

WATER QUALITY UNDER THE ENVIRONMENTAL RESOURCE PERMITTING PROGRAM

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Statutes Addressing Water Quality

- Chapter 403, Florida Statutes
- Chapter 373, Florida Statutes

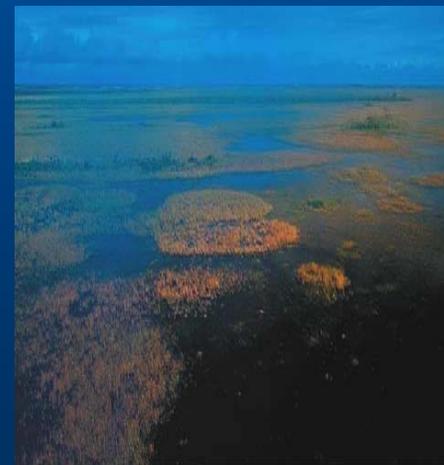
DEP'S Role



- Sole authority to adopt water quality standards (§403.061(11), Fla. Stat.)
- Adopt a program for the prevention, control and abatement of pollution of the waters of the state and classification of waters (§403.061(10), Fla. Stat.)
- “Coordinate the state’s stormwater program” (§403.061(32), Fla. Stat.)
- Adopt, in consultation with WMDs, water quality criteria for wetlands (§403.061(11)(c)), Fla. Stat.)

Impaired Water Bodies

- Impaired waters, classified by DEP, are water body segments which do not meet applicable water body standards due to the discharge of pollutants.
- These water body segments are in need of additional protection.



Part IV of Chapter 373

- Only 1 of the tools in the state's toolbox to protect water quality
- Applies only to new activities affecting surface waters
- Other tools in the DEP and water management districts' tool boxes address water quality issues for existing development



ERP Statutory Provisions

Under Part IV of Chapter 373, Fla. Stat., reasonable assurances must be provided that an activity will not:

- Be harmful to the water resources (§§373.413, 373.416, Fla. Stat.);
- Be inconsistent with the objectives of the District (§§373.416, 373.426, Fla. Stat.);
- Violate state water quality standards (§373.414(1), Fla. Stat.).

Environmental Resource Permits

WMD or DEP? Who Does What?

Operating Agreement between WMDs and DEP establishes “activity-based” split of permitting responsibility.

WMDs

Residential

Residential dock/marina

Agricultural (non-exempt)

