Commercial Buildings:

Stormwater

METRA
Metropolitan Environmental TRaining Alliance

Outline

- Why is Stormwater Important?
- Who Regulates Stormwater?
  - ERP
  - NPDES
  - NPS
- Impacts to Business & Industry
  - Stormwater Ponds & BMPs
  - Industrial Stormwater (MSGP)
  - Construction Stormwater (CGP)

Outline

- **Why is Stormwater Important?**
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What is stormwater?

- **Precipitation from rain or snowmelt events flows over land or impervious surfaces and does not percolate into the ground.**

What is stormwater?

- As stormwater flows over land or impervious surfaces it accumulates debris, chemicals, sediment or other pollutants

- Stormwater that is unable to infiltrate into the ground, results in runoff.

What is stormwater?

- Increased Development = Increased Runoff
- Result:
  - Downstream flooding
  - Stream bank or canal slope erosion
  - Increased turbidity
  - Contaminated lakes, rivers, and coastal waters

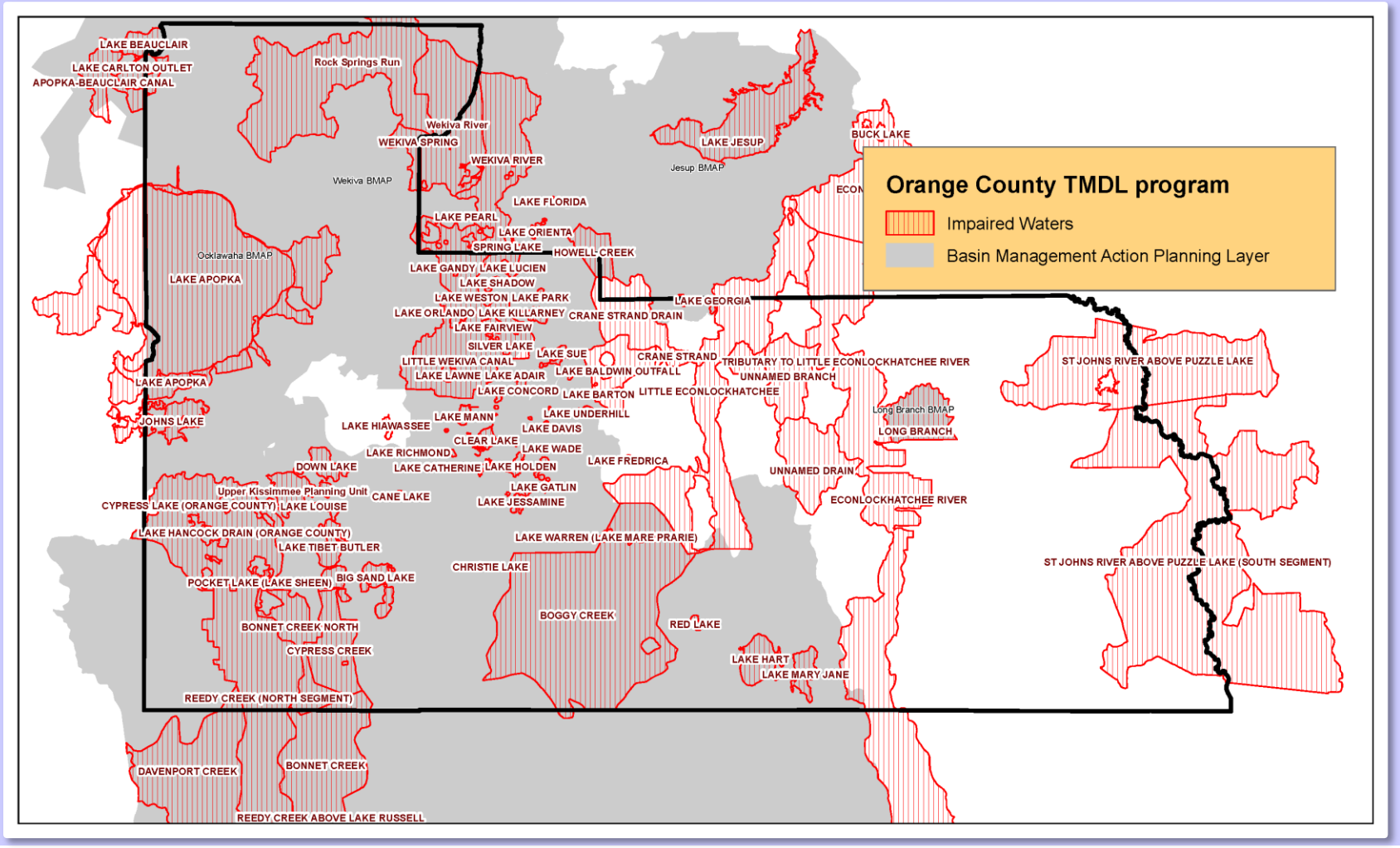
Ignoring Stormwater…

Ignoring Stormwater…

Ignoring Stormwater…

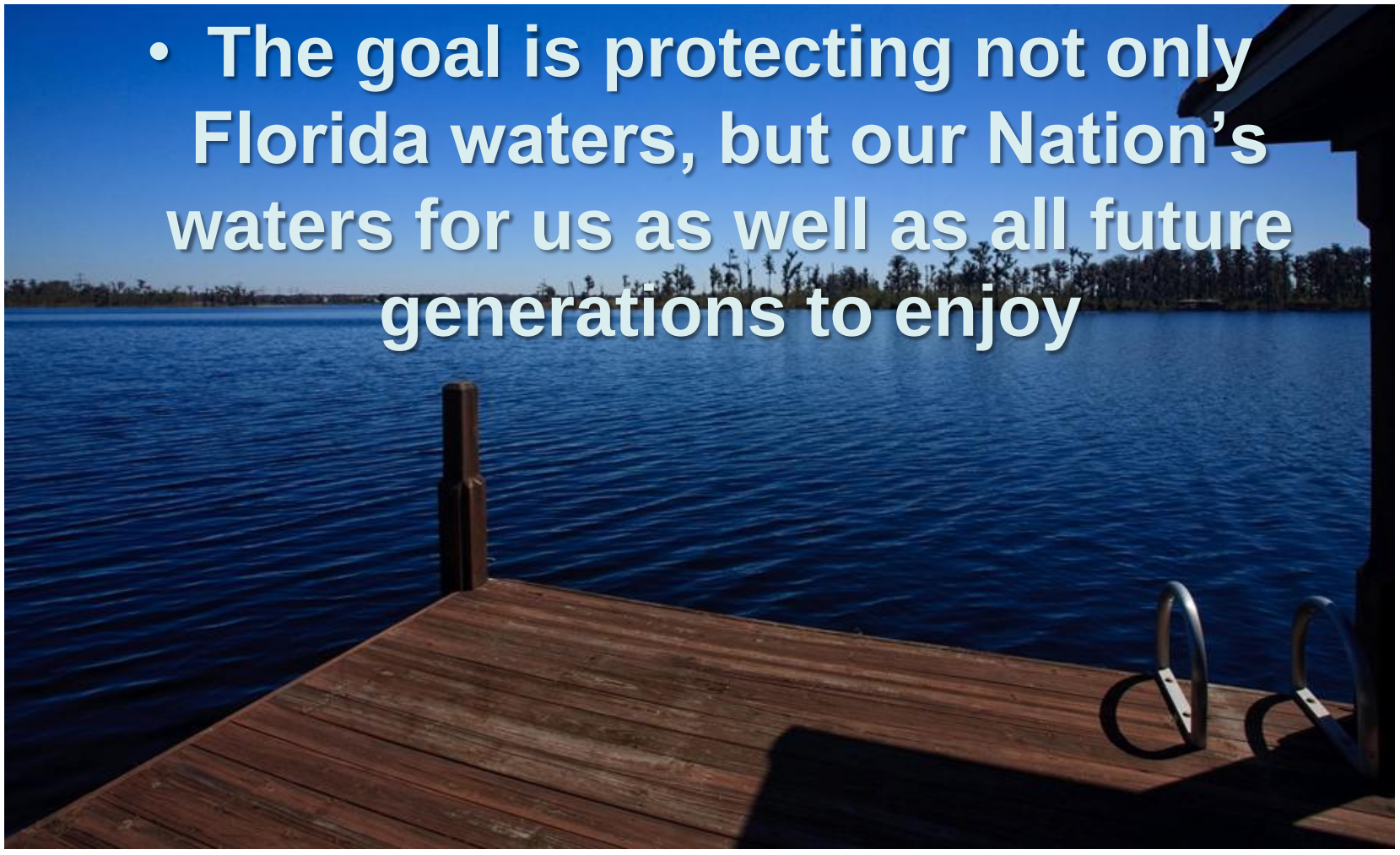
Ignoring Stormwater…

Ignoring Stormwater…



Ignoring Stormwater…

Importance of Stormwater



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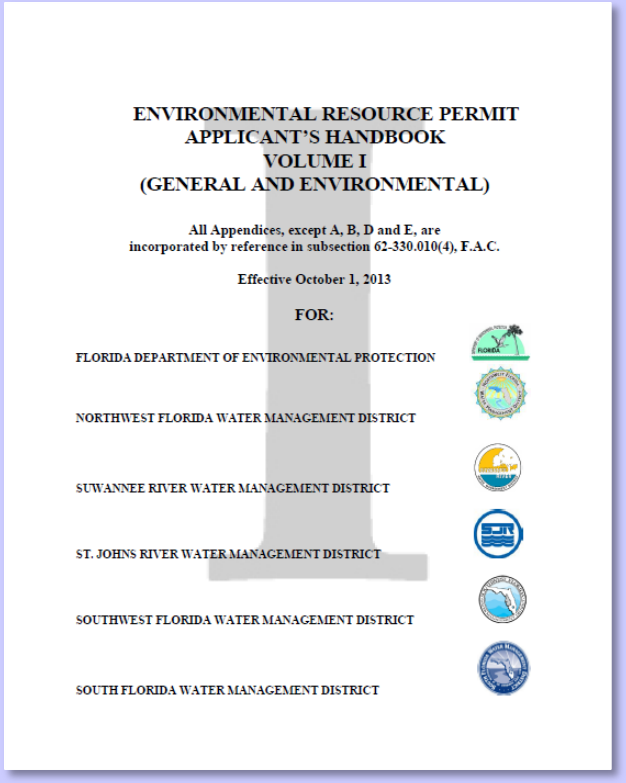
ERP Program Overview

- Environmental Resource Permit
- Required For:
  - Construction of Stormwater Systems
  - Impacts to Surface Waters & Wetlands
    - Dredge / Fill Projects
    - Construction of Dams
    - Impoundments
    - Docks



ENVIRONMENTAL RESOURCE PERMIT
APPLICANT'S HANDBOOK
VOLUME I
(GENERAL AND ENVIRONMENTAL)

All Appendices, except A, B, D and E, are incorporated by reference in subsection 62-330.010(4), F.A.C.

Effective October 1, 2013

FOR:

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SUWANNEE RIVER WATER MANAGEMENT DISTRICT

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

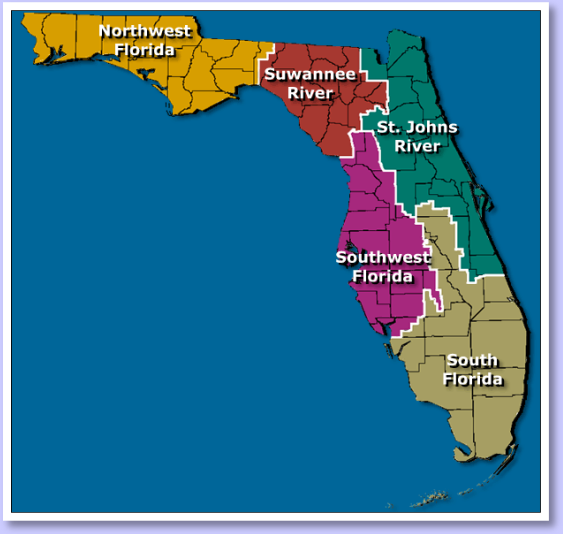
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

ERP Program Overview

- ERP applications are processed by either DEP or one of Florida's five Water Management Districts:

1. South Florida
2. Southwest Florida
3. St. Johns River
4. Suwannee River
5. Northwest Florida



- Effective since 1995, it merged wetland resource permitting program and the management and storage of surface waters permitting program

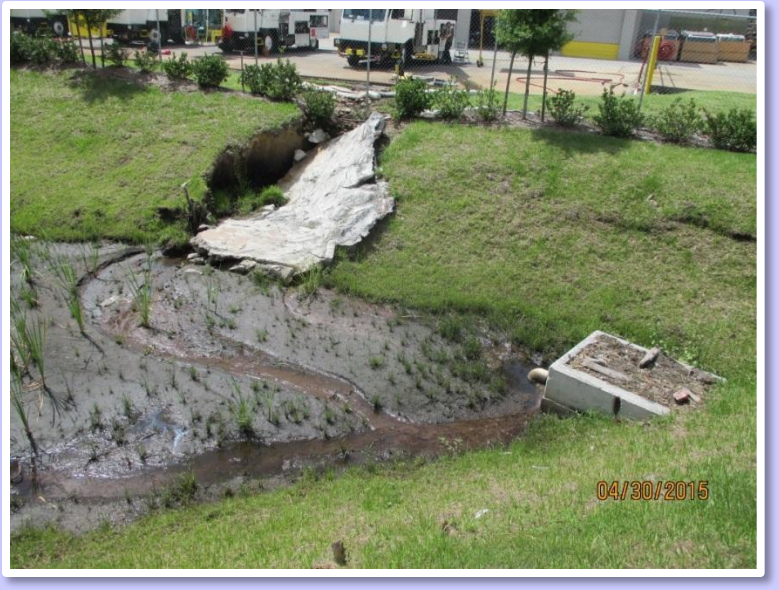
ERP Program Overview

Applications are evaluated for adverse effects to surface water quality & quantity

ERP Program Overview

Thresholds:

- **Any project in, on, or over wetlands or surface waters**
- **≥ 4,000 sq. ft. impervious/semi-impervious with vehicle traffic (or)**
- **≥ 9,000 sq. ft. impervious/semi-impervious surface area**
- **> 1 acre total project area**



FAC 62-330.020

ERP Program Overview

- ERP must be obtained PRIOR* to start of construction
- *Except 10/2 Self Certification (403.814(12), F.S)
  - Qualified upland areas
  - Total area less than 10 acres, and
  - Less than 2 acres impervious
  - Must apply for within 30 days after construction begins

FAC 62-330.020

