Subcommittee of the Water Resources Coordinating Council
To Focus on Recommendations required by HF756
(WRCC Established under Iowa Code Chapter 466B)

RECOMMENDATIONS

And Funding Options

Presented to the Water Resources Coordinating Council 11/6/09

16 Policy Recommendations and 9 Possible Funding Options
Grouped by Means of Mitigating Flood Risk:
Regulatory, Planning and Projects, and Research and Education

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INTRODUCTION

2009 Iowa legislation, HF 756 , requires the state's Water Resources Coordinating Council (WRCC) to submit policy and funding recommendations that promote "a watershed management approach to reduce the adverse impact of future flooding on this state's residents, businesses, communities, and soil and water quality." At its meeting on June 12, 2009, the WRCC named a subcommittee to work on recommendations. Subcommittee members include:

University of Iowa -- IIHR- Hydroscience & Engineering, Iowa Flood Center: Larry Weber
Iowa State University – Leopold Center: Jerry DeWitt, alternate Jeri Neal
University of Northern Iowa – Center for Energy and Environmental Education: Kamyar Enshayan
Homeland Security: Tom Oswald, alternate Steve Zimmerman
U.S. Army Corps of Engineers: Jerry Skalak
IDOT: Scott Marler, alternate Dave Claman
NRCS: Rich Sims, alternate Marty Adkins
IDNR: Bill Ehm, alternate Sharon Tahtinen
IDALS: Chuck Gipp
IDED: Jessica Montana
RIO: Ken Tow, alternate Susan Judkins
USGS: Rob Middlemis-Brown, alternate Kaylene Carney

The subcommittee met on July 13, 2009, and identified four work groups to work on components of the recommendations required by HF 756. Work groups had a diverse representation, including members from groups outlined in HF756 that should be consulted, including "hydrological and land use experts, representatives of cities, counties, drainage and levee districts, agricultural interests, and soil and water conservation districts, and other urban and regional planning experts." The work groups include:

#1: Flood Plain Management and Regulation, chaired by Chuck Corell, DNR (See Exhibit A to Draft Recommendations, Page 19)
#2: Lowland Focus, Wetland protection, restoration and construction; and conservation easements and other land management, chaired by Marty Adkins, NRCS (See Exhibit A to Draft Recommendations, Page 20)
#3: Upland Focus, Perennial ground cover and other agricultural conservation practices; and permanent or temporary water retention structures, chaired by Tom Oswald, HSEMD (See Exhibit A to Draft Recommendations, Page 21)
#4: Stormwater, Promulgation and implementation of statewide stormwater management standards; and pervious pavement, bioswales, and other urban conservation practices, chaired by Jessica Montana, IDED (See Exhibit A to Draft Recommendations, Page 22)

Work group meeting dates and times were published on the Rebuild Iowa Office web site, and the public participated in person and by teleconference. The work groups' recommendations were considered by the subcommittee on September 15, 2009, edited slightly, and 48 draft recommendations were submitted to the Water Resources Coordinating Council for preliminary consideration on 9/18/09. **The 48 draft recommendations and attachments are included in this document as Exhibit A.**

The Water Resources Coordinating Council authorized the subcommittee to solicit public input on these 48 draft recommendations electronically, via regular mail and fax, and at public meetings as follows:

9/29/09	Mount Pleasant Civic Center, 307 East Monroe Street, 2-4 PM
	West Branch, Hoover Library and Museum, 210 Parkside Drive, 6-8 PM
10/6/09	Ankeny, Public Services Building, 220 W. 1st Street, Conf. Room A. 10 AM-Noon
	Waverly Civic Center, 200 E. 1st St. NE, 5-7 PM
10/8/09	Lewis, Wallace Foundation Learning Center, Armstrong Research Farm, 10 AM-Noon
	Storm Lake, Sunrise Pointe Municipal Golf Course, 4-6 PM

The public input was collected, summarized, and considered by the subcommittee at meetings held on October 20, 2009 and October 27, 2009. **The public input is included in this document as Exhibit B.**

A sample of documentation of the background research and discussions held by the four work groups is included in this document as Exhibit C.

Based on consideration of public input and thorough subcommittee discussion, recommendations were revised, combined or deleted to result in sixteen policy recommendations (A- P)and nine potential funding options (AA through II). The recommendations were no longer grouped by the originating work group, but were regrouped under three principal means of mitigating flood risk, i.e. 1) Regulatory; 2) Planning and Projects; and 3) Research and Education. Projected cost information was added for many of the proposals, and some funding options were identified.

In addition to these recommendations and options, it is strongly urged that the Governor and General Assembly recognize that excellent recommendations have been generated from past water resources task forces in 2001, 2003 and 2007 and should be reconsidered (former Draft Recommendation #26, p.13 and task force reports pp. 22-26) and existing water resources programs should be managed to include flood risk management (former Draft Recommendation #28, p. 13).

Regulatory Recommendations

A (REVISED #1): The 0.2% flood should be the regulated flood plain instead of the 1% flood. This change should be phased in as the 0.2% flood plains are identified on Flood Insurance Rate Maps published by FEMA. Potential funding assistance has been identified in recommendations G and K, and funding option DD.

B (REVISED #2 & #3): The State should prohibit reconstruction of substantially damaged structures in the floodway and limit reconstruction or new construction in the flood plain to no more than 3 vertical feet of fill above the natural ground line. Means other than fill to elevate structures may be allowed. These provisions do not apply to features and structures necessary for the construction or maintenance of utility facilities, transportation, water control facilities, or public infrastructure that are otherwise subject to permitting requirements by state and federal regulations.

C (ORIGINAL #4): Areas on the landward side of a flood control levee recognized by the Federal Emergency Management Agency as protecting against the 0.2% flood should not be considered as being in the 0.2% flood plain and should not be subject to the regulations for the 0.2% flood plain.

D (Original #12): New Class I Critical Facilities should be located outside the 0.2% flood plain whenever practical. New Class I Critical Facilities should also be designed and located as to maintain their function during a 0.2% flood whenever practical.

E (REVISED #40): Explore opportunities for enhancing and implementing minimum statewide stormwater laws and regulations, including, but not limited to, limiting water runoff, reducing future flood damage, focusing on stream channelization, and improving water quality.

F (REVISED #41): Amend National Pollutant Discharge Elimination System (NPDES) permits to require soil quality restoration after one or more acre of land is disturbed, including, but not limited, to mitigating soil compaction and replacing top soil after construction is complete.

Planning and Project Recommendations

G (REVISED #5, #16 and #18): Focus public investments in levees on built-up areas where there are no other practicable alternatives for mitigating flood damage risks. Elsewhere, reconnect streams and rivers to their flood plains through levee modifications or removal, coupled with compensatory agreements with farm owners that provide for continued farming with higher assumed flood loss risks. Provide $10 Million annually for rural levee modification and farmland compensatory agreements.

H (ORIGINAL #14): Provide interagency assessment and project planning to support and inform infrastructure / easement / land purchase investment decisions in flood plain areas.

I (ORIGINAL #19): Integrate multi-purpose wetlands into watersheds with drainage districts or larger drainage systems. Systems would be retrofitted to enable nutrient trapping and treatment; more water infiltration and evapotranspiration; greater retention of run-off; and habitat to support biodiversity. Maintain a holistic view of watershed management and targeting funds and programs within those watersheds.

J (ORIGINAL REVISED #20, #30 and #48): Conduct a hydrological tiling study to determine the impact tile drainage has on infiltration, surface runoff, and flooding and to evaluate the feasibility of seasonal retention of water in tile drained fields as a drainage management strategy. The impact of potholes, wetlands and water retention structures should be considered in the study.

K (REVISED #21, #23, #27): Fund planning, implementation and monitoring of a pilot HUC-12 urban/rural watershed demonstration. (A HUC-12 is a hydrologic unit termed a “subwatershed” by the US Geological Survey. A

HUC-12 averages 40 square miles, with a range from 10,000 to 40,000 acres.) The pilot project should integrate the following:

1. Maximizing soil water holding capacity from precipitation.
2. Minimizing severe scour erosion and sand deposition during floods
3. Managing runoff in uplands under saturated soil moisture conditions
4. Structural and nonstructural flood damage reduction and mitigation strategies.

It is recommended to plan for total costs of $35 million, with $23 million in state funds leveraging $12 million of local funds.

Research and Education Recommendations

L. (ORIGINAL #10): Support the formation of a local chapter of the Association of State Flood Plain Managers in Iowa that would provide a vehicle for local managers and planners to discuss flood plain issues and learn from each other.

M (REVISED #11 & #29, 25, 31, 32): The Iowa State University Extension, working in conjunction with flood plain and hydrology experts, should be tasked with and appropriated funds for educating the general public about flood plains, flood risks and basic flood plain management principles.

1. Develop a state-wide soil moisture monitoring network for assessing flood risk through the Iowa Water Center and Leopold Center for Sustainable Agriculture, both at ISU; and make extensive use of existing tools and knowledge focused on soil health, specifically, the NRCS Soil Conditioning Index as a common metric for improved agronomic and conservation practices.

   - *Projected Costs: $170,000 ($85K/yr for 2 years, doesn't include indirects)*
     Expand Iowa Daily Erosion Project (WEPP model) for a statewide soil moisture monitoring network by synching with LIDAR and real time satellite data. Yr.1: Supplies $5,000; 30K (salary for 6 months) to rewrite/optimize IDEP scripts and automate input of new management scenarios; $90K (salary for 1 year) for coding IDEP point sampling (6 months), hillslope delineation (4 months) , and rotation database (2 months); and 45K to create and code methodology to determine residue cover (6 months).

2. Develop educational materials and programs in consultation with flood plain experts
   - *Projected Costs: $370K ($100K year 1; 85-90K/yr for years 2-4)*
     1 FTE – 80 K Salary & Benefits, 10K for current expenses, materials prep, & transportation; 10K for trainings and meetings (YR 1); 85-90 for salary, benefits and expenses for following years

3. Expand use of existing integrated farm/land resource management tools, specifically I-Farm, to assist planners, landowners, and farmers to plan and create infiltration systems to accommodate one inch rainfalls and support conservation and business planning
   - *Projected costs: $1,000,000 (250K/yr for 4 years)*
     Redesign of I-FARM user interface to increase user accessibility; re-code the algorithms in a newer, more flexible and maintainable programming language; and create a set of optimization algorithms and results visualization methods for users that return an overall "optimize" solution among alternatives and their environmental impacts, profitability, etc.

N (ORIGINAL #24): Include flood plain or alluvial soils information as part of the disclosure form used as part of real estate transactions.

O (ORIGINAL #35): Reassess criteria for conservation practices because of changing climate.

1. NRCS Field Office Technical Guide (conservation criteria)
2. NRCS Engineering Field Manual (design criteria)

P (REVISED #33 - #47): Develop and implement a statewide watershed education and outreach marketing campaign, as outlined in HF2400. Estimated first year funding is $1 million.

Funding Options

POSSIBLE REVENUE GENERATORS:

AA (REVISED #39): Approximately $16 million in sales tax is currently collected by public water suppliers for drinking water. A percentage could be allocated for watershed protection projects, a percentage to an infrastructure replacement revolving loan fund, with approximately 10% going to the Department of Natural Resources for management of the Safe Drinking Water Act. Additional sources could include a new sales tax on bottled water sales, and/or collecting a redemption fee on bottled water similar to pop bottles.

