FLORIDA’S NPDES EVOLUTION

COURSE N: Comprehensive Watershed Evaluation, Planning and Management
Florida Chamber 28th Annual Environmental Permitting Summer School
Marco Island, Florida
July 23, 2014
OUTLINE

✓ Brief History of NPDES
✓ Permit Expectation Evolution
✓ Changes to Florida MS4 Permits
✓ Impacts to Local Managers
NPDES BRIEF HISTORY

• The National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act (CWA) is the primary federal vehicle to regulate the quality of the nation’s waterbodies.

• This program was initially developed to reduce pollutants from industrial process wastewater and municipal sewage discharges. These point sources were known to be responsible for poor, often drastically degraded conditions in receiving waterbodies. They were easily regulated because they emanated from identifiable locations, such as pipe outfalls.

• To address the role of stormwater in causing or contributing to water quality impairments, in 1987 Congress wrote Section 402(p) of the CWA, bringing stormwater control into the NPDES program, and in 1990 the U.S. Environmental Protection Agency (EPA) issued the Phase I Stormwater Rules.

NPDES BRIEF HISTORY

- The sources of stormwater discharges regulated under the NPDES program fall into three categories:
  - Industrial Activity
  - Construction Activity
  - Municipal Separate Storm Sewer Systems (MS4s)
NPDES BRIEF HISTORY

- The U.S. Environmental Protection Agency (EPA) developed the federal National Pollutant Discharge Elimination System (NPDES) stormwater permitting program in two phases.
  - **Phase I**, promulgated in 1990, addresses the following sources:
    - "Large" and "medium" municipal separate storm sewer systems (MS4s) located in incorporated places and counties with populations of 100,000 or more, and
    - Eleven categories of industrial activity, one of which is large construction activity that disturbs 5 or more acres of land.
  - **Phase II**, promulgated in 1999, addresses additional sources, including MS4s not regulated under Phase I, and small construction activity disturbing between 1 and 5 acres.
- In October 2000, EPA authorized the Florida Department of Environmental Protection (DEP) to implement the NPDES stormwater permitting program in the State of Florida (in all areas except Indian Country lands). DEP's authority to administer the NPDES program is set forth in Section 403.0885, Florida Statutes (F.S.). The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of Florida from certain municipal, industrial and construction activities.
- As the NPDES stormwater permitting authority, DEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities.

Source: http://www.dep.state.fl.us/water/stormwater/npdes/index.htm
NPDES REGULATIONS

• Florida Rules Related to Stormwater / NPDES
  • Chapter 62-620 - Wastewater Facility and Activities Permitting
  • Chapter 62-621 - Generic Permits
  • Chapter 62-624 - Municipal Separate Storm Sewer Systems
  • Chapter 62-25 - Regulations of Stormwater Discharge
"Large" and "medium" municipal separate storm sewer systems (MS4s) located in incorporated places and counties with populations of 100,000 or more.
EXAMPLE PHASE II MS4

- Urban Census Areas
- Clean Water Partnership
  - Alachua County
  - Gainesville
  - FDOT
EPA’S EFFECTIVENESS EVOLUTION

- Purposes of Program Evaluation
  - Meet regulatory requirements
  - Document progress toward water quality goals
  - Justify commitment of resources
  - Provide feedback to the management program
  - Assess reductions in pollutants of concern
EPA’S MS4 EXPECTATIONS

- EPA Region 4 to FDEP - April 2010
- Expectations based on *MS4 Permit Improvement Guide*
- Underscores the importance of permit requirements that are clear, specific, measurable, and enforceable
- Performance Standards Consistent with the *Maximum Extent Practicable* (MEP) Requirement
- Permit Elements of Focus:
  - Implementation of TMDLs
  - Stormwater Controls for Construction Activities
  - Stormwater Controls for New Development and Redevelopment - Post Construction
  - Illicit Discharge Detection and Elimination Program
FDEP’S REACTION

• Permit Expectations Embraced by FDEP
  • Increased accountability and measurable permit requirements – enforceability
  • Focus areas: TMDL implementation, construction sites, post-construction SWM, illicit discharge detection/elimination
  • Stormwater system inspection, O&M
  • Require written plans, SOPs, schedules, milestones, etc.
  • Antidegradation policy implementation