ERP Program Overview

- **Current ERP rule criteria for stormwater management is technology-based**
  - **Compliance with best management practices (BMP) design and performance standards (desired level of treatment) should not cause violations of water quality standards in receiving waters**
  - **Design Criteria outlined in Chapter 62-25 F.A.C.**
- **Current standards are (62-40.432 F.A.C.):**
  - **Removal of at least 80% of the average annual load of pollutants (95% if discharge to OFW)**

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NPDES Program Overview

- **National Pollutant Discharge Elimination System**
  - **Regulates the discharge of stormwater to surface waters**
  - **Restore and maintain the health of the surface waters**
  - **Establish goals and practices to meet pollution reduction targets from permitted facilities**

NPDES Program Overview

Federal Water Pollution Control Act – Amend. 1972
Clean Water Act - 1977

↓

NPDES Stormwater Program (EPA)
1990-Phase I & Industrial
1999-Phase II and Small Construction

↓

FDEP
October 2000 - Granted Authority
2003 - Phase II

Construction Sites
1 acre or more
Construction Generic Permit (CGP)

Municipal Separate Storm Sewer Systems (MS4)
Phase I and II
ditches, pipes, inlets, ponds, swales, canals

Industrial Activities Multi-Sector Generic Permit (MSGP)
marinas, auto salvage, WWTPs…

NPDES Program Overview - FDEP

- Issues Permits
  - Construction Generic Permits
  - Multi-Sector Generic Permits
  - Municipal Separate Storm Sewer Permits
- Conducts Inspections
- Compliance Assistance
- Enforcement
- Answer to EPA

NPDES Program Overview – MS4s

- **NPDES Permit Program Activities**
  - **Maintenance**
  - **Inspections**
  - **Monitoring**
  - **Training & Education**
  - **Reporting**

NPDES Program Overview – MS4s

- **MS4 NPDES Programs Inspect**
  - **Construction Sites**
  - **Stormwater Ponds**
  - **Industrial Facilities**
  - **Illicit Discharges**

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NPS Management Program Overview

- Nonpoint Source Management Program
  - Work in cooperation with multiple agencies to reduce NPS pollution.
  - Current focus is on waters with TMDLs and BMAPs
  - Established per Section 319 of CWA
    - $6 Million per year in grants to reduce pollution

NPS Management Program Overview

- **Restore impaired waters by reducing/preventing NPS pollution:**
  - **Assess waterbodies for impairments**
  - **Prioritize waters for TMDL development**
  - **Develop TMDLs for impaired waters**
  - **Prioritize waters for watershed plan development**
  - **Develop watershed management plans to implement TMDLs**
  - **Support programs and projects geared towards implementing watershed management plans and restoring impaired waters**

NPS Management Program Overview

- **Protect unimpaired waters from NPS pollution:**
  - **Support statewide and local projects targeted at preventing NPS pollution**
  - **Support programs that protect unimpaired waters, such as the land acquisition program, Outstanding Florida Waters (OFW) Program, nonpoint source education programs, *etc.***