BB (REVISED #46): Amend the Iowa Code Amend the Iowa Code which authorizes soil and water conservation sub-districts to fund local watershed projects; include integrating levee, drainage and SWCD watershed project taxing authority.

POSSIBLE STATE APPROPRIATIONS:

CC (ORIGINAL #7): The state should create a grant program to help entities bear the cost of certifying existing flood control levees.

Projected Costs: Rough cost estimate for the evaluation and certification of applicable levee systems (e.g. those levee systems known to provide or potentially providing protection from the 1% or greater flood event). Our District's experience to date in accomplishing the rigorous evaluation work necessary to support certification and, ultimately, levee accreditation suggests a reasonable average cost per levee system would be $200,000 (+/-). We estimate there are approximately 30 levee systems in the State still needing/wanting to be evaluated and certified for purposes of accreditation and for which there are no known other funding source(s) to accomplish this work. Based on these numbers the total estimated cost would be $6,000,000 ($200,000 X 30).

DD (REVISED #9 and #13): Provide $3Million annually for local and regional watershed-based flood plain management planning. Provide $50 Million annually to leverage local and federal funds for flood damage risk mitigation projects, with a priority given to projects that employ non-structural strategies. The types of leverage that could occur are explored in the following fictional examples:

Example #1: *Flashy City has experienced repetitive flood damages in a low-to moderate income neighborhood that lies in the flood plain of Flashy Creek. A comprehensive planning effort coordinated by the Iowa Flood Risk Management Team (FRMT) identifies the most cost-effective alternative, which is found to be acceptable to the community after public and interagency review. The alternative consists of:*

1. *A series of small dams in the Flashy Creek watershed to reduce peak flows from up to 1% storm events. Construction is paid for with a combination of federal, state, and landowner contributions.*
2. *Relocation of households and removal of houses and other buildings in the Flashy Creek 1% flood plain funded through the FEMA 404 Hazard Mitigation Program and State funds.*
3. *Cost-sharing and low-interest loan assistance for flood-proofing measures for home and businesses in Flashy Creek 0.2% flood plain funded through the FEMA 404 Hazard Mitigation Program and State funds.*

Example #2: *The business and manufacturing district of Sycamore City (population 40,000) developed in the flood plain of the Sycamore River. After repeated flood damages in the early 1900's the City built a levee and flood wall which protected the district reliably – at least until 2010. The City is growing and there is local pressure to develop additional flood plain land for housing.*

Prior to 1960, farmers working the productive but flood-vulnerable soils of the Sycamore River flood plain also erected levees to shield them from floods which had damaged crops three years in ten on average. The levees typically were not engineered extensively and were placed within 30 feet of the river bank.

In 2010 saturated soil conditions coupled with a sudden snowmelt and heavy rains resulted in 0.2% flows on the Sycamore River, resulting in broken levees in Sycamore City and the rural flood plain nearby. The business and manufacturing district suffered heavy losses to buildings, equipment, stock and inventory. Farmed areas nearby experienced severe land damage from scouring and sediment deposition.
A comprehensive planning effort coordinated by the Iowa Flood Risk Management Team (FRMT) identifies the most cost-effective alternative, which is found to be acceptable to the community after public and interagency review. The alternative consists of:

1. *Removal or notching of agricultural levees within ten miles upstream and downstream of Sycamore City.*
2. *The purchase of flood storage easements on farmland within the 4% flood plain by a State-County-City intergovernmental entity organized under Chapter 28E of the Code of Iowa.*
3. *The purchase of development rights by the City in farmed parts of the flood plain located within 2 miles of City limits, cost-shared through the USDA Farm and Ranchland Protection Program (FRPP).*
4. *Raising and armoring the levee protecting the existing business and manufacturing district to achieve not less than 0.2% protection, certification of the levee's 0.2% protection status, and certification by the U.S. Army Corps of Engineers (USACE) for participation in the USACE 84-99 Program.*

EE (ORIGINAL #17): Provide authority for the purchase of easements in upland areas that are part of planned flood risk reduction projects. The easements would stipulate the use of water infiltration practices that are appropriate for each situation, consistent with the Field Office Technical Guide. Practices might include contour farming, strips of perennial vegetation, ponds, wetlands, no-till, and other measures.

FF (REVISED #22): Increase leveraging of federal funds with state funding for programs including the Wetland Reserve Program (WRP), Emergency Watershed Protection (EWP), Farm and Ranch Lands Protection Program (FRPP), and Conservation Reserve Program (CRP) programs with state matching funds.

GG (REVISED #36): Recommend increased funding for staff at research as well as project implementation levels in the public and/or private sector. An effective watershed level planning effort that leads to an effective locally-led implementation project typically ranges from 10,000 – 30,000 acres in size. Staff is typically IDALS/DSC or ISU-Extension Service technical positions that are dedicated to that project. The USDA/NRCS also provides technical and/or financial assistance. Current staffing levels are not adequate to provide the technical expertise needed. Funding needs at the state level would require an additional 50 dedicated technical positions estimated at $4.2 million annually.

HH (REVISED #37): Recommend continued funding established in 2009 via HF822 for:

1. The Iowa Flood Center: $1.3 million
2. The Iowa Department of Natural Resources: $2 million for flood plain management section

II (REVISED #43): Support and enhance existing stormwater funds, including the State Revolving Fund (currently funded on an 80% federal/20% state basis with the federal share received from EPA funds dependent on federal appropriations and the state share contributed by state bond funds) and the Watershed Improvement Review Board (currently funded at $5 million).

Deletions from Original Draft Recommendations

DELETE #6: The governor should support and endorse Alternative H in the "Upper Mississippi River Comprehensive Plan - Final Report June 2008 (Revised Aug 14, 2008)" prepared by the Army Corps of Engineers. This alternative would improve the existing levee system to provide protection from the 0.2% flood along the Mississippi River (not the tributaries). [Note: The Army Corps of Engineers employees participating in the work group did not endorse any alternative.] – *It was determined that this is not a legislative issue and strayed from the statewide focus of other recommendations.*

DELETE #8: The state should create a grant program to assist entities with improving existing levees as one way to meet the new 0.2% flood regulations. – *Potential funding assistance has been identified in recommendations G and K, and funding option DD.*

DELETE #15: The Water Resources Coordinating Council should move more quickly from information sharing to actual interagency program coordination. – *This is being accomplished via watershed initiatives and the subcommittee established to generate these recommendations.*

DELETE #26: Highlights from prior flood plain-related recommendations brought forward by water resources task forces in 2001, 2003 and 2007 should be reconsidered (See EXHIBIT 3 to EXHIBIT A, Page 24 of draft recommendations, incorporated by reference into draft recommendation #26). – *Referenced in Introduction.*

DELETE #28: Manage existing water resources programs to include flood risk management. – *Referenced in Introduction.*

DELETE #34: Storm frequency needs to be analyzed for accuracy of predictions (i.e. basis for a "ten-year storm"). – *This is already being researched by the National Oceanic and Atmospheric Administration (NOAA), which is conducting a research project, also sponsored by FHWA, titled, "Update of Precipitation Frequency Estimates for the Midwest Region."*

DELETE #38: Recognize that voters may approve a 2010 referendum question amending Iowa's Constitution to provide that if the state raises the sales tax in the future, 3/8ths of the increase will go to a new protected account for natural resources projects, including soil and water conservation; a one-penny increase would generate about $150 million annually which could serve as a funding source. – *It is premature to recognize this as a funding option until such a referendum would pass and the General Assembly would choose to increase the state sales tax.*

DELETE #42: Increase state government's utilization of the Iowa Stormwater Manual. – *This will occur as Recommendation E is pursued.*

DELETE #44: Give cities authority to establish a connection fee for stormwater drainage utility systems (SF458). – *Cities and their legal counsel have concluded that this is already feasible under state law.*

DELETE #45: Give cities and counties authority to establish a Credit Program based on the stormwater best management practice implemented to offset the amount of impervious surfaces installed. – *The subcommittee determined that they did not have enough information to make an informed recommendation about this proposal.*

EXHIBIT A - ORIGINAL DRAFT RECOMMENDATIONS

Subcommittee of the Water Resources Coordinating Council
To Focus on Recommendations required by HF756
(WRCC Established under Iowa Code Chapter 466B)

RECOMMENDATION SUMMARIES

2009 Iowa legislation, HF 756 , requires the state's Water Resources Coordinating Council (WRCC) to submit policy and funding recommendations that promote "a watershed management approach to reduce the adverse impact of future flooding on this state's residents, businesses, communities, and soil and water quality." At its meeting on June 12, 2009, the WRCC named a subcommittee to work on recommendations. Subcommittee members include:

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The subcommittee met on July 13, 2009, and identified four work groups to work on components of the recommendations required by HF 756. Work groups had a diverse representation, including members from groups outlined in HF756 that should be consulted, including "hydrological and land use experts, representatives of cities, counties, drainage and levee districts, agricultural interests, and soil and water conservation districts, and other urban and regional planning experts." The work groups include:

#1: Flood Plain Management and Regulation, chaired by Chuck Corell, DNR (See Exhibit 1)
#2: Lowland Focus: Wetland protection, restoration and construction; and conservation easements and other land management, chaired by Marty Adkins, NRCS (See Exhibit 1)
#3: Upland Focus: Perennial ground cover and other agricultural conservation practices; and permanent or temporary water retention structures, chaired by Tom Oswald, HSEMD (See Exhibit 1)
#4: Stormwater: Promulgation and implementation of statewide stormwater management standards; and pervious pavement, bioswales, and other urban conservation practices, chaired by Jessica Montana, IDED (See Exhibit 1)

Their recommendations were considered by the subcommittee on September 15, 2009. They were edited slightly and presented for consideration 9/18/09 by the Water Resources Coordinating Council, authorized the subcommittee to solicit public input on these draft recommendations at public meetings as follows:

9/29/09	Mount Pleasant Civic Center, 307 East Monroe Street, 2-4 PM
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10/8/09	Lewis, Wallace Foundation Learning Center, Armstrong Research Farm, 10 AM-Noon
	Storm Lake, Sunrise Pointe Municipal Golf Course, 4-6 PM

Recommendations and related exhibits follow.

WORK GROUP 1: FLOOD PLAIN MANAGEMENT

FLOOD PLAIN REGULATIONS

#1: The 0.2% flood should be the regulated flood plain instead of the 1% flood. This change should be phased in as the 0.2% flood plains and floodways are identified on maps approved by the Federal Emergency Management Agency. (See Exhibit 2 for diagram of 100- and 500-year flood plain).

#2: The state should prohibit development (structures, fill and other restrictions to flood flows) in the floodway of the regulated flood plain. Reconstruction of substantially damaged structures already located in the floodway should also be prohibited.

#3: The use of fill to elevate new or reconstructed structures (excluding levees) in the flood plain should be restricted to no more than three vertical feet. Other means of elevating structures should be allowed. Structures in the regulated flood plain but outside the floodway should be constructed in a manner that will reduce the damage caused by the 0.2% flood. These restrictions should be phased in as the 0.2% flood plains are identified on maps approved by the Federal Emergency Management Agency.

