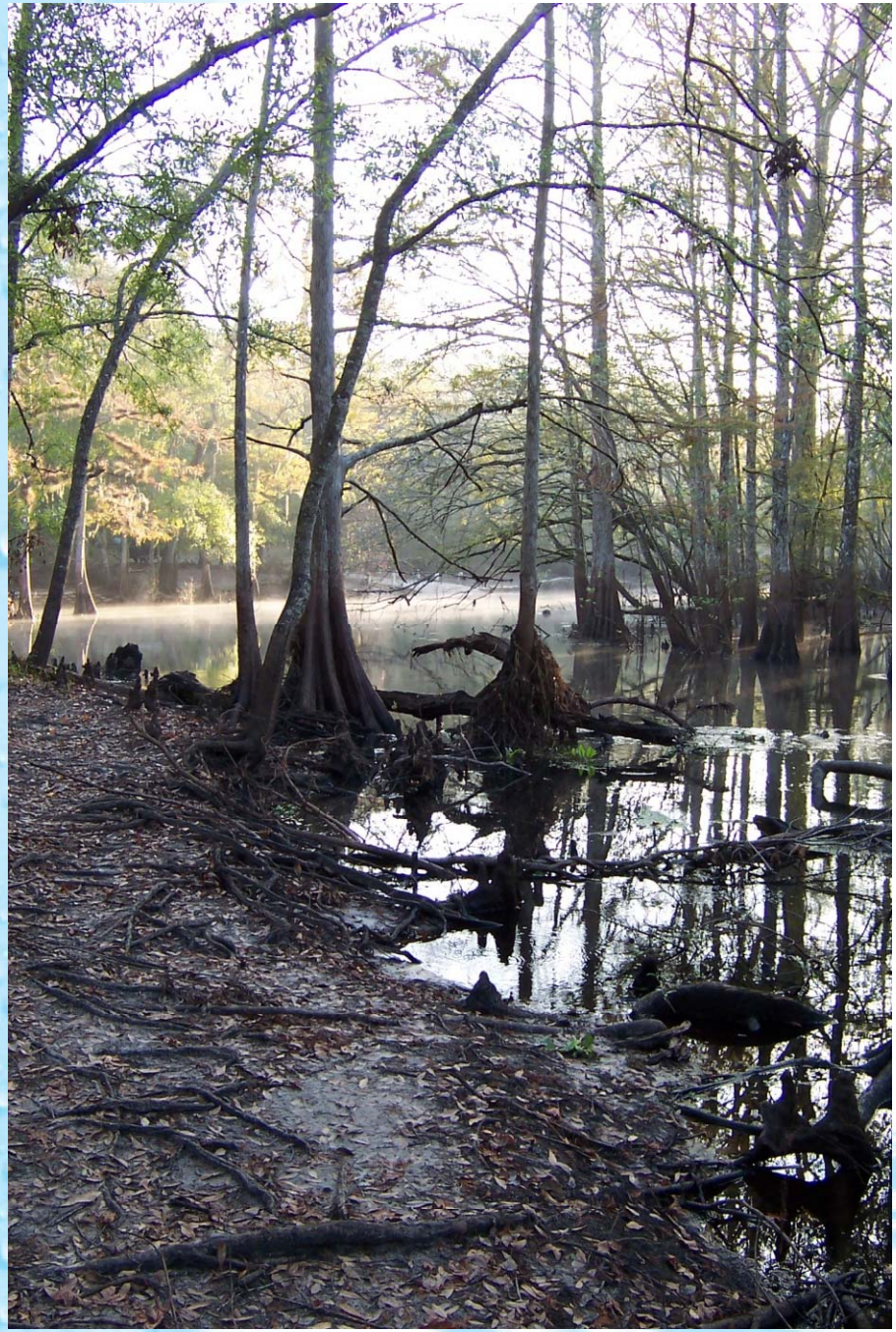

MFLs and Reservations Team

December 2, 2011

Steering Committee Meeting

CFWI Schedule

Technical Collaborative Team	Key Components	Start	End
Minimum Flows and Levels and Reservations ---------- (C)	Review and understand the various approaches used by the WMDs to set MFLs/Reservations (C1)	June 22, 2011	Sep. 30, 2011
	Identify commonalities and differences in the approaches currently used to set criteria (C2)	June 22, 2011	Nov. 30, 2011