NPS Management Program Overview

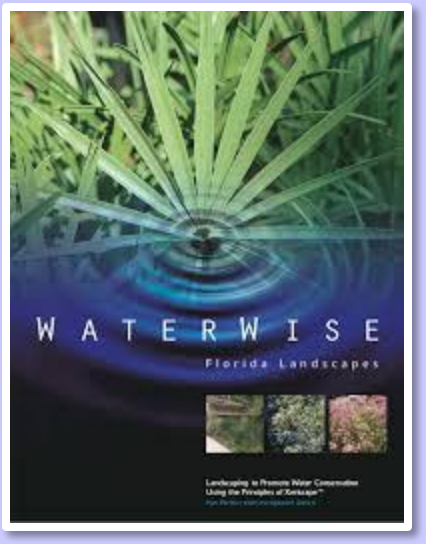
- Erosion
- Pesticides, Herbicides, Fertilizers
- Agricultural Runoff
- Illicit Discharges
- Urban Runoff

NPS Management Program Overview

- **NPSM Study Found:**
  - **NPS pollution was source of >75% load to lakes**
  - **Stormwater responsible for more TSS and BOD than treated wastewater**
  - **Stormwater accounts for 80%-95% of metals & coliform bacteria**

NPS Management Program Overview

- Best Management Practice Guidance
- Public information
- Environmental education resources



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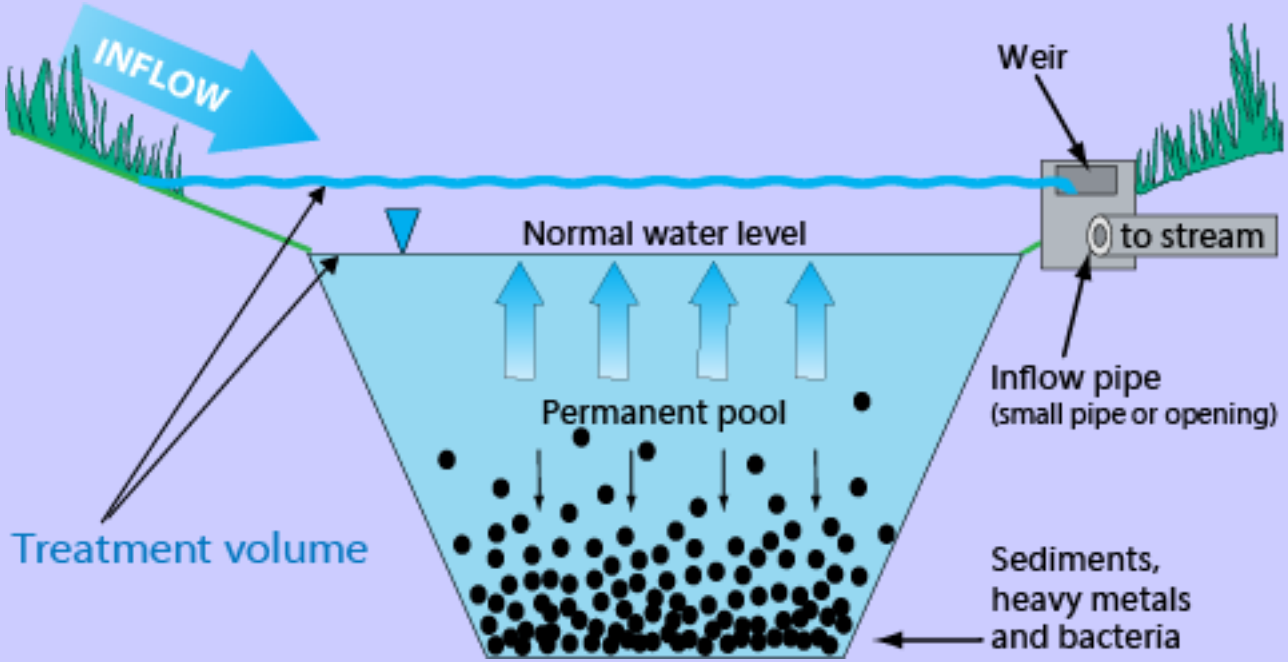
Stormwater Ponds (ERP)

- **Why treat Stormwater?**
  - **Flood Attenuation – Control rate of discharge**
  - **Treatment – Reduce pollutant load**



Stormwater Ponds (ERP)

- Types of Systems
  - Dry Detention
  - Dry Retention
  - Wet Detention
  - Exfiltration Chambers
- Auxiliary Systems & Structures
- Maintenance & Inspection Criteria

Stormwater Ponds (ERP)

- **Types of Systems: Dry Detention**
  - dry prior to and following a storm event
  - utilize a control structure to delay discharge
  - physical, chemical and biological treatment

Stormwater Ponds (ERP)

- **Types of Systems: Dry Retention**
  - dry prior to and following a storm event
  - provide treatment primarily through percolation
  - prevent stormwater from directly discharging

Stormwater Ponds (ERP)

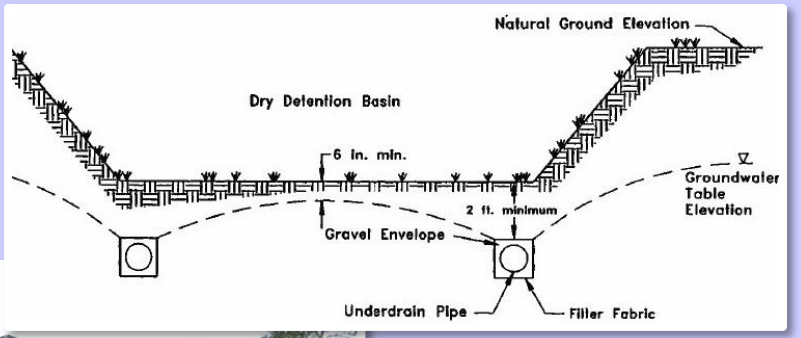
- **Types of Systems: Wet Detention**
  - constant pool of water
  - utilize a control structure to delay discharge
  - physical, chemical and biological treatment

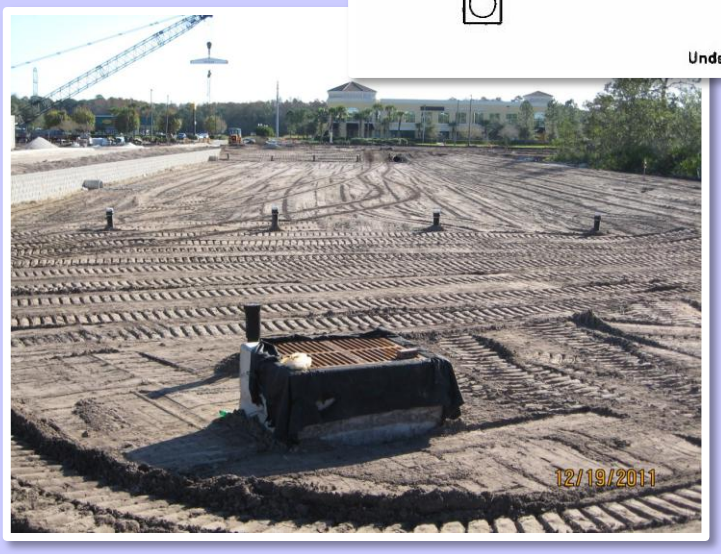
Stormwater Ponds (ERP)

- **Types of Systems: Exfiltration Chambers**
  - retains stormwater underground, no discharge
  - controls volume of runoff and provides treatment
  - percolation into the ground

Stormwater Ponds (ERP)

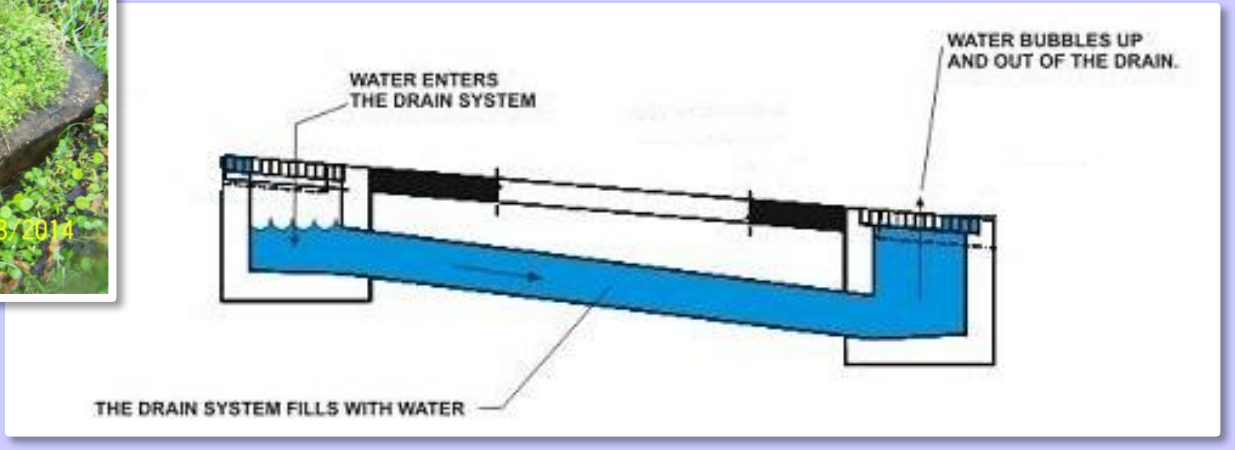
- **Auxiliary Systems & Structures**
  - **Underdrains**





