

Florida's TMDL Program and the TMDL Development Process

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Summary of Presentation

- **TMDL Overview and 303(d) Requirements**
- **TMDL Development Schedule**
- **Watershed Management Approach**
- **Florida's TMDL Legislation**
 - Administrative Requirements**
- **Schedule for Rulemaking Process**
- **Allocation Process**

What Does TMDL stand for?

Total

Maximum

Daily

Load

- Establishes maximum amount of a pollutant that a water body can assimilate without causing exceedances of water quality standards (water quality criteria & designated uses)

TMDL Process Overall Objective

- Identify and quantify all point and nonpoint source (NPS) loadings to a water to determine the assimilative capacity of that water body for each pollutant impairing water quality
- Often use computer modeling to estimate NPSs and establish assimilative capacity
- TMDL is then allocated to all sources
 - Includes a Margin of Safety (MOS)
 - Written to protect during “Critical Conditions”
 - We generally plan to follow recommendations in 2001 Allocation TAC Report, which was submitted to Legislature and Governor

General Equation

- $TMDL = LC = \sum WLA + \sum LA + MOS$
 - LC = waterbody loading capacity
 - $\sum WLA$ = sum of point source loadings within basin
 - $\sum LA$ = sum of nonpoint source loadings within basin
 - MOS = margin of safety

General Equation - Evolved

● $TMDL = \sum WLA_{ww} + \sum WLA_{sw} + \sum LA + MOS$

● $\sum WLA_{ww} =$ sum of wastewater point source contributions within basin

● $\sum WLA_{sw} =$ sum of stormwater point source contributions within basin

TMDL Development Schedule

- EPA sued by EarthJustice in Florida on April 1998 and settled with detailed schedule for TMDL development
 - DEP was not a party to suit, but participated in some settlement discussions
 - EPA agreed to 13 year schedule, mainly based on DEP's basin management cycle, but with EPA as backstop

