

Water Resources Coordinating Council

Agenda

Tuesday, July 13, 2010

9:00 a.m. - Noon

Iowa State Capitol – Room 19

*****SUBJECT TO APPROVAL BY THE COUNCIL*****

-
- 9:00 a.m. Call to Order, Governor's Office
- Approve November 2009 Minutes
- Approve July 2010 Agenda
- 9:15 a.m. Topics of Discussion
- The Iowa Wetlands and Drainage Initiative – Dean Lemke, Bureau Chief – Water Resources, Iowa Dept. of Agriculture and Land Stewardship
- Iowa Cedar River Basin Plan Update – Bill Ehm, Water Resources Director, Iowa Dept. of Natural Resources
- Legislative Update – Susan Judkins, Legislative Liaison, Rebuild Iowa Office and Sharon Tahtinen Status of HF 2459 – Watershed Planning Advisory Council; HF 2531 – Infrastructure bill provisions related to the Watershed Resources Coordinating Council; other legislative issues.
- Other : WRCC web page information – Sharon Tahtinen
- Future plans and meetings

For those wishing to use the conference call option, dial (866) 685-1580 shortly before 9:00 a.m. When the call is answered follow the prompts by entering the conference code of 4510673319 followed by #.

Iowa-Cedar Rivers Basin Interagency Watershed Coordination Team

The WEBSITE (<http://iowacedarbasin.org>)

The website serves as a “one-stop-shop” resource for informing and engaging the Iowa-Cedar Basins stakeholders in the decision-making process and on-the-ground actions for mitigating the critical water resources problems in the basin. The website contains data and information for the entire spectrum of basin stakeholders, from management agencies (federal, state, and local) to water-focused groups, grass-root organizations, land owners, and public. A Decision Support System embedded in the website will allow examination of existing conditions, planning of sustainable watershed scenarios, and forecasting and warning on the flood risks and other water crises. The overall goal of the website is to inform, educate and engage the watershed community in a new form of partnership that promotes sustainable water resources.

IOWA-CEDAR
RIVERS BASIN INTERAGENCY WATERSHED
COORDINATION TEAM

Home Watershed Team Planning Products Meetings Community Resources

Welcome to Iowa-Cedar Rivers Basin

The Iowa-Cedar Rivers Basin is a 12,620 mi² (32,686 km²) mixed-use basin with a vibrant agricultural sector for crop and livestock production, major manufacturing and high tech industries, and three major growing urban centers. The basin population is about 1 million. In the last several years, the changes in the landscape and in the hydrologic regime of the rivers have increased stress on fresh water sustainability leading to crises such as the Gulf hypoxia (due to excessive export of nutrient loading into the Mississippi River) and epic flooding (notably, the floods of 1993 and 2008). Water agencies, the public and the academia are increasingly partnering to face these crises by forging actionable interagency partnerships, building capacity and infrastructure, and mobilizing the local intellectual resources toward addressing and solving the pressing societal problems related to sustainable water resources.

About Us

In 2009, the Iowa-Cedar River Basin Study was initiated to provide a comprehensive watershed plan and process for interagency collaboration and public participation to address water resource and related land resource problems and opportunities in the Basin in the interests of increasing social and economic value, increasing ecological integrity, and managing risk.

Featured

The Cedar River has been deemed the nation's fifth-most endangered river primarily due to poor flood-management practices.

Read More

- America's Most Endangered Rivers: 2010 Edition
- Gazette Online (June 2, 2010)

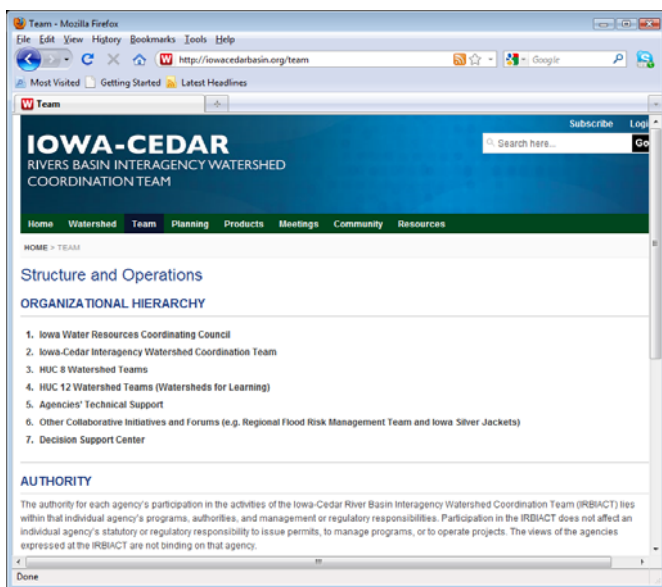
News & Events

- Future Midwestern Landscapes Study Focuses on Ecosystem Services 5 July, 2010
- UNESCO-HELP Americas Workshop in Portland, OR – May 10-13, 2010 6 May, 2010
- The Iowa-Cedar Rivers HELP Basin – First Year 6 May, 2010

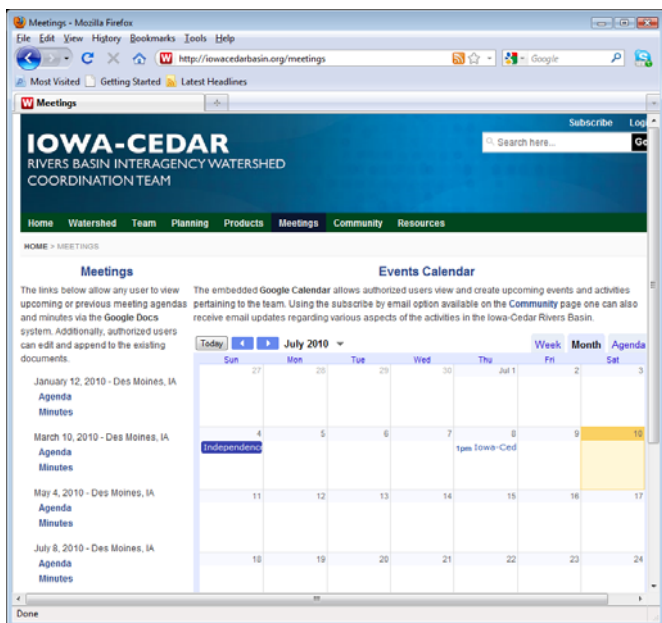
More News

US Army Corps of Engineers, USDA, NRCS, USGS, EPA, UNESCO-HELP, CUAAHSI, DNR, Iowa Department of Transportation, Iowa Water Center, The Nature Conservancy, IHR, IEC, Iowa Department of Agriculture and Land Stewardship.

In the Initial phase the website will promote partnerships and capacity building for the implementation of the Iowa-Cedar Rivers Basin Interagency Watershed Plan.



The Coordination Team meetings are open to the public and subjected to community input



The Process for Watershed Management links the Organization for Coordination, the Watershed Plan; Watersheds for Learning; and the Decision Support System (DSS) together in a way that promotes informed decision making by local, state, and federal government, non-government entities, and land owners and managers under a framework of coordination, collaboration, and partnership.

The Community section of the website will become an open forum allowing stakeholders to:

- learn about the **watershed issues** in the basin
- connect to the **initiatives and actions** in the basin
- link to information on water-related issues

The section also enables users to access multi-level **educational resources** facilitating research and education, hands-on ecological investigations, networking, partnerships, stewardship and volunteering opportunities in the basin in an effort to produce environmentally literate citizens.

