

APPLICATION NO. 16

APPLICATION REQUESTING AMENDMENT TO THE COMPREHENSIVE DEVELOPMENT MASTER PLAN

1. APPLICANT

Miami- Dade County Department of Planning and Zoning
111 NW 1 Street, Suite 1110
Miami, Florida 33128-1972
(305) 375-2835

2. APPLICANT'S REPRESENTATIVE

Subrata Basu, AIA, AICP, Interim Director
Miami-Dade County Department of Planning and Zoning
111 NW 1 Street, Suite 1110
Miami, Florida 33128-1972

By: _____ August 25, 2007
Subrata Basu

3. DESCRIPTION OF REQUESTED CHANGES

The Department of Planning and Zoning requests the following modifications based on the requirements made to Section 163.3177(5), Florida Statutes, regarding water supply planning. These changes include:

- Part A** – Modifications and additions to the text, figures and tables of the Water and Sewer Subelement of the Water, Sewer and Solid Waste Element, including the addition of a 20-year Water Supply Facilities Workplan;
- Part B** - Modifications to the Conservation, Aquifer Recharge and Drainage Element;
- Part C** – Modifications to the Intergovernmental Coordination Element; and,
- Part D** – Modifications to the Capital Improvements Element.

Part A: Revisions to the Water and Sewer Sub-element of the Water Sewer and Solid Waste Element¹:

1. Revise Policy WS-2C on Page V-5 as follows:

WS-2C. Miami-Dade County shall maintain procedures and programs to monitor levels of service of each water supply, water treatment and wastewater treatment facility for use by agencies that issue development orders or permits. Such procedures may include the establishment of water and wastewater allocation processes to assure that adequate water supply, and water and wastewater transmission and treatment capacity is available prior to issuance of development orders or permits.

2. Revise Policy WS-5A on Page V-6 as follows:

WS-5A. All potable water distribution systems shall reduce unaccounted for water loss to less than ~~45~~ 10 percent of the water entering the system.

3. Revise Objective WS-6 on Page V-9 as follows:

Objective WS-6

Miami-Dade County shall undertake timely efforts to expand traditional sources of raw water and develop new raw water sources to meet the County's ~~level of service standards for water supply~~ needs.

4. Revise Policy WS-6A on Page V-9 as follows:

WS-6A. Miami-Dade County shall continue to utilize, expand and pursue the development of new potable water wellfields and alternative water supplies to meet the County's existing and future water supply needs. After 2013, Miami-Dade County will meet all future water supply demands from alternative water supply sources, which may include: withdrawals from the Floridan Aquifer, implementation of water conservation methods, and development of reclaimed and wastewater reuse strategies.

5. Revise Policy WS-6D on Page V-10 as follows:

WS-6D. In the development of its future potable water supplies, Miami-Dade County shall, to the maximum extent feasible, utilize methods which

¹ Underlined words are proposed additions. ~~Strikethrough~~ words are proposed deletions. All other words exist in the Plan and will remain unchanged.

preserve the integrity of the Biscayne Aquifer, protect the quality of surface water and related ecosystems, consider and are compatible with the South Florida Water Management District's Lower East Coast Regional Water Supply Plan, and comply with the land use and environmental protection policies of the Miami-Dade County CDMP, the Strategic Regional Policy Plan for South Florida, and the State Comprehensive Plan.

6. Revise Policy WS-6E on Page V-10 as follows:

WS-6E. Miami-Dade County shall develop and implement reclaimed water use strategies to augment the water supplies of the Biscayne Aquifer. ~~when feasible and where appropriate.~~ The Miami-Dade Water and Sewer Department shall be responsible for implementing any reuse that is deemed by the County to be economically feasible. Miami-Dade County ~~may also~~ will continue to participate in pilot projects that are a part of the Comprehensive Everglades Restoration Plan (CERP) and explore the utilization of reuse as a way to augment water flows to Biscayne Bay and also to meet the demands for: (1) the Bird Drive Recharge Area; (2) the South Dade Conveyance System; and (3) the Northeast Shark River Slough. If feasible, the County, in cooperation with state and federal agencies, will utilize the results of these pilot programs to develop future large-scale water reuse projects.

7. Add a new Objective WS-7 and related policies, tables and figures beginning on Page V-10 as follows:

Objective WS-7

Miami-Dade County shall create a Water Supply Facilities Work Plan that identifies and develops those water supply projects necessary to meet the County's projected water demands for a 20-year period.