• Increased Load Reductions

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
FDEP’S REACTION

- Permit Expectations **Not** Embraced by FDEP
  - Annual MS4 system-wide inspections
  - Monitoring of all stormwater outfalls
  - Implementation of post-development stormwater regulatory program
  - Minimum number of construction site inspections set by State
  - Expanded MS4 regulatory program for industrial dischargers
  - **Mandatory** use of “Green Infrastructure” BMPs

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
Components

- Structural Controls and Stormwater System Operation
- Areas of New Development and Significant Redevelopment
- Roadways
- Minimizing Water Quality Impacts from Flood Control Projects
- Municipal Waste Treatment, Storage, or Disposal Facilities Not Covered by an NPDES Stormwater Permit
- Pesticides, Herbicides, and Fertilizer Application
- Illicit Discharges
- Industrial and High Risk Runoff
- Construction Site Runoff Management
- Monitoring Requirements
- Annual Reporting
- TMDL Implementation
CHANGES TO PERMITS (CYCLE 3)

- Inventory, Inspection, & Maintenance
- Standard Operating Procedures (SOPs)
- Training Plans & Public Ed Plans
- Accountability Reporting – Load Reductions
- TMDL Implementation
INVENTORY, INSPECTION, MAINTENANCE

• Better inventory of stormwater system
• More detailed maintenance items
• Inspection schedule changes
  (closer agreement with WMD ERP requirements)
  • Outfalls – annual unless historical records
  • Pipes, culverts – 10% of assets per year
  • Inlets, catch basins, - 10% of assets per year
  • *Note that EPA wanted annual inspections of all assets*

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
SOP’S

• What is a written Standard Operating Procedure (SOP) ?
  • Management tool
  • What makes sense for your MS4 and local government departments
  • Organizes processes and procedures
  • Includes coordination policies among local government departments
  • Includes prioritization factors, checklists, flow charts, etc.
  • Assures continuity when staff changes

• Develop written standard implementation procedures

• Perform annual review and revise as necessary

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
SOP’S

- Conducting MS4 system inspections/O&M
- Roadway litter program
- Street sweeping, road repair/O&M
- Equipment & maintenance yards
- Waste TSD facility inspections
- Minimize use of and properly store and use pesticides, herbicides, and fertilizers
- Conducting pro-active and reactive illicit discharge inspections
- Conducting/coordinating spill prevention and response
- Reducing & responding to sanitary sewer overflows or spills
- Conducting high risk facility inspections
- Conducting site plan reviews
- Conducting construction site inspections

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
TRAINING & PUBLIC EDUCATION

• Develop and implement a written training plan for personnel and contractors, including refresher training, for:
  • Identifying illicit discharges and knowing how to report them and deal with them
  • Proper spill prevention, containment, and response techniques and procedures
  • Conducting construction site plan reviews and inspections
• Develop and implement a written public education plan on how to minimize stormwater impacts associated with:
  • Use of pesticides, herbicides, and fertilizers including Florida-friendly landscaping principles
  • Promote identification and reporting of illicit discharges and improper disposal
  • Promote proper use and disposal of used vehicle fluids, household hazardous wastes, etc.

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
ACCOUNTABILITY REPORTING

• Monitoring and Loadings
  - Use state EMCS to calculate Year 3 pollutant loadings – in MS4 Permit Resource Manual
  - Standard set of six parameters (TN, TP, TSS, BOD, Zinc, Copper)
  - Not required to do seasonal loadings
  - No change in monitoring

• Annual Report on the effectiveness of SWMP in reducing pollutant loads
  - Compare with previous two Year 3 outfall or watershed loadings
  - If no load reduction, explain why not and revise your SWMP to make it more effective in reducing stormwater loads
  - Which components of the SWMP are working & effective in reducing SW loadings?
  - Which components of the SWMP are not working well & need revised to make them more effective?
  - Which components of the SWMP do not contribute to reducing SW loads and could be revised or de-emphasized?
  - Is the monitoring program providing data that assesses SWMP effectiveness, BMP effectiveness, retrofitting locations?

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
ACCOUNTABILITY REPORTING

- Conducting construction site plan reviews and inspections
  - Do we have requirements that exceed ERP or CGP?
  - If no, four checks needed:
    1. ES control plan included
    2. Stormwater plan included
    3. ERP obtained or applied for?
    4. CGP needed? Obtained or applied for?