The Decision Support System embedded into the website will integrate existing sources of data and information in the basin to assist in the selection, design, implementation, monitoring, and evaluation of watershed water quality and quantity and ecosystem management and restoration measures.



The new interagency partnership will address water resources and related land resources problems and opportunities in the Basin in the interest of increasing social and economic value, increasing ecological integrity and sustainability, and managing the risks. Successful experiences tested in the basin will be disseminated throughout the nation and worldwide through the network of UNESCO-Hydrology for Environment Life and Policy (HELP) basins of which the Iowa-Cedar Rivers Basin is a member since 2009.

13 July 2010

**WATERSHED STUDY OF THE IOWA – CEDAR RIVER BASIN
INTERAGENCY TEAM REPORT TO THE IWRCC**

STUDY PURPOSE AND OBJECTIVES

The purpose of this study is to formulate a comprehensive watershed plan and process for interagency collaboration to address water resource and related land resource problems and opportunities in the Iowa – Cedar Rivers Basin in the interests of increasing social and economic value, increasing ecological integrity, and managing risk.

- Develop a definitive vision for the watershed that addresses sustainable management of water and natural resources of the Iowa-Cedar Rivers Basin for multiple purposes; balances economic, environmental, and social values; and manages risk.
- Formulate a basin-scale watershed plan exemplifying the vision.
- Develop a process for managing the Iowa-Cedar Rivers Basin through coordination, collaboration, and partnership toward achievement of the vision.
- Develop a system for managing data and information.
- Develop a process for ongoing public outreach and involvement.
- Develop strategies for implementing the watershed plan.

STUDY BENEFITS

- Transformation from reactive to proactive watershed management with stakeholders, state and federal agencies, and non-government organizations coordinating actions toward a shared vision, goals, and objectives.
- Means to better understand and manage risk.
- Means for more efficient collection, preservation, and sharing of information and data.
- Means to guide investment decisions for more effective and efficient outcomes.
- Model for other watersheds in Iowa and within the Mississippi River Basin.
- Means for more effective communication among watershed managers.
- Means for more effective communication with the public.

INTERAGENCY TEAM

- Iowa Department of Natural Resources
- Iowa Department of Transportation
- Iowa Department of Agriculture and Land Stewardship
- Iowa Department of Homeland Security and Emergency Management
- Minnesota Department of Natural Resources (currently not active)
- Rebuild Iowa Office
- University of Iowa (IIHR)
- Iowa State University (currently not active)
- USDA - Natural Resources Conservation Service
- US Geological Service
- US Fish & Wildlife Service

- US Environmental Protection Agency
- National Weather Service
- US Army Corps of Engineers
- US Federal Emergency Management Agency (currently not active)
- US Farm Service Agency (currently not active)

Sub-teams: Four specialized interagency teams are being formed to facilitate execution of the study.

- **Visioning Team** will develop process and lead efforts to engage the public and to engage specially formed stakeholder groups. Engagement with the public is scheduled to begin in December 2010 within the Middle Cedar watershed.
- **Technological Team** will develop the methodology for developing and maintaining the central information clearinghouse and the modeling protocol for achieving results across multiple objectives and scales.
- **Plan Formulation Team** will guide refinement of objectives; formulation and evaluation alternative futures; and preparation of reports and other products.
- **Governance Communication Team** will keep decision makers in the watershed from local government to state, federal, and non-government organizations informed and to facilitate policy type discussions.

Note: Participation of more non-government organizations is desired and will be pursued.

AREAS FOR ASSESSMENT

The following assessment areas will provide a framework for setting objectives at multiple scales relating to water and land resources.

- Floodplain Management
- Water Quantity and Allocation
- Water Quality
- Fisheries, Wildlife, and Native Vegetation
- Water-Based Recreation
- Urbanization
- Agriculture
- Energy Production
- Cultural Resource Preservation
- Watershed Management

METHODOLOGY

The study will result in first generation watershed plans for each HUC8 and processes and systems for ongoing watershed management within a reasonable timeline and at a reasonable cost. Scenario planning at the HUC8 scale will include location and scale of specific actions, but will not reach a feasibility level of planning and design for specific projects. Watershed planning at the HUC12 scale will include definitive action plans.

Study phases are compatible with the planning processes of federal water and land resource agencies. Activities within each phase may transcend phases and require iteration. Phases 2-4 apply to study at the HUC8 and basin scales.

PHASE 1 - Initiate Study - Establish Goals and Objectives

PHASE 2 - Assess Current Conditions and Forecast Future Conditions (Without Plan)

PHASE 3 - Formulate and Evaluate Watershed Plan (Desired Future Conditions)

PHASE 4 - Develop Implementation Strategies

PHASE 5 - Conduct Pilot HUC12 Watershed Studies

PHASE 6 - Develop Process for Watershed Management

PHASE 7 - Develop Decision Support System

COST AND SCHEDULE

A first cost “straw” estimate for all agencies in total amounts to \$12 million. A more refined estimate will be developed over the next couple of months, but agencies were in concurrence that \$12 million seemed like a reasonable cost for the breadth and depth of study proposed. Some of the total will be covered through currently existing programs and budgets. A specific determination of this amount is underway. Assuming regular budgets will cover one third of the total, the balance of **\$8 million remains unfunded** and would need to be covered by specific state and/or federal appropriations. Cost does not include ongoing initiatives with in the basin that are outside the defined scope and does not include funding that would be needed to sustain watershed management beyond completion of the defined scope.

If fully funded in FY11 (which is unlikely), the study could be fully accomplished in 2-1/2 to 3 years. Benefits, however, would start accruing from the beginning.

PROGRESS TO DATE

Concept for interagency study was proposed to the IWRCC in 2009. The first interagency meeting was held in January 2010 with follow up meetings in March and May. Subsequent meetings are planned bimonthly with the next one scheduled for September 2010. Overall progress puts us midway through Phase 2. Some specific accomplishments include”:

- Formed interagency team and prepared charter for participation.
- Developed and refined study methodology.
- Set initial vision, goals and objectives at the basin scale.
- Investigated platform for information sharing through the HELP initiative.
- Investigated other large watershed studies – Minnesota River Basin, Muskegon River Basin (Michigan), and several through the HELP initiative.
- Stood up website for the Iowa-Cedar River Basin through the HELP initiative.
- (NRCS) Prepared Rapid Watershed Assessments at the HUC8 scale.
- (NRCS) Developed GIS tool for identifying “hot spots” within basin at the HUC8 and HUC12 scales – **Middle Cedar** HUC8 was decided as the most appropriate HUC8 in which to start study.
- (USACE) Provided staff support and funding for exploring the LEAM system as a tool for forecasting impacts of changes in land use.

- (TNC) Met with several watershed management entities within the basin, conducted an online survey, and prepared a capacity report that included recommendations.
- (TNC) is working with state agencies and others on the possibility of creating a basin coordinator position who would serve as a bridge for work being done at multiple scales.
- Inventoried ongoing efforts by participating agencies and incorporating into the study scope-of-work.
- Prepared initial draft interagency management plan.