FLOOD CONTROL STRUCTURES (LEVEES)

#4: Areas on the landward side of a flood control levee recognized by the Federal Emergency Management Agency as protecting against the 0.2% flood should not be considered as in the 0.2% flood plain and should not be subject to the regulations for the 0.2% flood plain.

#5: Flood control levees should primarily be used to protect areas with existing development if there are no practical alternatives for mitigating damage from floods.

#6: The governor should support and endorse Alternative H in the "Upper Mississippi River Comprehensive Plan - Final Report June 2008 (Revised Aug 14, 2008)" prepared by the Army Corps of Engineers. This alternative would improve the existing levee system to provide protection from the 0.2% flood along the Mississippi River (not the tributaries). [Note: The Army Corps of Engineers employees participating in the work group did not endorse any alternative.]

#7: The state should create a grant program to help entities bear the cost of certifying existing flood control levees.

#8: The state should create a grant program to assist entities with improving existing levees as one way to meet the new 0.2% flood regulations.

PLANNING

#9: The state should create a grant program to support local planning entities for developing local flood plain management plans. Preference should be given to planning activities that benefit a region

or watershed. The goal of these flood plain management plans should be to reduce the flood exposure to people and property and thereby reduce flood damages.

FLOOD RISK EDUCATION

#10: The legislature and the governor should support the formation of a local chapter of the Association of State Flood Plain Managers in Iowa that would provide a vehicle for local managers and planners to discuss flood plain issues and learn from each other.

#11: The Iowa State University Extension Service should be tasked with and appropriated funds for educating the general public about flood plains, flood risks and basic flood plain management principles. The ISU Extension Service already has a network of educators across Iowa and should develop materials and programs in consultation with flood plain experts.

CRITICAL FACILITIES

#12: New Class I Critical Facilities should be located outside the 0.2% flood plain whenever practical. New Class I Critical Facilities should also be designed and located as to maintain their function during a 0.2% flood whenever practical.

OTHER OPINIONS EXPRESSED:

Whenever possible, the workgroup tried to reach consensus on the statements and recommendations. When consensus was reached it was rarely unanimous. Below are the viewpoints of those that did not necessarily agree with the statements and recommendations above.

- *Government should not impose restrictions on the use of property. Many citizens that live in a flood plain are aware of and have accepted the risks and do not expect any help from the government.*

- *Flood control structures are not reliable enough to be used extensively in flood plain management. Any flood plain management strategy that uses structural flood controls in lieu of removing or flood proofing structures in the 0.2% flood plain is incomplete and will fail eventually. Structural controls do have their place—to protect existing development that cannot be mitigated in other ways. However, in many instances, structural controls are used because they are less intrusive and less costly and more effective mitigation measures.*

- *The geographic boundaries and the economic impacts of delineating the 0.2% flood plain area as the regulated flood plain are currently unknown. A mapping project has been recently initiated that will produce flood maps for the entire state but it will not be completed and approved by FEMA for another five to seven years. The delineation of the 0.2% flood plains and floodways should be completed in order to educate property owners and local communities and to make an informed policy decision. Some in the workgroup believe that the policy decision to move to a 0.2% regulated flood plain should wait until delineation of the 0.2% flood plains and floodways is*

- *completed and the impacts of this change analyzed before making a policy decision which will have an impact on the property rights of many Iowans including the value of their property and risk of flood damage.*

The workgroup realizes that the expanded or new policy recommendations made here have serious implications to the citizens of Iowa. Many residences and other buildings will have to be moved from the 0.2% flood plain after being damaged rather than being rebuilt in their current location. New development in the 0.2% flood plain, while not prohibited by these recommendations, will be more difficult and expensive than it is now. But the goal of these recommendations is to reduce the damage caused by flooding and that cannot be accomplished without changes in how we manage our flood plains.
Many of the workgroup members are representatives of different public interest groups. While the representatives participated with the full knowledge of the groups they represent, it should not be assumed that the groups or their representatives fully endorse the recommendations or statements made herein.

WORK GROUP 2: LOWLAND FOCUS

PLANNING & COORDINATION:

#13: Provide funding for watershed project planning and the implementation and maintenance of high priority flood damage reduction projects.

#14: Provide interagency assessment and project planning to support and inform infrastructure / easement / land purchase investment decisions in flood plain areas.

#15: The WRCC should move more quickly from information sharing to actual interagency program coordination.

NON-STRUCTURAL:

#16: Reconnect streams and rivers to their flood plains and floodways. This practice involves the modifications of levees, roads, channels and diversions. The State of Iowa should consider levee district buyouts when they are needed in order to accomplish stream-flood plain reconnections.

#17: Provide authority for the purchase of easements in upland areas that are part of planned flood risk reduction projects. The easements would stipulate the use of water infiltration practices that are appropriate for each situation. Practices might include contour farming, strips of perennial vegetation, ponds, wetlands, no-till, and other measures.

#18: Provide a means of indemnification that would allow levees to be modified or removed and flood plains to be farmed with the agreement that if there is flooding the land will be used for back up and holding water.

EXHIBIT A - ORIGINAL DRAFT RECOMMENDATIONS

PROJECTS:

#19: Integrate multi-purpose wetlands into watersheds with drainage districts or larger drainage systems. Systems would be retrofitted to enable nutrient trapping and treatment; more water infiltration and evapotranspiration; greater retention of run-off; and habitat to support biodiversity. Maintain a holistic view of watershed management and targeting funds and programs within those watersheds.

#20: Drainage Water Management to allow for the seasonal retention of water in tile drained fields should be supported technically. This practice is most easily adopted in very flat landscapes. (WG Priority 6)

#21: Develop, implement, monitor and document a watershed project that has as a primary goal high infiltration of rainfall under non-saturated soil moisture conditions in both rural and urban areas.

#22: Enhance WRP, EWP, FRPP, and CRP programs with state matching funds.

#23: Conduct a cooperative pilot project for the evaluation of strategies for reducing severe scour erosion and sand deposition by floodwaters under various soils/geology conditions. Strategies would include but are not limited to levee and road modifications, reforestation and grassland seeding. This project should be part of an overall watershed plan at the HUC 8 scale or larger.

EDUCATE & INFORM:

#24: Include flood plain or alluvial soils information as part of the disclosure form used as part of real estate transactions.

#25: "I-Farm" is a farm resource management and business planning tool developed at ISU. I-Farm could help farmers plan and create infiltration systems to accommodate one inch rainfalls. I-Farm should be used by ISU Extension and other agencies to support conservation and business planning.

WORK GROUP 3: UPLAND FOCUS

PRIOR STUDY HAS YIELDED GOOD RECOMMENDATIONS THAT SHOULD BE RECONSIDERED

#26: Highlights from prior flood plain-related recommendations brought forward by water resources task forces in 2001, 2003 and 2007 should be reconsidered (See EXHIBIT 3, Page 15, incorporated by reference into this recommendation)

PILOT/DEMONSTRATION PROJECT

#27: Fund a pilot/demonstration project involving a "hybrid" of both implementation and research, implementing best practices as well as hydrologic studies at the Iowa Flood Center (U of I) and management for flood reduction

- Includes a "distributed storage" system including upland retention structures
- Site selected based on criteria including isolated community (at top of watershed) impacted in 2008, impaired waters (for funding), willingness of watershed stakeholders, geographic MLRA, flexibility to expand to larger scale, visible and quantifiable results, take advantage of other ongoing research (e.g. Iowa/Cedar Basin), input from stakeholder groups including agriculture community, livestock groups, cities, state agencies, universities, water interests (water, waste water and rural water), ability to collect soil moisture data, an area with a gaging station or recommend installation of a gage in the area
- Multi-jurisdictional effort and funding, leverage one program with another (multi-programmatic)
- Funding sources ranging from individual to all levels of government, private sector including commodity groups

#28: Manage existing water resources programs to address flood risk management

EDUCATION

#29: The Iowa State University Extension Service should be tasked with and appropriated funds for educating the general public about flood plains, flood risks and basic flood plain management principles. The ISU Extension Service already has a network of educators across Iowa and should develop materials and programs in consultation with flood plain experts. (Same as Work Group #1, recommendation #11)

#30: Conduct a hydrological tiling study to determine the impact tile drainage has on infiltration, surface runoff, and flooding. (Same as Work Group #4, recommendation #48) Consider impacts of potholes, wetlands and water retention structures.

#31: Develop a soil moisture monitoring network through the Iowa Water Center and Leopold Center, both at ISU

#32: Make extensive use of the NRCS Soil Conditioning Index tool. Conservation and agronomic practices that are matched to the need of the land and objective of the landowner will improve sustainability over the long term, potentially increasing profitability, reducing impacts of flooding, and improving water quality. One example of a best practice is use of perennial ground covers. An improved Soil Conditioning Index score is an indication of good agronomic and conservation practices.

#33: A media campaign is needed to let Iowans know we are <u>all</u> affected by, and have an impact on, watershed issues. Landowner/tenant issues should be considered as part of this campaign.

#34: Storm frequency needs to be analyzed for accuracy of predictions (i.e. basis for a "ten-year storm")

EXHIBIT A - ORIGINAL DRAFT RECOMMENDATIONS

#35: Reassess criteria for conservation practices because of changing climate.

- NRCS Field Office Technical Guide (conservation criteria)
- NRCS Engineering Field Manual (design criteria)

RESOURCES

#36: Recommend increased funding for staff at research and field levels for public and/or private sector. Watershed level planning requires effort at the research level to actual watershed level down to the field level working with individual farmers. Current staffing levels would not be sufficient to provide the technical expertise needed.

#37: Recommend multi-year state funding for the Iowa Flood Center

#38: Recognize that voters may approve a 2010 referendum question amending Iowa's Constitution to provide that if the state raises the sales tax in the future, 3/8ths of the increase will go to a new protected account for natural resources projects, including soil and water conservation; a one-penny increase would generate about $150 million annually which could serve as a funding source.

#39: A tax Dedicate the sales tax currently collected by public water supplies for drinking water, add sales tax on bottled water sales, and/or collect a redemption fee on bottled water similar to pop bottles, could serve as additional funding sources.

WORK GROUP 4: STORMWATER

STORMWATER REGULATION:

#40 – Utilize a Phase-In Approach to Implement Statewide Stormwater Standards Consistent with the Iowa Stormwater Management Manual

The State should require all cities and counties to implement stormwater management practices consistent with the Iowa Stormwater Management Manual (ISMM). They should be given the opportunity to develop a phased-in approach to allow sufficient time to secure necessary technical and financial assistance for effective implementation.

The ISMM presents planning and design guidelines for the management of stormwater quality and quantity in the urban environment, and encourages the use of enhanced design practices for stormwater management, including best management practices and low impact development (LID). Iowa-specific and part of the Iowa Statewide Urban Designs and Specifications (SUDAS) Manual, the ISMM outlines eleven minimum standards as community development guidelines. Statewide stormwater management standards should be applicable to new development, retrofits, redevelopment, and improvements to property.