Commercial

Highway

DEP

Mining

Industrial

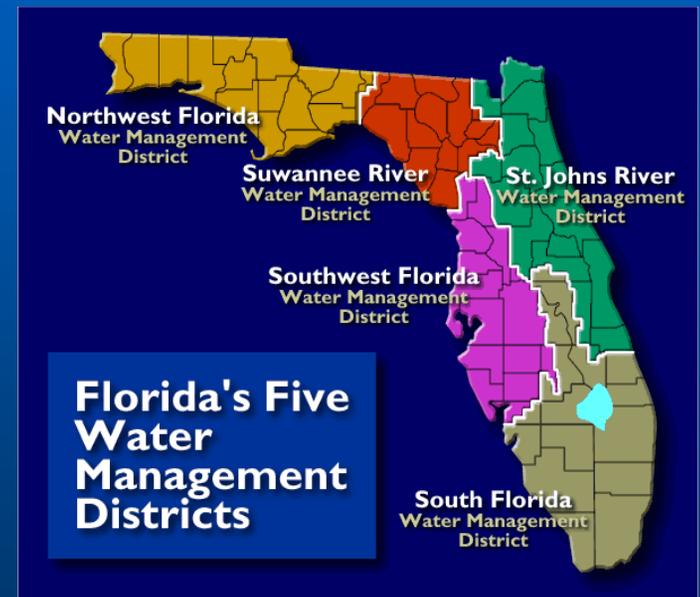
Landfills

Commercial marinas

Single family

DEP Uses Water Management Districts' Rules

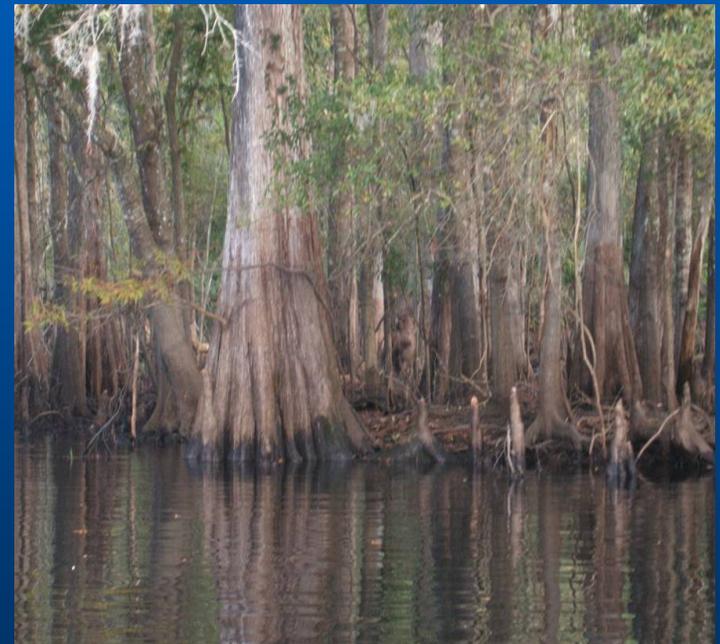
- DEP adopted rules of each of the 5 water management districts
- DEP uses water management district rules when issuing permits



Water Management Districts Adopted Conditions for Issuance Relying upon State Water Quality Standards

Rule 40E-4.301(1)(e), F.A.C.

Applicants must provide reasonable assurances that the proposed surface water management system will not adversely affect the quality of receiving waters such that state water quality standards will be violated.



Section 5.0, Basis of Review (BOR)

- WMDs each adopted their own version of design based water quality criteria in their Basis of Review or Applicant's Handbook
- Standard- "Projects shall be designed and operated so that off-site discharges will meet State water quality standards".
- Criteria includes Best Management Practices (BMPs) such as retention, detention and other measures
- SFWMD's base chapter pertaining to water quality design criteria is Section 5.0, BOR

Life of the Project

Criteria is designed to protect water quality:

- **During construction through erosion and sediment control**
- **Long-term during operation and maintenance of discharges from the surface water management system**

Additional Treatment for OFW, Class I, II

- Outstanding Florida Waters (OFW), Class I and Class II waters
- Additional 50% treatment
- Additional Best Management Practices
- Additional maintenance requirements

(Section 5.9.1, BOR)



Additional Protections for Impaired Water Bodies

- Additional protections are included in the environmental criteria set forth in Section 4 of the BOR.
- The requirements in Section 4 of the BOR “are in addition to the water quality requirements in Section 5 of the BOR.”

Section 4.2.4, BOR

- Applicants “must provide reasonable assurances that the regulated activity will not violate water quality standards.”

Section 4.2.4, BOR



- Applicants “must demonstrate that the proposed activity will not contribute to the existing violation.”

Section 4.2.4.5, BOR

Demonstration that Activities Will Not Contribute



- Additional 50% treatment
- Additional Best Management Practices
- Additional maintenance requirements



Application

How are these
rules applied?



Water Quality – Wet Detention:

Detention – The delay of stormwater runoff prior to discharge into receiving waters.

Water Quality – Wet Detention:

- **Wet detention volume is required for the first inch of runoff from the developed project or 2.5” times the percentage of imperviousness, whichever is greater.**
- **Most residential developments meet the 1” criteria, whereas commercial/ industrial projects normally require 2.5” times percentage of imperviousness.**

Wet Detention Area



Wet Detention Area



Wet Detention Area



Wet Detention Area



Wet Detention Area



Wet Detention Area



Wet Detention Area









Control Structure – Corrugated Metal Pipe (CMP) Riser with Aluminum Slide Gate





SOUTH FLORIDA WATER MANAGEMENT DISTRICT



Lake Interconnect Culverts



Water Quality - Dry Detention:

Dry detention volume shall be provided equal to 75 percent of the above amounts computed for wet detention.

Dry Detention Area



Dry Detention Area



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Dry Detention Area



Dry Detention Area



Dry Detention Area



Water Quality - Retention:

Retention – The prevention of stormwater runoff from direct discharge into receiving waters.

Water Quality - Retention:

- Retention volume shall be provided equal to 50 percent of the amounts computed for wet detention.
- Retention volume included in flood protection calculations requires a guarantee of long term operation and maintenance of system bleed-down ability.
- Examples of such guarantee includes evidence of excellent soil percolation rates (Coastal Ridge Sands).

Water Quality - Inlets in Grassed Areas







Grassed Conveyance Swale



Grassed Conveyance Swale



Land Use and Coverage Criteria:

- Commercial or industrial zoned projects shall provide at least one half inch of dry detention or retention pre-treatment as part of the required retention/detention.
- Projects having greater than 40% impervious area and which discharge directly to specific listed receiving waters shall provide at least one half inch of dry detention or retention pretreatment as part of the required retention/detention (i.e., Lake Okeechobee/ Kissimmee River/ Class I or II Waters/ Savannas/ Six Mile Cypress Strand).