TMDL Development Schedule

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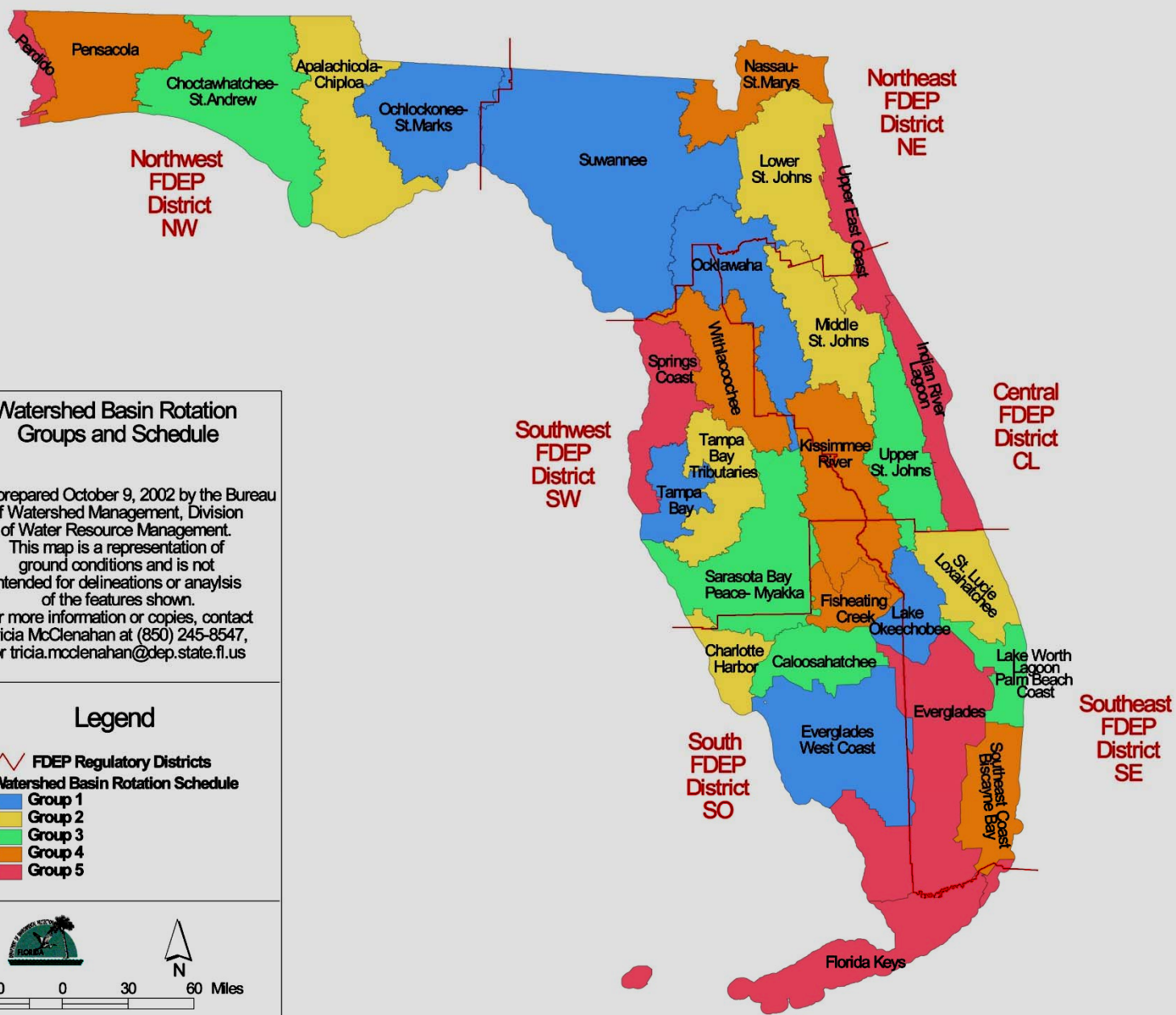
- At times, EPA also developing TMDLs because there are some waters on the 1998 303(d) list for which we had insufficient data to either verify as impaired or delist
 - We might place them on the “planning list” for more study
 - But, EPA is required under the Consent Decree to propose specific TMDLs on schedule

Watershed Management Approach

- **DEP implementing TMDL Program as part of Watershed Management Approach**
 - Started in July, 2000
 - Now in Cycle 2!
 - Watershed Approach establishes five-phase cycle that rotates through all of basins in the state over five-year period
 - Divided state's basins into groups
 - aggregates of USGS 8-digit HUC (hydrologic unit code)
 - breaks basins in each DEP District into fifths

Watershed Management Approach

- **Tampa Bay Watershed (SW District)**
 - Tampa Bay Group 1 Basin – Includes Tampa Bay proper and smaller coastal tributaries
 - Tampa Bay Tributaries Group 2 Basin – Includes the 4 major tributary basins (Hillsborough River, Alafia River, Little Manatee River, Manatee River)

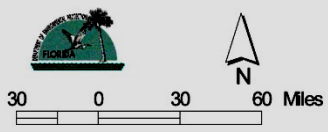


Watershed Basin Rotation Groups and Schedule

Map prepared October 9, 2002 by the Bureau of Watershed Management, Division of Water Resource Management. This map is a representation of ground conditions and is not intended for delineations or analysis of the features shown. For more information or copies, contact Tricia McClenahan at (850) 245-8547, or tricia.mcclenahan@dep.state.fl.us

Legend

-  FDEP Regulatory Districts
- Watershed Basin Rotation Schedule**
-  Group 1
-  Group 2
-  Group 3
-  Group 4
-  Group 5



Watershed Management Cycle

(general overview)

Phase 1 - Preliminary Assessment

- Produce Planning List

Phase 2 - Targeted Monitoring

- Monitor, Verify impairment, and Adopt Verified List by Secretarial Order

Phase 3 - Develop and adopt TMDLs

Phase 4 - Develop BMAP

- Basin Management Action Plan

Phase 5 - TMDL Implementation

Basin Rotation Schedule

YEAR	00	01	01	02	02	03	03	04	04	05	05	06	06	07	07	08	08	09	09	10
Group 1	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Group 2		PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4
Group 3			PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3
Group 4				PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2
Group 5					PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1
	1 st Five-year Cycle – High-priority Waters										2 nd Five-year Cycle – Medium and Low Priority Waters									