Comparison of Approaches and Methodologies – completed and submitted to TOC according to schedule

MEMORANDUM

Comparison and Contrasting of MFLs and Water Reservations for the Central Florida Water Initiative

PREPARED FOR: Technical Oversight Committee

COPY TO: Hydrologic Analysis and Tools Team
Data Monitoring and Investigations Team
Environmental Measures Team

PREPARED BY: MFL and Reservations Team

DATE: November 30, 2011

Minimum flows and levels (MFLs) and water reservations are two mechanisms provided by the *Water Resources Act* (Chapter 373, F.S.) and the *Water Resource Implementation Rule* (62-40, F.A.C.) to assist in the management of water resources with the intent of realizing their full use while sustaining Florida's ecological systems and reasonable-beneficial uses. The fundamental theme to the Central Florida Water Initiative (CFWI) area is that the boundaries of three water management districts intersect in Central Florida, which resulted in different approaches to water management and to the implementation of MFLs and reservations. This memorandum compares and contrasts the MFL and reservation programs and rules of the three Districts, and summarizes the consistency of various attributes of the resulting programs. A map of adopted MFLs and proposed reservations in the CFWI area is provided in Figure 1.

The intent of MFLs is to define the minimum flows or water levels of surface water courses or the minimum levels in aquifers beyond which significant harm to the water resources or ecology from further withdrawals would result. Minimum flows of a water course can be established to sustain the water resources or ecology of the area; minimum levels can be established to sustain the water resources of the area. MFLs effectively set the resource threshold needed to sustain ecologic and hydrologic systems, above which withdrawals may be made for reasonable-beneficial uses in the public interest, or below which recovery strategies need to be implemented to sustain those uses.

The intent of Reservations is to set aside from consumptive use water for the protection of fish and wildlife or the public health and safety. Through implementing criteria, a water reservation clearly defines the water set aside from consumptive use, allowing unreserved water to remain available for future allocation. Reservations can be adopted prospectively for water quantities anticipated to be made available.

The following overarching concepts were revealed in the assessment:

- MFLs consider withdrawal-related impacts to a water body and may incorporate structural alterations and changes that may be relevant to a water body into the base assessment.
- Reservations can consider structural alterations and consumptive use withdrawals during the assessment.
- SFWMD intends to pursue rulemaking for a water reservation for the Kissimmee River, its floodplain and the Chain of Lakes to ensure protection for fish and wildlife in that region of the CFWI. in the CFWI area. This rulemaking effort will be delayed until 2014.
- SJRWMD intends to use MFLs over reservations in the CFWI area.
- SWFWMD uses MFLs in the CFWI area with reservations implemented as part of recovery and prevention strategies.
- MFL programs of the SJRWMD and SWFWMD were developed using similar approaches that define specific thresholds to prevent the occurrence of significant harm. The two Districts do, however, select different metrics to define thresholds for water body evaluation and rule development.

TABLE 1.
Comparison of MFLs or Reservations of the SFWMD, SJRWMD, and SWFWMD Relevant to Withdrawals in the CFWI Area

