

**How Can We Help to Improve the Quality of Water in Iowa Lakes and Streams?**



**Welcome to the Comprehensive Stormwater Workgroup**

•Your experience, input to the workgroup and outreach to your organization/department are keys to the success of developing a stormwater management plan for Iowa and reducing urban impacts on water quality in Iowa.

•Thank you for volunteering your time and efforts.

•Inspiration from Yogi Berra "If you come to a fork in the road, take it."

•"You give a hundred percent in the first half of the game, and if that isn't enough, in the second half you give what's left."

**Acronyms...Any New Acronyms?**

- IDNR: Iowa Department of Natural Resources
- IHRB: Iowa Highway Research Board
- IDALS: Iowa Department of Agriculture & Land Stewardship
- IAMU: Iowa Association of Municipal Utilities
- CTRE: Center for Transportation Research & Education (ISU)
- SUDAS: Statewide Urban Design Standards and Specifications
- NRCS: Natural Resources Conservation Service
- URBAN: Urban Regional Borderland Alliance Network

**Iowa Stormwater Management**

NPDES requirements are providing us with a unique opportunity to really improve water quality in Iowa



We have a lot to think about.....

**Erosion and Sediment Control**

Prevent this..



Develop effective BMPs, Ordinances, and Enforce

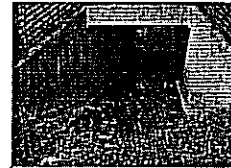


**Stormwater Management**

•Almost all municipal stormwater systems are set up to collect and get rid of the water as fast as they can by discharging it directly to surface water (lakes and streams).

•Contaminants such as sediment, road salt, motor vehicle wastes (organics and heavy metals) are discharged directly to lakes and rivers.

•Thermal discharges from pavement impact the chemical, biological, and physical environmental within a lake or stream



**Stormwater Management for Water Quality Improvement**

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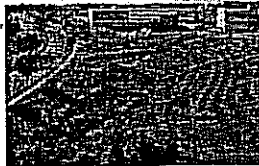
•We still need to manage for flood control, low freq. high intensity storms.

•But we need consider different management strategies for low intensity, high frequency storms.

•Trap water on-site, infiltrate, use vegetation adapted to improving infiltration.

•Low impact development

What Future Urban Landscapes Could Look Like in Iowa



**Managing Stormwater for Water Quality**



**What is One of the Pollutants of Great Concern in Iowa?**

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**Sediment (Eroded Soil)**

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•Source from soil that is not protected from the erosional forces of water during rain storms, and in some cases wind erosion.

•Agricultural fields that are improperly managed: poor tillage practices, no/low residue, poor streambank protection.

•\*\*Construction sites with little/no erosion and sediment control.

Where does eroded soil/sediment from construction sites go after it leaves the site?

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**What Impact Does Sediment Have On a Stream?**

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•Causes turbidity or cloudiness in water that is harmful to desirable fish and vegetation.

•Sediment carries fertilizers and pathogens or microorganisms harmful to fish and humans.

•High water treatment costs for those removing water from streams.

•Loosing soil that eventually makes it's way down the Mississippi to the Gulf of Mexico, soil that we will need for our future and generations to come.

**Why is erosion and sediment control and stormwater management for water quality improvement necessary?**

•Sediment or eroded soil along with organic and heavy metal contaminant, salts, and nutrients from fertilizers in stormwater pollute rivers and lakes. Sediment runoff rates from construction sites are typically 10 to 20 times greater than agricultural lands!

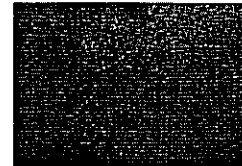


•These contaminants are considered non-point source pollution. For the past 30 years EPA has focused their attention on point sources and are now focusing on non-point source, diffuse source pollution.



We are trying to prevent this.....

We are trying to improve water quality through effective management practices.....



**What is the National Stormwater Program?**

•Federally mandated program for all states resulting from the amendments to the Clean Water Act. All NPDES (National Pollutant Discharge Elimination System) discharge permits to surface water developed from this program.

•Phase I in place since 1990 cities with populations >100,000 must have stormwater management plan and permit for discharges (MS-4s); and construction sites > 5 acres must have permit and stormwater pollution prevention plans.

• Phase II effective March 10, 2002 impacts cities with specific populations and/or discharge to an impaired waterbody, they must have stormwater plan and permit for discharges; and any construction activities 1 acre or > soil disturbance.

**Is there any bite behind these federal regulations?.....YES**

•Failure to comply can result in fines up to \$10,000 or more depending on the situation.

•Cities may also through their local ordinances enforce.