TMDL Legislation

- 1999 and 2005 Florida Watershed Restoration Act (403.067, Florida Statutes)
 - Clarified Statutory Authority for TMDL Program and defines administrative process
 - Established that 1998 303(d) list submitted to EPA was for planning purposes only and required DEP to adopt listing criteria (methodology) by rule
- Lists for Group 1 (Cycle 2) Basins were adopted on June 3rd, 2008
 - We cannot adopt TMDLs for a water unless it is included on the final Verified List
 - Approximately 30 Consent Decree TMDLs scheduled for development in Tampa Bay Basin in 2009

TMDL Legislation


(continued)

- **authorizes DEP to develop Basin Plans to implement TMDLs**
 - **requires coordination and at least one public meeting**
 - **using nonregulatory and incentive-based programs, including best management practices, cost sharing, waste minimization, pollution prevention, and public education**

Impaired Waters Rule (62-303, FAC)

- Rule provides methods for both “planning” and “verified” lists
- Planning list methodology identifies potentially impaired waters
 - waters on planning list will be monitored and evaluated more closely to verify impaired
 - if verified impaired, will put on verified list, which will be submitted to EPA as 303(d) list
- Statistical evaluation of exceedances of water quality criteria
- Interpretation of narrative nutrient criteria

Five Categories

- 1) **Attaining ALL Water Quality Standards**
 - only if have data on all designated uses
- 2) **Attaining Some Water Quality Standards**
 - meet standards but don't have data for all uses
- 3) **Insufficient Data to Determine Use Support**
 - planning list of potentially impaired waters
- 4) **Impaired but don't need TMDL**
 - TMDL complete or will attain standards in “near future” or not impaired by a pollutant
- 5) **Impaired by a pollutant**  **303(d) List**

303(d) Listing Requirements

- Section 303(d) of the Federal CWA requires states to:
 - submit lists of waters that do not meet applicable water quality standards (designated uses) (“impaired waters”)
 - identify pollutant causing or expected to cause impairment
 - in Florida, main pollutants on 1998 list were nutrients, sediments, and coliforms
 - establish/implement TMDLs for these waters on a prioritized schedule
 - new list and schedule required every 2 years

Status of Basin Lists in DEP SW District

Adoption Dates Shown

- Group 1 – Tampa Bay Basin
 - Cycle 1 list 3/11/2003
 - Cycle 2 list 6/3/2008
- Group 2 – Tampa Bay Tributaries Basins
 - Cycle 1 lists 5/27/2004
 - **Cycle 2 list in prep (draft presentation 11/20/08)**
Anticipate adoption in Spring 2009
- Group 3 – Sarasota Bay-Peace-Myakka Basins
 - Cycle 1 lists 6/17/2005
- Group 4 – Withlacoochee River Basin
 - Cycle 1 list 5/3/2006
- Group 5 – Springs Coast Basin
 - Cycle 1 list 12/12/2007

Format of Verified Lists

- Basin and planning unit
- WBID and water segment name
- Waterbody type and classification
- Parameter assessed under the IWR
- Concentration causing impairment
- Priority and projected year for TMDL development
- Comments
- Website:
<http://www.dep.state.fl.us/water/tmdl/index.htm>

Rulemaking Schedule

- Once draft TMDL is completed, we hold a public workshop on draft TMDL and post the draft on our TMDL website
 - <http://www.dep.state.fl.us/water/tmdl/index.htm>
 - Notice published provides a 30-day public comment period