Stormwater Ponds (ERP)

- **Auxiliary Systems & Structures**
  - **Bubble Ups**



Stormwater Ponds (ERP)

- **Auxiliary Systems & Structures**
  - **Pipes, inlets**

Stormwater Ponds (ERP)

- Maintenance Considerations
  - Vegetation
  - Sediment
  - Outfalls
  - Inflows
  - Erosion
  - Trash
  - Illicit Connections
  - Design Specifications

Stormwater Ponds (ERP)

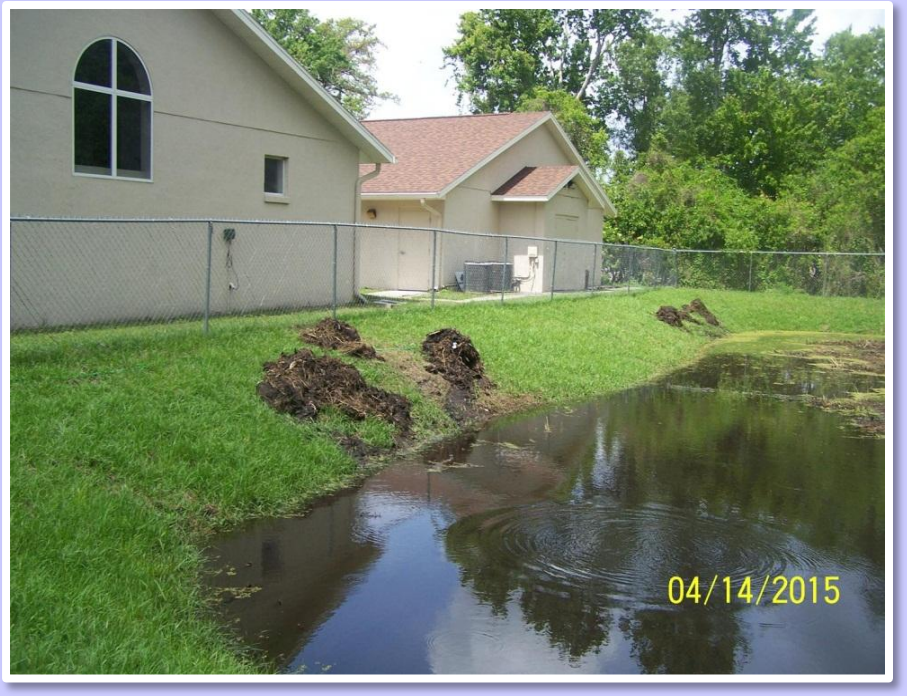
- **Maintenance Considerations**
  - **Vegetation**

Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Vegetation**

Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Vegetation**



Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Vegetation**

Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Control Structures**

Stormwater Ponds (ERP)

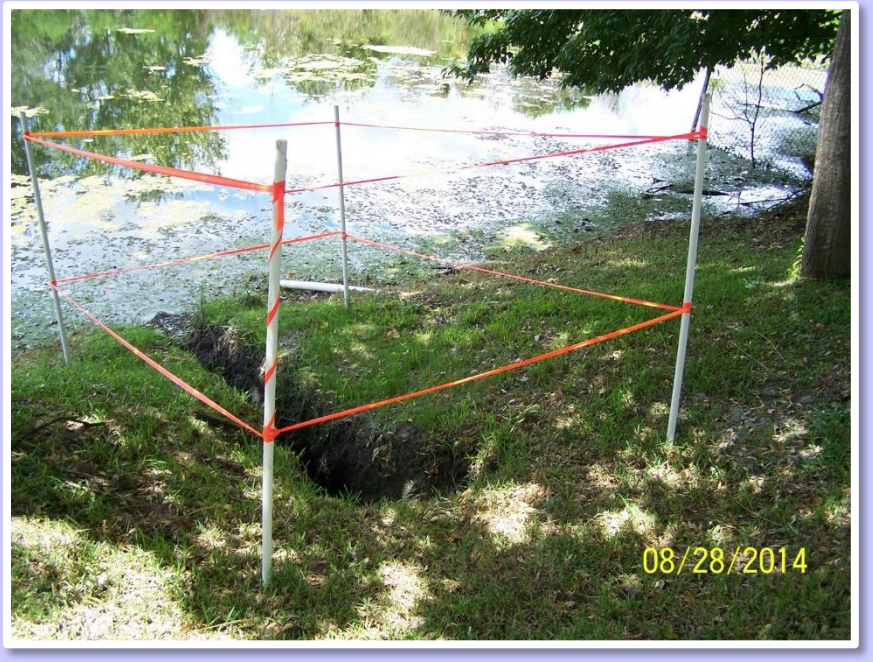
- **Maintenance Considerations**
  - **Control Structures**

Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Sediment**

Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Outfalls**



Stormwater Ponds (ERP)

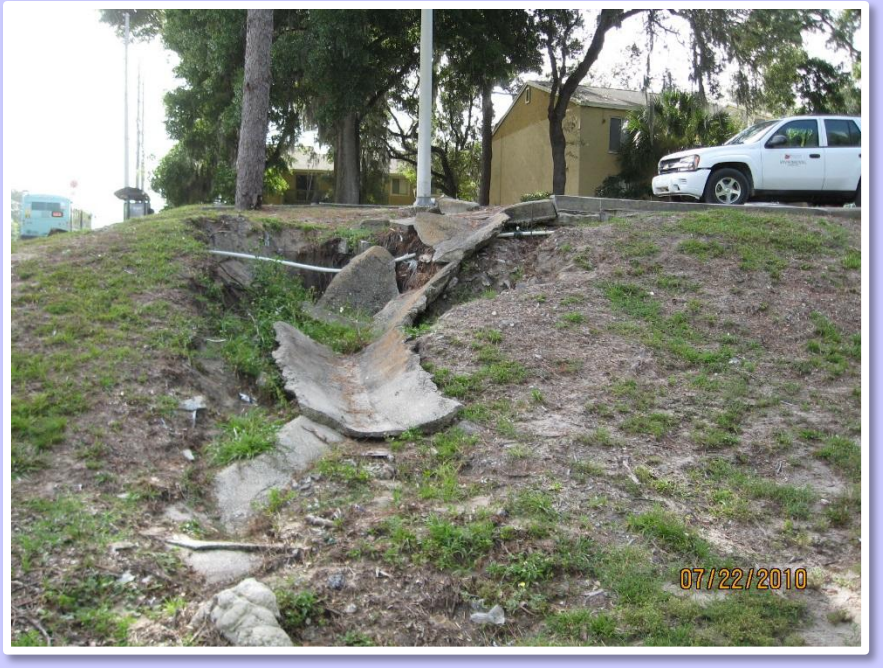
- **Maintenance Considerations**
  - **Inflows**

Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Inflows**

Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Erosion**

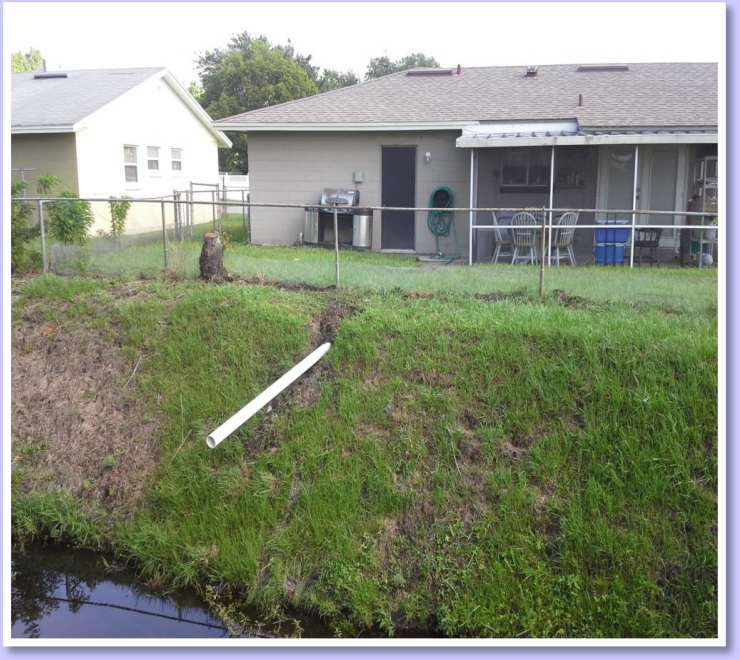


Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Trash**

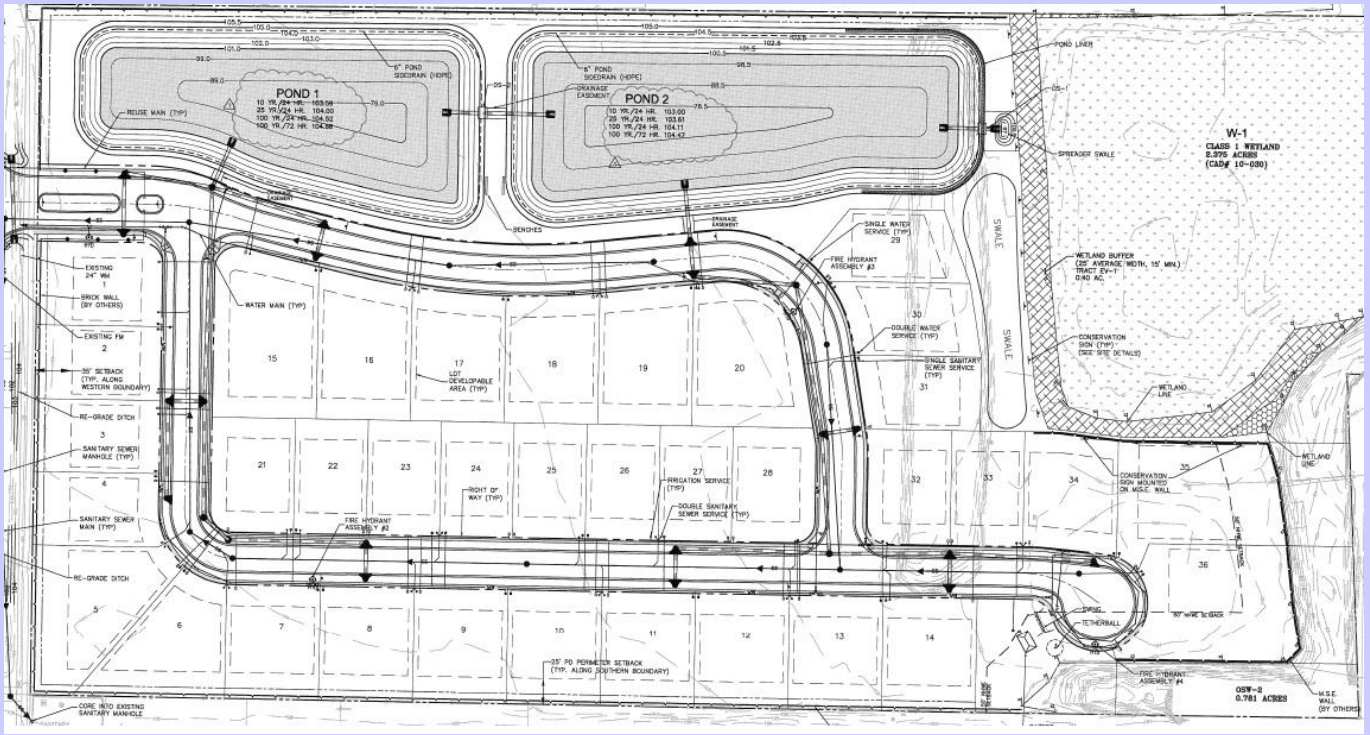
Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Illicit Connections / Discharges**



Stormwater Ponds (ERP)

- **Maintenance Considerations**
  - **Refer to plans, when available**

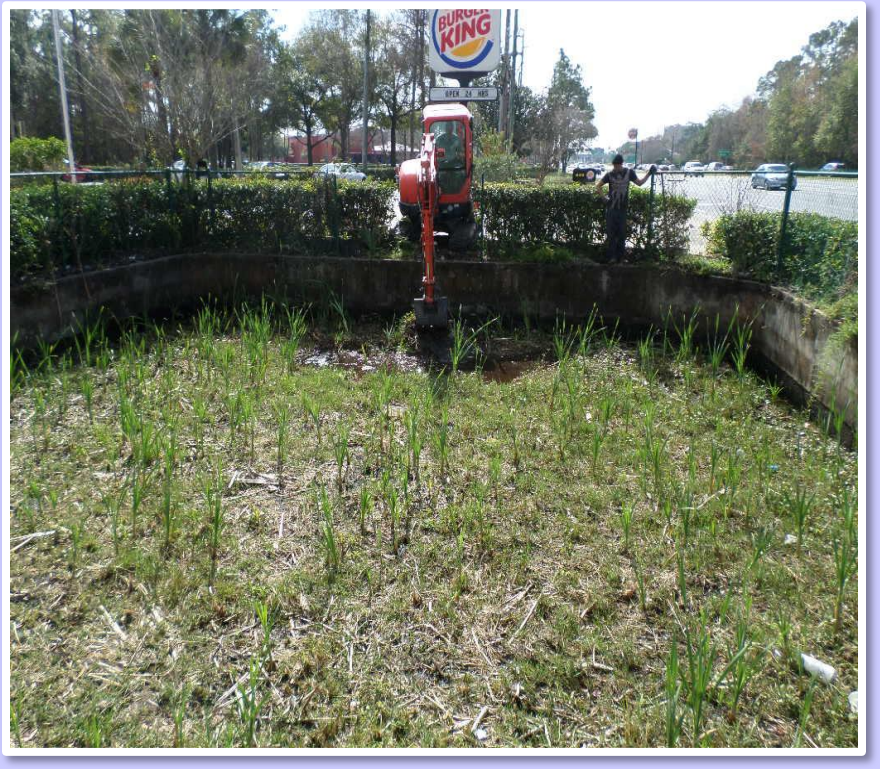


Stormwater Ponds (ERP)

- **Case Study – Small Commercial Complex**

Stormwater Ponds (ERP)

- **Case Study – Small Commercial Complex**



Stormwater Ponds (ERP)

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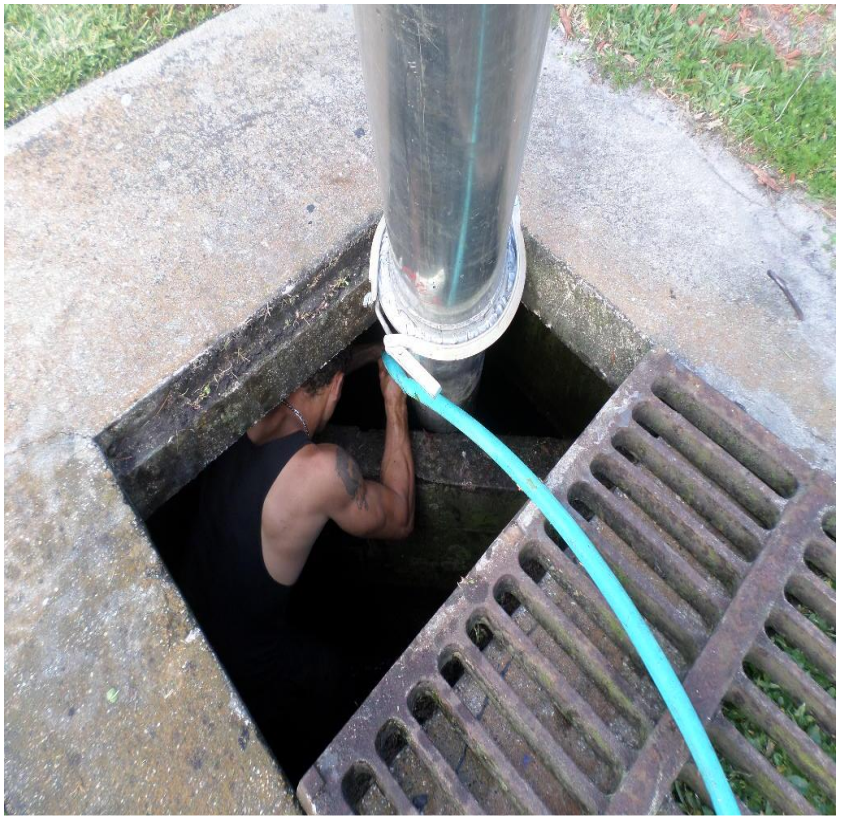

Stormwater Ponds (ERP)

- **Special Considerations**
  - **Dewatering**
    - Hold on site, if possible
    - Assess pond water quality prior to discharge
  - **Disposal of Material**
    - Refer to FDEP Guidance Document (March 2004)
    - Debris and trash must be separated from vegetation and dirt, dewatered, and disposed of at a Class I landfill.
    - Sites with known contamination require materials testing and coordination with FDEP.