EXHIBIT A - ORIGINAL DRAFT RECOMMENDATIONS

One phased-in approach to consider could begin with:

- The 43 communities and three universities with municipal separate storm sewer systems (MS4s)
- Communities over 10,000 and counties greater than 20,000 in population
- Communities under 10,000 and counties under 20,000 in population

Before a city or county is required to implement statewide stormwater standards, they should be directed to the educational resources for stormwater management (Recommendation 8). Additionally, enhanced funding and mechanisms for raising those funds are needed (Recommendations 4-7).

#41 – Require New and Amend Renewal National Pollutant Discharge Elimination System (NPDES) MS4 Permits to Include Stormwater Best Management Practices as Outlined in the Iowa Stormwater Management Manual.

Require new and amend renewal NPDES permits to include stormwater best management practices as outlined in the ISMM. Other states are requiring statewide standards be included in a community's NPDES Phase II permit. Similarly,

the ISMM section 2A-1 recommends "non-structural best management practices to be implemented to reduce pollutant sources and to reduce the transfer of urban pollutants to runoff before more expensive structural controls are instituted."[1]

#42 – Increase State Government's Utilization of the Iowa Stormwater Management Manual

The State can demonstrate its commitment to effective stormwater management by requiring construction of vertical infrastructure, pursuant to 2009 Iowa Code chapter 8.57 and in suit with Recommendation 1, on State property or projects funded in full or in-part by State funds to use stormwater best management practices described in the ISMM. This commitment would provide demonstration projects to serve as an example for city and county officials and developers.

FINANCIAL:

#43 – Support and Enhance Existing Stormwater Funds; Establish a New Fund Similar to the Property Assessed Clean Energy (PACE) Program

Support and enhance the existing funds currently available for stormwater projects. Two existing funds exist: 1) the State Revolving Loan Fund provides funds for stormwater quality projects with low-interest loans to cities, counties, non-profits, developers, businesses and individuals, and 2) the Watershed Improvement Review Board (WIRB) awards competitive grants for local watershed improvements through the Watershed Improvement Fund to local watershed improvement committees, soil and water conservation districts, public water supply utilities, cities and county conservation boards. Additional funds should be made available for implementation of stormwater best practices as defined by the

ISMM. The funds should also target high-growth counties because these areas typically produce more impervious surfaces, thus increased runoff.

A new funding mechanism for stormwater projects could mimic the Property Assessed Clean Energy[2] (PACE) Program. A PACE bond is a bond where the proceeds are lent to commercial and residential property owners to finance energy retrofits (efficiency measures and small renewable energy systems) and who then repay their loans over 20 years via an annual assessment on their property tax bill.[3] PACE bonds can be issued by municipal financing districts or finance companies and the proceeds can be typically used to retrofit both commercial and residential properties.

#44 – Give Cities Authority to Establish a Connection Fee for Stormwater Drainage Utility Systems

Give cities authority to establish a connection fee for stormwater drainage system utility districts for purposes of funding construction of stormwater infrastructure. Senate File 458 (SF 458) accomplishes this goal and should be supported. SF 458 passed the Senate 32-18 on a primarily partisan vote in 2009; however, it ended in the House Ways & Means Committee. It remains alive for discussion in 2010.

#45 – Give Cities and Counties Authority to Establish a Fee System and Credit Program Based on the Amount of Impervious Surface Installed[4]

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[1] Iowa Stormwater Management Manual, www.ctre.iastate.edu/PUBS/stormwater/index.cfm

[2] Property Assessed Clean Energy Program, www.pacenow.org

[3] Environmental Protection Commission, publication intended to assist local stormwater managers understand the alternatives available to fund their stormwater program.www.epa.gov/npdes/pubs/region3_factsheet_funding.pdf

Fee System

Cities and counties should be given the authority to establish a fee system that is based on the amount of impervious surfaces installed. For the purpose of this recommendation, impervious surface includes a surface not connected to potable water, or non-metered customers. This could include, but is not limited to, a parking lot, driveway, rights-of-way, and rail lines.

Credit Program

The goals of stormwater credit programs are to reduce or mitigate imperviousness, promote on-site stormwater management, reduce runoff volume, and promote or direct use of specific stormwater best management practices. The mechanism for fee reduction could include percent fee reduction or water quantity and water quality credits.

#46 – Allow Soil and Water Conservation Districts to Create Watershed Districts

Soil and Water Conservation Districts (SWCD) should be allowed to create watershed districts to develop integrated water management plans. Watershed districts could utilize 28E Agreements to work across county boundaries and collaboratively with local governments. The Watershed Districts could create a

sustainable funding source by leveraging taxes. Iowa Code 161A would need to be amended to implement this recommendation.

STORMWATER EDUCATION:

#47 – Support and Enhance Existing Educational Efforts

Stormwater education should include and reach all parties, including, but not limited to, State, county and city officials, engineers, planners, realtors, and developers, and consider the various needs and circumstances of residential and commercial and industrial properties. Stormwater education should focus on stormwater best management practices as outlined in the ISMM, including issues of water quality, water quantity and the potential for environmental impact and damage to cities and counties. Current programs that exist within the State include the Iowa Stormwater Partnership, Iowa Stormwater Education Program, Urban Conservationists, RainScaping Iowa Initiative, and the Council of Governments. These programs' efforts should be supported and enhanced to reach a larger audience and provide more technical assistance as stormwater standards are phased-in and stormwater best management practices are implemented (Recommendation 1).

#48 – Conduct a Hydrological Tiling Study

There is a general lack of understanding of how tile drainage functions. Some think more tile drainage means more flooding; while others think it is unlikely that tile flow alone could cause out of control bank flows and might even reduce peak flows by helping the landscape infiltrate more rainfall and shed less runoff. A scientific hydrologic study is needed to determine the impact of tile drainage on infiltration, surface runoff, and flooding.

EXHIBIT 1 – WORK GROUPS

Water Resources Coordinating Council

Flood plain Subcommittee - Regulation Work Group #1

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Water Resources Coordinating Council

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Water Resources Coordinating Council

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Water Resources Coordinating Council

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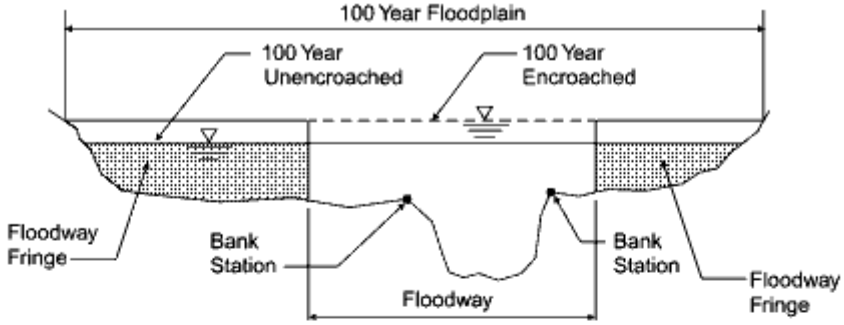
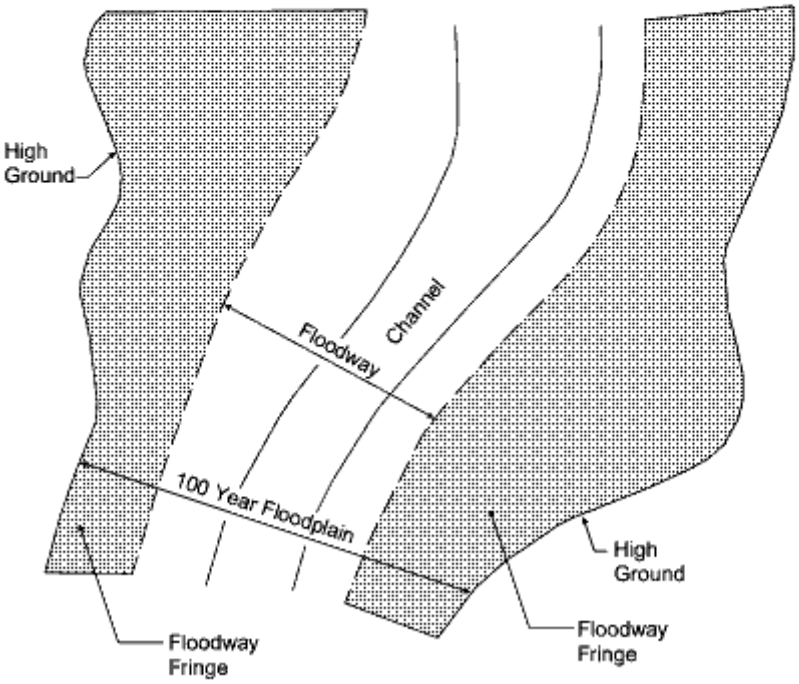
EXHIBIT 2



(a) Cross Section



(b) Plan View

EXHIBIT 3 – RECOMMENDATIONS PRIOR TO 2008 DISASTERS

This document is a compilation of the recommendations made by the Iowa Watershed Task Force in 2001, the Iowa Water Summit in 2003 and the Iowa Watershed Quality Planning Task force in 2007. Recommendations are incorporated into Recommendation #1 of WRCC Work Group 3.
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IOWA WATERSHED TASKFORCE, 2001

Goal: Develop a Framework for Enhanced Cooperation and Coordination

Recommendations

1. Establish an on-going coordinating body to continue to address the watershed issues identified by this task force. Include similar representation from state, federal, and local agencies, nonprofits and commercial interests, as on the Watershed Task Force.

Create a "home" for coordinating entity within the Iowa Department of Agriculture and Land Stewardship – Division of Soil Conservation.

Specific services and/or functions provided by the water resources coordination body will include:

• serving as a liaison and point of contact on watershed issues with key resource and service providers linking state and federal agencies with local watershed interests;
• facilitating the connection and integration of programs/strategies currently done independently (example: wellhead protection and hazard mitigation);
• collaborating on opportunities for watershed-related training, development of a watershed clearinghouse of information and resources and development of Geographic Information System resources;
• building consensus on watershed issues among state, federal and local authorities; and
• developing an annual update on watershed programs, reporting on the progress to address the recommendations in this Watershed Task Force and other priorities established by the coordinating body.

2. Conduct a statewide needs assessment, in cooperation with appropriate local and federal entities, to identify and quantify water resource problems and funding needs. Base on each 11-digit HUC watershed in the state. Parameters for the inventory will include: land use, water uses, population, major point 43 and non-point sources of pollutants, flood plain management issues, identification of drinking water sources, existing water resource management practices and costs of estimated remediation practices.

Goal: Increase State Support for Watershed Protection

Recommendations

1. Establish a legislative study committee to explore in more detail the specific needs for financial support for watershed-related programs and sources of funding that could be utilized beyond the state's General Fund. Higher levels of funding for water-related programs are critical to achieve the basic goals

EXHIBIT A - ORIGINAL DRAFT RECOMMENDATIONS

identified in this Task Force report, and to take better advantage of opportunities to leverage funds available from federal and other sources. Creative options that should be considered include additional mechanisms to charge fees based on polluting products or activities, credit trading, a usage-based tax added to water and sewer bills, a fraction of a percentage sales tax such as in Missouri, or a low-interest revolving loan fund similar to the Clean Water Act State Revolving Fund that is now used for sewer infrastructure projects.