**Who is impacted by these regulations?????**

- Urban and rural entities
- Cities, counties, IDOT, private landowners
- Engineers, developers, contractors
- Soil scientists, landscape architects
- Private development, commercial development

**Who is impacted by These Regulations?**

•Phase I: 2 MS-4s Des Moines and Cedar Rapids and anyone disturbing 5 acres or more soil

•Phase II: 41 MS-4 cities, 2 universities, and anyone disturbing 1 acre or more soil

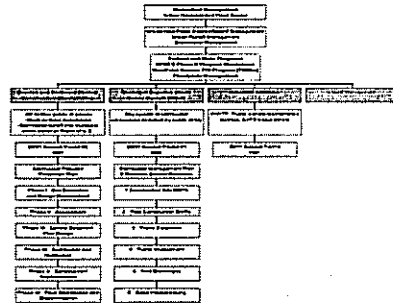
**Who Enforces These Regulations in Iowa?**

- IDNR Central Office, IDNR Field Offices
- Once city has ordinance they may enforce

**Phase II Cities in Iowa**

Altoona, Ames, Ankeny, Asbury, Bettendorf, Bondurant, Carter Lake, Cedar Falls, Clinton, Clive, Coralville, Council Bluffs, Davenport, Dubuque, Elk Run Heights, Evansdale, Fort Madison, Grimes, Hiawatha, Iowa City, Iowa State University, Johnston, LeClaire, Marion, Marshalltown, North Liberty, Norwalk, Ottumwa, Pleasant Valley, Pleasant Hill, Raymond, Riverdale, Robins, Sergeant Bluff, Sioux City, Storm Lake, University of Iowa, University Heights, Urbandale, Waterloo, Waukee, West Des Moines, Windsor Heights,

**Iowa Stormwater Management**



**How Should We Manage Stormwater In Iowa?**

- Develop a comprehensive workgroup to address urban non-point/runoff issues.
- Develop a state stormwater management plan.
- Address the needs of those impacted by the Phase I and II regulations, the entire state of Iowa

**Meeting Purpose**

- Organize comprehensive workgroup to address stormwater management plan for Iowa, welcome new members.
- Update on past and current workgroup activities.
- Discuss essential components of comprehensive statewide stormwater management plan, begin with identification of teams and activities.
- Discuss urban runoff control team activities and provide program update.

**History**

- IAMU 2 yr contract with IDNR to conduct workshops and develop educational materials for Phase II.
- Surveyed MS-4s to assess their needs.
- Met with Ubbo (IDNR) to discuss our preproposal that included activities prioritized by MS-4s.
- Ubbo need for a comprehensive workgroup to address stormwater management in Iowa. IAMU is organizing workgroup.
- An IAMU and SUDAS partnership has resulted in the organization of a team to address runoff control and standards and specifications for some of the stormwater management components.
- Presented plan for runoff control to IDNR and IDOT in August. Funding erosion and sed control and WQ BMPs.

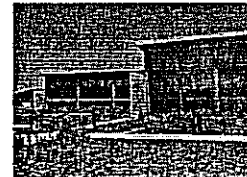
**A little about IAMU.....**

•Nonprofit, 550 municipal utility members, water, wastewater, stormwater, electric, telecom.

