

**Pinellas Board of County
Commissioners Work Session:
Total Maximum Daily Loads
(TMDLs)**

Topics

- Surface water quality issues and regulatory framework
- History of County efforts
- What is a TMDL?
- How is a TMDL developed?
- How is a TMDL implemented?
- TMDLs in Pinellas County
- How is Pinellas County planning for TMDLs?
- Challenges and Potential solutions
- Discussion

What are the Sources of Surface Water Pollution

- Point sources
 - Wastewater treatment plants
 - Industry
- Non-Point sources
 - Surface runoff
 - Fertilizer
 - Pesticides
 - Construction sites
 - Atmospheric Deposition



History of County Efforts: Surface Water Program

- 1970s-1980s: Stormwater master plans – flood control only
- 1989 Clean Water Act mandated in County Comprehensive Plan
- 1990s Watershed approach to address both flooding and water quality issues
- 1991 County implemented surface water quality monitoring program
- 1997 FDEP issues County NPDES permit regulating stormwater discharges
- Late 1990s – 2000's County's first TMDLs emerge
- Current - TMDL regulations linked to NPDES compliance and more stringent nutrient standards to be proposed January 2010

What is a TMDL?

- Total Maximum Daily Load
- Load Reduction = Pollution “diet”
- Regulated through the Clean Water Act (1972)
 - Goal: To maintain and restore the quality of the nation’s waters



How is a TMDL Developed?

Phase 1 – Impaired Waters Listing

- Compare data for each water body against state standards
- If $>10\%$ of the data exceed the standard the water body is considered impaired
- A water body may be impaired for many parameters
- List goes through rule making process
- Adopted list moves on to TMDL development

How is a TMDL Developed?

Phase 2 – Developing the TMDL

- TMDLs are prioritized based on the list
- Data analysis to determine extent of impairment
- Modeling or statistical analysis to develop reductions that will result in compliance with standards
- Proposed reductions to permitted entities
- TMDL goes through rule making process

TMDL Timeline

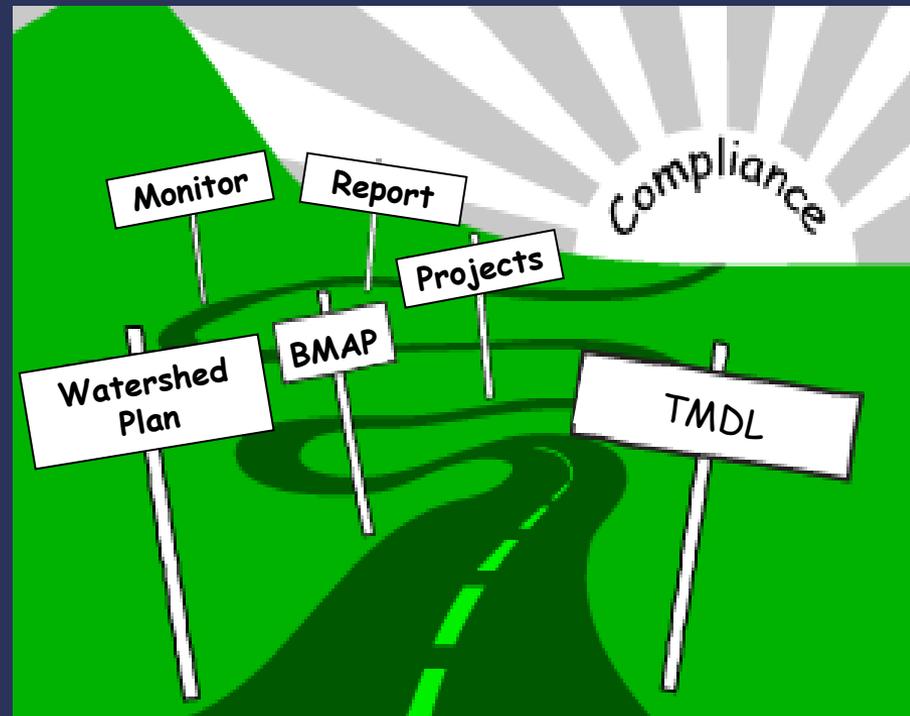


- Pinellas County goes through this process two times/5 years
 - Group 1 waters (Tampa Bay) 1 final TMDL and 32 in rule making
 - Group 5 waters (Springs Coast) 10 TMDLs adopted in 2007-2008
- 1999 Consent decree requires Florida to issue TMDLs for all impaired waters by 2013
- If the state does not complete the assigned TMDLs, then EPA must step in

How is a TMDL implemented?