Policies

WS-7A The Miami-Dade County Water Supply Facilities Work Plan (Work Plan), as prepared by the Miami-Dade County Department of Water and Sewer and dated July 2007, is incorporated by reference into the CDMP. This document is designed to: assess current and projected potable water demands; evaluate the sources and capacities of available water supplies; and, identify those water supply projects, using all available technologies, necessary to meet the County's water demands for a 20-year period. The Work Plan shall remain consistent with the County's Water Use Permit renewals and with projects as listed in the South Florida Water Management District's Lower East

Coast Regional Water Supply Plan. The Work Plan will be updated, at a minimum, every 5-years and within 18 months after the South Florida Water Management District's approval of an updated Lower East Coast Regional Water Supply Plan. The potable water supply facilities necessary to satisfy projected water demands during the 2007-2030 period are shown in Table 1, below.

WS-7B The County shall consider the current approved version of South Florida Water Management District's Lower East Coast Regional Water Supply Plan in developing and updating its 20-Year Work Plan.

8. Add a new Monitoring Measure for Objective 7 on Page V-12 as follows:

Objective WS-7. Development and maintenance of a Water Supply Facilities Plan.

Recommended measurements include: Consistency between the water supply projects identified in the Water Supply Facilities Work Plan and those listed in Miami-Dade County's Consumptive Use Permit(s), the *Lower East Coast Regional Water Supply Plan*, and the Capital Improvements Element of the CDMP. A second measure would be to compare the projected 20-year water demands with the projected water supplies produced by the projects identified in the Work Plan.

**Table 1
Alternative Water Supply and Wastewater Reuse Projects 2007- 2030¹**

Project No/ CIE Table.¹	Project Name	Project Description	Construction Timeframe	Estimated Cost (\$million)	
Alternative Water Supply Projects					
17, Table 12	South Miami Heights Water Treatment Plant and Wellfield	Reverse osmosis and ultra-filtration membranes provide treatment of 20 mgd of Biscayne aquifer water from 10 wells.	2007-2012	158.7	
20D, Table 12	New Upper Floridan Aquifer Reverse Osmosis (RO) WTP	A new upper Floridan aquifer reverse osmosis water treatment plant is to be constructed in the northern part of the County (i.e., Hialeah). The WTP will directly utilize the Floridan Aquifer as the alternative water supply using the RO treatment to remove salt.	2007-2012	93	
20D, Table 12	Phase 1 (10 MGD)				
22, Table 12	Phase 2 (5 MGD)			2015-2018	25
23, Table 12	Phase 3 (2.5 MGD)			2025-2028	9.7
20A, Table 12	Floridan Aquifer Blending (and ASR) at Alexander Orr, Jr. Water Treatment Plant (7.4 MGD)	This project uses the brackish Floridan Aquifer water to blend with the fresh Biscayne Aquifer raw water. Also these wells will be used for storage of fresh Biscayne Aquifer water in the Floridan Aquifer during the wet season for extraction and use in the dry season.	2007-2007	6.4	
20C, Table 12	Floridan Aquifer Blending Wellfield at Hialeah-Preston Water Treatment Plants (4.8 MGD)	Construction of two Floridan Aquifer blending wells to supply raw water to the Hialeah-Preston WTP complex. This project will blend Floridan Aquifer water with the raw water supply.	2006-2010	10.3	
Wastewater Reclamation Projects					
29, Table 8	North District Wastewater Treatment Plant (7.0 MGD)	Five MGD of this reclaimed water (e.g. purple pipe) irrigation project will be pumped to the City of North Miami Beach and 2 MGD will be used to replace current potable water irrigation in the service area.	2007-2012	26.8	
30, Table 8	Central District Wastewater Treatment Plant (1.0 MGD)	This reclaimed water (e.g. purple pipe) irrigation project will replace potable water irrigation at Crandon Park and certain areas of Key Biscayne.	2007-2011	15.3	
	South District Wastewater Treatment Plant (SDWWTP)	This Groundwater Replenishment project provides advanced treatment to secondary effluent. Technologies include micro-filtration, reverse osmosis and UV light for disinfection. The highly treated reclaimed water would be piped to areas upgradient of the South Miami Heights wellfield and discharged into the groundwater through underground trenches.			
31, Table 8	Phase 1 (18 MGD)		2007-2014	357.5	
32, Table 8	Phase 2 (20 MGD)		2015-2021	298	
33, Table 8	Phase 3 (15 MGD)		2021-2026	217.5	
27, Table 8	Coastal Wetlands Rehydration Demonstration Project (1 mgd)	The Coastal Wetland Rehydration program and Aquifer Recharge Pilot studies are projects that will help the County reach its effluent reuse goals. The wetland rehydration process requires thorough removal of nutrients from the reuse water. Results of the pilot project, which will test different treatment technologies and to gain insights into the biological and ecological response of typical wetlands to highly treated effluent, will help to optimize the treatment system and the preferred areas for rehydration to maximize the benefits to the wetlands and to the Bay. The pilot project will lay the foundation for the full scale rehydration project.	2006-2009	19.2	
28, Table 8	Aquifer Recharge Pilot Study (20,000 gpd)			1.02	
34, Table 8	Biscayne Bay Coastal Wetlands Rehydration Demonstration Project (52 mgd)			2010-2021	621

¹ CIE Table References are per CIE adopted on March 28, 2007 and revised by Ordinance No 07-73 adopted on June 5, 2007.