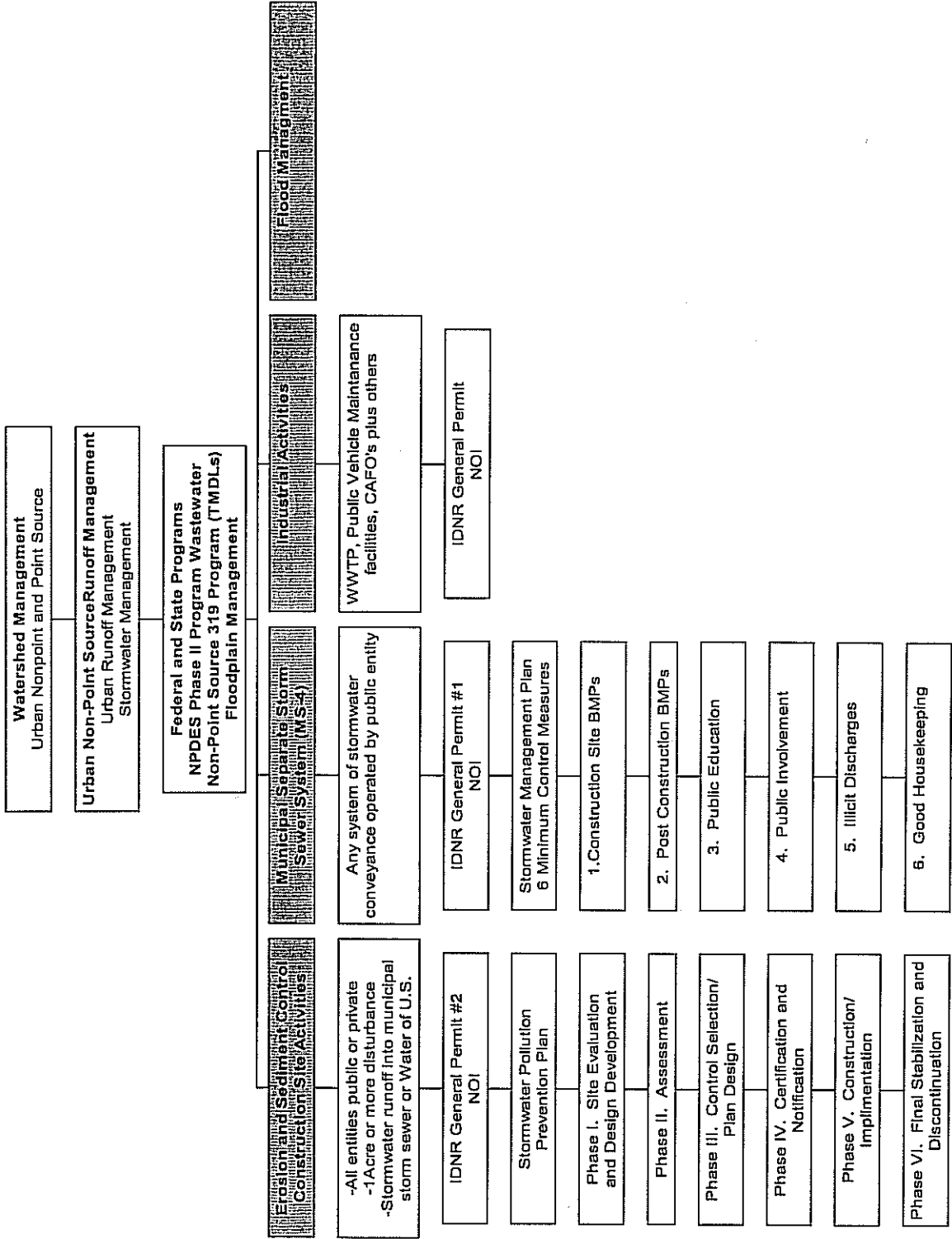


•Set example for others with the land management of our site (prairie restoration) and energy efficiency of building)

•IDNR 319 funding for Phase II workshops, educational materials for cities and other entities impacted by Phase II and wellhead protection.



# Iowa Stormwater Management



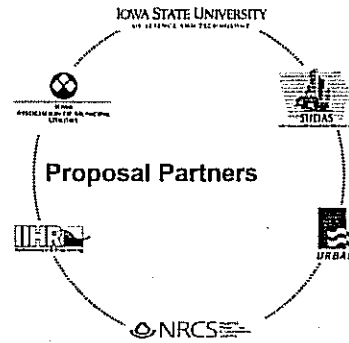
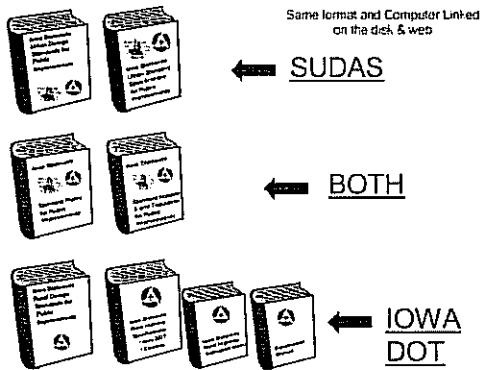
## History (Date)

### Concurrently:

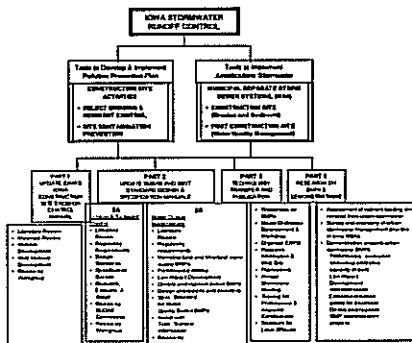
- SUDAS IHRB activities
- Partnership concept (SUDAS and IAMU)
- SUDAS and IHRB need to develop statewide standards and specifications for BMPs.