Stormwater Ponds (ERP)

- Special Considerations
  - Disposal of Material (Continued)
    - For non-industrial sites, sediment and vegetation can be disposed of at Class III landfills
    - For both non-industrial and industrial sites, separated vegetation can go to Class I, III or C&D facilities
    - For industrial ponds, the sediment must be sampled and the results discussed with FDEP, in order to determine the disposal location
    - Contractors and property owners can be held liable for illegal disposal of materials

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Industrial Stormwater (NPDES MSGP)

- **NPDES Program regulates all industrial activities that:**
  - **Discharge to surface waters of the State or into a Municipal Separate Storm Sewer System (MS4)**

    and
  - **Included in one of 11 categories of "stormwater discharges associated with industrial activity"**

(40 CFR 122.26(b)(14) / 62-620 FAC)

Industrial Stormwater (NPDES MSGP)

Eleven Industrial Categories:

1. Facilities with federal effluent limits
2. Heavy manufacturing
3. Mining/oil and gas exploration
4. Hazardous waste facilities
5. Landfills
6. Recycling facilities
7. Steam electric power generation sites
8. Transportation
9. Wastewater treatment facilities
10. Large and small construction sites
11. Light industry

Industrial Stormwater (NPDES MSGP)

- **Two Types of Permits:**
  - **Multi-Sector Generic Permit (MSGP)**
    - Issued by FDEP
    - Most all activities will qualify for an MSGP
    - MSGP is divided into 30 Sectors
    - based on Standard Industrial Classification (SIC) Codes
  - **Individual Permits**
    - Issued by FDEP
    - Substantial application process, FDEP staff review and fee structure
    - More extensive, site specific, monitoring

Chapter 62-620 F.A.C

Industrial Stormwater (NPDES MSGP)

Typical businesses subject to MSGP:

- Paint Manufacturing
- Chemical Manufacturing
- Fertilizer Processing
- Asphalt Plants
- Concrete Batch Plants
- Stonecutters
- Misc. Metal Products/Fabricators
- Auto Salvage Yards
- Scrap Recycling

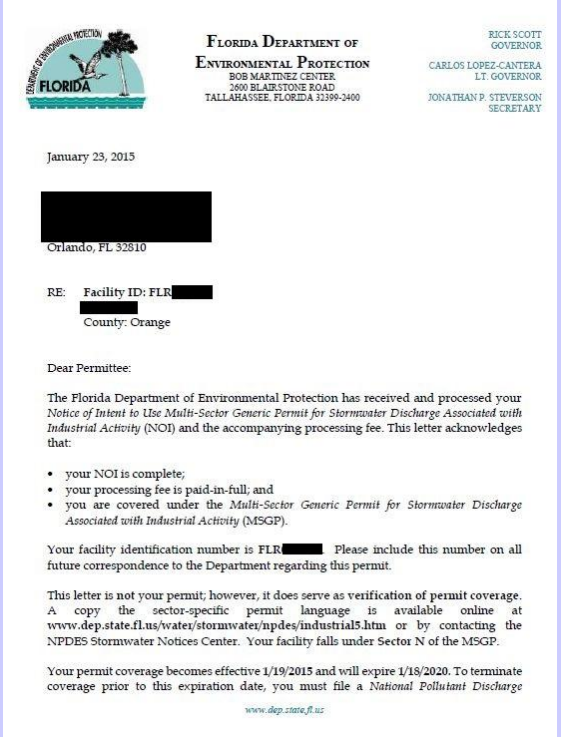
Industrial Stormwater (NPDES MSGP)

Typical businesses subject to MSGP:

- Motor Freight Transportation and Warehousing
- Misc. Food Preparation
- Printing Facilities
- Landscape Mulch Producers and Wholesalers
- US Postal Service

Industrial Stormwater (NPDES MSGP)

- **To obtain MSGP permit coverage:**
  - **Read the permit applicable to your sector**
  - **Develop & implement a Stormwater Pollution Prevention Plan (SWPPP)**
  - **Complete an NOI in its entirety**
  - **Submit the NOI with application fee ($500) to FDEP**
  - **Reapply for coverage every 5 years**



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BOB MARTINEZ CENTER
2600 BLAIRSTONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
SECRETARY

January 23, 2015

[redacted]
Orlando, FL 32810

RE: Facility ID: FLR[redacted]
County: Orange

Dear Permittee:

The Florida Department of Environmental Protection has received and processed your *Notice of Intent to Use Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity* (NOI) and the accompanying processing fee. This letter acknowledges that:

- your NOI is complete;
- your processing fee is paid-in-full; and
- you are covered under the *Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity* (MSGP).

Your facility identification number is **FLR[redacted]**. Please include this number on all future correspondence to the Department regarding this permit.

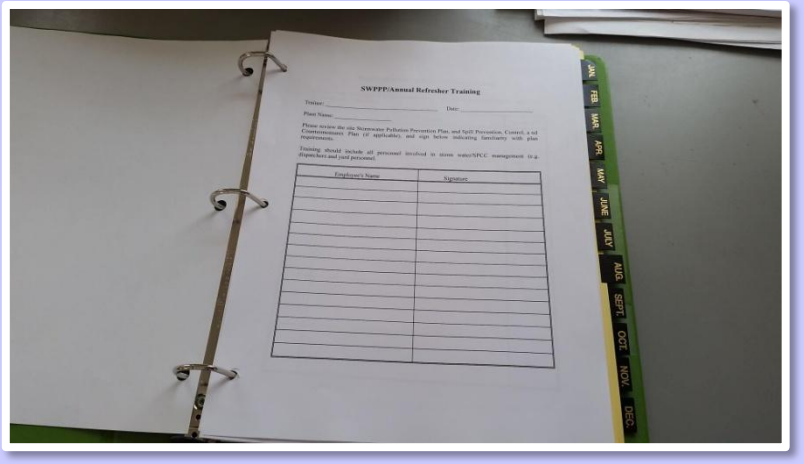
This letter is **not** your permit; however, it does serve as **verification of permit coverage**. A copy the sector-specific permit language is available online at **www.dep.state.fl.us/water/stormwater/npdes/industrial5.htm** or by contacting the NPDES Stormwater Notices Center. Your facility falls under **Sector N** of the MSGP.

Your permit coverage becomes effective **1/19/2015** and will expire **1/18/2020**. To terminate coverage prior to this expiration date, you must file a *National Pollutant Discharge*

www.dep.state.fl.us

Industrial Stormwater (NPDES MSGP)

- **Components of a SWPPP:**
  - **SWPPP Team**
  - **Site map**
  - **Material inventory**
  - **Assessment of past spills**
  - **Non-stormwater discharges**

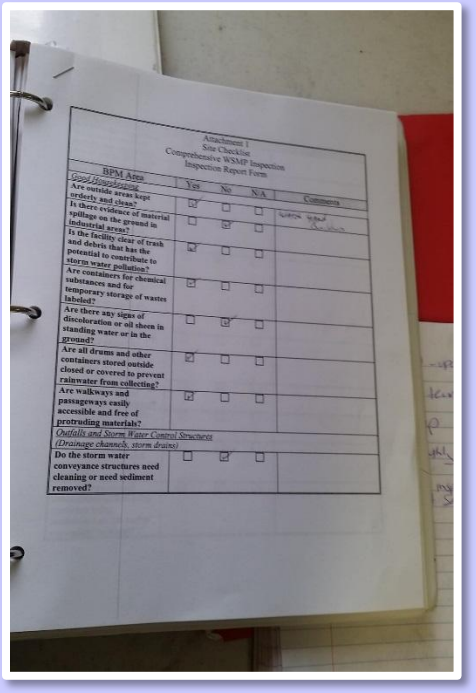


Industrial Stormwater (NPDES MSGP)

- **Components of a SWPPP:**
  - **Best Management Practices**
    - **Good housekeeping**
    - **Spill prevention**
  - **Employee training**
  - **Site evaluation/monitoring**
  - **Record keeping**
  - **Communication with FDEP**

Industrial Stormwater (NPDES MSGP)

- Typical Issues / BMPs
  - Good Housekeeping
  - Recordkeeping
  - SWPPP
  - Monitoring Records


Attachment 1
Site Checklist
Comprehensive WSMP Inspection
Inspection Report Form

BPM Area	Yes	No	N/A	Comments
Good Housekeeping				
Are outside areas kept orderly and clean?	☑	☐	☐	
Is there evidence of material spillage on the ground in industrial areas?	☐	☑	☐	
Is the facility clear of trash and debris that has the potential to contribute to storm water pollution?	☑	☐	☐	
Are containers for chemical substances and for temporary storage of wastes labeled?	☑	☐	☐	
Are there any signs of discoloration or oil sheen in standing water or in the ground?	☐	☑	☐	
Are all drums and other containers stored outside closed or covered to prevent rainwater from collecting?	☑	☐	☐	
Are walkways and passageways easily accessible and free of protruding materials?	☑	☐	☐	
Outfalls and Storm Water Control Structures (Drainage channels, storm drains)				
Do the storm water conveyance structures need cleaning or need sediment removed?	☐	☑	☐	

Industrial Stormwater (NPDES MSGP)

- **MSGP No Exposure (NEX) Certification**
  - **Available for industrial sites whose processes and materials are not exposed to stormwater or stormwater run-on.**