KEY TASKS FOR REMAINDER OF FY2010 (federal)

- Recommend HUC12 pilot watersheds.
- Present to the Cedar Basin Coalition.
- Develop planning and integrated modeling protocol for HUC8 scale.
- Refine management plan – especially cost breakdown.
- Develop visioning process for engagement of the public and shared-vision planning process for engagement of specially formed stakeholder group for developing a plan for the Middle Cedar watershed.

VISION, GOALS, AND OBJECTIVES

Vision: Water and land management within the Iowa-Cedar Rivers Basin are done within an integrated, watershed approach toward sustainability of water and natural resources and the economic, ecological and social value derived from their beneficial use.

Goal 1: Risk associated with use of floodplains for economic and social purposes is understood and controlled. (Floodplain)

- 1.1 Achieve acceptable balance between land use and flood risk.
- 1.2 Understand and assign residual financial flood risk responsibility.
- 1.3 Mitigate risk to critical facilities that must be located within the floodplain.
- 1.4 Effectively prepare for and respond to flood emergencies.

Goal 2: Water movement and supply are adequate, sustainable, and compatible with goals and objectives for ecological and landscape integrity and water quality.

- 2.1 Rate of runoff to rivers and streams and isolated wetlands is conducive to natural channel stability and water quality (with pre-settlement hydrographs serving as references).
- 2.2 Long-term forecast for surface water usage are within sustainable supplies, including periods of drought.
- 2.3 Long-term ground water recharge exceeds water usage rate for all purposes.
Forecasts regarding quantity of water over the short-term and long-term adequately account for global climate change.

Goal 3: Surface and ground waters meet water quality standards for nutrients, contaminants, sediment, and temperature throughout the basin and at the interface with downstream watersheds.

- 3.1 Water quality of all water bodies (including groundwater) meet designated uses.
- 3.2 Water quality is within standards (including guidelines for mitigation of gulf hypoxia) at juncture with next HUC8 for all flow conditions.

Goal 4: Watershed ecology, supporting native fisheries, wildlife, and vegetation is sufficient to ensure ecological diversity and integrity across all types of landscapes (uplands, floodplains and lowlands (including water courses and bodies).

- 4.1 Patches of suitable quality, size, variety, and connection are dedicated to providing diverse, sustainable populations of native vegetation and wildlife.
- 4.2 Sufficient connection (size and distribution) exists between uplands, floodplains, wetlands, and riparian natural areas.
- 4.3 Rivers and streams are stable and have natural river functions and connection to their floodplains.

Goal 5: Public access and association with water features (rivers, lakes and ponds, and wetlands) and riparian areas provide wide ranging recreational opportunities compatible with ecosystem sustainability.

Goal 6: Urbanization and rural development (e.g. transportation and utility corridors) occur with minimal impacts on and use of natural resources and in compatibility with watershed sustainability.

- 6.1 Urbanization and rural development are in compliance with waste and water management regulations.
- 6.2 Urbanization and rural development are in compliance with floodplain regulations.
- 6.3 Urbanization and rural development are in compliance with a master plan that recognizes components of community and watershed sustainability.

Goal 7: Agricultural productivity, resiliency, and sustainability increase.

- 7.1 Farmland soil quality increases and soil erosion decreases.
- 7.2 Farmland susceptibility to erosion and sand deposition from floods is reduced.
- 7.3 Agricultural uses in “lowlands” are suitable for lands subjected to frequent flooding.

Goal 8: Energy production, transportation, and use are compatible with a healthy, sustainable watershed.

- 8.1 Fossil fuel based power plants meet air and water quality standards.
- 8.2 Fuel management (transit and storage) practices minimize risk to humans and environment.
- 8.3 Alternative energy sources – such as wind and bio-fuels – continue to increase as a share of energy production.
- 8.4 Water usage for energy production is compatible with other water uses and sustainable.

Goal 9: Cultural resources are identified, documented, preserved, and made accessible to the public in accordance with federal and state laws and regulations.

Goal 10: Ongoing watershed management results in progressive improvement toward watershed sustainability and informs and engages stakeholders and the public.

- 10.1 Stakeholders and public are informed and engaged.
- 10.2 Process for watershed management is effective and ongoing.
- 10.3 Process for interagency collection, storage, and dissemination of technical information serving stakeholders and public is effective and ongoing.
- 10.4 Actions plans are developed at the HUC12 scale compatible with basin and HUC8 goals and objectives.
- 10.5 Some HUC12 watersheds are intensively and holistically managed to answer questions relevant to improving watershed management at a larger scale.
- 10.6 Potential impact of climate change is incorporated into assessment and analysis of all assessment areas.

*A Pilot Program for Integrated
Drainage and Wetland
Landscape Systems*

Development Team

Dr. James Baker, ISU (emeritus) & IDALS

John Chenoweth, P.E., NRCS (retired)

Dr. Bill Crumpton, ISU

Don Etler, P.E., IA Drainage District Assn

Dr. Matt Helmers, ISU

Dean Lemke, P.E., IDALS

Dr. Stewart Melvin, ISU (emeritus) & IDALS

John Torbert, IA Drainage District Assn



Research/Science Basis

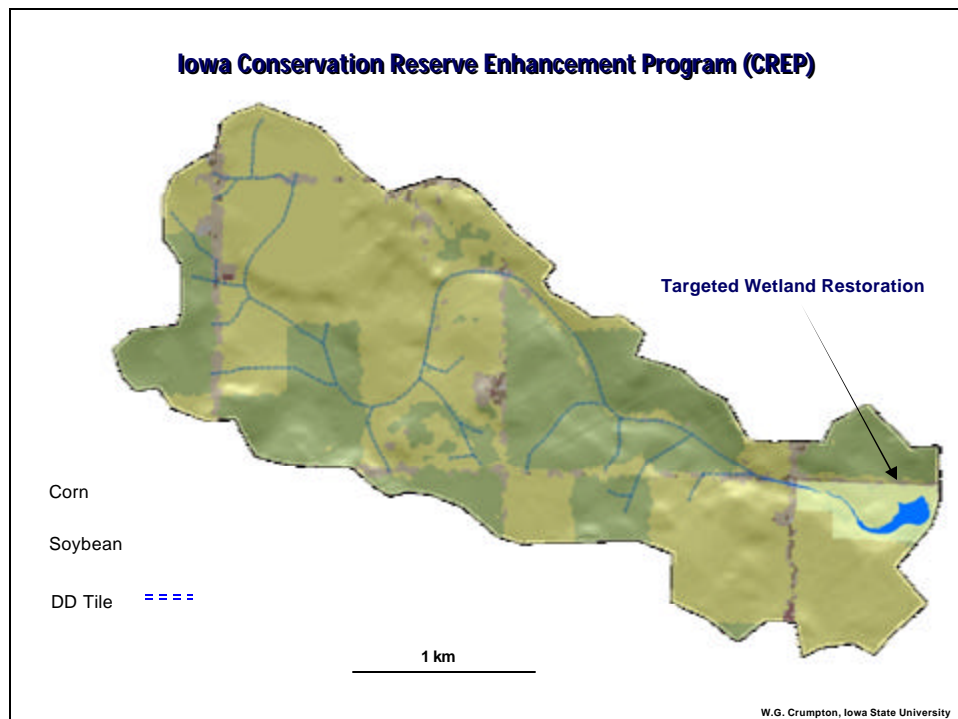
- Water Quality & Drainage Studies – Since 1988, Funded from Fees on Ag Chemicals
 - Gilmore City Research Station & Outlying Farms
 - Ames Research Farm
 - Pekin Farm
- EPA Grant \$1 million – “Integrated Drainage-Wetland Systems for Reducing Nitrate Loads from Des Moines Lobe Watersheds”

