASD met with the Miami-Dade County Parks Department and DERM to discuss potential impacts from the recharge to the Zoo Miami drainage system. The parties agreed that a groundwater elevation of 4.7' NGVD should not be exceeded to ensure that site drainage would not be impacted. On December 9, 2010 a letter was sent to SFWMD asking for their concurrence for the shut-off elevation of 4.7 ft.

The final BODR for the SDWRP was submitted by the consultant to MDWASD, on August 27, 2010. On December 22, 2010 MDWASD met with DERM to discuss their comments on the BODR. On December 29, 2010 the BODR, along with an Application for Facility Permit Modifications was sent to FDEP. On November 19, 2010, the consultant submitted the 60% design drawings of the SDWRP. On December 3, 2010, a 60% design workshop was held between CDM and WASD. CDM's consultant team presented a general overview of the 60% design, including all buildings and processes.

A&P Consulting has completed the design for Phase I of the pipeline along SW 127 Avenue from the C-1W Canal to Zoo Miami. The consultant has submitted 70% design drawings for the portion of the pipeline along the C-1 canal right-of-way (Phase II). The pre-bid meeting for the construction of the Phase I portion of the pipeline was held on December 22, 2010.

On-site irrigation and in-plant use of reclaimed water resulted in 4.536 MGD of water reclamation at the SDWWTP in FY2010. The estimated capacity of the current SDWWTP reuse system is 4.173 MGD.

Expenditures through December 31, 2010 for the SDWRP Plant and Pilot are \$19,758,749. Expenditures through December 31, 2010 for the SDWRP Pipeline are \$1,084,731.

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. On July 10, 2008, ERM Southeast, Inc. was selected to assist in the site screening. On July 23, 2008, the consultant was approved to establish evaluation criteria and methodology, and to evaluate and rank potential sites for the West District plant. MDWASD staff and the consultant met with various federal, state and local agencies as part of the site evaluation process.

On November 3, 2009, MDWASD staff and the consultant met and selected Candidate Site (CS) 12 as the preferred site for the construction of the WDWRP.

A sales contract has been drafted by the County for the purchase of Candidate Site (CS) 12 for the West District Water Reclamation Plant (WDWRP). The environmental contingency items, within the contract, are currently being reviewed. A Phase II Environmental Site Assessment (ESA) will be performed. Wetlands remediation costs and the DERM administration costs associated with ongoing permitting issues with the current owner, along with costs associated with any potential Phase II ESA corrective measures, will be considered. MDWASD staff continues to work on 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 ocean outfall legislation implementation.

Expenditures through this reporting period for the WDWRP were \$304,705.

North District Wastewater Treatment Plant Reuse Projects

The scope of the North District Water Reclamation Plant will be determined as part of the Ocean Outfall Legislation implementation plan which will be submitted to FDEP by July 1, 2013.

The NDWWTP currently has a reuse capacity of 4.44 MGD. In FY2010, 1.97 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 0.11 MGD of reuse from the NDWWTP.

Central District Wastewater Treatment Plant Reuse Projects

The scope of the Central District Water Reclamation Plant will be determined as part of the Ocean Outfall Legislation implementation plan which will be submitted to FDEP by July 1, 2013.

In FY2010, the CDWWTP used 6.18 MGD of reclaimed water for in-plant processes. The CDWWTP has an estimated maximum reuse capacity of 7.878 MGD.

FPL Turkey Point

MDWASD staff are meeting regularly with representatives from FPL. Four (4) main alternatives were considered for providing reuse water to Turkey Point. MDWASD developed cost estimates for these alternatives, and the selected alternative will provide up to 90 MGD of HLD-treated water from the SDWWTP for FPL use. The construction of the treated water pipeline is scheduled to be completed in 2017.

Expenditures for the FPL Turkey Point Reuse Project, through December 31, 2010, are approximately \$110,283.

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 22, 2008, MDWASD received comments on the Conceptual Plan from the SFWMD. On May 27, 2008 Miami-Dade County held a RFP Pre-Submittal Project Briefing for the Project.

The recommendation for consultant selection for this project was approved by the BCC on January 22, 2009 and the first Task Authorization was issued on February 2, 2009. A kick-off meeting was held with the consultant on February 19, 2009.

The Agreement with Florida International University (FIU) for ecological and aquatic toxicity testing was approved by the BCC on March 3, 2009. On March 5, 2009, MDWASD sent letters to FDEP, Biscayne National Park (BNP), the SFWMD, and DERM, requesting appointment of staff members to the BBCWRP project stakeholder's leadership team. The designated Leadership Team met on April 28, 2009. On June 16, 2009 a public meeting of all stakeholders was held at MDWASD. The second stakeholder meeting was held on July 21, 2009.

On June 29, 2009, the consultant submitted a Water Quality Evaluation and a Process Technology Assessment report. On August 25, 2009, a stakeholders' workshop was held to review treatment efficiencies of the proposed pilot plant treatment trains. On November 4, 2009, a public meeting was held to update stakeholders on the progress of the pilot. On December 4, 2009, a stakeholder workshop was held to discuss the draft literature review and the draft report on monitoring data sources.