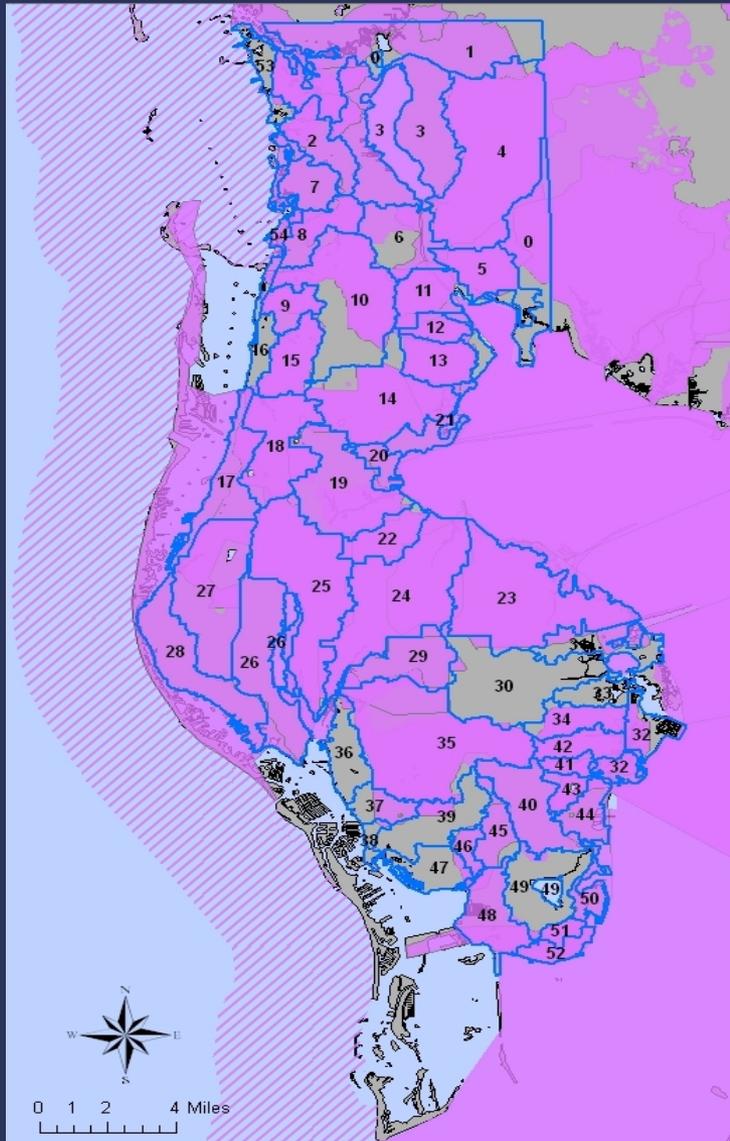
Phase 3 - TMDL Compliance

1. TMDL load allocations become NPDES permit requirements
2. Annual NPDES reporting:
 - Planning
 - Watershed Plans
 - Basin Management Action Plans
 - Monitoring / Special Studies
 - Load reduction efforts:
 - Structural projects (ponds, etc.)
 - Maintenance (street sweeping, ditch cleaning)
 - Non-structural (fertilizer ordinance, education)



Pinellas County Impaired Waters

- State stats: 1 800/6400 waterbodies are impaired (28%)
- County stats: 1 13/153 waterbodies are impaired (75%)



Legend

-  Impaired Waters
-  Statewide Mercury TMDL
-  Non-impaired open waters
-  Non-impaired tributary waters
-  Pinellas County Basin Boundaries

What is the Current Status of TMDL Development in Pinellas County

- 2003 - 2004 Long Branch Creek, Roosevelt, and Brooker Creek
- 2007 Lake Seminole
- 2008 Joe's Creek, Pinellas Park Ditch #5, Stevenson's Creek, Spring Branch, Klosterman
- 2009* Lake Tarpon, Lake Tarpon Outfall, Double Branch, Moccasin Creek, Bishop Creek, Mullet Creek, Alligator Creek, Alligator Lake, Allen's Creek, Cross Bayou Canal (North), Smacks Bayou, Coffee Pot Bayou

* Extended to January 29, 2010

How will TMDLs affect Pinellas County?