Situation

- To reduce the size of the Gulf of Mexico Hypoxic Zone - at least 45% reductions in both riverine total nitrogen flux and riverine total phosphorus flux are needed
- To achieve these reductions as well as local water quality goals will require a combination of practices implemented at the watershed scale
- Nitrate removal wetlands are a watershed scale practice that have been shown to be effective in removing nitrate
- Drainage district systems re-designed to increase environmental services and modern design standards will reduce surface runoff, phosphorus & other contaminants carried by surface runoff
- Market driven, public/private partnerships will be essential to achieve these nutrient reductions at full landscape scale

Goals for Integrated Drainage and Wetland Landscape Systems

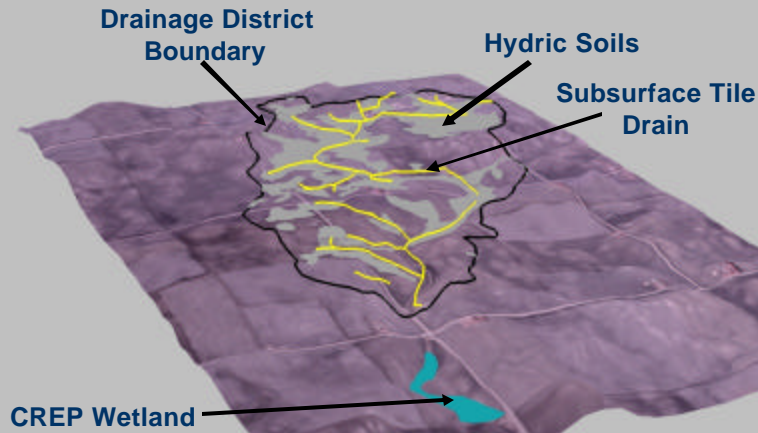
- Reduce the loss of subsurface flow contaminants (primarily nitrate)
- Reduce surface runoff
- Reduce loss of surface runoff contaminants (e.g. phosphorus, pesticides, sediment, and micro-organisms)
- Increase habitat and ecological functions of the landscape
- Reduce N₂O greenhouse gas emissions
- Optimize crop production, yield, and profitability



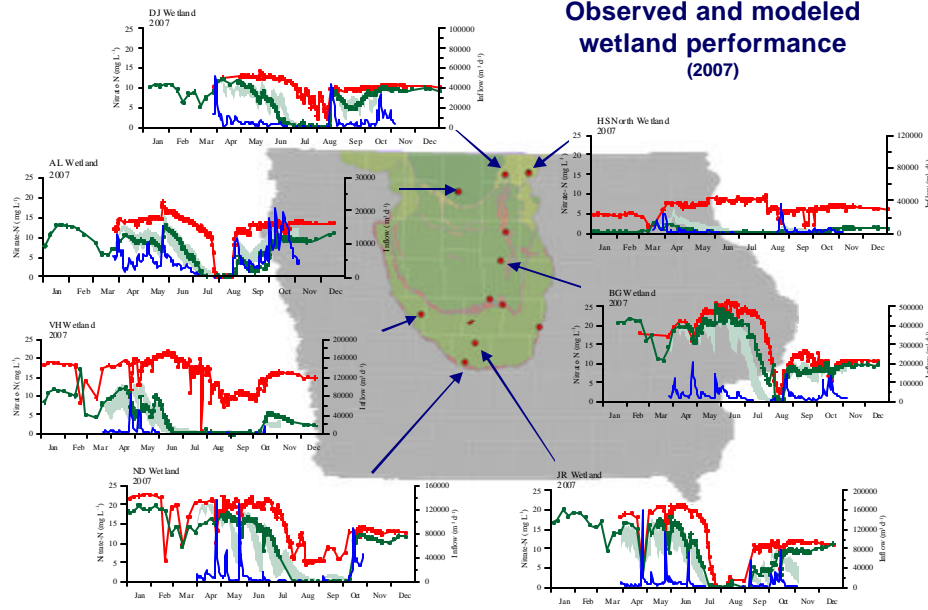
Nitrate Removal by Targeted Wetland Restorations in Agricultural Watersheds



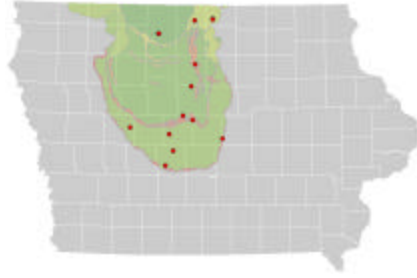
Iowa Conservation Reserve Enhancement Program



Observed and modeled wetland performance (2007)

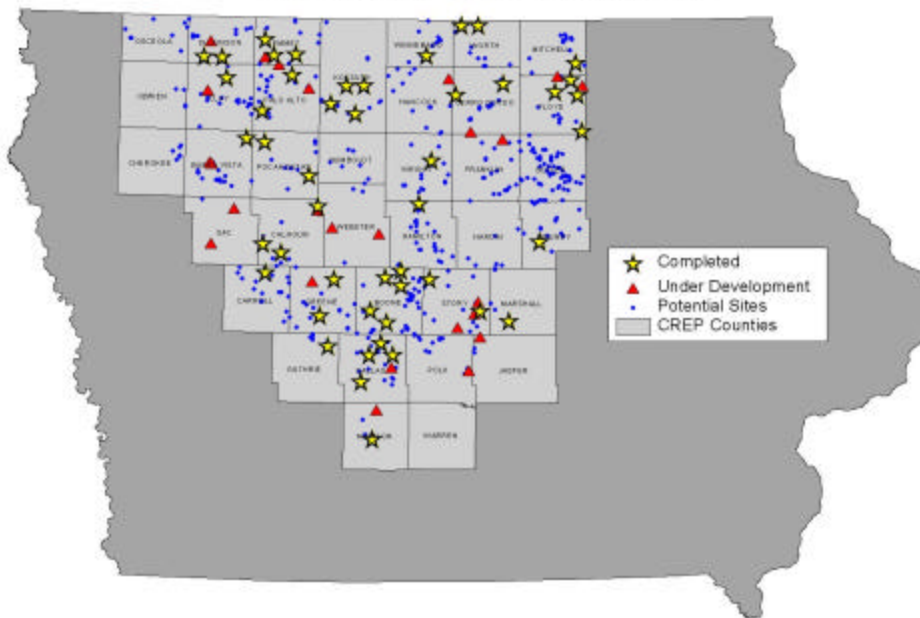


<http://www.abe.iastate.edu/research/facilities/ag-drainage/research-program/adw-project.html>