Underground Exfiltration System:

- Systems shall be designed for the retention volumes previously listed, exfiltrated over one hour.
- A safety factor of two or more shall be applied to the design to allow for geologic uncertainties.
- A dry system is one with the pipe invert at or above the average wet season water table.





SOUTH FLORIDA WATER MANAGEMENT DISTRICT



Water Quantity – Discharge Rate:

- Offsite discharge rate is limited to rates not causing adverse impacts to existing offsite properties, and:
 - Historic discharge rates, or
 - Rates determined in previous District permit actions, or
 - Rates specified in District Criteria (Appendix 2)

Water Quantity – Design Storm:

Unless otherwise specified by previous District permits or District Criteria, a storm event of 3 day duration and 25 year return frequency shall be used in computing off-site discharge rates.

Water Quantity – Flood Protection of Building Floors:

Building floors shall be at or above the 100 year flood elevations, as determined from the most appropriate information, including Federal Flood Insurance Rate maps.

Water Quantity – Flood Protection of Roads and Parking Lots:

- Most local governments have criteria for the protection of roads and parking lots from flooding.
- In cases where criteria are not specified by the local government, the following design criteria for drainage and flood protection shall be used:
 - Frequency – 5 years
 - Duration
 - 1 day (road centerline)
 - 1 hour (parking lots served by exfiltration system)



Water Quantity – Flood Plain Encroachment:

**No net encroachment into
the floodplain is allowed.**

Water Quantity – Over Drainage and Water Conservation (Section 6.10):

Systems shall be designed to:

- **Maintain existing water table elevation in existing wellfields cones of depression**
- **Preserve site environmental values (wetlands)**
- **Not waste freshwater**
- **Not lower water tables which would adversely affect the existing rights of others**
- **Preserve site ground water recharge characteristics**

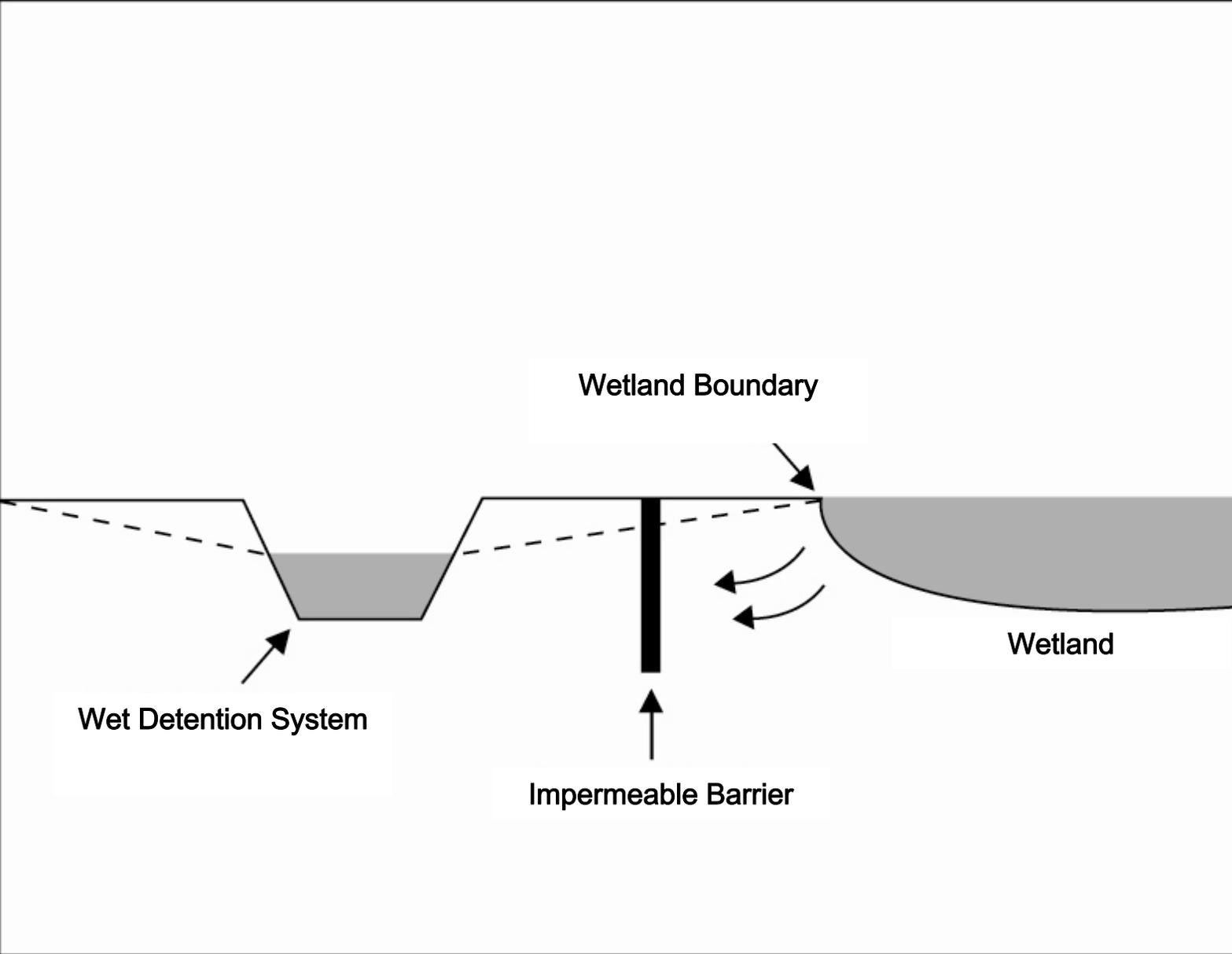
Water Quantity – Detention and Control Elevations:

