



# Total Maximum Daily Loads

*Guidance For Local Officials*

**Are  
You  
Ready?**

*Cooperatively produced by  
Florida Stormwater Association  
Florida Department of Environmental Protection*



*The TMDL program sets pollutant load limits to indicate how much of a particular pollutant a waterbody can absorb and remain healthy.*



*TMDLs will be established for waterbodies that contain more pollutants than can be absorbed for the water to meet its designated use, such as swimming or fishing.*



*Each offending pollutant will be addressed through a separate TMDL, so it is possible for a waterbody to have more than one*

# TMDLs Will Have Significant Impacts on Every Community Throughout Florida.

*TMDLs must be developed for all waters that do not meet their designated uses due to human impacts and, consequently, are defined as "impaired."*

## What is the TMDL Program?

The Total Maximum Daily Load (TMDL) Program is a federally required water quality program administered by the Florida Department of Environmental Protection (DEP) under the Florida Watershed Restoration Act (Section 403.067, Florida Statutes).

Through the program, DEP works closely with affected stakeholders to determine how to reduce targeted pollutant loadings to restore the legally designated uses (e.g., drinking water, fishing, swimming, shellfish harvesting) of the polluted waters.

## What are TMDLs?

A TMDL is the maximum amount of a pollutant that a waterbody can receive and maintain its designated uses. A given waterbody may have several TMDLs - one for each targeted pollutant (phosphorus, coliforms, nutrients, etc.).

Under the Florida Watershed Restoration Act, TMDLs must be developed for all waters that do not meet their designated uses due to human impacts and, consequently, are defined as "impaired." The primary sources of these human-induced impairments are pollutants in urban stormwater, agricultural runoff, and permitted industrial and municipal wastewater treatment plants.

A TMDL, or a waterbody's assimilative capacity, is scientifically derived, typically using existing monitoring data and water quality models or empirical relationships between the pollutant load and the waterbody's response. The final TMDL provides a margin of safety that accounts for uncertainty in the analysis.

## What distinguishes the TMDL Program from other state water quality programs?

The issues that the TMDL Program addresses are not new. Nonpoint sources, such as stormwater and agricultural runoff, and point sources, such as industrial wastewater outfalls, have created water quality concerns in Florida for decades and have been addressed in various ways.

However, the TMDL Program does bring something new to existing local, regional, and state water quality protection efforts by establishing water quality targets, or actual pollutant load

limits, that indicate how much of a pollutant a lake, river, stream, or estuary can absorb and maintain its designated use. Before establishing these targets, DEP identifies the location, nature, and degree of impairments; the pollutants of concern; and, as much as possible, the pollutant sources.

In implementing the TMDL Program, DEP is taking an open, broad-based approach to local stakeholder involvement, a watershed management approach. The intent is to build on and strengthen local efforts to protect and restore water quality.

The TMDL Program will add emphasis to stormwater management.

## What are the federal and state laws governing TMDLs?

Section 303(d) of the Clean Water Act (33 United States Code) requires states to identify impaired waters and the pollutants causing the water quality impairment. The state must then establish a TMDL for each identified pollutant.

Though these federal requirements were enacted in the early 1970's, they were not implemented in most states until citizen and environmental groups filed a number of successful lawsuits in the mid-1990's.

In Florida, DEP prepared a planning list in 1998 of potentially impaired waters (the 1998 303(d) list) and submitted the list to the U.S. Environmental Protection Agency (EPA). In 1999, the settlement of a lawsuit in Florida against the EPA by EarthJustice resulted in a consent decree that established a thirteen-year schedule for EPA to complete TMDLs for certain waters on Florida's planning list.

Later in 1999, the Florida Legislature passed the Florida Watershed Restoration Act, establishing the framework and requirements for implementing a state TMDL Program. The Act directed DEP to adopt by rule (the "Impaired Surface Waters Rule") a scientific methodology to determine whether a waterbody is indeed "impaired," and required DEP to adopt TMDLs by rule.

# Take a Careful Look at Where Your Community is in the Process.

The State Department of Environmental Protection (DEP) has established a rotating schedule that will allow basin coordinators to gather data, conduct meetings, and develop and implement specific action plans for each geographically defined basin.

## How and when are TMDLs established?

TMDLs are developed, allocated and implemented through a watershed management approach (managing water resources within their natural boundaries) that addresses the state's 52 major hydrologic basins in five groups.