Wetlands monitored during 2004 – 2009

Current Iowa CREP - Nitrate Removal Wetlands



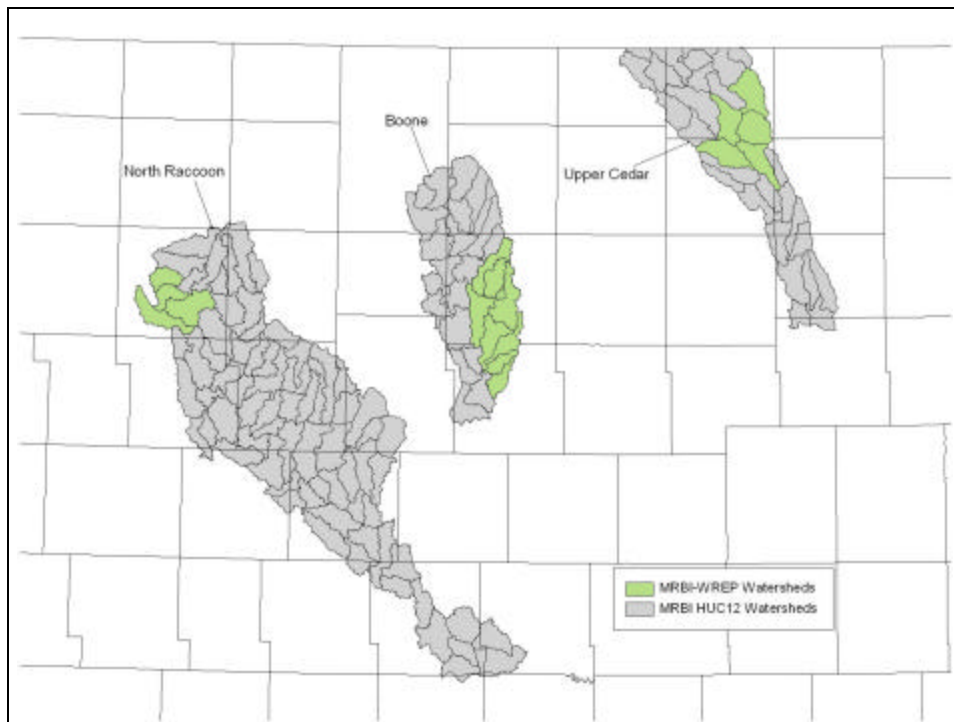
Iowa CREP Status

- 48 wetlands restored/constructed
- 72 wetlands restored, under construction or design
 - 715 acres total wetland pool
 - Remove 40-90% of nitrate from 86,100 acres
 - Estimated nitrate removal over practice lifetime is 53,600 tons
 - Nitrogen removal cost \$0.23/lb, below current cost of fertilizer N

2010 USDA Mississippi River Basin Initiative Wetland Reserve Enhancement Program

Funding award to IDALS

- \$14.1 million federal to match \$3.6 million state funds
- 37 wetland restorations
 - 475 acres total wetland pool
 - 2159 total easement acres including buffer
 - Remove 40-70% of nitrate from 40,700 acres
 - Estimated nitrate removal over practice lifetime is 35,600 tons



Cedar River Watershed Case Study – scenario to reduce nitrate losses 35% (9,200 tons/non-point source allocation) while retaining row-crop production

Practice	% reduction	Acres* treated	Tons reduced
140 to 100 N rate - CB	20.1% or 3.9 lb/ac	all or 1.70 M ac	3,315
190 to 150 N rate - CC	16.2% or 3.8 lb/ac	all or 0.10 M ac	190
Avoid fall N application	15% or 2.5 lb/ac	all or 300,000 ac	375
Rye cover crops	50% or 8 lb/ac	10% or 170,000 ac	680
Drainage water mgt	50% or 8 lb/ac	10% or 167,000 ac	670
N removal wetlands	50% or 8 lb/ac	59% or 1.00 M ac	4,000
TOTALS		[*2/3 of 2.55 M or 1.70 M ac]	9,230

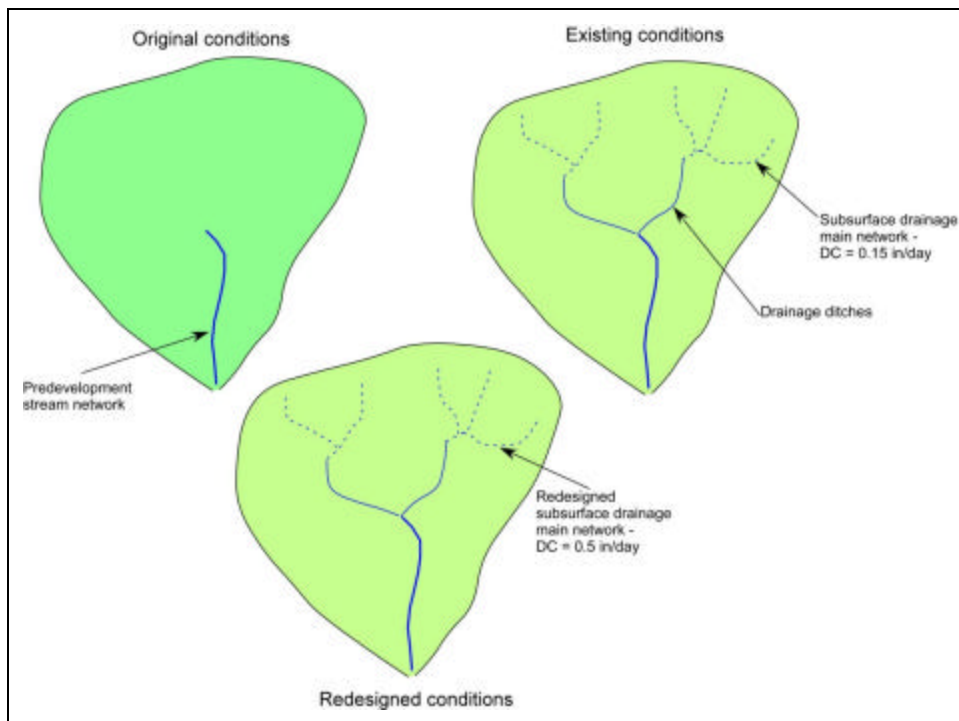
Surface Runoff, Phosphorus, and Sediment Reductions Through Redesigned Drainage Systems

Drainage Design

- Majority of Des Moines Lobe is artificially drained with tile drainage systems installed in early to mid-1900's
- From surveys performed in 1980's many drainage systems have a drainage coefficient of <0.25 in/day (some <0.10 in/day)
- Modern drainage systems (since 1950's) are designed with a drainage coefficient of 0.5-1.0 in/day
 - Tiles for terrace outlets
 - Tile drainage for grassed waterways
 - Ag drainage well closures
 - Drainage district mains and laterals

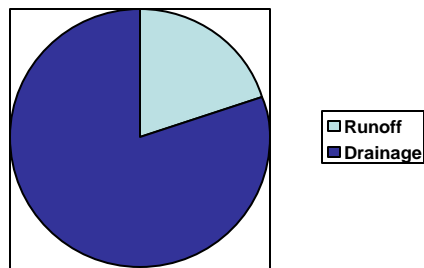
Opportunity for Environmental Improvement

- Drainage district systems will be redesigned and replaced in the future due to aging of existing infrastructure
- Question remains whether they are designed to the status quo (1915-1925 design basis) or designed to increase environmental services (example, integrated with wetland systems) and modern design standards?
- Integrating wetlands at the drainage design stage allows for additional wetland sites since depth and grade of drainage system can be altered to incorporate a wetland



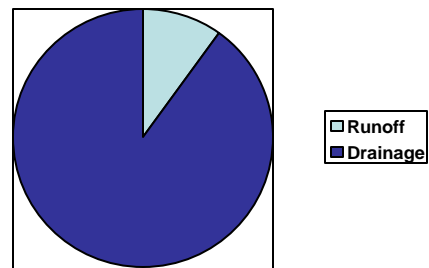
Integrated Drainage and Wetland Landscape Systems