Rulemaking Schedule

- After we revise TMDLs in response to public comments, we will issue a “Notice of Proposed Rulemaking” that will include rule language and provide a hearing date
 - provides for 21-day period to request a hearing or challenge proposed rule
 - hearing will NOT be held unless requested
 - rule language is very brief, and primarily only lists TMDL, WLA, LA, and MOS

TMDL Allocation

- Legislation also requires DEP to adopt TMDL, including allocation, by rule
 - adopted by Secretary and not ERC
- Legislation requires us to establish “reasonable and equitable” allocation of TMDL, but doesn't really say how to allocate to individual sources

Allocation Process

- If information is available, plan to “only” allocate to level of major categories for nonpoint sources initially (in allocation adopted by rule)
 - will be detailed for point sources
 - detailed allocation (TMDL Implementation Plan) for NPSs will be part of Basin Plan
- Initial allocation is not prescriptive
 - allocating responsibility, particularly between point and nonpoint sources
 - ultimate management activity may be different

Allocation Process

(continued)

- Main goal is to “level the playing field” between point and nonpoint sources
 - recognizes that point sources already provide at least secondary treatment/BAT statewide and advanced treatment in SW FL (Grizzle-Figg area)
 - BAT = Best Available Technology Economically Achievable
 - notes that BMPs are the NPS equivalent of BAT
- Establishes a three-step process
- Important to note that all steps done at one time using a spreadsheet until TMDL met
 - like accounting process
 - not iterations of watershed management cycle

Allocation Process

(continued)

- **First two steps geared at nonpoint sources**
 - allocates responsibility based on implementation of applicable BMPs for ag, retrofitting urban areas to meet state stormwater requirements, and removing problem septic tanks
 - first step is 45% and second step is 90%
- **In step 3, reduce all sources by same percentage until TMDL met**
 - will take prior treatment beyond BAT for the source into account

Report Recommendations

- Report includes many recommendations
- As TMDL Program relies on BMPs for NPSs, provides guidance (to Dept of Ag) on BMP development including
 - having set chapters on nutrient management and water resources
 - documenting estimates of treatment efficiency
 - setting minimum treatment performance standards