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
TMDL IMPLEMENTATION

• Fact sheet lists DEP adopted and EPA established TMDLs at time of permit issue as starting list
• TMDLs with BMAPs – stay the course
• TMDLs without BMAPs
  • Prioritization report (Months 1–6)
  • Monitoring & assessment plan (Months 6-12)
  • TMDL outfall storm event monitoring of 1 outfall (Months 12-36)
  • Supplemental SWMP = TMDL implementation plan (Months 24-48)

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
TMDL IMPLEMENTATION

- TMDL Implementation Prioritization Report
- Each permittee that discharges to a water body with an adopted TMDL is responsible for reporting - individually or with other permittees
- Prioritization factors might include:
  - For a verified impaired water body? If not, suggest monitoring to delist
  - BMAP development underway?
  - Public access? Significance to community?
  - Used for swimming or fishing?
  - DO or nutrient impairment vs coliform?
  - For water body with SW master plan?

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
OTHER NEW REQUIREMENTS

• Fertilizer applicators must receive training through Green Industry BMP Program

• Adopt Florida-friendly ordinance if within watershed of impaired water

• Notify DEP if industrial facility does not have coverage under MSGP

• Develop and implement procedures to ensure that ERP and CGP permits have been obtained prior to issuing local grading, clearing, or building permits

Source: New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011
CONSTRUCTION DEWATERING

- Revisions to the Generic Permit for Stormwater Discharge from Large and Small Construction Activities, Rule 62-621.300(4)(a), F.A.C.

- COMMENTS: From 6/19/2014 To 7/10/2014 (closed)

The proposed revisions to the stormwater NPDES generic permit include provisions authorizing construction dewatering for non-contaminated ground water, with appropriate control measures for non-stormwater discharge. **Revisions to the dewatering permit will provide that sites covered under the CGP that also have dewatering operations do not need separate coverage under the industrial wastewater generic permits.** The combined revisions will have the effect of allowing sites covered by the CGP to conduct dewatering operations without the need to obtain a separate NPDES permit under the Industrial Wastewater Program.
IMPACT TO LOCAL NPDES MANAGERS

- Impacts to Local Manager
  - Time
  - Budgets
  - Staffing
- Stakeholder Coordination
  - Municipal Partners
  - Public
  - Regulatory
- Practical Pollutant Load Reduction
  - Accountability
  - BMP benefit/cost
- Rallying Support from the Powers that Be
IMPACT TO LOCAL NPDES MANAGERS

- TMDL / BMAP vs. NPDES
  - NPDES = Outfall – centric
  - TMDLs = Watershed – centric
- Multiple Stakeholders
- Multiple Permitees
- Approach:
  - Prioritize TMDL waters
  - Prioritize Outfalls
  - Monitor Priority Outfall
  - Assess Reductions
  - Report Progress
IMPACT TO LOCAL NPDES MANAGERS

- Code Review
  - Stormwater Regulations
  - WMD Concurrency
  - Illicit Discharges
  - Floodplains
  - Lake Management
  - Stormwater Utility
IMPACT TO LOCAL NPDES MANAGERS

- Code Review
  - Innovative Stormwater Practices
  - Green infrastructure
  - LID

Each section of the Land Development Code should be reviewed to identify possible impediments to using newer, more sustainable techniques such as “Low Impact Design” or “LID”. In addition, this is an excellent time to revise and correct any references to statutes, rules of other agencies, or your own legal authority to implement and enforce the various components of your MS4 permit.

In recent years there has been increased interest in LID which seeks to minimize the hydrologic and water quality changes that result as part of site development. **Low impact design principles seek to integrate the following concepts into the design process:**

- Use hydrology as the integrating framework
- Think micromanagement
- Control stormwater at the source
- Use simplistic, non-structural methods
- Create a multi-functional landscape and infrastructure

LID provides the opportunity to recharge groundwater supplies, protect surface waters, and reduce waste and disposal through the use of natural processes with waste that can be composted. It reduces potable water demand through the use of cisterns and also improves air quality and reduces urban heat island effects through the use of vegetation and trees. LID also improves neighborhoods by beautifying the common spaces and adding aesthetic value. One of the reasons that LID is a sustainable solution is the fact that it addresses more than just one issue.
WOTUS