On January 28, 2010, the consultant, MWH, proposed changing from the originally proposed biologically aerated filters for nitrification and deep bed sand filters for denitrification to a membrane bioreactor (MBR). The consultant proposed the MBR technology to lower nutrient levels and because the MBR can be more easily procured. MDWASD has approved the change.

A meeting of the stakeholders was held on February 26, 2010 to discuss the changes in the process equipment and the proposed water quality testing plan. On March 30, 2010, a stakeholder meeting was held to further discuss the water quality testing plan.

On April 6, 2010, the proposed Aquatic Toxicity testing plan that will be conducted by Florida International University (FIU) was submitted to MDWASD. On May 12, 2010, the stakeholders continued discussions on the water quality testing plan. A consensus was reached among the stakeholders on the water quality testing plan objectives.

On May 18, 2010, MWH submitted the drawings for the BBCWRP pilot plant to the Miami-Dade County Building Department for permitting. A permit was issued on June 30, 2010.

A stakeholder meeting was held on June 23, 2010 to review the proposed Aquatic Toxicity Testing Plan. Dr. Rand from FIU presented an overview of the proposed plan for the first year of testing.

Construction of the pilot plant has been completed and the membrane bioreactor (MBR) was seeded on October 12, 2010. On November 8, 2010, the stakeholders met at the SDWWTP and toured the pilot plant.

Chemical testing began the second week of November 2010. The first series of provisional water quality data for microconstituents and nutrients was distributed to the stakeholders on January 7th and 10th, 2011, respectively, for review.

On December 16, 2010 a tour of the eco-toxicology and chemistry labs at Florida International University's Biscayne Bay Campus was held for interested stakeholders.

Expenditures through December 31, 2010, for the BBCWRP were \$2,938,321.86.

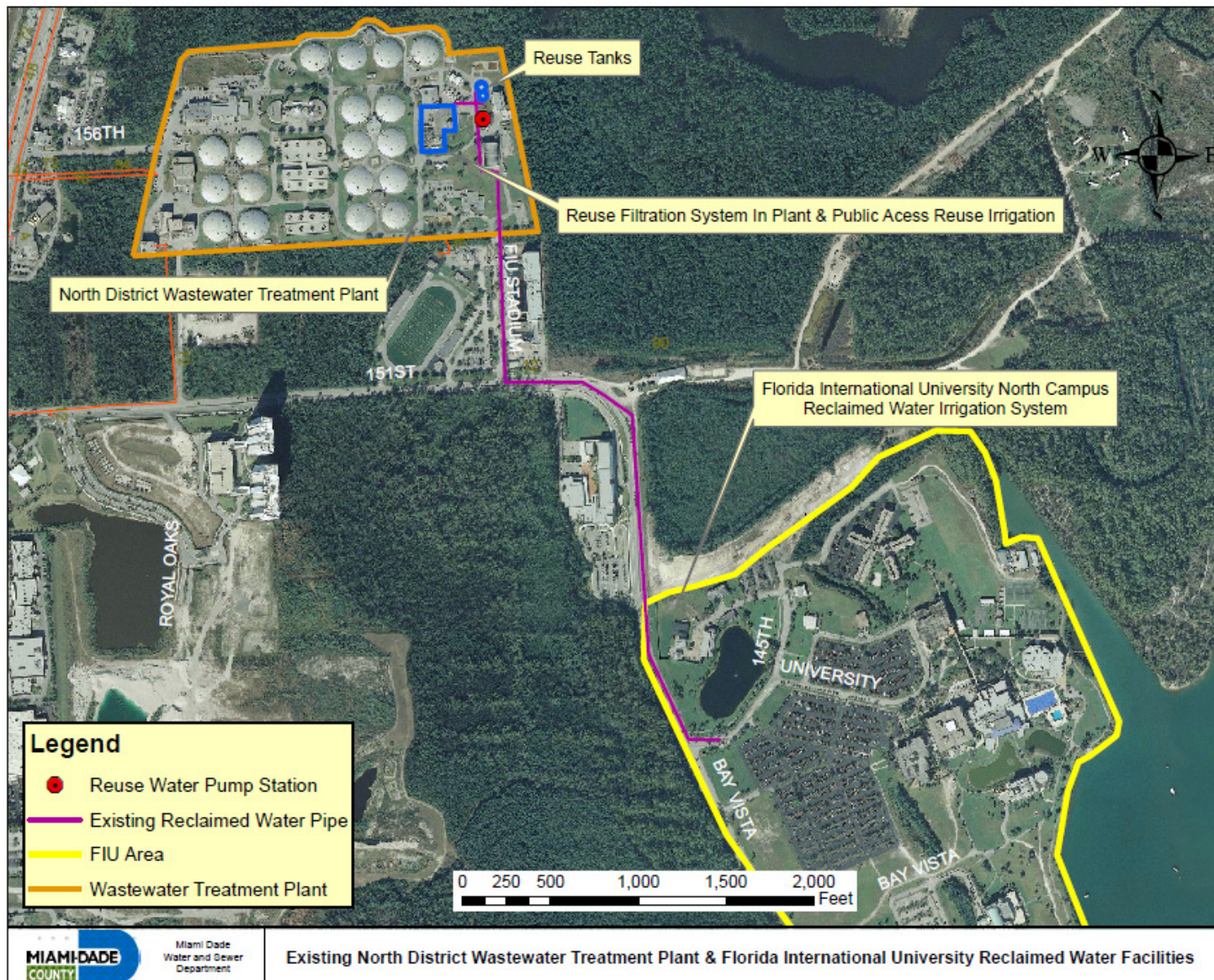
SECTION V STATUS OF REUSE ORDINANCES

MDWASD will establish reuse rates, as needed, upon completion of the July 2013 Ocean Outfall legislation implementation reuse plan.