2. Encourage state agencies with responsibilities for programs that impact the landscape, including the departments of transportation and economic development, to provide more active leadership and accountability in conducting programs consistent with principles of sound watershed and flood plain management. Positive examples at the state

level will set the stage for positive actions by local governments and individuals. First steps should be to assist staff with additional training and to review laws and authorities that relate to watershed and flood plain management activities, identifying needed readjustments or changes so that watersheds become a primary organizational focus for doing business rather than an add-on issue.

3. Establish an ongoing, staffed watershed clearinghouse for data and grant information. All government programs that fall under the umbrella of watershed management would provide detailed project information to the clearinghouse, based on an established, consistent format (see Appendix 4: Program Description Template for a Watershed Clearinghouse). The recommended location for the clearinghouse would be Iowa State University Extension, based on the model of the Missouri Watershed Information Network.

Practical tools for regional and local contacts and groups could include information such as:

- GIS maps of watershed units at different hydrologic scales
- Model of assessment, planning and evaluation worksheets
- Examples of watershed action plans from Iowa or the region
- Models for convening a group of representative stakeholders, with examples of different types of facilitation and surveys for landowner and residents
- Template news releases for publicity
- Data on water quality and quantity, and other issues identified by state coordination group
- Lists of technical and financial assistance for watershed efforts

4. Support the statewide water quality monitoring plan, developed by the Iowa Department of Natural Resources (IDNR), with additional resources to move forward to finalize the plan and achieve priority goals, including meeting legislative requirements to provide credible data (see discussion in Section IV: Essential Tools for Watersheds).

5. Continue funding for GIS programs, as described by the Iowa Water Quality Initiative, and insure that local watershed organizations have free access and training to use computerized landscape information managed by the IDNR, the Iowa Geographic Information Council and other entities. Adequate staffing is critical to help people who do not have GIS technical resources or staff capacity. Establish a repository for GIS data produced for completed and on-going watershed projects, and link to the watershed clearinghouse.

6. Develop a sustainable, smart growth development initiative to address watershed goals, or consider expanding existing efforts like IDNR's "Rebuild Iowa" program that currently works with local communities primarily to address energy efficiency issues.

Goal: Build Local Capacity for Watershed Initiatives

Recommendations

1. Encourage and assist development of local watershed councils by providing state support and technical assistance. Local soil and water conservation districts will be the focal point for assistance, providing leadership and a point of contact for local watershed initiatives.

2. Revise current state watershed grant program guidelines to better support local watershed-oriented planning and implementation initiatives. Provide structure while allowing flexibility. Establish an ad-hoc committee that includes local watershed project coordinators to review procedures and consider items such as development of standard evaluation format and/or procedures that will provide a "base" set of reporting requirements to reduce paperwork, improve consistency and allow more effective quantification of results and comparisons between projects.

3. Increase the emphasis on watershed planning in grant programs. Make resources available to build local capacity in communities or regions for planning-related activities, such as problem assessment, outreach and group facilitation. Groups may also benefit from legal assistance to utilize opportunities for organizing under existing "subdistrict" legislation that applies to lake and water districts, sanitary districts or soil and water conservation districts.

Goal: Emphasize the Role of Watershed Efforts in Flood Hazard Mitigation

Recommendations

1. Work cooperatively with all levels of government to fund development and periodic updating of a system of flood plain mapping that is standardized and available on geographic information systems so that information on flood hazards is available in every community.

2. Fund increased flood plain education for local governments. Provide incentives for county government to better enforce existing flood plain laws and to develop tighter restrictions on new development in flood plain areas that are particularly hazard-prone.

3. Strengthen procedures for conducting environmental review of economic development funding when projects are proposed in flood-prone areas. Appropriate, low-impact development should be encouraged, and commercial and/or residential development discouraged in those areas. Guidelines should be established by the statewide coordination body that include a reporting procedure to document review process and resulting decisions.

4. Continue working to strengthen coordination between planning efforts in the areas of hazard mitigation, economic development and watershed protection.

Goal: Encourage Citizen Involvement

Recommendations

1. Initiate a public outreach and marketing campaign to build on existing and past efforts to increase awareness and appreciation of watershed issues. Work closely with local and regional watershed leaders to develop.

2. Continue to encourage involvement by diverse stakeholders in developing and leading watershed projects. Include nonprofit organizations, commercial interests and interested individuals, along with representatives of state, local and/or federal agencies. Where appropriate, provide financial assistance to bring in neutral facilitators skilled in community development to help build capacity for citizen leadership and decision-making. Also, provide additional training for state and local agency staff in working effectively with the public and encouraging citizen participation.

3. Support education efforts with youth and adults that heighten awareness, develop understanding and support local engagement on watershed issues. Effective programs to support include the Iowa Envirothon and aquatic education programs for youth, and the IOWATER citizen water quality monitoring and Adopt-a-Stream programs that primarily involve adults.

4. Increase the emphasis on addressing local social and economic issues in watershed programs.

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IOWA WATER SUMMIT, 2003

RECOMMENDATION

-Develop a plan for building local capacity for watershed councils using principles set forward in the Watershed Task Force Report

-Utilize existing authority under Iowa Code for watershed improvement. Optimize the ability to leverage additional resources at the local level. The Iowa Department of Agriculture and Land Stewardship, Soil Conservation Districts should provide the leadership to develop a funding coordination plan. **(**Drainage districts, watershed sub-districts, storm water utilities, 28E agreements, etc.)

RECOMMENDATION

Dedicated and sustainable state funding to protect water quality in Iowa by:

-Increased priority ranking of Environment First Fund,

-Re-direct sales tax collected on drinking and bottled water,

-Utilize revenues from the lottery and develop an unending dedicated game focusing on Iowa's natural resources,

-All fees and fines used to re-capture costs and reinvest in water quality in the affected area, and,

-Expand remediation role of the Iowa Underground Storage Tank Fund to better protect groundwater and surface water.

RECOMMENDATION
-To receive Tax Increment Financing (TIF) or economic development grants the applicant must assure water quality protection and improvement where possible.

RECOMMENDATION
-Municipal wastewater permit fees should at least cover the cost of program administration.

RECOMMENDATION
-Accelerate research and demonstration projects for alternative methods of management and improvement of aging drainage infrastructure systems emphasizing agronomic, economic and water quality issues. Recommend the Governor appoint a state university to lead this effort and appoint an advisory board of stakeholders to develop a plan identifying work elements, time frames and costs.

RECOMMENDATION
-Streamline the SRF loan process and implement a continuous loan process for the Clean Water and Drinking Water State Revolving Loan Fund (SRF) by putting an experienced lending entity in charge of loans.
-Appoint a permanent SRF advisory committee of stakeholders to assess the efficiencies and effectiveness of the program and make recommendations for processing reform and financing terms.
-Maximize the leverage of EPA's capitalization grants. Loan programs should generate sufficient income to fund administration of the loan program and contribute to clean water programs.
-Increase use of Clean Water SRF for non-point source programs
-Increase use of Drinking Water SRF set-aside for source water protection
-Assist *Sponsored Projects (1)* for watershed improvement under the Clean and Drinking Water SRF.

RECOMMENDATION
-The Governor has the leadership responsibility to coordinate funding, staff and programs to improve the effectiveness of all state programs with water resource related responsibilities. Therefore, the Governor through Executive Order should insist on cooperation and coordination between all state agencies. The Governor should issue invitations to local, federal and public agencies, non-profit organizations and businesses to participate in addressing any resource impacting water quality and watershed management.
-Once ordered the Governor with input from a stakeholder group will initiate, oversee, and implement a needs assessment and a clean water action plan.
-Improve results based targeting of state resources for water quality. (The best outcome for the dollars invested.)

RECOMMENDATION
-The Governor, legislature and Iowa's Congressional Delegates have a responsibility to work for changes in federal funding and policy issues to better target Midwestern states water quality issues.
-Develop a multi state coalition to lobby for changes in current and future federal water quality funding and policies
-Work with appropriate federal agencies to accelerate technical and financial assistance for water quality issues in the Midwest.
-Seek a special designation from the U.S. Environmental Protection Agency and the U.S. Dept. of Agriculture to act as a pilot project for water quality enhancement and improvement programs. The pilot project would include access to federal funds to target measurable, results-based watershed projects to reduce nitrogen and phosphorus in Iowa.
-Within the Conservation Title of the current Farm Bill use all appropriate funding tools such as the Conservation Security Program to improve water quality.

WATERSHED QUALITY PLANNING TASK FORCE, 2007

1. **Creation of a Water Resource Coordinating Council**. The WRCC under the direction of the Governor is recommended with a common goal to develop an integrated approach to water resource management, and which recognizes the insufficiency of current approaches, programs, practices, funding and utilization of current funding programs. This approach seeks to overcome old polarities such as quantity versus quality, land versus water, the chemical versus the physical and biological, supply versus demand, political boundaries versus hydrologic boundaries and point versus non-point. This approach seeks to manage water comprehensively rather than compartmentally. The purpose of this recommendation is to coordinate programs, not to duplicate or supersede agency authorities and responsibilities. **Funding Recommendation: None**

2. **Develop a Water Quality Research and Marketing Campaign.** The task force recommends a marketing campaign be undertaken by public agencies and other organizations to rekindle the conservation ethic in all Iowans. Surveys indicate citizen's desire for improvement in water quality. Other surveys show that citizens don't understand the problems with local water quality. **Funding Recommendation: $1 million for year one development**

3. **Larger (Regional) Watershed Assessment, Planning and Prioritization.** The state should support creating, publishing and updating periodically a Regional Watershed Assessment (RWA) program at a larger watershed scale, such as the Hydrologic Unit Code (HUC – a federal term that delineates watersheds) 8 scale. There are approximately 56 HUC 8 size watershed units delineated in Iowa. A goal is to assess 11 HUC 8 size watersheds per year for 5 years to eventually cover the entire state. The Rapid Watershed Assessment tool used by Iowa NRCS, for example, is one assessment process that may be used. A regular review and update of these assessments should also be planned. **Funding recommendation: $5 million annually**

4. **Smaller (Community-Based) Watershed Assessment, Planning, Prioritization and Implementation.** Once a regional watershed assessment is completed at the HUC 8 scale, planned projects of a manageable scope can be implemented. Priority sub-watersheds at a HUC 12 or smaller scale can reasonably be recruited and provided more resources for planning. A sub-watershed plan should include objectives, a thorough local assessment of the physical, social, and financial resources of the watershed, an analysis of the alternatives, and an implementation plan that includes an evaluation process to measure results. **Funding Recommendation: $5 million annually.**

5. **Support for Smaller (Community-Based) Watershed Monitoring and Measurement.** In addition to current support for water monitoring, the state should provide technical and financial support for locally-based watershed monitoring and measurement. This monitoring would be custom designed to provide information on essential water resource questions facing the community. Local communities would first be able to use this information to support enhanced planning, local data collection, and thus helping them identify priority areas to target limited resources. **Funding Recommendations: $2.5 million annually.**