- Extent of drained acreage will NOT be increased
- Drainage district main network will be re-designed to modern drainage coefficient to allow for greater infiltration of water and reduced surface runoff
- Better soil aeration will facilitate improved in-field management (i.e. reduced tillage)
- Field-scale modeling (DRAINMOD) has been conducted to evaluate potential impact of existing versus redesigned outlet capacity on field export of water
- Future studies will evaluate drainage district scale impacts (size of 1000-2000 acres)



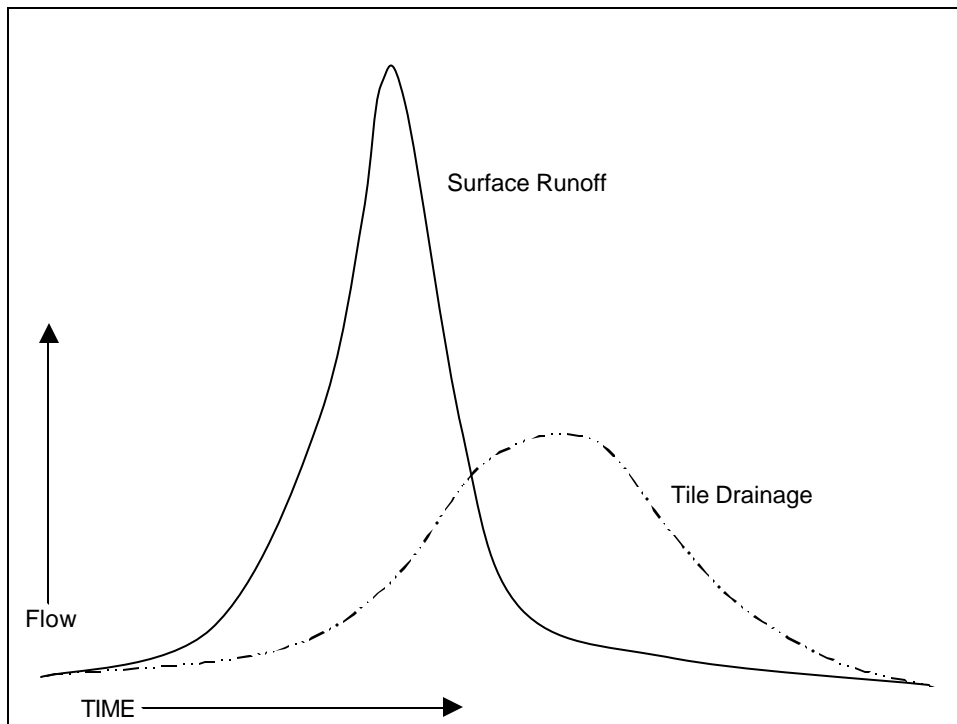
Annual Flow (10 inches)

Existing Drainage System
-Reduced infiltration capacity in soil
-No N removal wetland



Annual Flow (10 inches)

Modern Drainage System with Wetland
-50% reduction in surface runoff
-Small % increase in subsurface drainage
-40-70% N reduction in wetland



Water Quality and Quantity Impacts of Agricultural Subsurface Drainage

- Fausey, Brown, Belcher and Kanwar (1995) reviewed 150+ journal articles and published reports
- From this literature review, water quantity and quality impacts related to subsurface drainage as % change are summarized

Impacts of Agricultural Subsurface Drainage as % Change – Summary of 150+ Journal Articles/Reports

Water & Sediment

- Reduction in total amount of runoff that leaves site as overland flow ranged from 29-65%
- Reduction in peak overland flow runoff rate ranged from 15-30%
- Reduction in total sediment lost by water erosion ranged from 16-65%

Impacts of Agricultural Subsurface Drainage as % Change – Summary of 150+ Journal Articles/Reports

Soil-Bound Nutrients

- Reduction in phosphorus lost by water erosion ranged from 0-45%
- P reduction related to reductions in total soil loss, total runoff, peak runoff rate
- Reduction in soil-bound nutrients ranged from 30-50%

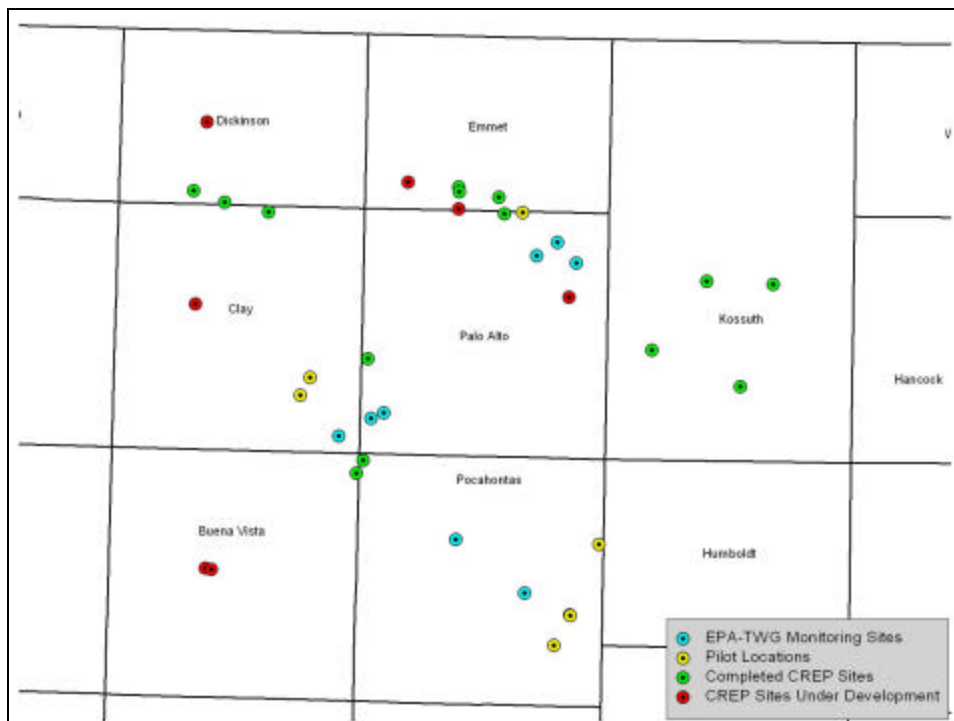
Pilot Demonstrations Multi-disciplinary Studies and Assessments