Category	Attribute	SFWMD (MFLs)	SJRWMD (MFLs)	SWFWMD (MFLs)	Consistency between WMD's
Concepts	Basis for MFLs	*(2) Water bodies experience variations in water flows and levels that often contribute to significant functions of the system, such as those described in subsection 62-40.473(1), F.A.C. Minimum flows and levels should be expressed as multiple flows or levels defining a minimum hydrologic regime, to the extent practical and necessary to establish the limit beyond which further withdrawals would be significantly harmful to the water resources or the ecology of the area as provided in Section 373.042(1), F.S. However, a minimum flow or level need not be expressed as multiple flows or levels if other resource protection tools, such as reservations implemented to protect fish and wildlife or public health and safety, that provide equivalent or greater protection of the hydrologic regime of the water body, are developed and adopted in coordination with the minimum flow or level.* *(3) Established minimum flows and levels shall be protected during the construction and operation of water resource projects and, where relevant, to the issuance of permits pursuant to Section 373.086 and Parts II and IV of Chapter 373, F.S.* *(4) Established minimum flows and levels shall be protected during declaration of a water shortage pursuant to Section 373.175 or Section 373.246, Florida Statutes, except when the drought is of a severity that such protection would compromise public health and safety, or such protection would otherwise be inconsistent with the public interest as determined by the governing board.* *(5) At the time of minimum flow or level is adopted, if a water body is below, or projected to go below its minimum flow or level, the District shall consider simultaneously developing the recovery or prevention strategy required by section 373.0421(2), F.S. The recovery or prevention strategy shall include phasing or a timetable which will allow for the provision of sufficient water supplies for all existing and projected reasonable-beneficial uses, including development of additional water supplies and implementation of conservation and other efficiency measures concurrent with, to the extent practical, and to offset, reductions in permitted withdrawals. In the development of a recovery or prevention strategy, the District shall consider the need for water resource or water supply development, additional regulatory measures, and implementation of additional water conservation measures.* Rule 62-40.473, F.A.C.			Consistent
	Harm (Harm is not applicable to MFLs. It is included here for comparison to significant harm.)	Harm is defined in Rule 40E-8.021(9) and is applicable to Reservations: Temporary loss of water resource functions that results from a change in surface or groundwater hydrology and takes a 1 to 2 year period of average rainfall to recover; 40E-8.021(9) F.A.C.	There is no definition of "harm" in the District's rule (40C-8) dealing with Minimum Flows and Levels. Conceptually MFL rules differentiate between significant harm and no significant harm.	There is no definition of "harm" in the District's rule (40D-8) dealing with Minimum Flows and Levels. Conceptually MFL rules differentiate between significant harm and no significant harm.	SFWMD currently has a definition of harm in Rule 40E-8, F.A.C. SJRWMD and SWFWMD are consistent in that they do not define harm in their respective MFLs rules.
	Significant Harm (Significant harm is directly applicable to MFLs by statute)	Rule 40E-8 defines significant harm as the temporary loss of water resource functions that results from a change in surface or ground water hydrology, that takes more than 2 years to recover, but which is considered less severe than serious harm; 40E-8.021(31) F.A.C.	Rule 40C-8 does not contain a definition. However, significant harm is defined on a system-by-system basis (system specific, e.g., protection of manatee habitat at Blue Spring from withdrawals, or no downhill shift in wetland communities along the St. Johns River). MFLs are evaluated through calculated changes to MFL-defined hydrologic event thresholds (i.e., minimum number of high water events, maximum number of low water events, etc.). Four assumptions are implicit for the concept of significant harm (Neubauer, et al., 2008). 1. Caused by excessive withdrawals or diversions, not naturally-occurring floods or droughts. 2. Should be considered a function of the return interval of hydrologic events and the recovery time of ecological systems.	Rule 40D-8 defines significant harm for lakes and wetlands; wetland (isolated cypress wetlands) and lake methodologies are explicitly incorporated in rule. "Significant harm" for rivers, estuaries, and springs is defined in MFL documents that are developed for each MFL. These documents (to date) have all been voluntarily independently peer reviewed. MFLs establish the limit at which significant harm occurs due to withdrawals. Permitted uses cannot cause the MFL to be violated. If permitted uses are determined to cause a violation of an MFL, then a recovery strategy is required.	The three WMDs are consistent by using a threshold-based approach to define the criteria for significant harm. The metrics vary between the WMDs.

Central Florida Coordination Area Water Initiative

Technical Collaborative Team	Key Components	Start	End
Minimum Flows and Levels and Reservations ---------- (C)	Develop options for a standard methodology to establish MFLs/Reservations (C3)	Sep. 30, 2011	Mar. 31, 2012
	Evaluate current peer review process of each WMD in order to develop options for a standard procedure to peer review MFLs and Reservations within the CFWI (C4a) and peer review the methods developed under C3 if appropriate (C4b)	June 22, 2011 (C4a) Feb. 28, 2012 (C4b)	Jan 31, 2012(C4a) Aug. 31, 2012 (C4b)

Questions/Comments ?

MFLs and Reservations Team Members

Agency Staff:

Florida DEP

Kathleen Greenwood

South Florida WMD

Don Medellin

St. Johns River WMD

Tom Bartol

Southwest Florida WMD

~~Marty Kelly~~

Doug Leeper

Utilities

- David DeLoach
- Tony Janicki
- Al Aikens
- Terry McCue
- Shirley Denton