6. **Wastewater and Stormwater Treatment Infrastructure.** We all live in a watershed. Impacts to water quality come from a variety of sources, including both rural and urban, nonpoint and point sources. Challenges for point sources and communities can have a significant impact on watershed conditions from storm water and wastewater. Aging wastewater and combined sewer/storm water infrastructure issues are having negative impacts on water quality. Also, compliance with current and future water quality standards may be cost-prohibitive for many communities. **Funding Recommendation: None.**

EXHIBIT 4

PRELIMINARY LIST: STATUS OF PRIOR FLOOD PLAIN MANAGEMENT-RELATED LEGISLATION

Compiled by Legislative Services Agency and RIO

2002

SF 2145/HF2469 Water Quality Improvements -- passed but not flood plain

HCR 106 Water Quality Interim Study Resolution --water quality interim committee resolution but didn't pass

SF 2213 Clean Water Revolving Loan --not flood plain and did not pass

2003

HF 525 Environmental Oversight Council -- passed house not senate and created a new Committee

HF 495 Flooding Prevention Act --introduced in Local Government Committee but never passed

2004

HF 2120 Water Quality Interim Study -- Did not pass

HF 2104 Watershed Districts --Created a watershed task force. Did not pass

2005

HF 200 Clean Water Standards--WIRB was established and projects can included in flood plain

SF 329 Water Quality Program -- didn't pass

HF 291 Water Quality Protection Fund -- didn't pass

2006

SF 2363 Water Quality Standards -- passed

2007

SF 495 Water Quality Initiative --didn't pass

SF 600 Water Quality Program -- didn't pass

HF 626 Water Quality annual assessment --didn't pass

2008

HF 2672 Water Resource Management Appropriations Bill -- didn't pass

2009

HF64 – $56M Disaster Assistance Bill – passed

HF 756 – Flood Plain Management Recommendations – passed

HF 759-- Flood Insurance for Cities & Counties – passed

HF822 – Infrastructure Appropriations – includes funding for Iowa Flood Center and DNR Flood Plain Section – passed

SF415 – City Acquisition of Disaster-affected Property – passed

SF 367 -- Flood Plain Urban Standards -- didn't pass

HF 268 Flood Plain Map Plan --- didn't pass

SSB 1069 -- Flood Impact Prevention -- didn't pass

SF 370 -- Flood Center Basin Study -- didn't pass

SF 458 – Storm Water Fees – didn’t pass

Water Resources Coordinating Council Flood Plain Subcommittee - Survey

Group 1: Flood Plain Management

		Support	Oppose	Neutral	Top Three*
1	Regulate to .2% flood	☐	☐	☐	☐
2	Prohibit floodway development	☐	☐	☐	☐
3	Restrict elevation to 3 vertical ft.	☐	☐	☐	☐
4	Landward side of levee not in .2% flood plain	☐	☐	☐	☐
5	Levees primarily to protect existing development	☐	☐	☐	☐
6	Support Corps of Engineers Alternative H	☐	☐	☐	☐
7	State grant program for levee certification	☐	☐	☐	☐
8	State grant program to improve existing levees	☐	☐	☐	☐
9	State grant program to develop flood plain management plans	☐	☐	☐	☐
10	Form Iowa chapter of Association of State Flood Plain Managers	☐	☐	☐	☐
11	Fund public education by ISU Extension on flood plains and risks	☐	☐	☐	☐
12	Locate critical facilities outside .2% flood plain when practical	☐	☐	☐	☐

Group 2: Lowland Focus

13	Fund watershed project planning & damage reduction projects	☐	☐	☐	☐
14	Interagency assessment & planning re floodplain investments	☐	☐	☐	☐
15	Interagency program coordination by WRCC	☐	☐	☐	☐
16	Reconnect streams and rivers to floodplains and floodways	☐	☐	☐	☐
17	Authorize easement purchase for planned flood risk reduction projects	☐	☐	☐	☐
18	Levee modification or removal w/ indemnification for farmland used as retention	☐	☐	☐	☐
19	Integrate multi-purpose wetlands into watersheds	☐	☐	☐	☐
20	Seasonal retention of water in tile drained fields	☐	☐	☐	☐
21	Develop watershed project with infiltration focus	☐	☐	☐	☐
22	Enhance existing federal water & conservation programs w/ state matching funds	☐	☐	☐	☐
23	Conduct cooperative pilot project to reduce scour erosion and sand deposition	☐	☐	☐	☐
24	Include floodplain or soils information in real estate disclosure	☐	☐	☐	☐
25	Use ISU's I-Farm tool to support conservation and business planning	☐	☐	☐	☐

Group 3: Upland Focus

26	Support prior water recommendations (EXHBT 3)	☐	☐	☐	☐
27	Fund pilot project for flood reduction	☐	☐	☐	☐
28	Manage existing water programs for flood risk	☐	☐	☐	☐
29	Public floodplain education through ISU Extension	☐	☐	☐	☐
30	Conduct hydrological tiling study	☐	☐	☐	☐
31	Develop soil moisture monitoring network	☐	☐	☐	☐
32	Use NRCS Soil Conditioning Index	☐	☐	☐	☐
33	Media campaign on watershed issues	☐	☐	☐	☐
34	Analyze storm frequency for prediction accuracy	☐	☐	☐	☐
35	Reassess conservation practices criteria	☐	☐	☐	☐
36	Increase funding for research and field staff	☐	☐	☐	☐
37	Recommend multi-year funding for Iowa Flood Center	☐	☐	☐	☐
38	Possible funding source if referendum passes & sales tax increased	☐	☐	☐	☐
39	Possible funding source from water fees	☐	☐	☐	☐

Group 4: Stormwater

40	Phase in statewide stormwater standards consistent w/ state manual	☐	☐	☐	☐
41	Require New & Amend Renewal NPDES Permits to include best stormwater practices	☐	☐	☐	☐
42	Increase state government's usage of Iowa Stormwater Management Manual	☐	☐	☐	☐
43	Increase stormwater funding	☐	☐	☐	☐
44	Authorize cities to collect stormwater connection fee	☐	☐	☐	☐
45	Authorize cities & counties a fee system and credit program for impervious surfaces	☐	☐	☐	☐
46	Allow Soil & Water Conservation Districts to create watershed districts w/ tax authority	☐	☐	☐	☐
47	Support and enhance existing educational efforts	☐	☐	☐	☐
48	Conduct a hydrological tiling study	☐	☐	☐	☐

Recommendations that should be added:

Examples of Best Practices in Iowa that should be replicated in other areas of the state:

Funding Recommendations:

Additional Comments:

Please complete and submit by October 8, 2009

Mail to:
Rebuild Iowa Office
Wallace Building
502 E. Ninth St., 2nd Floor
Des Moines, IA 50319

E-mail:
Susan Judkins Josten
Rebuild Iowa Office
Susan.Judkins@rio.iowa.gov

Fax to:
(515)242-5006

EXHIBIT B – SURVEY FEEDBACK AND ANALYSIS

Subcommittee of the Water Resources Coordinating Council
To Focus on Recommendations required by HF756
(WRCC Established under Iowa Code Chapter 466B)

SURVEY FEEDBACK

This chart demonstrates the level of support, opposition, or neutrality indicated by respondents to a public survey regarding draft flood plain management recommendations being considered by the Water Resources Coordinating Council for submission to the Governor and General Assembly by November 15, 2009.
***NOTE: Respondents were asked to identify their top three priorities within each of four groupings of recommendations. Most respondents marked issues that they supported as priorities, but several prioritized an item they opposed.**

	Group 1: Flood Plain Management	**Support**	**Oppose**	**Neutral**	***Top Three**
1	Regulate to .2% flood	36	21	13	14
2	Prohibit floodway development	47	20	7	36
3	Restrict elevation to 3 vertical ft.	34	19	16	8
4	Landward side of levee not in .2% flood plain	34	14	17	2
5	Levees primarily to protect existing development	45	7	16	3
6	Support Corps of Engineers Alternative H	29	5	33	4
7	State grant program for levee certification	51	3	16	4
8	State grant program to improve existing levees	48	9	11	6
9	State grant program to develop flood plain management plans	56	5	10	10
10	Form Iowa chapter of Association of State Flood Plain Managers	44	8	16	8
11	Fund public education by ISU Extension on flood plains and risks	41	8	16	7
12	Locate critical facilities outside .2% flood plain when practical	51	3	13	12
	Group 2: Lowland Focus				
13	Fund watershed project planning & damage reduction projects	58	2	8	11
14	Interagency assessment & planning re flood plain investments	43	7	16	8
15	Interagency program coordination by WRCC	44	9	21	4
16	Reconnect streams and rivers to flood plains and floodways	35	16	15	4
17	Authorize easement purchase for planned flood risk reduction projects	50	9	10	10
18	Levee modification or removal w/ indemnification for farmland used as retention	38	13	10	10
19	Integrate multi-purpose wetlands into watersheds	48	4	11	11
20	Seasonal retention of water in tile drained fields	41	12	12	9
21	Develop watershed project with infiltration focus	47	3	13	7
22	Enhance existing federal water & conservation programs w/ state matching funds	45	6	14	4
23	Conduct cooperative pilot project to reduce scour erosion and sand deposition	38	7	17	4

24	Include flood plain or soils information in real estate disclosure	47	5	13	8
25	Use ISU's I-Farm tool to support conservation & business planning	43	2	25	2
	Group 3: Upland Focus				
26	Support prior water recommendations (EXHBT 3)	34	7	23	7
27	Fund pilot project for flood reduction	46	5	12	18
28	Manage existing water programs for flood risk	48	3	17	9
29	Public flood plain education through ISU Extension	44	5	17	8
30	Conduct hydrological tiling study	49	6	11	16
31	Develop soil moisture monitoring network	32	5	23	0
32	Use NRCS Soil Conditioning Index	25	4	29	1
33	Media campaign on watershed issues	42	7	20	6
34	Analyze storm frequency for prediction accuracy	48	5	15	10
35	Reassess conservation practices criteria	41	3	19	9
36	Increase funding for research and field staff	39	3	25	3
37	Recommend multi-year funding for Iowa Flood Center	28	6	17	2
38	Possible funding source if referendum passes & sales tax increased	31	16	19	4
39	Possible funding source from water fees	26	16	19	2
	Group 4: Stormwater				
40	Phase in statewide stormwater standards consistent w/ state manual	33	10	15	6
41	Require New & Amend Renewal NPDES Permits to include best stormwater practices	35	15	16	5
42	Increase state government's usage of Iowa Stormwater Management Manual	49	8	12	4
43	Increase stormwater funding	45	9	11	13
44	Authorize cities to collect stormwater connection fee	45	12	12	8
45	Authorize cities & counties a fee system and credit program for impervious surfaces	46	14	12	11
46	Allow Soil & Water Conservation Districts to create watershed districts w/ tax authority	36	18	14	9
47	Support and enhance existing educational efforts	58	4	5	5
48	Conduct a hydrological tiling study	45	7	16	7

EXHIBIT B – SURVEY FEEDBACK AND ANALYSIS

The following comments were provided by respondents to a public survey regarding draft flood plain management recommendations being considered by the Water Resources Coordinating Council for submission to the Governor and General Assembly by November 15, 2009.

Recommendations that should be added:

Develop policies that prevent flooding. Hold farmers and developers financially accountable for practices that damage the environment.