Part B: Revisions to the Conservation, Aquifer Recharge and Drainage Element:

1. Add a new CON-2L Policy to page IV-5 as follows:

CON-2L. By 2020, Miami-Dade County shall prepare a management plan for the protection and proper utilization of the Floridan Aquifer. This management plan should identify potential areas of water withdrawals, potential sources of contamination, the impact of potential withdrawals to other legal users, and the development of practices that will maintain this aquifer as a viable water supply source.

2. Add a new CON-4G Policy to page IV-7 as follows:

CON-4E. In accordance with the South Florida Water Management District's Lower East Coast Regional Water Supply Plan and Objective WS-7, and its related policies, Miami-Dade County shall develop alternative water supply sources to supplement withdrawals from the Biscayne Aquifer. Such sources may include withdrawals from the Floridan Aquifer, implementation of water conservation methods, and development of reclaimed and wastewater reuse strategies.

Part C: Revisions to the Intergovernmental Coordination Element:

1. Revise Policy ICE-4F on page VII-12 as follows:

ICE-4F. It is the policy of Miami-Dade County that the South Florida Water Management District (SFWMD) shall recognize in its water supply and management planning and permitting processes, Miami-Dade County's adopted population projections, spatial characteristics of the CDMP Land Use Plan map, and policies of the CDMP Land Use, Conservation and Coastal Management Elements. It is further County policy to accommodate future population and economic growth by utilizing the range of alternative water supply technologies outlined under CDMP Water and Sewer Sub-element Objective WS-6, including ~~traditional~~ sources from expanded and/or new Biscayne Aquifer and Floridan Aquifer wellfields, Floridan Aquifer storage and recover (ASR) techniques, and other alternatives including water conservation methods, water reclamation, water and wastewater reuse and other advanced technologies.

2. Add new ICE-5E Policy to page VIII-13 as follows:

ICE-5E. In its development of future potable water supplies and the County's Water Supply Facilities Work Plan as outlined in Objective WS-7, Miami-Dade County shall consider, and be compatible, with the South Florida Water Management District's Lower East Coast Regional Water Supply Plan.

Part D: Revisions to the Capital Improvements Element:

1. Add a new Policy CIE-5E on page IX-11 as follows:

CIE-5E Appropriate mechanisms will be developed and adopted by Miami-Dade County in order to assure that adequate water supplies are available to all water users of the Miami-Dade County Water and Sewer Department. Furthermore, the Miami-Dade County Water and Sewer Department shall be responsible for monitoring the availability of water supplies for all water users of the Miami-Dade County Water and Sewer Department and for implementing a system that links water supplies to the permitting of new development.

2. Revise the text of the **Concurrency Management Program** 1(a) on page IX-15 as follows:

1. Except as provided in paragraphs 3, 4, and 5 below, in no instance shall a building permit be issued authorizing construction of a new building or expansion of an existing building unless adequate water supply is available and the facilities necessary to maintain LOS standards are existing and available or are assured to be existing and available within the following timeframes relative to the date of issuance of a certificate of use and occupancy (CO):

- a) Necessary water supply and water, sewer, solid waste and drainage facilities must be in place and available at the time of issuance of a CO.

4. REASON FOR CHANGE

To meet the mandates of the 2005 legislature per the revisions to Chapter 163, Florida Statutes, regarding water supply. See Staff Analysis below, for a full listing of reasons for change pertaining to this amendment.

5. ADDITIONAL MATERIAL SUBMITTED

Miami-Dade County Water and Sewer Department *Final Water Supply Facilities Work Plan* dated July 2007. – supplied on compact disc (CD) but available in hard copy upon request.

South Florida Water Management District's Lower *East Coast Regional Water Supply Plan* – supplied on compact disc (CD).