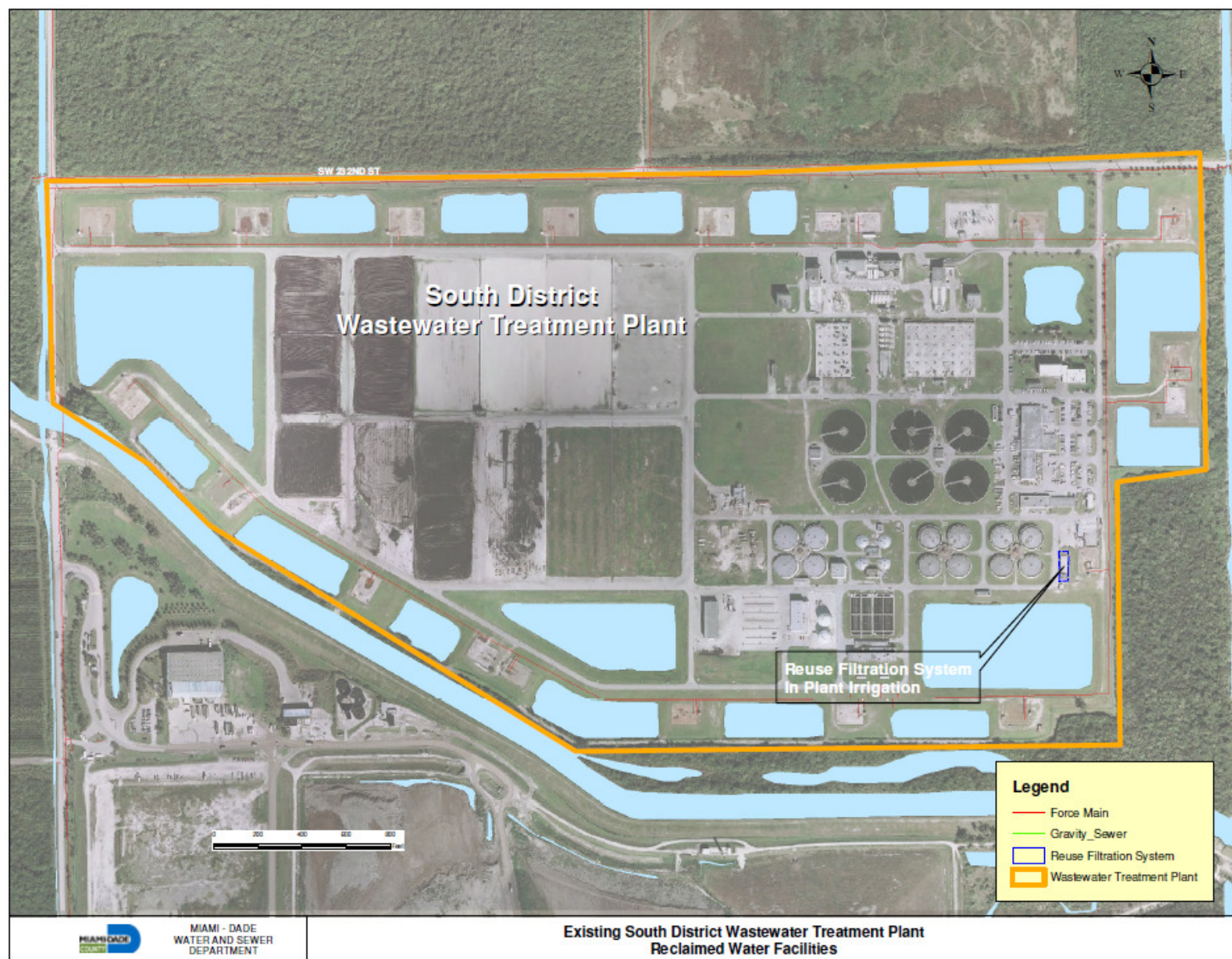
SECTION VI PROPOSED CHANGES TO EXHIBIT 13 AND 14

MDWASD will be submitting an application for a permit modification to the SFWMD. As a result of lower demands and updated population projections, along with additional reuse opportunities, MDWASD is reevaluating the demands for the South Miami Heights Water Treatment Plant, and the corresponding AWS projects and project schedules. The application for the permit modification will reflect changes to the AWS plan.

APPENDIX A EXISTING REUSE LINES







iv.

APPENDIX B ANNUAL REUSE REPORTS