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  - **Construction Stormwater (NPDES CGP)**

Construction Stormwater (NPDES CGP)

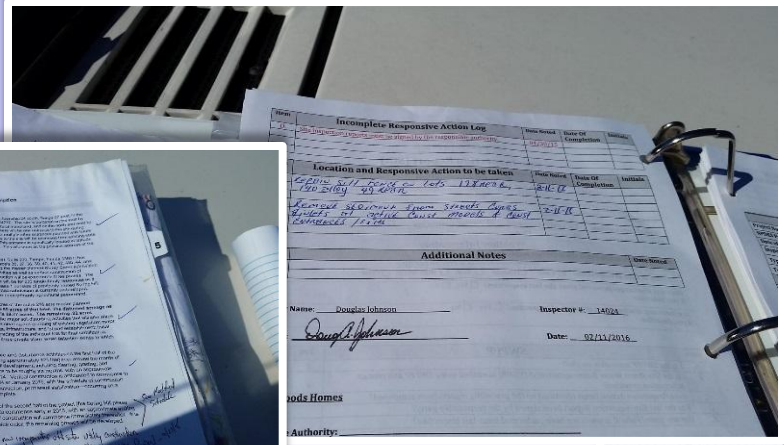
- CGP = Construction Generic Permit
  - Required for sites 1 acre or more OR
  - less than 1 acre and part of a LCP
  - Includes demolition
- Notice of Intent
  - File after SWPPP is created
  - At least 2 days before starting
  - Filed by the Operator
- Notice of Termination
  - Site MUST be stabilized
  - All BMPs removed
  - File within 14 days of final stabilization

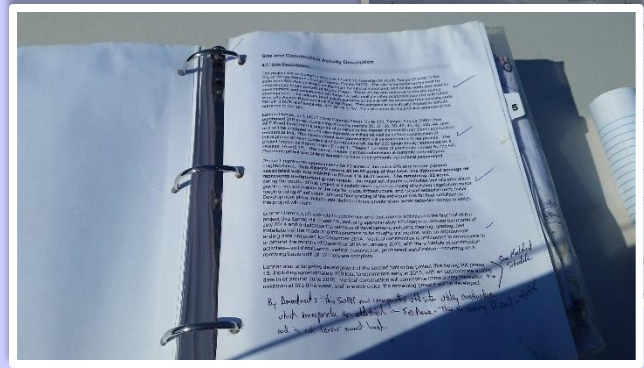
Construction Stormwater (NPDES CGP)

- Phases of Construction

Construction Stormwater (NPDES CGP)

- SWPPP
- Routine Inspections
- Maintenance
- Living Document



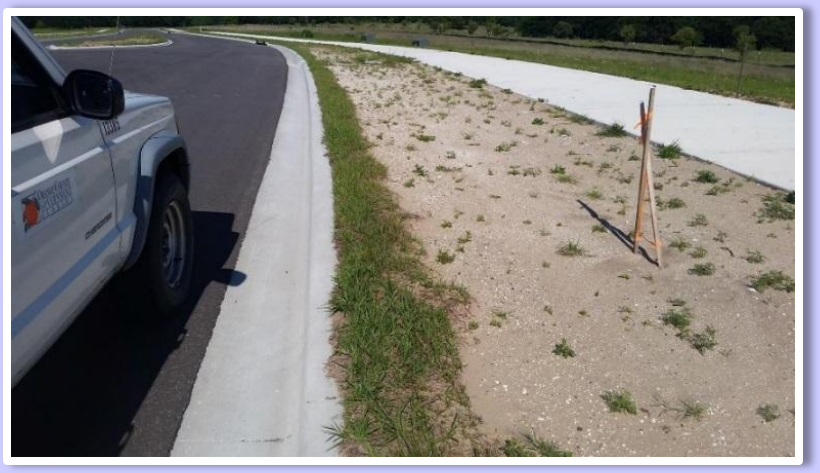


Construction Stormwater (NPDES CGP)

- Perimeter Controls
- Not One-Size-Fits-All

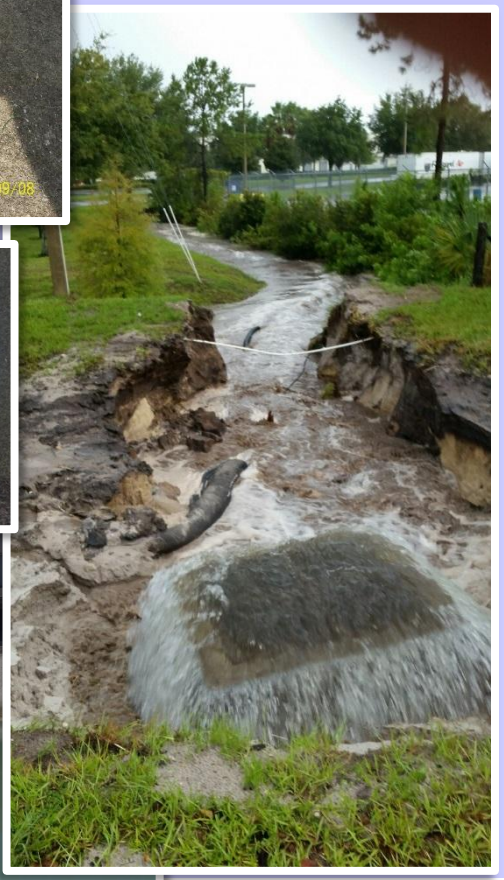
Construction Stormwater (NPDES CGP)

- Perimeter Controls
- Three R's:
  - Repair, Reinstall, Replace



Construction Stormwater (NPDES CGP)

- Outfalls & Stormwater Ponds
- Turbidity, Erosion, pH

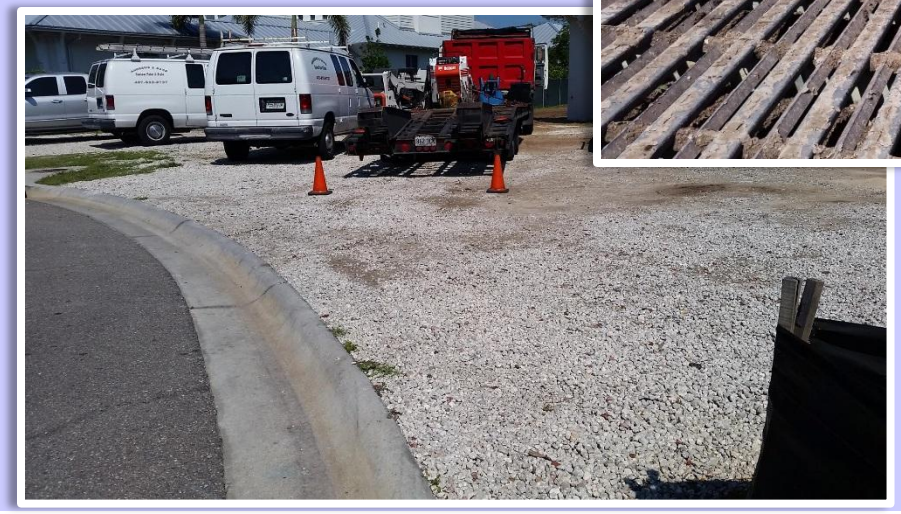


Construction Stormwater (NPDES CGP)

- Inlet Protection

Construction Stormwater (NPDES CGP)

- **Stabilized Exits**

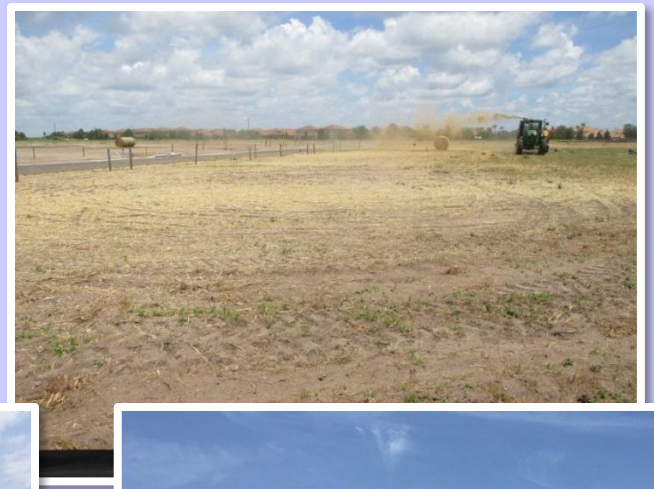


Construction Stormwater (NPDES CGP)

- **Dust & Stabilization Practices**

Construction Stormwater (NPDES CGP)

- **Stabilization**
  - **Required within 7 days!**



Construction Stormwater (NPDES CGP)