- April 2014 EPA and USACE jointly propose revising definition of **Waters of the United States**
- Purpose to clarify what waters are and are not covered by CWA
- Representing that new language will not substantially impact MS4s
- Traditional definition of WOTUS: *those waters that are susceptible for use in interstate or foreign commerce, interstate waters, certain wetlands, territorial seas and impoundments of these waters, and tributaries thereto.*
- Definition being expanded to include:
  - Adjacent Waters
  - Tributaries
  - Waters with “Significant Nexus”

WOTUS

• **Adjacent Waters**
  - “Adjacent” not specifically defined
  - All waters including wetlands
  - Neighboring waters within the floodplain
  - EPA will use best professional judgment

• **Tributaries**
  - “Tributary” not specially defined
  - Includes man-altered or man-made ponds, canals, ditches

• **Waters with “Significant Nexus”**
  - On a case-specific basis, the proposed regulations provide that other waters and wetlands, alone or in combination with other waters, that have a significant effect on WOTUS in the region, are also considered jurisdictional waters.
WOTUS

- Exclusions
  - Ditches that are excavated entirely from uplands, drain only upland areas, and have less than perennial flow
  - Ditches that do not contribute flow to a WOUS
  - Waste treatment systems, such as ponds or lagoons that are used for stormwater/water quality treatment that are designed to meet requirements of the CWA
  - Prior converted cropland, where wetlands were converted to farmland, prior to the “Swampbuster” provision of the Food Security Act of 1985
  - Artificial features, such as:
    - Irrigated areas that would revert to uplands if irrigation applications ceased;
    - Man-made lakes or ponds created by excavating and/or diking uplands and used exclusively for livestock watering, irrigation, settling basins, or rice growing;
    - Aesthetic pools, such as reflecting pools, swimming pools, or ornamental waters that were excavated/constructed in uplands;
    - Depressional areas that may fill with water that were incidentally created during construction activities;
    - Groundwater, including groundwater drained through subsurface drainage systems; and,
    - Gullies, rills, and non-wetland swales.

WOTUS

- Potential consequences for MS4s
  - Municipal Separate Storm Sewer System permit requirements and water quality standards must be met in stormwater conveyances and retention structures that are determined to be WOTUS, including numeric nutrient criteria applicable to Class III ("recreational") water bodies, antidegradation requirements and other permit conditions.
  - Dredge and fill permitting policies of the Corps will be applicable to stormwater attenuation ponds, drainage ditches and other conveyances that are determined to be WOTUS - even during routine maintenance activities.
FDEP STAFFING

- Edward C. Smith – Program Administrator
  Program Administration, MS4 permits
  Edward.C.Smith@dep.state.fl.us
  (850) 245-8568

- Borja Crane-Amores - Environmental Manager
  Industrial and Construction Permitting Questions, Notice of Termination and No Exposure Certification Questions, Permit Denials
  Borja.CraneAmores@dep.state.fl.us
  (850) 245-7520

- Shirish Bhat - Environmental Consultant
  MS4 Coordinator, Phase I & II MS4s
  Shirish.Bhat@dep.state.fl.us
  (850) 245-7523

- Michelle Fish – Environmental Specialist III
  Phase I MS4 Questions
  Michelle.Fish@dep.state.fl.us
  (850) 245-7561

- Katie Downey – Environmental Specialist II
  Phase II MS4 Questions
  Kathleen.Downey@dep.state.fl.us
  (850) 245-8667

http://www.dep.state.fl.us/water/stormwater/npdes/
REFERENCES

• Evaluating the Effectiveness of Municipal Stormwater Programs, EPA 833-F-07-010, January 2008
• New Permit Conditions for Phase I MS4 Permits, E. Livingston, FDEP NPDES Section, Presentation from FSA New Directions in Stormwater Permits & Programs Seminar, September 2011.
• New & Improved NPDES MS4 Permits – Challenges from a Local Perspective, K. Ornberg & R. Potts, Presentation from ASCE EWRI Seminar, March 2012.
• NPDES Phase II MS4 Generic Permit and Rule Revisions, Workshop/Webinar, FDEP, April 2013.
Thank you!

Mark Ellard, PE, CFM, D.WRE Associate, Water Resources
mellard@geosyntec.com