Take whatever FEMA standards are and make our triply more stringent.

Exempt critical infrastructure: Energy generation and delivery infrastructure along with water, transportation and other utilities should be exempted from the expansion of flood plain regulation. Defining specific infrastructure would significantly clarify the intent of the critical infrastructure recommendation.
Repair and re-use: MidAmerican is concerned about regulatory interpretation that prevent the regular maintenance or emergency reconstruction of infrastructure in the flood plain and floodways. Communities need energy service, both natural gas and electric, to recover from disaster and to support other critical infrastructure like drinking water and transportation.
Study first, then act: MidAmerican believes that comprehensive review of the proposed .2% flood levels and floodways should occur before any expansion of flood plain regulation. The present 30-year-old FEMA flood map and hydrologic models are not adequate to make informed decisions. Investment in accurate modeling and mapping is necessary before any legislative.

Current homes that meet the 100 year flood plain elevation need to be grandfathered in when increasing to the 500 year standard. Fill that redirects or inhibits the flow of flood water should be prohibited.

Encourage the use of Rain Gardens and Rain Barrels in urban areas.

Current NPDES requirements pertain solely to construction sites. Much improvement is needed in the Ag industry in regards to protection from erosion… a stream buffering requirement would go a long way in reducing erosion from surface run-off as well as allowing stream banks to re-stabilize.

Existing local government agencies and state and federal regulatory agencies should work together to address flood plain and floodway issues – like they did years ago. Where the no till practice are implemented this has been corrected (infiltration has increased from .25 in per 30 minutes to .5 in 7 minutes). This was part of a watershed study on 9600 acres in southern Black Hawk County (96% row crop)
More emphasis on no till practices should be part of the farm program.

In Black Hawk County an estimated 80% of the land is in cropland and the farming practices (removal of fence row, filter areas along streams) has changed the rural runoff by a factor of 400%

Empower and develop local-led watershed districts. (Small, neighborhood working with neighborhoods)
Encourage stewardship.

Improve efficiency in permitting process for storm water and flood protection projects. Clarify watershed definition. There is wide variation in perception from a very small watershed to the ultimate Mississippi drainage system.

Bring all drainage districts into any planning with a standardized blue print of directions. For standardized drainage district action.
Review of processed that constrain positive development - Example IDNR $.25 per ton fee for removal of sand from river channels. I'm sure there are more examples where our police s are counterproductive.

Strict guidelines for cities to follow mitigate flood risk.
If development is allowed in a flood plain and way (which I am 100% against) then we need to restrict the fill.
Fill should not be allowed in flood plain unless it comes from within and plans for development should be required to have 0 negative effects on neighbors. We need to watch out for today and future generations.

No more unfunded mandates. Small cities cannot afford them.

Under Flood plain Management, I would like to see "Assess/Evaluate Existing Flood Plain Management". Currently, there is a varying ability of small cities to "do a good job" effectively enforcing flood plain regulations. Larger communities do well, but I have concerns that we are not doing as well with the existing regulations in smaller communities.

We need better field drainage to not flood towns we need better protection and not have to bare the expense that the county should pay for.

Sand needs to be taken out of the rivers.

I do not understand all the questions on the survey, or in some cases, just what they mean. Some are pretty vague.

Any expenditures of runoff control north of I-80 would be the best answer to a complex problem.

Allow greater funding for rain gardens, returning streams to original state (reversing the channelization), and funding for upland ponds to slow water flow.

It has been a few years, but last I looked there is an Iowa LAW, legalizing the straightening of natural water ways; the tributaries and Creeks / Streams of natural drainage to the greater flow. This should be abolished. Educate the attributes of meander. As a child I observed concrete tunnels (multi-block-long culverts) created where Natural tributaries, those little streams that may dry by late summer or early fall, ran; effectively main lining the water to a greater flowing stream, and eliminating any chance of infiltration along what was its natural course. A side effect being a greater total harsh flow, and for those who bought houses built along what had been the natural stream; water in their basement, _frequently. This practice continues today, as some think it esthetically and commercially better. Advised planting of Native grasses even along the now tunneled urban tributaries would surely help, as

the natural drainage still migrates to what once was its course; runs off and/or collects and stands. Advertise examples of pleasantly peoplized (read neatly manicured) banks and wooded / vegetated areas along these tributaries, which some would demean with the term ditch or gully. There was a flurry of media attention on '*Wetlands'* a few years ago; seemed almost a buzz phrase for a few weeks. Within just a few months I observed the last public mini-wetland in my town, be piped direct to the nearby Creek; for mowing *convenience* of a city park. Rare would it be that I believe a wetland can be 'created'. As I understand it, the water essentially comes subteranean to a true wetland. Education may best start with the youth, but adults on city councils, parks and rec boards (though mostly sport oriented), Utility people and such, need to become better educated to the better bigger picture

The LiDAR topology mapping needs to done ASAP for the Cedar River Watershed. One reason is to have this data to pick the best sites for demonstration projects.

I am Chris Ball Louisa county supervisor . We the board are very interested in the final version of the WRCC recommendations.In Louisa county we need certified levee s and possibly 30% of our county is affected by the flood plan rules proposed, thanks

Work Group 1: #2 Sounds like this constitutes a “taking.” Mandate good flood insurance rather than restrictions. Development and agriculture in these areas is vital to tax base. #5 Agricultural areas and areas near other major developments that have the infrastructure to expand or grow should be viewed with importance.
Work Group 2: #16 Work with existing channels, strengthen programs listed in #22 to improve situations. Better have a great new funding source to modify all of the infrastructure suggested.
Work Group 3: $30 Tile acts like an overflow pipe in a pond. Have seen worse erosion due to surface runoff in poorly drained locations. Tile allows slow/steady release of water. Might consider erosion control/energy dissipation at outlet of tile. $35 Base on recent and past damaging events-not dreamed up, unprovable theories.
Work Group #4: #46 NRCS should not be given taxing authority. NRCS has many other important roles though. This effort should be done in partnership with landowners, not by force. Most efforts should be by grants or outside funding with minimal local matches.

Storage of hazardous materials in t500-year flood plain should be restricted. DNR measured high concentration of many item (fertilizers, pesticides, fuel, LP tanks, etc. in flood waters). If state is serious about water quality improvements, we begin to restrict storage of hazardous materials in the 500-year flood plain.
Portions of properties in the 500-year flood plain should not be platted for subdivision development. This should be a statewide law that would prevent flood plain development, and not left to each locality.

Examples of Best Practices in Iowa that should be replicated in other areas of the state:

Implement what Wayne Peterson recommends. Stop CAFO’s, make agriculture sustainable.
Slow down water going into title drainage with blind intakes, etc.

Charlotte, North Carolina

The State of Iowa should develop inundation mapping tools to the greatest extent possible. While not in use in Iowa, these technological tools were very valuable in recent North Dakota flooding along the Red

River. Accurate flooding forecasts may not prevent flood damage but can significantly improve the decision-making for both emergency response and mitigation.

It is difficult to locate such practice within the City of Cedar Rapids, the mindset must change. There has been a lot of talk but no action.

No till farming be recognized for its major change in runoff.

Cut all tiling in fields. This is something that State of Ohio is doing, charge fees per linear ft. of tile.

Study Palo northern area.

Bring all drainage districts into a coordinated – standardized water and tile management plan. Just like building planning and zoning.

Retention ponds – lakes for storage of runoff and manage for flood control not fish and wildlife or recreation boating or shoreline residential or business development.

Cedar Falls is just now starting to look at revising ordinance for flood plain development/fill. Long overdue since the worse disaster to hit us was over a year ago.

Let quarry or cement company prod (?) river at no cost.

Ponds and holding areas again north of I-80

Not in Iowa, but Grand Forks saved themselves this year from another flood by implementing their plan quickly (less than 10 years)

Some good WIRB projects out there

Funding Recommendations:

Move funding to programs that teach people responsible ways to farm and help them implement practices that prevent flooding, soil erosion and water pollution. Teach homeowners how to landscape in sustainable ways.

Take all casino profits and apply them to water quality issues.

New housing developments need to have impervious driveways and streets. Limit street width to 26ft. Rain water retention.

Use funding from the I Jobs, Federal stimulus, Federal grants and Iowa Gaming Commission.

Storm water fees based on impervious areas would really get people thinking and pushing for BMPs.

Not for profit or faith-based organizations to assist prior to disasters and after disasters. Prior issues to assist in improving of conditions and goals of flood issues management. After disaster issues assist victims in restoration and/or flood mitigation issues rise up home/business. Assist victims with

unmet/housing issues that do not qualify for regardless of reasons. Donations through employees or industries or bank draft/EFT AC 4 etc.

Incentive payment for farms with no till practices.

Increase sales tax. Fees from farmers that continue to tile out their fields.

It's a difficult time to find additional sources of revenue. Perhaps the appropriate answer is a re-prioritization of some conservation dollars (Fed and State) as well as DOT and rural economic development.

Use existing funds for programs with little value.

Let land owner recognize true land value of marginal lands – and be responsible if they over pay for land.

Watershed tax based on runoff.

If cities drainage districts are faced with mandates the foundation for compliance should be provided.

Important enough to fund form anywhere. Basically need to find the funds and move it.

The people and business in the flood plain need to pay for cost of preventing flooding of their home or business.

Charge min per resident $5.00 to belong to watershed group, US funding to buy insurance to cover damage to farm fields used as temp [sic]. (?)

Let quarries take sand out of river free of charge.

Make sure that you're sure you want this and then make double sure you don't. Starve your new baby, like you always do.

US Sec of Ag just proclaimed 342 miles for the upper Mississippi.

FEMA HMGP grants may be option if they expand that program. I don't want more state sales taxes, income taxes, and property taxes.

Additional Comments:

- # 23 Scale/scope of proposed pilot project?
- #24 Disclaimers should be required, pre-purchase not as closing
- #39 Municipal water customers – i.e. residents and businesses already pay sales tax and water purchased from city at full retail %

We need to change our priorities and practices! Look tong term at ways to keep development out of flood plains, mitigate climate change, be responsible so we conserve soil, purify water and pass the earth on to our children and grandchildren in good shape, rather than exploit it for short term profit.

No new levies on agricultural land. No new development in the flood plain. Areas that flooded in Cedar Rapids should become green space. Give them aid only to rebuild outside the flood plain. No assistance for stream bank stabilization it just sends the problem downstream. Lucrative conservative programs are available for farmers to enroll flood prove areas to in CRP native grasses and wetlands. They have options, no more levies!

Move the hog back about 100 feet from nearest small steam.

I would like to know what improvements have been made from the 2001, 2003, and 2007 recommendations.

There needs to be some studies done on how many acres and citizens of Iowa this will affect. If some of these recommendations are implemented, thousands of Iowa will leave the state and several tax dollars will be lost. Do you realize how many flood plains there are in Iowa? The cities of Des Moines, Cedar Rapids, Iowa City, and Davenport have areas in flood plains. Your committee only had one person representing levee and drainage issues. More of the state needs to be informed before this is voted on. There is no need to rush into such drastic changes.

We answered these questions the best of our ability, we found some unknowledgeable to us, and these are checked neutral.