## SUDAS

The Statewide Urban Standard Design and Specifications (SUDAS) project



### Iowa Stormwater Runoff Control Team



### Part 1 Update IDNRs 1994 "Iowa Construction Site Erosion Control Manual"

Dale Harrington for Jim Cable, ISU

- Literature and Materials Review for Erosion and Streambank Manuals
- Review by workgroup, team and technical coordinators
- Make both manuals available on web at CTRE
- Annual review of materials, "living document"



**Part 2A Erosion and Sediment Control**

**Update SUDAS Manuals and IDOT Design and Specifications**

SUDAS, Dale Harrington

- Iowa Stormwater Runoff Team (Program Administration, coordination with Program Coordinator to IDNR, Pat Sauer)

**Part 2A Erosion and Sediment Control**

**Update SUDAS Manuals and IDOT Design and Specifications**

- Literature Review
- SUDAS Regulatory Requirements Section
- Specifications Section
- Research, evaluation, and Adoption of Design Standards and Specs. For IDOT Manual
- Review by SUDAS Committees
- Review by ISRC Workgroup and Team, and technical coordinators.
- Technology transfer, Part 3

**Part 2B Design Guidelines and Specifications for Management of Stormwater Quality**

ISU, Stephen Jones

- Need to address stormwater quality and provide guidance to MS-4s
- Review and document technologies and BMPs for stormwater quality management
- Design procedures, standards, and specs. For water quality BMPs for frequent, low intensity storms-first flush of contaminants.
- Develop standards and specs.
- Review by SUDAS committees.
- Technology transfer Part3

**Part 3. Program Coordination (IDNR) and Technology Transfer**

IAMU, Pat Sauer

Program Coordination (IDNR)

- Organize comprehensive workgroup meetings to discuss stormwater plan, project funding, updates.
- Organize meetings along with SUDAS with team reps. for project updates.
- Prepare annual report from team reps. That summarizes activities and accomplishments, and future project needs, present this to workgroup
- Present workgroup and team activities at professional meetings.

**Technology Transfer**

- Workshops on BMPs developed by SUDAS for construction site E&SC and stormwater management for water quality.
- Develop Model Ordinances and workshop.
- Develop "Expo" for construction site E&SC and water quality mgmt. of stormwater.
- Web site with resources



**Technology Transfer**

- Organize annual meeting for stormwater and E&SC.
- Training sessions for CPESC and inspectors of construction sites.
- Seminars for local decision makers on latest methods for managing stormwater and low impact development.

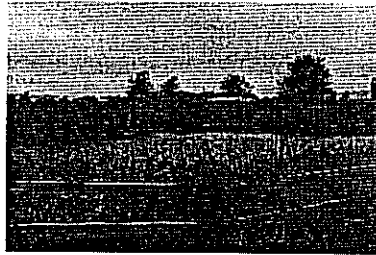


**Part 4. Research on BMPs and Demonstrations**

Stephen Jones, ISU

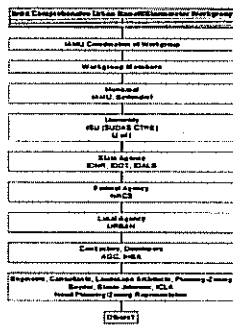
- Survey and Inventory SW management practices at municipalities
- Nutrient loading and removal efficiencies of BMPs
- Demonstration projects

We need a sustainable model for managing stormwater in Iowa

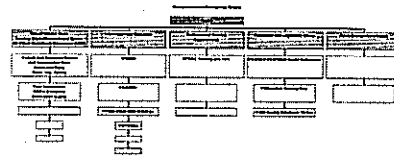


We have something to learn from other states.  
Coastal states have well developed programs that incorporate LID, WI and MN similar

**Iowa Comprehensive Urban Runoff/Stormwater Workgroup**



**Iowa Comprehensive Urban Runoff/Stormwater Workgroup Teams**



**Announcements**

**Upcoming Events:**

1. Stormwater Utility Workshop, March 8, 2004
2. First Annual Stormwater Management Conference, March 9, 2004
3. Construction Site Inspection Workshop, March 10, 2004
4. CPESC (Certified Professional in Erosion and Sediment Control) training, March 31, exam April 1, 2004.
5. Others?

# Iowa Comprehensive Urban Runoff/Stormwater Workgroup

Iowa Comprehensive Urban Runoff/Stormwater Workgroup
IAMU Coordination of Workgroup
<b>Workgroup Members</b>
Municipal IAMU, Bettendorf
University ISU (SUDAS,CTRE) U of I
State Agency IDNR, IDOT, IDALS
Federal Agency NRCS
Local Agency URBAN
Contractors, Developers AGC, IHBA
Engineers, Consultants, Landscape Architects, Planning-Zoning Snyder, Stacie Johnson, ICLA Need Planning/Zoning Representation

Others?

# Iowa Comprehensive Urban Runoff/Stormwater Workgroup Teams

## Comprehensive Workgroup Teams