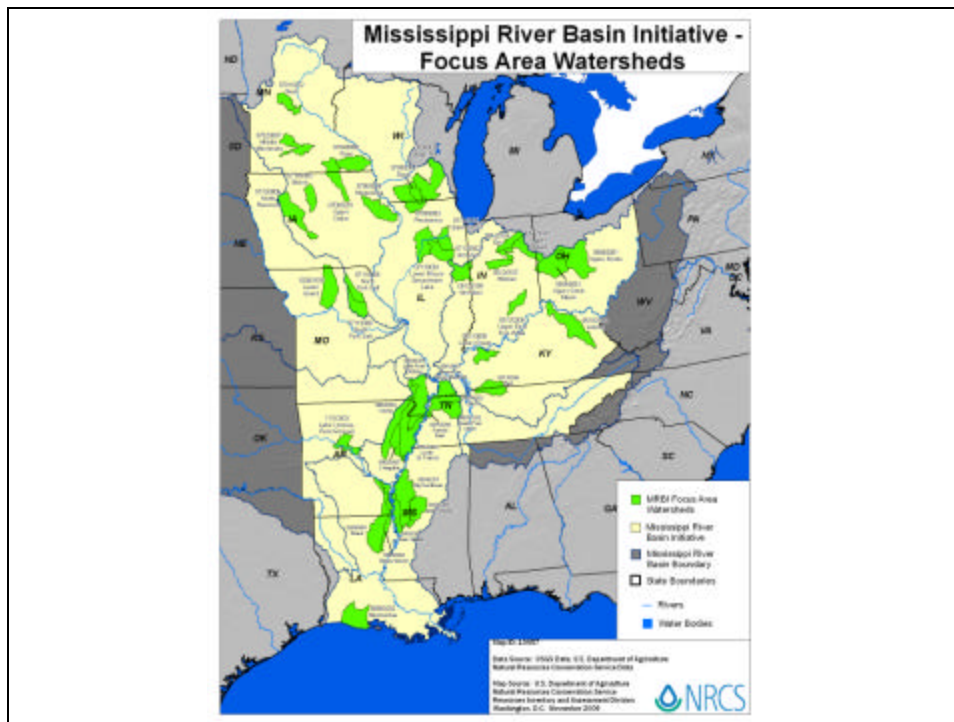
Pilot Demonstrations

- 2012 – 5 pilot demonstration and study sites
 - Study sites to confirm water quality, wetland function, runoff reductions, and crop yield impacts over minimum of 5 years
- Expand to additional 20 pilots primarily for crop yield demonstrations to trigger market-force economic drivers for adoption
- 2050 – projected date for replacement of drainage district mains and laterals, target for implementation across 6 million acres

Initial Pilot Demo Study Sites

- Solicitation of interest across 3000 drainage districts
 - Considerations underway in several counties
- Drainage district applications and IDALS cost-share funding obligations for pilot demonstrations
 - Pocahontas DD 65 (under construction)
 - Clay DD 8
 - Clay DD 25
 - Pocahontas DD 48 & 81 (combined)
 - Palo Alto DD15





Interagency Working Group

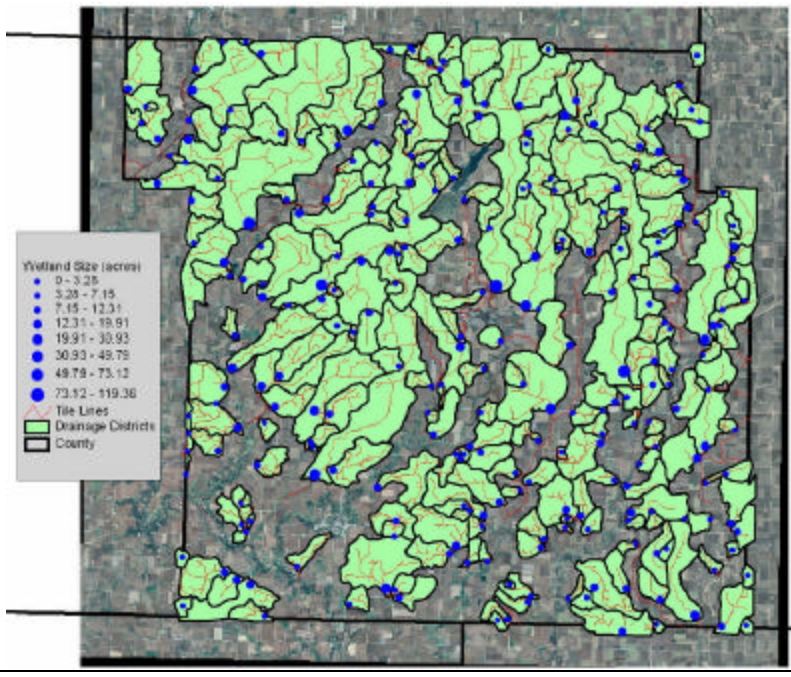
Iowa Department of Agriculture & Land Stewardship (IDALS)
 Iowa State University (ISU)
 University of Iowa (UI)
 Iowa Department of Natural Resources (DNR)
 USDA – Farm Service Agency (FSA)
 USDA – Natural Resources Conservation Service (NRCS)
 USDA – Agricultural Research Service (ARS)
 United States Fish & Wildlife Service (FWS)
 United States Environmental Protection Agency (EPA)
 United States Geological Survey (USGS)
 Iowa Institute of Hydraulic Research (IIHR)
 Center for Agricultural and Rural Development (CARD)
 Iowa Flood Center (IFC)

•	Hydrology and Water Quality	Co-Leads: ISU— Matt Helmers ISU—Bill Crumpton
•		Members: DNR—Keith Schilling
•		DNR— Eric O'Brien
•		DNR— Mary Skopec
•		ARS— Marc Tomar
•		NRCS— Eric Hurley
•		EPA— Jason Daniels
•		USGS—Rob Middlemis-Brown
•		IHR—Nandita Basu
•		DSC—Dean Lemke
•	Soil Resources	Lead: ARS—Dan Jaynes
•		Members: ISU—Rick Cruse
•		ISU—Lee Burras
•		DNR—Deb Ouade
•		DSC—Dean Lemke
•		DSC—James Baker
•		NRCS—Barb Stewart
•		NRCS—Mike Suck
•		IHR—Thanos Papanicolaou
•		LE—Arl Bettis
•	Crop Yield	Lead: FSU—John Whitaker
•		Members: DSC—Stewart Melvin
•		ISU—Matt Helmers
•		ARS—Dan Jaynes
•	Habitat	Lead: USF WS—Doug Helmers
•		Members: ISU—Bill Crumpton
•		ISU—Steve Dinsmore
•		ISU—Arnold Van der Valk
•		DNR—Todd Bishop
•		DNR—Tom Witton
•		DNR—Vince Evesizer
•		DSC—Shawn Richmond
•		NRCS—Jennifer Anderson-Cruz
•		EPA—Jason Daniels
•	Green House Gases	Lead: ISU—Bill Crumpton
•		EPA—Jason Daniels
•		DSC—Dean Lemke
•		ARS—Tim Parkin
•	Decision Drivers	Lead: DNR—Pat Boddy
•		Members: DSC—Chuck Glipp
•		DSC—Dean Lemke
•		DNR—Bill Ehm
•		DNR—James Giglierano
•		DNR—Melissa Speed
•		ISU—Cathy King
•		ISU—Matt Helmers
•		ISU—Jay Arbuckle
•		ISU—Jackie Comito

