

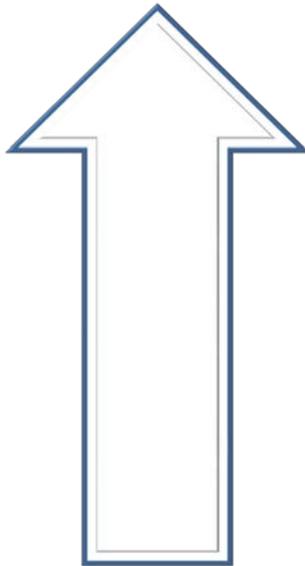
MS4 Permit Compliance Getting to 40 and beyond



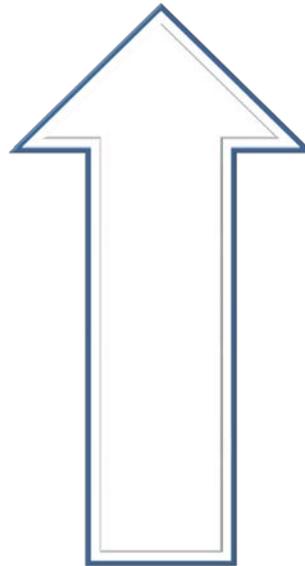
Chris Genellie, P.E.

Current State of Storm Water Management

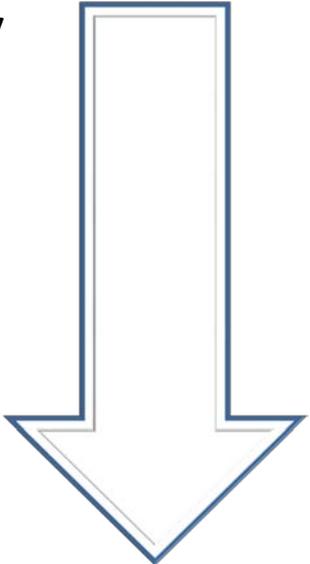
Flooding
Concerns



Storm Water
Regulations



Water Quality
Concerns



Municipal
Storm Water
Budgets



Step 1

Figure out where you're at

- Below 40% TSS reduction?
 - Maximum Credit Obtained?
 - Review your model (SLAMM,P8)
 - Model every BMP you can...even the private ones.
 - BMPs in neighboring communities?
 - Exclude every area you can exclude.
 - Are you current and up to date?
 - Continue to refine your model



Utilize All Allowed Techniques

- BMP Inventory
- Area Exclusions
- Field Verification
- Infiltration Rate Testing



Do you find yourself above 40%?

- You may have met the 40% TSS reduction but did you know?
 - Impaired waterway plans
 - Phosphorus rule impacts
 - TMDLs
- These things ~~may~~ **will** require more work...regardless of you meeting 40% TSS goal.
- Continue to pay attention!!! YOU'RE NOT DONE YET.



Step 2

Figure out where you're going

- How many TSS percentage points do I need?
- Then ask...
 - What is going on in my community that can help me get there?
 - Is there a place or budget for a BMP
 - Alternatives analysis?
- Work toward developing a plan



TSS reduction plan

- Do I need one?
 - Of course you do.
- What is this plan for?
 - Its for the DNR...duh!
 - Its for you and your community(road map)
- What is in the plan?
 - Strategy, cost, time to get to 40%
 - Keep these concepts in mind.....



Concept 1

Multi-Purpose Storm Water Management

- Flood Control
- Pollutant Removal (TSS, P, Others)
- Recreation / Parks
- Aesthetics
- Common Thread = Cost Sharing + Efficiency



Flood Control and Water Quality



Storm Water Management & Recreation



Concept 2

Spend Your Money Wisely



Plan First



Plan First, Build Second

- Determine needs
 - Community vs. Watershed
 - Sediment vs. Phosphorus vs. Other Pollutants
 - Pollutants vs. Flood Control vs. Recreation
- Once needs are known, analyze solutions

PLAN FIRST!