RECOMMENDATIONS AND ANALYSIS

RECOMMENDATIONS

Staff:	ADOPT AND TRANSMIT (August 25, 2007)
Community Councils:	NOT APPLICABLE
Planning Advisory Board (PAB) acting as Local Planning Agency:	ADOPT AND TRANSMIT (October 15, 2007)
Board of County Commissioners:	TO BE DETERMINED (November 27, 2007)
Final Recommendation of PAB acting as Local Planning Agency:	TO BE DETERMINED
Final Action of Board of County Commissioners:	TO BE DETERMINED

STAFF ANALYSIS

The Staff recommends: **ADOPT AND TRANSMIT** the proposed amendments based on the Staff Analysis summarized below:

Background

The 2005 Florida Legislature enacted legislation with regard to water supply that amended Chapter 163 Florida Statutes and required a new Water Supply Facilities Work Plan be incorporated into the County's Comprehensive Development Master Plan (CDMP). The purpose of the legislation, with regard to water supply, was to:

- Better coordinate local government comprehensive planning with water management districts' regional water supply plans.
- Establish a closer link between development decisions and the availability of water by requiring local government to determine whether adequate water supplies will be available no later than issuance of a certificate of occupancy.
- Provide for more comprehensive regional water supply plans, permitting incentives for development of alternative water supplies.

The purpose of water supply planning is to develop strategies to meet future water demands of urban and agricultural uses, while meeting the needs of the environment. This process identifies areas where historically used sources of water will not be

adequate to meet future demands, and evaluates several water source options to meet those demands.

Under the new legislation, local governments subject to a regional water supply plan must identify alternative water supply projects necessary to meet existing and future development needs. By working with the South Florida Water Management District (SFWMD) during the update of the Lower East Coast Regional Water Supply Plan (LEC Plan) Miami-Dade County had an opportunity to provide input on water supply projects to be included in the LEC plan. As mandated by Florida water law, each regional water supply plan is based on at least a 20-year future planning horizon, and a complete update of each plan is required every five years. The LEC Plan was adopted by the SFWMD Governing Board in February 2007. Local governments have, by statute, 18 months to incorporate the alternative water supply projects applicable to that jurisdiction into their comprehensive plans. Other updates to maintain consistency between elements of the comprehensive plan are also required by statute.

To help meet the legislative requirements, the Water and Sewer Department developed a Water Supply Facilities Plan Report, which is incorporated by reference into the CDMP. This report identifies the projects listed in the SFWMD's *Lower East Coast Regional Water Supply Plan*

Principal Reasons for Change

1. Section 163.3177, (6)(c), F.S. relating to sanitary sewer, solid waste drainage, potable water and natural groundwater aquifer recharge element, as amended in 2005, requires all local governments to adopt a work plan that identifies the alternative water supply projects that were selected by the local government for inclusion into the regional water supply plan. The Work Plan is to be updated, at a minimum, every five years within 18-months of an adopted update to the regional water supply plan. *The Lower East Coast Regional Water Supply Plan*, prepared by the South Florida Water Management District (SFWMD), was adopted in February 2007. The development and inclusion of a Water Supply Facilities Work Plan into the Water and Sewer Subelement is in response to these mandated requirements.

Additional changes were made to various policies of the Water and Sewer Subelement to reflect new mandates of the SFWMD, which have capped the quantity of Biscayne Aquifer withdrawals. In order to meet future growth needs, Miami-Dade County must identify and develop new alternative water sources into its water strategies. New water withdrawals from the Biscayne will only be permitted in conjunction with the use of "make-up" water generated by alternative sources.

2. Section 163.3177, (6)(d), F.S., requires local governments to assess their current and projected water needs and available water supply sources for at least a 10 year period. (Miami-Dade County is using a 20-year period). Although the projected needs and anticipated sources are addressed in the Water and Sewer Subelement,

language regarding source protection and a restatement of the County's commitment to developing reclaimed water and wastewater reuse projects was added to the Conservation Element to maintain consistency between elements.

3. Section 163.3177, (6)(h)1, F.S., relating to the intergovernmental coordination element, was amended to strengthen the relationship between the County and the regional water supply authority with regards to water resource planning. Therefore, language has been added regarding the County's Water Supply Facilities Work Plan and its relationship with the SFWMD's *Lower East Coast Water Supply Plan*.
4. As per Section 163.3177, (6)(h)1, F.S., the Capital Improvements Element must be "financially feasible" for the full planning horizon. In the April 2006 Amendment Cycle, the Miami-Dade County Board of County Commissioners adopted over \$1.6 billion in water supply and water reuse projects into the Capital Improvements Element to fund water supply projects between 2007 and 2028.

The Work Plan is a 20-year plan, which will be updated on a five year basis and within 18 months of the update of the SFWMD's *Lower East Coast Water Supply Plan*. This timing corresponds to the County's 20-year water use permit, which must also be updated on a 5-year basis. The proposed amendments tie the Work Plan and the CIE together, and add language to direct the County to develop and maintain an allocation system to track water supply demands. In accordance with Chapter 163, Florida Statutes, language is also included that forbids the issuance of a building permit unless WASD issues a letter stating that adequate water supply is available for the proposed development. Through the proposed water allocation tracking system, the County can better time the development of new water supply projects to assure the availability of water for future growth.

APPENDIX A

FINAL WATER SUPPLY FACILITIES WORK PLAN