Each group will undergo a cycle of five phases on a rotating schedule:

- Phase 1:** Preliminary Evaluation of Water Quality
- Phase 2:** Strategic Monitoring and Assessment to Verify Water Quality Impairments
- Phase 3:** Development and Adoption of TMDLs for Waters Verified as Impaired
- Phase 4:** Development of a Basin Management Action Plan to Achieve TMDLs
- Phase 5:** Implementation of the Plan and Monitoring of Results

## Basins by Group and DEP District Office

DEP District	Group 1 Basins	Group 2 Basins	Group 3 Basins	Group 4 Basins	Group 5 Basins
NW	Ochlockonee-St. Marlos	Apalachicola-Chipola	Choctawhatchee St. Andrews Bay	Pensacola Bay	Perdido Bay
NE	Suwannee	Lower St. Johns		Nassau-St. Marys	Upper East Coast
Central	Ocklawaha	Middle St. Johns	Upper St. Johns	Kissimmee	Indian River Lagoon
SW	Tampa Bay	Tampa Bay Tributaries	Sarasota Bay-Peace Myakka	Withlacoochee	Springs Coast
S	Everglades West Coast	Charlotte Harbor	Caloosahatchee	Fisheating Creek	Florida Keys
SE	Lake Okeechobee	St. Lucie-Loxahatchee	Lake Worth Lagoon-Palm Beach Coast	Southeast Coast Buscayne Bay	Everglades



A consent decree established the first formal TMDLs in Florida in 1999. Solutions will involve short and long term projects. This wet detention pond provides both physical and biological treatment of stormwater.

## Basin Rotation Schedule For TMDL Development and Implementation

Year	00	01	01	02	02	03	03	04	04	05	05	06	06	07	07	08	08	09	09	10
<b>Group 1</b>	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
<b>Group 2</b>			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
<b>Group 3</b>				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
<b>Group 4</b>					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
<b>Group 5</b>								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
	1st Five-year Cycle - High Priority Water										2nd Five-year Cycle - Medium Priority Water									

### What about TMDLs established by EPA?

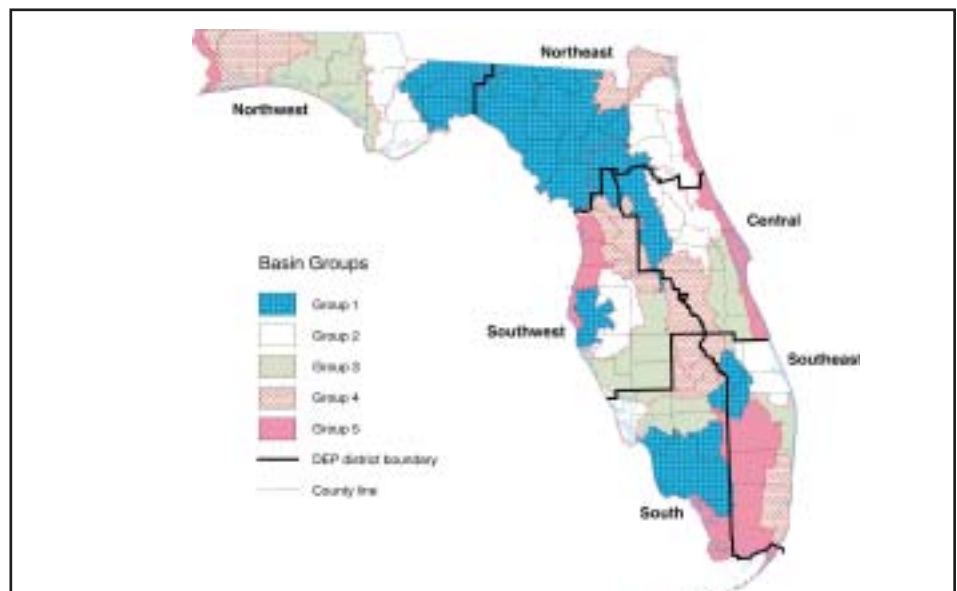
There are a number of TMDLs that EPA will be proposing in Florida in order to satisfy the consent decree with EarthJustice. The legal status of EPA-generated TMDLs is not yet clear, as neither the Florida Watershed Restoration Act nor the consent decree address their implementation.

### How are TMDLs implemented?

Two key steps in implementing TMDLs in a basin are:

1. Allocating detailed pollutant load reductions, based on the initial allocations in the TMDL. To reduce pollutant loadings to achieve a TMDL, each point and nonpoint source discharging a pollutant of concern must be reduced in an equitable manner. TMDLs include an "initial allocation" of pollutant load reductions between point and nonpoint sources. In most cases, this initial allocation will need to be broken down into more detail, to assign responsibility for specific reductions. Future growth must be considered in the allocation process.