Cost Effective Solutions

- Retrofit existing facilities
- Construct new facilities
- Construct BMPs with other public works projects
- Think creatively to meet multiple needs
- Determine pollutant removal efficiency



Pollutant Removal Efficiency

Project Description	Present Worth Cost	Cost Per Pound TSS Removed
Existing Street Sweeping	\$41,000	\$27
Sweeping 8x Year – Critical Land Use	\$63,000	\$17
Sweeping 16x Year – Critical Land Use	\$134,000	\$24
Main Street Bioretention	\$97,500	\$37
Middle School Infiltration	\$182,900	\$25
Venture Drive Bioretention	\$160,200	\$96
Venture Drive Proprietary Devices	\$136,900	\$242
Eagle Industries Partnership	\$145,000	\$24
Main Street South Pond Retrofit	\$88,200	\$17

Cost Effective Solutions

- Determine constructability, environmental and resident concerns
- Funding mechanisms
 - Storm Water Utility vs. General Fund
 - Grants & Loans



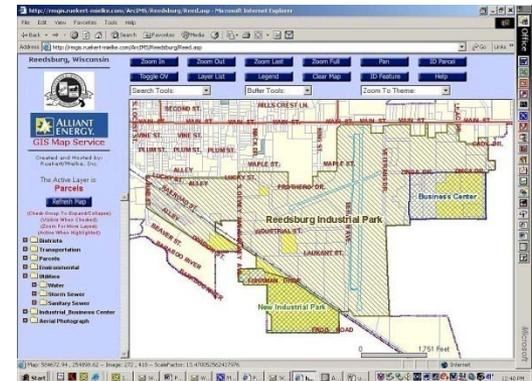
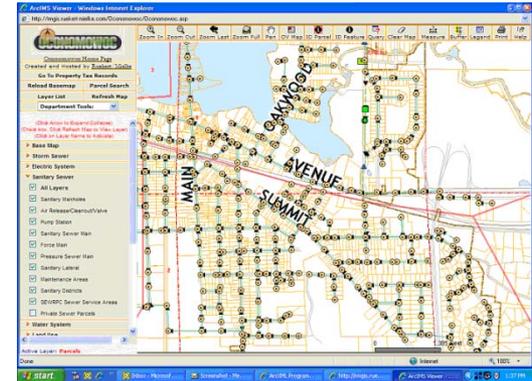
Concept 3

Using Technology to Increase Municipal Staff Efficiency



Role of GIS

- Development documents
- BMP maintenance inspections
- Street sweeping schedules
- Active erosion control permits
- Illicit discharge inspections
- Catch basin stenciling program



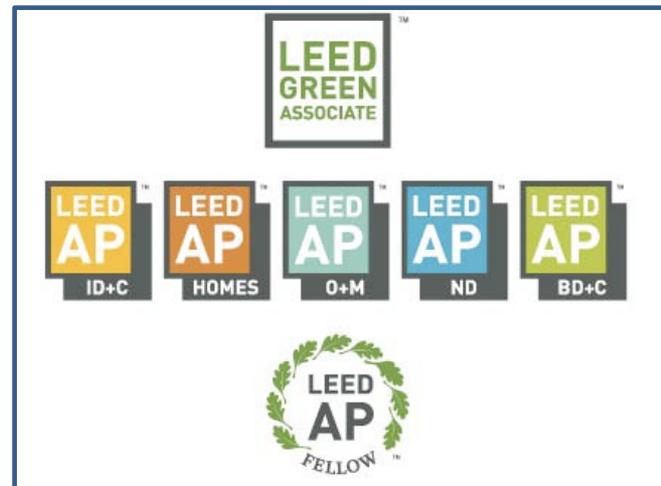
Concept 4

Public / Private Partnerships



Partnerships Continued

- Partner with interested businesses
 - LEED accreditation?
 - Storm water utility credits?
- Share in costs, maintenance and benefits
- Use local environmental & citizen groups



In Summary

- Where am I? Below 40%?
- How do I get to 40%?
 - Develop a TSS reduction plan
 - Four concepts
 - Be creative & address multiple Storm Water issues with one project
 - Plan first
 - Utilize technology
 - Public/private partnerships





Thank You

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