- TMDLs will be integrated into our NPDES permit
- Increased scrutiny for new growth and land use changes
- More stringent stormwater treatment requirements for projects (Environmental Resource Permits)
- Increased County responsibilities:
 - Investigate sources of pollution,
 - Develop strategies for improving water quality, and
 - Implement projects and programs to meet regulations
- Fines for non-compliance up to \$47,500/violation/day

Lake Seminole Restoration

- Projects based on 2001 Watershed Management Plan (WMP) recommendations
- Early action projects complete
- Habitat restoration complete
- Alum injection construction in progress
- Sediment removal design: 2010
- Expected completion date: 2015
- Total shared capital costs: Est. \$32 million

* *State and Federal agencies approved the Lake Seminole WMP as Reasonable Assurance (TMDL Override)*



Lake Tarpon



- Lake Tarpon Drainage Basin Management Plan (1998)
- Alum treatment system under construction (March 2010)
- Two alum treatment systems in design and permitting
- Estimated Capital Costs: \$3 Million
- Anticipated Completion: 2012

Watershed Management Plans

- Recently completed/In progress
 - Roosevelt Basin and Brooker Creek
 - Plans completed in 2009
 - Total cost: \$1,300,000*
 - Cross Bayou
 - Scope Development phase
 - Expected Completion Date 2013
 - Total cost: \$600,000*
 - Starkey Basin
 - Beginning phases of plan
 - Expected Completion 2013
 - Total cost: \$600,000*
- Scheduled
 - Allen's Creek (2012 update) and McKay Creek (2013)



* Includes 50% funding from SWFWMD

Clearwater Harbor / St Joseph Sound Comprehensive Conservation and Management Plan



- Planning tool for management and restoration of the estuary and watershed
- Will address numerous TMDLs
- Total Cost: \$670,000:
 - EPA \$300,000
 - SWFWMD \$270,000
 - Pinellas \$72,000
 - Municipalities \$68,000
- Anticipated Completion December 2012

Nutrient Source Tracking Studies

Klosterman Bayou / Joe's Creek

- Completed 2009
- Total Cost \$70,000
- 50% Cooperative Funding Agreement with SWFWMD

Roosevelt Channel 5:

- Expected Completion March 2010
- Total Cost \$60,000
- 50% Cooperative Funding Agreement with SWFWMD

Long Branch Creek

- Scheduled for 2010
- Total Cost Estimate: \$200,000
- 50% Cooperative Funding Agreement with SWFWMD and Largo

Challenges

- Technical validity
- Multi jurisdictional problem
 - Example Curlew Creek: Creek flows through Unincorporated County, Clearwater, and Dunedin
- Funding needed
 - Determine source of problem
 - Recommendations for improvements
 - Implement projects and programs