2. Developing a basin management action plan (B-MAP) that reflects the detailed allocations and contains short-term and long-term projects and activities to achieve the applicable TMDLs in the basin, along with a strategy for monitoring, follow-up, and



plan revision. Implementing corrective actions and achieving TMDLs may take many years.

During Phases 3 and 4 of the watershed management cycle, DEP and basin stakeholders will jointly develop strategies to implement the reductions assigned in the allocation process. These will be expressed in the B-MAP.

The development of the B-MAP is an opportunity for affected stakeholders to cooperate, coordinate, and negotiate on the best and most cost-effective ways to achieve a TMDL. A wide variety of approaches may be used.

An important element of a B-MAP will be the identification of funds and potential funding mechanisms to achieve load reductions. State and federal funds may be available to finance some projects and activities. Many of the management actions addressed in the B-MAP may come from existing plans and projects. The load reductions reasonably expected from these existing or planned efforts may be credited toward the reductions needed to meet the applicable TMDL. Stakeholders will then identify additional projects and activities to complete the needed reductions. In some basins, a B-MAP may incorporate or be incorporated into an existing watershed management plan.

# Water Quality Solutions Will Come at a Price.

*Fiscal impacts on many city and county governments will generally be tied to the high cost of retrofitting stormwater treatment facilities in urbanized areas.*



*The costs to reduce pollutant loadings are expected to be high. The biggest fiscal impacts involve large retrofit programs within urbanized areas*

## What are the implications of the TMDL Program for local governments?

### Costs.

The greatest impact to local governments likely will stem from the sizable costs of implementing projects and activities to achieve TMDLs.

Stormwater regulations to this point have largely addressed future development. Reducing pollutant loadings to meet TMDLs may require retrofitting stormwater and wastewater systems. According to several studies, fiscal impacts on many city and county governments will generally range from \$7,500 to more than \$12,000 per acre to build stormwater treatment facilities to retrofit urbanized areas.

The Florida Stormwater Association estimates that the cumulative retrofit costs would be between \$1 billion and \$5 billion, and probably much higher, if local governments were to achieve the current standards for future development in 90 percent of urban areas in Florida.

These estimates do not consider the need to address discharges from wastewater treatment plants, septic tank systems, or agricultural lands.

### Benefits.

In addition to improving water quality, the TMDL Program will:

- Produce better monitoring and more effective use of existing and new water quality information.
- Provide restoration targets and help define responsibility for management actions.
- Build on and strengthen existing restoration efforts of local governments, water management districts, established coalitions, DEP, and others.
- Focus funding and other resources on priority water resource problems.
- Trigger improvements in stormwater management by local governments, industry, agriculture, private developments, businesses, and others.
- Stimulate new approaches to land use design and development that minimize associated water resource problems.
- Help establish better working relationships among citizens and public and private organizations that deal with water quality issues.

# Getting Involved Early Will Benefit Everyone.

*As a first step in getting involved, contact your DEP Basin Coordinator to find out where your area falls in the basin rotation schedule. Ask about the condition of waterbodies in your basin. Get involved at the earliest planning stage if you can.*

## How and when do I get involved?

TMDLs and watershed restoration are part of state and federal water policy. They will significantly affect local government budgets and the ways in which water quality programs operate in Florida. Although Florida is ahead of the stormwater management game compared to most other states, achieving TMDLs will be an expensive endeavor. City and county officials need to develop local strategies to address TMDLs. To participate in the TMDL Program successfully, local officials should take the following steps, in partnership with other stakeholders and DEP:

### 1. Engage

Learn the status of the waterbodies in your jurisdiction (i.e., are they potentially impaired, verified as impaired, or not classified either way?) and where they fall in the basin rotation schedule.

Have your staff coordinate with DEP technical staff to ensure that your local water quality data is considered in assessing whether waters in your area are impaired.

Review and comment on planning lists

and draft verified lists of potentially impaired waters and draft TMDLs for waters in your basin.

### 2. Initiate and Participate

Your leadership will ensure that the TMDL Program addresses local issues and concerns.

Work with DEP to determine how stakeholders in your community can be involved most effectively in the TMDL Program and to create a stakeholder group.

Educate stakeholders in your communities about TMDLs and how they might be addressed. Make them aware of opportunities to provide input during the development of TMDLs, allocations, and basin management action plans.

Establish working committees of community leaders and interest groups so that their input can be obtained throughout the five-phase process.