Report Recommendations

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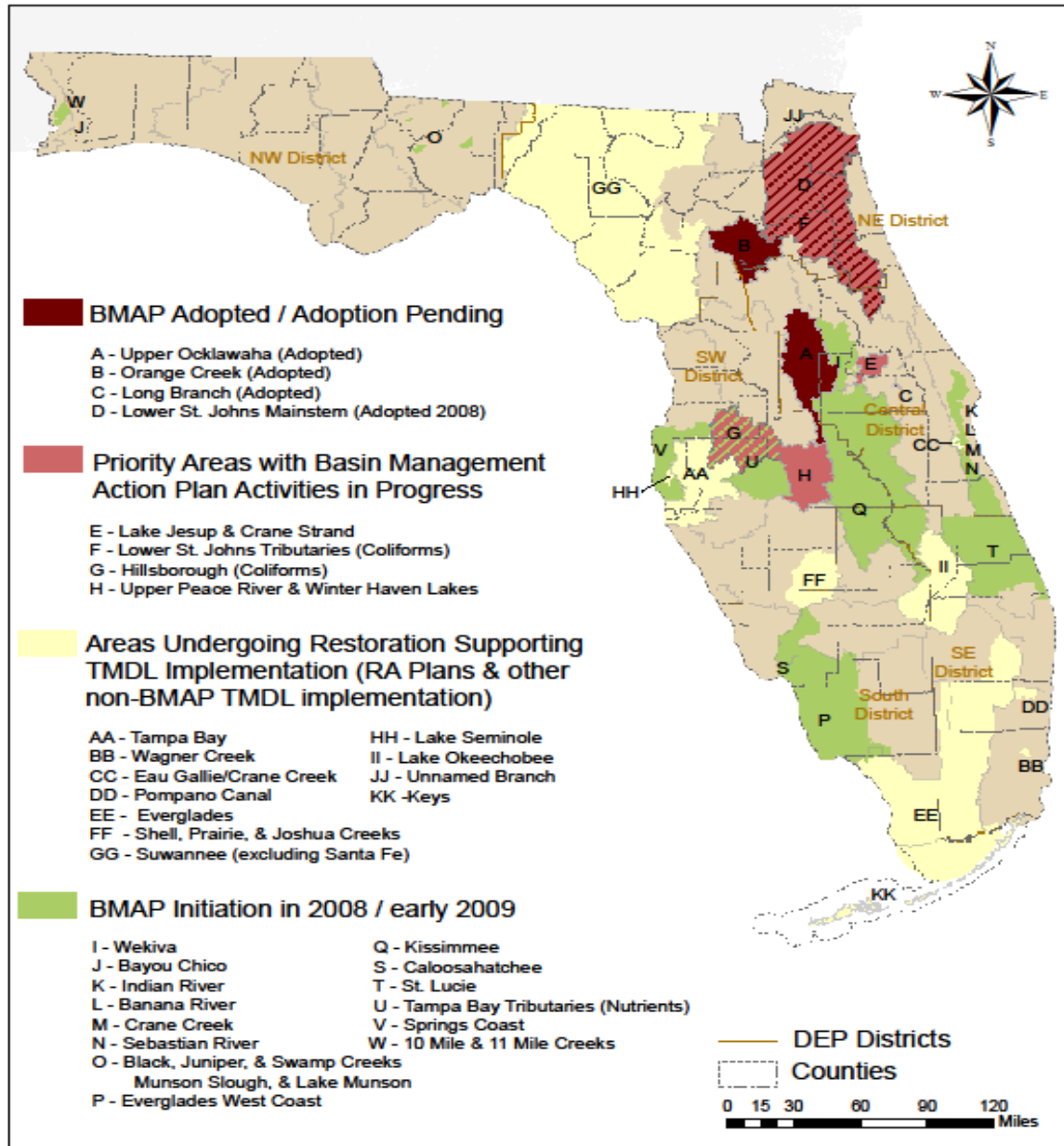
- **Allocation Process Recommendations**
 - use implicit MOS
 - take prior investments in treatment into account
 - use land use predictions for five years into future
 - need long-term rights to allocation recipients
 - should allocate to upstream sources, including those in other states
 - recommends tri-state task force
 - allocation should not be prescriptive
 - DEP should use BPJ to decide if all steps warranted depending on pollutant sources

Adopted TMDLs in Tampa Bay Watershed

- Baker Creek - Fecal Coliforms
- Blackwater Creek - Fecal Coliforms
- Flint Creek - Fecal Coliforms
- Lower Hillsborough River (WBID 1443E)-
Fecal Coliforms
- New River - Fecal Coliforms
- Sparkman Branch - Fecal Coliforms
- Thirty Mile Creek - Dissolved Oxygen, Nutrients
- Lake Hunter - Nutrients

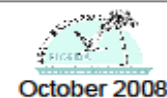
Tampa Bay Reasonable Assurance

- Reasonable Assurance (RA) Plan approved by FL for nutrient impairment in major bay segments (Hillsborough Bay, Old Tampa Bay, Middle Tampa Bay, Lower Tampa Bay)
- Bay waters impaired for nutrients placed in category 4b on Cycle 2 list.
- Final RA Plan update to be submitted to FDEP in July 2009.
 - Revised allocations to nonpoint sources, specific wastewater facilities, and Municipal Separate Storm Sewer Systems (MS4s)
 - Allocations not to exceed the assimilative capacity for each bay segment as defined in federally-recognized nutrient TMDL



Source: Florida Department of Environmental Protection
Watershed Planning & Coordination Section
(850) 245-8556

TMDL Project Implementation Activities



Adopted Basin Management Action Plans

- Upper Ocklawaha Basin (August 2007)
- Orange Creek Basin (May 2008)
- Long Branch (May 2008)
- Lower St. Johns River Basin (October 2008)
- Materials available at <http://www.dep.state.fl.us/water/watersheds/bmap.htm/>

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TMDL website:

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