Solutions

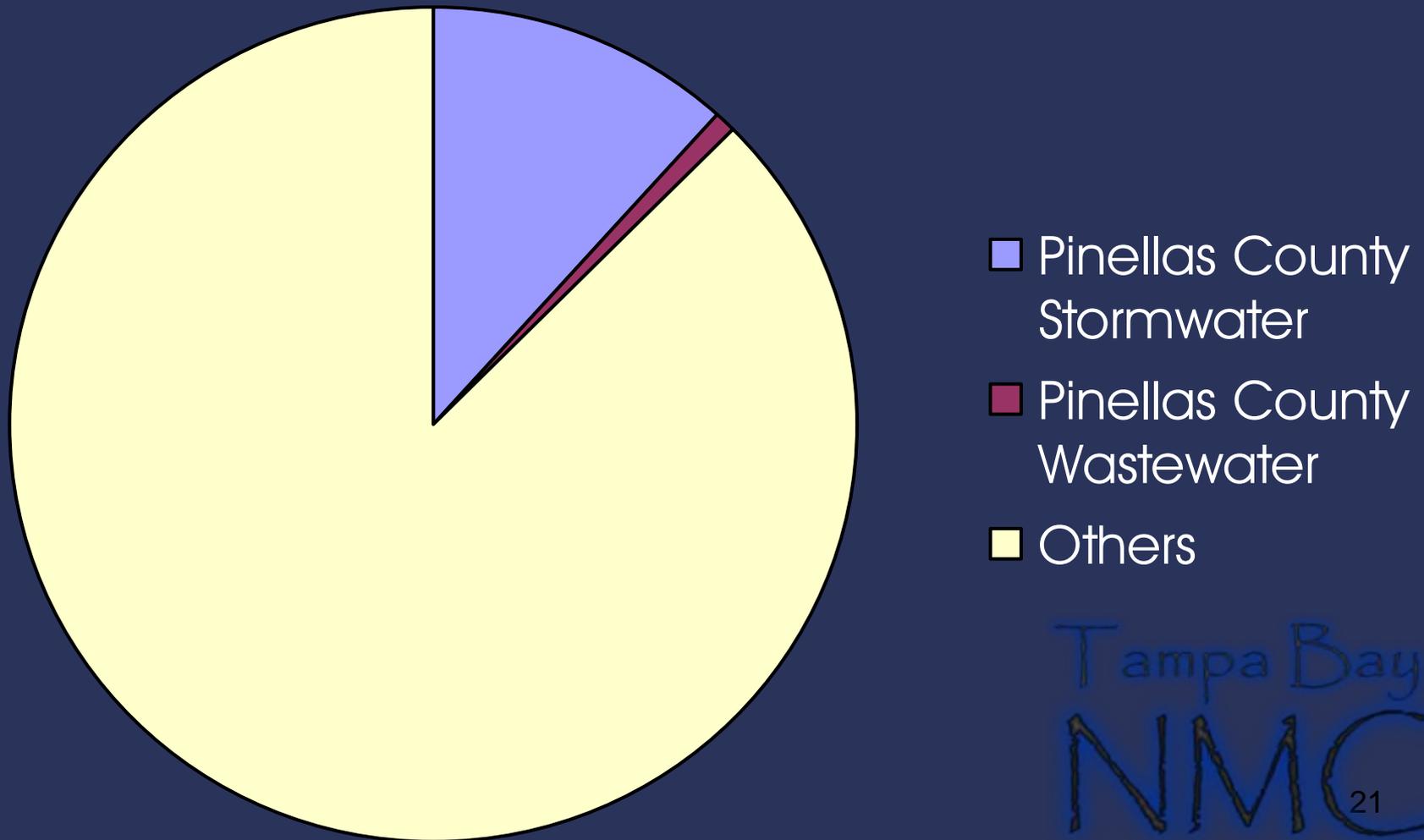
- TMDL Interlocal Agreement
 - Governance structure
 - Cost sharing
 - Pollutant tracking studies
 - Projects and programs to mitigate pollution
- Policy changes
 - Fertilizer Ordinance
- Collaboration
 - Nitrogen Management Consortium
 - Tampa Bay TMDL
 - Reasonable Assurance (RA) for FDEP
 - Declaration; January 19, 2010



The Tampa Bay TMDL Story

- 1998 EPA TMDL for Nitrogen
- 2006 EPA says Tampa Bay out of compliance
- 2008 TBEP Nitrogen Consortium began development of RA Plan
- RA Plan determines allocations by major bay segment
- 80 permits will be tied to RA Plan
- 9/11/09 NMC voted to send RA to FDEP and EPA
- Next County step – Declaration from Board due January 2010

Old Tampa Bay TMDL: Nitrogen Load Allocations



What are other Counties doing?

- Hillsborough County
 - Dedicated funding source: Stormwater Utility
 - Long-term comprehensive water quality monitoring program
 - Completed watershed plans for entire County in 2002
 - Currently updating models (completion 2010-2011)
 - Structural improvements: Alum systems, wetland restoration, wetland creation, hydrodynamic separators, baffle boxes, stormwater ponds and the Adopt-a-Pond program (pond dredging and planting)
 - Non-structural: Water Atlas, fertilizer ordinance, other educational and outreach programs, additional monitoring in TMDL waters

What are other Counties doing?

- Sarasota County
 - Dedicated funding source: Stormwater Utility
 - Water quality monitoring program
 - Including seagrass, oysters, and scallops
 - Watershed Planning: Nearly complete. Last plan 2011.
 - Completed a county-wide pollutant loading model in 2008
 - Special studies are on-going: reuse water and evaluating various land use impacts
 - Structural improvements: Septic replacements and conversions, stormwater treatment facilities, wetland restoration and creation
 - Non Structural: Changes to land development code (LID), fertilizer ordinance, NEST public education and resources program, landscape and irrigation ordinances

Summary

- TMDLs are here to stay
- Non-compliance is not an option
- Planning ahead is critical
 - Cost effective TMDL compliance that provide meaningful water quality improvements

DISCUSSION