Detention and control elevations shall be set to accomplish Section 6.10 and are subject to the following criteria:

- Wetland protection elevations
- Consistency with surrounding land and project control elevations and water tables
- Possible restrictions by other agencies to include tree protection and landscape ordinances
- Consistency with water use permits
- A maximum depth of six feet below natural ground

Water Quantity – Lake-Wetland Separation:

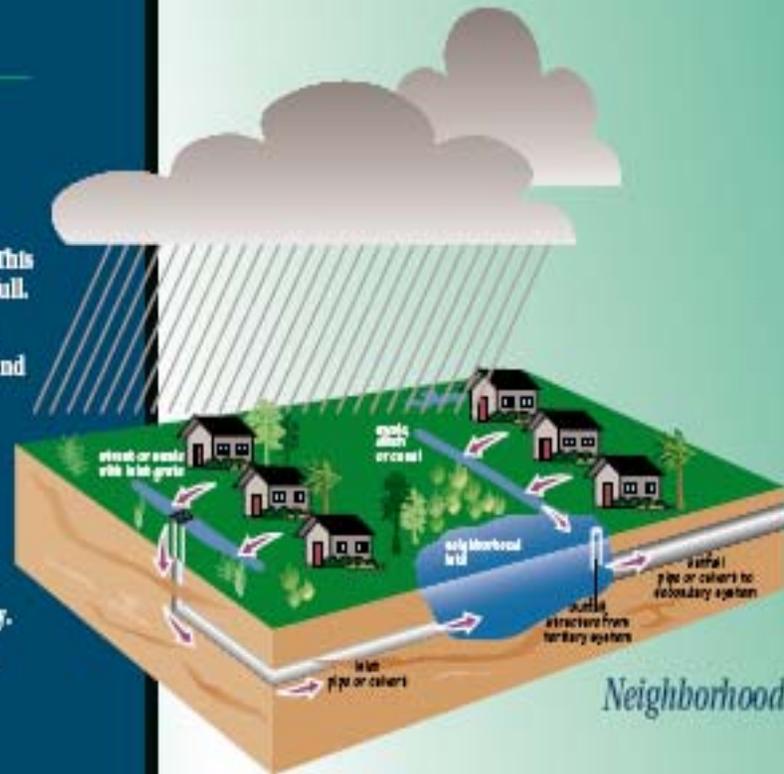
Lakes which potentially may adversely affect wetland areas shall be separated from the wetland preservation, creation or restoration areas by a minimum distance. If a gradient exists, then construction of an impermeable barrier must be taken to mitigate for the impact.



Neighborhood TERTIARY DRAINAGE SYSTEM

What path does storm water typically follow from your neighborhood to its final destination? Here's an example:

- Five inches of rain falls in 24 hours over an inland community. This rain follows a wet period, so ground water levels are already full.
- According to most approved drainage designs, some water is temporarily stored in public recreational areas, yard swales and streets.
- The excess "surface water" slowly drains to community lakes/on-site ponds via street and yard drainage grates or culverts and/or via swales, ditches or canals.
- Water then drains from the community or "tertiary" system through underground pipes to the "secondary" system, usually operated by a special taxing district or the county/city.
- Maintenance and upkeep of community drainage facilities is typically the responsibility of homeowner associations.



**Know
the
Flow!**

*Flood protection
is a shared
responsibility*



Who's guarding your grates?