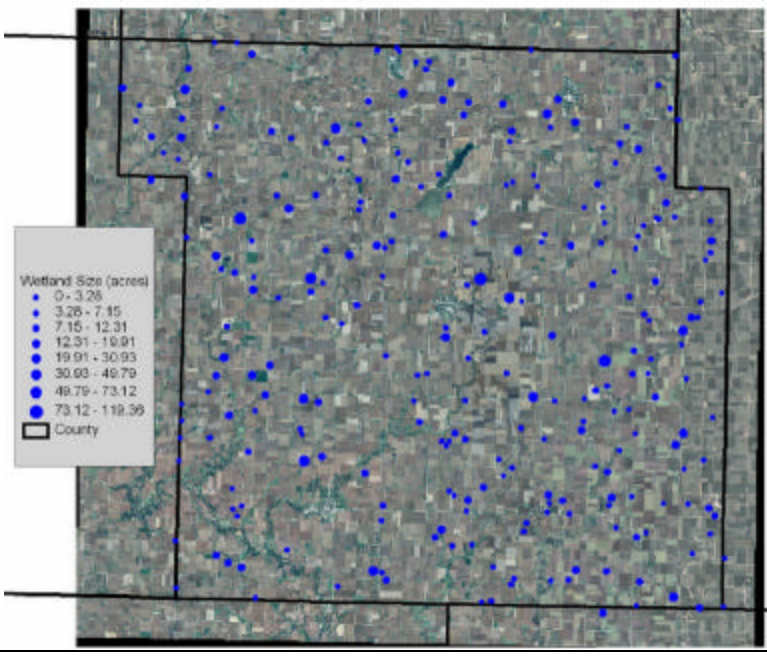
Goals for Integrated Drainage and Wetland Landscape Systems

- Reduce the loss of subsurface flow contaminants (primarily nitrate) – 40-70% nitrate reduction
- Reduce surface runoff – 50%
- Reduce loss of surface runoff contaminants (e.g. phosphorus, pesticides, sediment, and micro-organisms) – 50% sediment & P reduction
- Increase habitat and ecological functions of the landscape
- Reduce N₂O greenhouse gas emissions
- Implement through market-force economic drivers of optimized crop production and profitability

Calhoun County – Drainage Districts & Potential Nitrate Removal Wetlands



Calhoun County – Potential Nitrate Removal Wetlands




For Further Information

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Overview of 2010 Iowa Legislative Actions: Floodplain Management Recommendations of the Water Resources Coordinating Council

WRCC Meeting 7-13-10

Susan Judkins, Intergovernmental Affairs Director
Rebuild Iowa Office


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Floodplain Recommendation Process

- RIAC Recommendation #9 - The state will move state policy forward and lead regional and local discussion on floodplain and watershed management.
- HF756 "The council (WRCC) shall develop recommendations for policies and funding promoting a watershed management approach to reduce the adverse impact of future flooding on this state's residents, businesses, communities, and soil and water quality."
- Water Resources Coordinating Council (WRCC) generated 16 policy recommendations and 9 funding recommendations to the Governor and General Assembly by the 11/15/09 deadline.
- SF2316 addressed 12 policy recommendations and passed the Senate but did not pass the House Committee
- Just 5 policy recommendations PASSED in HF2531 and HF2459


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Floodplain Management Legislation

- Policy recommendations included in SF2316 but NOT PASSED in 2010:
 - Regulate the .2% (500-year) floodplain (or a model ordinance)
 - Establish stormwater standards (or best practices)
 - Enhance safety for critical facilities (require continued operation or safe cessation during 500-year flood event)
 - Hydrological tiling study
 - WRCC to make watershed management recommendations by 11/15/10
 - Integrate multipurpose wetlands into watersheds
 - Update conservation practice criteria to reflect changing precipitation


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Floodplain Management Legislation

- Water Resources Coordinating Council (WRCC) made 9 funding recommendations
 - Budget constraints made this difficult to address in 2010
 - HF2389 (RIIF Bill) appropriates \$2 million for the Watershed Improvement Review Board for wetland easements & flood prevention.
- A floodplain management-related bill that passed was SF2371, which reduces royalty fees for removing sand and gravel from rivers in Linn and Black Hawk Counties on a pilot basis through 6/30/15. (Signed 4/23/10)
- SSB3170 and HSB608 explored the idea that state financial support should be withheld from certain development in the 500-year floodplain, but these bills did not pass.


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Floodplain Management Legislation

- 5 policy recommendations were addressed by legislation passed in 2010:
 - HF2531 (Standing Appropriations Bill) requires the WRCC and others to *extent feasible* to
 - 1) work on establishing an Iowa chapter of State Floodplain Managers Association, and
 - 2) education and
 - 3) marketing for flood risks and floodplain awareness.
 - HF2459 (Watershed Bill)
 - 4) authorizes that funding be sought for pilot watershed projects involving IDALS, DNR and the Iowa Flood Center, and
 - 5) outlines potential watershed governance via Watershed Management Authorities

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HF2531 – WRCC Requirements

Sec. 127. Section 466B.4, subsection 2, Code Supplement 2009, is amended to read as follows: 2. Marketing campaign. The water resources coordinating council shall develop a marketing campaign to educate Iowans about the need to take personal responsibility for the quality and quantity of water in their local watersheds. The emphasis of the campaign shall be that not only is everyone responsible for clean water, but that everyone benefits from it as well, and that everyone is responsible for and benefits from reducing the risk for flooding and mitigating possible future flood damage. The goals of the campaign shall be to convince Iowans to take personal responsibility for clean water and reducing the risk of flooding and to equip them with the tools necessary to effect change through local water quality improvement projects and better flood plain management and flood risk programs.

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HF2531 – WRCC Requirements

Sec. 128. **NEW SECTION.** 466B.12 Flood plain managers.

The council shall encourage and support the formation of a chapter of the association of state flood plain managers in Iowa that would provide a vehicle for local flood plain managers and flood plain planners to further pursue professional educational opportunities.

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HF2531 – WRCC Requirements

Sec. 129. **NEW SECTION.** 466B.13 Flood education.

The Iowa state university agricultural extension service, the council, and agency members of the council shall, to the extent feasible, work with flood plain and hydrology experts to educate the general public about flood plains, flood risks, and basic flood plain management principles. This educational effort shall include developing educational materials and programs in consultation with flood plain experts.

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HF2459 – WRCC Requirements

Sec. 2. **NEW SECTION.** 466B.11 Watershed demonstration pilot projects. The department of natural resources and the department of agriculture and land stewardship, in collaboration with the United States department of agriculture's natural resources conservation service and the Iowa flood center established pursuant to section 466C.1, and in cooperation with the council, shall seek funding to plan, implement, and monitor one or more watershed demonstration pilot projects for urban and rural areas involving a twelve-digit hydrologic unit code subwatershed as defined by the United States geological survey. The pilot projects shall include features that seek to do all of the following: 1. Maximize soil water holding capacity from precipitation. 2. Minimize severe scour erosion and sand deposition during floods. 3. Manage water runoff in uplands under saturated soil moisture conditions. 4. Reduce and mitigate structural and nonstructural flood damage.

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HF2459 – WRCC Recommendation re Governance

Sec. 5. **NEW SECTION.** 466B.23 Duties. A watershed management authority may perform all of the following duties: 1. Assess the flood risks in the watershed. 2. Assess the water quality in the watershed. 3. Assess options for reducing flood risk and improving water quality in the watershed. 4. Monitor federal flood risk planning and activities. 5. Educate residents of the watershed area regarding water quality and flood risks. 6. Allocate moneys made available to the authority for purposes of water quality and flood mitigation. 7. Make and enter into contracts and agreements and execute all instruments necessary or incidental to the performance of the duties of the authority. A watershed management authority shall not acquire property by eminent domain.

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What's happening now?

- Considering what can be done without legislation
- Model ordinances being identified: Cedar Falls, Palo, Mason City
- Education: flood seminars
- Seeking dialogue with 2010 opponents
 - Cities
 - Levee Districts
- Floodplain Mapping moving ahead
- Pursuing federal program review through USDA
- Evaluating promotion of Watershed Management Authority creation and funding options
- WRCC to consider next steps

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Q & A



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