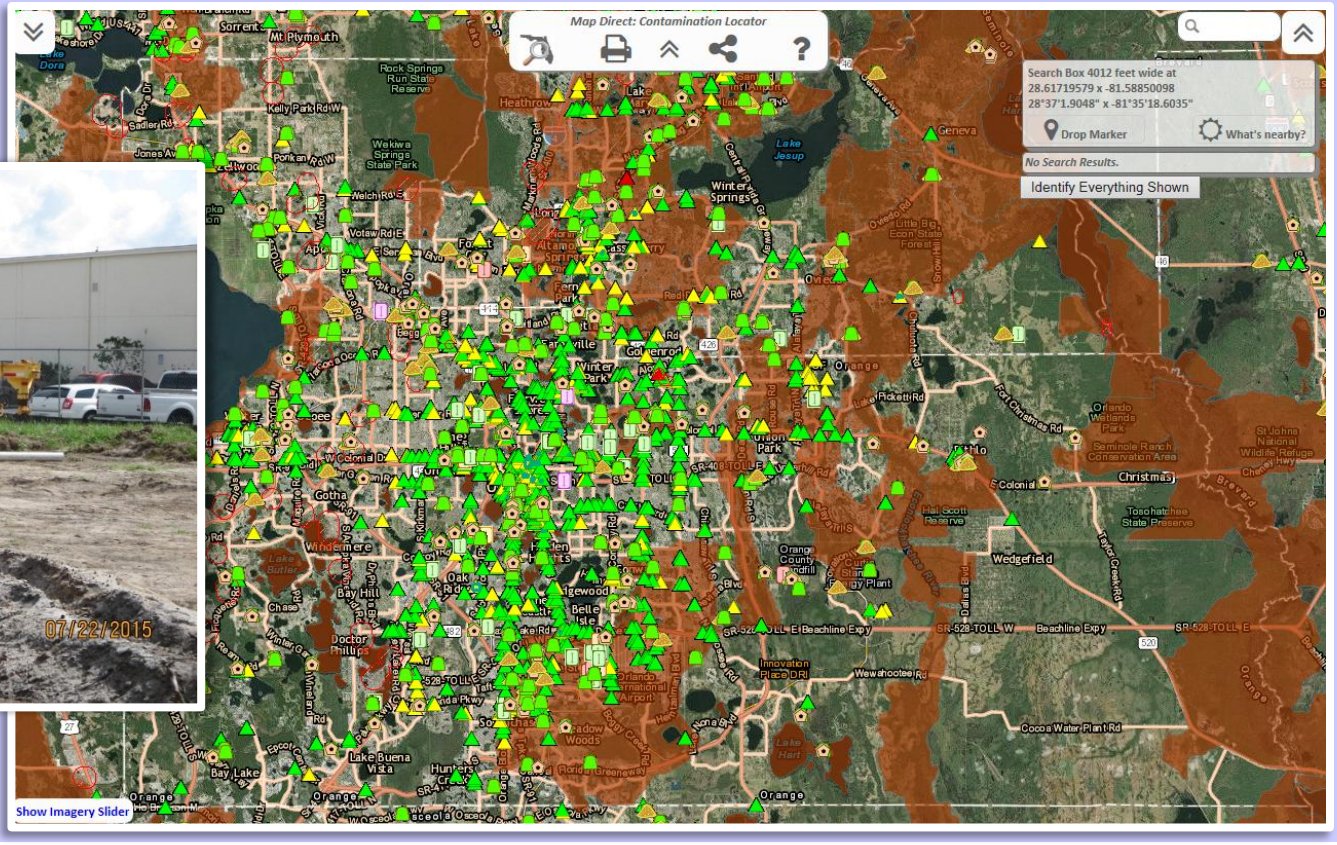
- **Materials Management**

Construction Stormwater (NPDES CGP)

- **Materials Management**

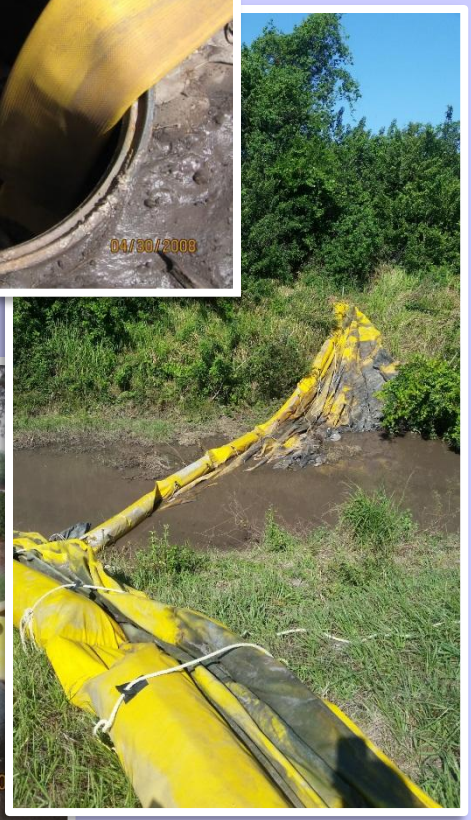
Construction Stormwater - Dewatering

- >500 ft from “known contamination”



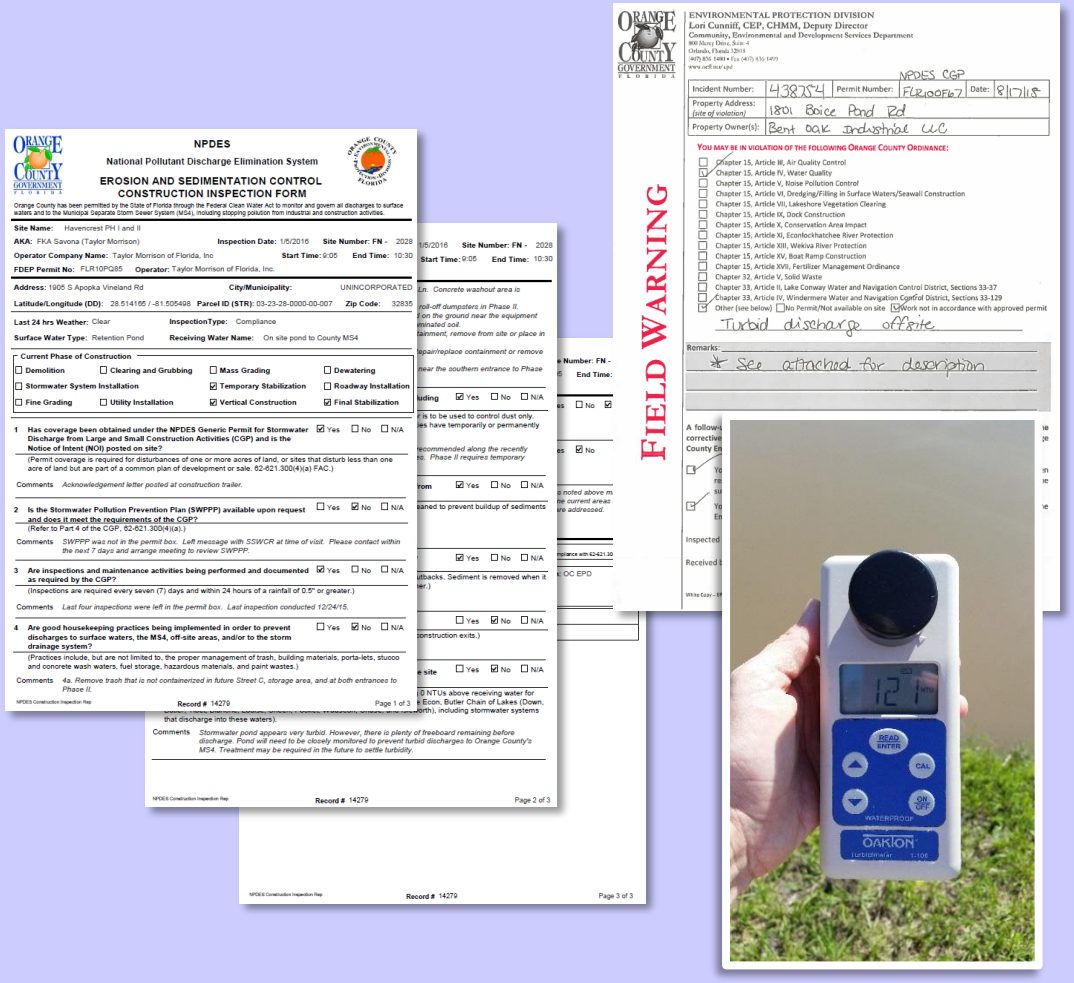
Construction Stormwater - Dewatering

- **Common Issues:**
  - Space constraints
  - Erosion
  - Turbidity
  - pH
  - Lack of planning



Construction Stormwater (NPDES CGP)

- **Agency NPDES Inspections**
  - Inspection Reports
  - Sampling
  - Field Warnings
  - Compliance Assistance
  - Training
  - Enforcement



Commercial Buildings Stormwater

- **Summary**
  - **Stormwater impacts everything**
  - **Your daily activities matter!**
  - **Plan**
  - **Ask questions**
  - **Care**