### 3. Document Activities

Work with DEP to compile information on the water quality improvement



*The basinwide approach will encourage partnerships between stakeholders to achieve water quality goals.*



projects and activities your jurisdiction has underway or are planned that may help achieve TMDLs. This information will be used in determining what load reductions can be expected from current efforts and what further reductions are needed.

#### 4. Assess Options

Evaluate your community's options for further improving water quality. Through the development of the B-MAP, stakeholders will help each other determine cost-effective ways to achieve TMDLs.

#### 5. Develop Financing Alternatives

Begin to think about long-term strategies for financing TMDL costs. What are appropriate sources of revenue to fund TMDLs? Have you established a stormwater utility?



*Communities with active stormwater management and water quality monitoring programs in place are better positioned to deal with the TMDL requirements.*





## When? NOW!

Early involvement will give local government a strong voice in determining the pollutant load reduction strategies proposed in Basin Management Action Plans, ensuring consideration of local goals and constraints.

If you are already part of a TMDL stakeholder process in your basin, you may still have questions or need additional assistance. If you are not aware of any stakeholder activities, you can check with DEP to see what the status of the TMDL process is in your basin.

## How are stakeholders being involved?

DEP's approach to stakeholder involvement is to work through existing forums and processes where practicable, and initiate new processes where necessary, to build consensus on how TMDLs should be achieved. Stakeholders have a crucial role in determining detailed pollutant load reduction allocations and developing and implementing B-MAPs. Ideally, the TMDL implementation process will be driven at the local level, with DEP's involvement and guidance.

In step with the basin rotation schedule, DEP is building on or initiating stakeholder processes around the state in areas such as the Lower St. Johns River Basin, the Upper Ocklawaha River Basin, the Orange Creek Basin, the Tampa Bay Basin and its tributaries, the St. Lucie-Loxahatchee River Basin, the Ochlockonee-St. Marks River Basin and others. The approach to stakeholder involvement in each basin is based on the characteristics and needs of the area.



*The approach to stakeholder involvement in each basin is based on the characteristics and needs of the area. Stakeholders have a critical role in determining the pollutant load reduction allocations within their basin.*

# TMDLS Will Be Addressed. You Can Influence How That Happens.

*To get involved, contact your Basin Coordinator by phone or by email. For more general information, a number of web sites are listed.*

## DEP Contacts

The following section lists some DEP contacts and internet sites that will provide you with or direct you to the information you need.

### Administrative Staff

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## TMDL Information

U.S. Environmental Protection Agency  
[www.epa.gov/owow/tmdl/policy.html](http://www.epa.gov/owow/tmdl/policy.html)

Florida Department of Environmental Protection  
[www.dep.state.fl.us/water/tmdl](http://www.dep.state.fl.us/water/tmdl)

Florida Department of Agriculture and Consumer Services, Office of Agricultural Water Policy  
[www.floridaagwaterpolicy.com](http://www.floridaagwaterpolicy.com)

Florida Stormwater Association  
[www.florida-stormwater.org](http://www.florida-stormwater.org)

## Managing the Environmental Impacts of Growth and Development

Low Impact Development Center (Beltsville, Maryland)  
[www.lowimpactdevelopment.org](http://www.lowimpactdevelopment.org)

Smart Growth Network  
[www.smartgrowth.org](http://www.smartgrowth.org)

National Small Flows Clearinghouse  
[www.nesc.wvu.edu/nsfc](http://www.nesc.wvu.edu/nsfc)

Florida Yards and Neighborhoods (Handbook)  
<http://hort.ifas.ufl.edu/fyn/handbook.pdf>

Nonpoint Education for Municipal Officials  
[www.nemo.uconn.edu](http://www.nemo.uconn.edu)

EPA Information on Low-Impact Development  
[www.epa.gov/owow/nps/lid](http://www.epa.gov/owow/nps/lid)

Eight Tools of Watershed Protection in Developing Areas (EPA Watershed Academy)  
[www.epa.gov/watertrain.protection/tl.html](http://www.epa.gov/watertrain.protection/tl.html)

Model Ordinances to Protect Local Resources  
[www.epa.gov/owow/nps/ordinance](http://www.epa.gov/owow/nps/ordinance)

EPA Programs and Resources for Smart Growth  
[www.epa.gov/livability](http://www.epa.gov/livability)

## Information on Funding Sources

Catalog of Federal Funding Sources for Watershed Protection  
[www.epa.gov/owow/watershed/wacademy/fund.html](http://www.epa.gov/owow/watershed/wacademy/fund.html)

Florida Stormwater Association  
[www.florida-stormwater.org](http://www.florida-stormwater.org)

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