Tile drainage increases the temporary storage volume in the soil providing for no till to function at its best. This also provides for deep root growth and maximum plant population which in turn reduces runoff.

I think an effort for support staff at the State level to assist with flood plain management after a disaster is important. Also the idea of a State association of flood plain managers would be a great addition and resource base = look at Missouri State Model.

Adopt and enforce Best Management practices on every farm state wide.

No regulation of flood plain until FEMA mapping is complete. No regulations shall be adopted through administrative rules. Any regulations must be through legislation!

This was a hard survey for me as I am not familiar with many of the specifics of the issues. I do know the levee system is crucial to our survival as a city and the surrounding area. It not only protects homes and family – it protects our livelihood and a way of life that set Iowa apart from all others.

Much of this is long overdue since the worst disaster to hit us was over a year ago. Another flood could come next year. Need to mandate strict guidelines for communities and enforce them.

If these items were a little less vague I may have answered them differently.

Have a pilot program for flood reduction in Palo, Iowa where the whole town was flooded.
The research and maps should be done before any regulations or projects are put in place.

I am very concerned about the flood plain requirements in the flood plain management section. My understanding is that flood plain maps for the State of Iowa are being redone but will not be completed for 5-7 years. How can we talk about regulating flood plain when we don't even know for certain where the flood plain is?

I did not comment on all areas since I spent all my time with Group 4: Storm Water. One comment I would have regulated on the .2% flood would be great, in some cases that is a significant impact to properties and the property value.

People in flood plains, or any other high risk areas, should receive new FEMA, State, or other Federal help one time to replace homes. Only one time. After that, hey are responsible for themselves. This will serve the same purpose as many regulations and is much easier and less expensive to implement than many new regulations. I live in an area that was flooded in 2008. Half of the people have moved out, the other have flood insurance. If anyone did try to build a new home here, no lender would ever loan them money if they didn't carry flood insurance.

We've been working on these ideas in Palo, with the UI Flood Center. I see Witold [?] used our information in a presentation to group 3. We would REALLY like to see our Dry Creek Watershed used a pilot project per item #27. Results would be publicized and propagated to other communities and watersheds in the Cedar River and other watersheds. We'd like to see some progress made yet in 2009, so the effects could be monitored in the spring.

Your committee had way too many single minded [sic] personal on them protecting their jobs! Bottom line is, does the view and steam control up or do we control the water for out benefit.

Should the general public be filling out this survey?

Let's solve these on individual property levels as much as possible rather than one or more big dinosaurs state programs.

We've been working on these ideas in Palo, with the UI Flood Center. I see Witold used our information in a presentation into group 3. We would really like to see our Dry Creek Watershed used a pilot project per item #27. Results would be publicized and propagated to other communities and watersheds in Cedar River and other watersheds. We'd like to see some more progress made yet in 2009, so the effects could be monitors in the spring.

Palo would REALLY like to see our Dry Creek Watershed used a pilot project per item #27. Results would be publicized and propagated to other communities and watersheds in the Cedar River and other watersheds. We'd like to see some progress made yet in 2009, so the effects could be monitored in the spring.

This needs more time, public input, & detail.

Comment Document: DES MOINES WATER WORKS

Water Resources Coordinating Council

Policy and Funding Recommendations

Public Hearing – October 6, 2009

House File 756 passed in the 2009 legislative session required the Water Resource Coordinating Council (WRCC) to submit policy and funding recommendations that promote a "watershed management approach to reduce the adverse effect of future flooding on this state's residents, businesses, communities, and soil and water quality." The WRCC, on June 13, 2009 identified four work groups to work on components of the recommendations required by HF756. This document provides formal comments by the Des Moines Water Works (DMWW) on the work groups recommendations.

DMWW found three central themes identified by each work group; watershed based management, planning, and education. These themes are strongly supported by DMWW, and essential actions needed for improving and protecting Iowa's water resources. Watershed management evaluates all aspects of a watershed system, by identifying, prioritizing, and implementing the appropriate mitigation. It brings urban and rural residents of a watershed together with a single purpose of protecting their families, homes, businesses, and the resources that drive their economic viability.

Watersheds are systems. Systems that consists of five components, hydrology, connectivity, biology, land forms, and water quality – one component alone cannot describe a watershed system; and, one practice alone cannot fix the system. There is a tendency to view the many components of a watershed as individual rather than interconnected parts of a complex system. This perspective is leading us to unrestrained use of surface and groundwater sources, even though these are two of the smallest components of water on earth.

DMWW supports additional funding for watershed planning. Developing comprehensive watershed plans, with multiple partners and supported at the local level should be the focus of this funding. Local watershed planning has been shown to be the most effective in improving and protecting Iowa's water resources, but funding for planning is many times non-existent.

DMWW also supports planning at the state level. The WRCC was conceived to address and coordinate all water resource programs, funding, and issues, thus allowing Iowans to get the best return on the investment of their tax dollars. It is imperative that we all recognize the important role the WRCC has in planning and managing Iowa's water and land resources for the future. We support the recommendation for the WRCC to move more quickly from information sharing to actual interagency coordination.

DMWW supports a coordinated multi-faceted approach to educate Iowans on the benefits and challenges of Iowa's water resources. The Water Quality Task Force recommended the state fund a marketing (education) campaign to increase Iowan's awareness of the immense value of our land and water resources. Flood risk should be a part of the total campaign. A sustainable campaign that encourages a public/private partnership and is somewhat patterned after a

program like Character Counts, a program that upon seeing six pillars of various colors, the majority of Iowa children instantaneously recognize.

Comment Document: DES MOINES WATER WORKS

WORKGROUP 1 – FLOOD PLAIN MANGEMENT

Flood plain Regulations

No comments

Flood Control Structures (Levees)

In some cases, as with DMWW, our position on the river necessitates a levee to protect the utility's critical infrastructure, but we also recognize there is a limit to the utilization of levees. The overuse of levees will cause further build-up and distribution of increased flows to our downstream neighbors. We agree that the state should consider a program of funding regular inspection and maintenance of approved levee systems to minimize breaching during a flood event, and that the use of any new levees be minimal and used only as a last resort.

Planning

(Comments included in introductory paragraphs)

Flood Risk Education

(Comments included in introductory paragraphs)

WORKGROUP 2 – LOWLAND FOCUS

Planning and Coordination

DMWW strongly supports the formal structure of the WRCC as the entity to develop a state water plan; a plan that addresses and coordinates all water resource programs, funding, and issues. It is imperative that state leaders recognize the important role the WRCC has in planning and managing Iowa's water and land resources for the future. We support the recommendation for the WRCC to move more quickly from information sharing to actual interagency coordination.

Non-Structural

DMWW supports the re-design of Iowa's landscape to better reflect the benefits of the past when precipitation remained on the land to percolate through the soil, meander in rivers and streams and linger in natural wetlands. The

average flow of the Des Moines River in Des Moines has more than doubled since gauging began in 1915 (USGS-Attachment 1). Since areas upstream of Des Moines are almost entirely rural, the increased discharge attributable to urban development and impervious surfaces is minimal. Rather, it must be due to landscape and hydrological modifications in the watershed coupled with increased levels of precipitation and precipitation events. We also know precipitation levels have not doubled since 1915, a logical conclusion is that landscape and hydrological changes are important factors in managing Iowa's water and land resources.

Comment Document: DES MOINES WATER WORKS

Projects

As stated above DMWW supports projects that will re-design Iowa's landscape to allow precipitation to remain on the land where it falls. However, the hypothesis that improved drainage may reduce surface runoff, at least in some circumstances may be valid, but it is difficult to imagine that improved drainage will not increase sub-surface flows. The proposed wetland projects replace a drainage system that is not functioning to capacity and also increases the size of the drainage tile. This seems to translate to a more efficient system, better able to transport additional quantities of water and pollutants. Since the size of project wetlands will be determined by economic and sociological factors (as opposed to optimum water storage considerations) our conclusion is that enhanced sub-surface drainage will likely increase stream flows.

The reasoning that drier soils will be better able to absorb a precipitation event and reduce peak flows has some merit in some circumstances, but most increased flows that lead to wide spread flooding are the result of multiple rainfall events on consecutive days. Multiple rainfall events on consecutive days will fall on saturated soils which have lost their capacity to absorb and hold water, regardless of the efficacy of the tiling system. It seems that in this type of circumstance, enhanced drainage will do little to reduce peak flows and has the potential to increase them. The installation of these structures should be very limited, until the effect on flow and transport of contaminates are determined. It is critical that the "leaky system" in place today not be amplified.

Educate and Inform

(Comments included in introductory paragraphs)

WORK GROUP 3 – UPLAND FOCUS

Prior Studies

DMWW has participated in prior water resource task forces and supports the recommendations brought forth by the groups. (See EXHIBIT 2, Page 15, incorporated by reference into the recommendations of the WRCC)

Pilot/Demonstration Project

Again as stated above DMWW supports projects that will re-design Iowa's landscape to allow precipitation to remain on the land where it falls. DMWW supports the Iowa Flood Center as an entity to research and work with city,

state, federal agencies and private organizations to identify policies, strategies, and practices that will minimize flooding and flood damage in Iowa.

The "distributed storage" concept proposed by the Iowa Flood Center (University of Iowa) and the multi-purpose wetlands proposed by Work Group 2 are two potential practices that may alleviate some flooding; but they must be incorporated into a comprehensive watershed plan that targets and prioritizes implementation strategies and practices. The Iowa Flood Center has the expertise in hydrology to determine the effects of both practices and to ensure size, design and location is appropriate for the watershed.

Comment Document: DES MOINES WATER WORKS

Education

(Comments included in introductory paragraphs)

DMWW strongly supports conducting hydrological tiling study to determine the impact of tile drainage on flows and groundwater recharge. We also support establishing a soil moisture monitoring network as it is critical to determine the effects of tile drainage in dry and saturated soils.

We agree with the work group that the reassessment of criteria for conservation practices is needed due to changes in weather patterns, cropping rotations, consolidation of livestock production (manure application) and other land use changes. (NRCS Field Office Technical Guide and Engineering Field Manual)

Resources

Watershed Planning - (Comments included in introductory paragraphs)

DMWW supports multi-year funding of the Iowa Flood Center as well as adding them as a participant of the WRCC.

DMWW supports all suggested sources of revenue included in the recommendations:

Referendum amending Iowa's constitution establishing a conservation fund, by which 3/8¢ of the next 1¢ sales tax increase will go for protecting natural resources

Sales tax collected on drinking water

Sales tax and/or recycle fee on bottled water

Work Group 4 - Stormwater

Utilize a Phase-in approach to Implement Statewide Stormwater Standards Consistent with the Iowa Stormwater Management Manual

DMWW supports the recommendations of Work Group 4 and strongly supports consideration of the hydrological tiling study as stated above.

Education

(Comments included in introductory paragraphs)

Comment Document: DES MOINES WATER WORKS

DMWW would like to thank the WRCC, the sub-committee and work groups for sharing their time and expertise in developing these recommendations. We would also like to thank the work groups for including drinking water utilities as stakeholders in their groups, because above all the public health of Iowans depends on accessible safe drinking water. I would like to publically thank our staff for participating in this important process. And finally, thank you for the opportunity to comment.

Linda Kinman

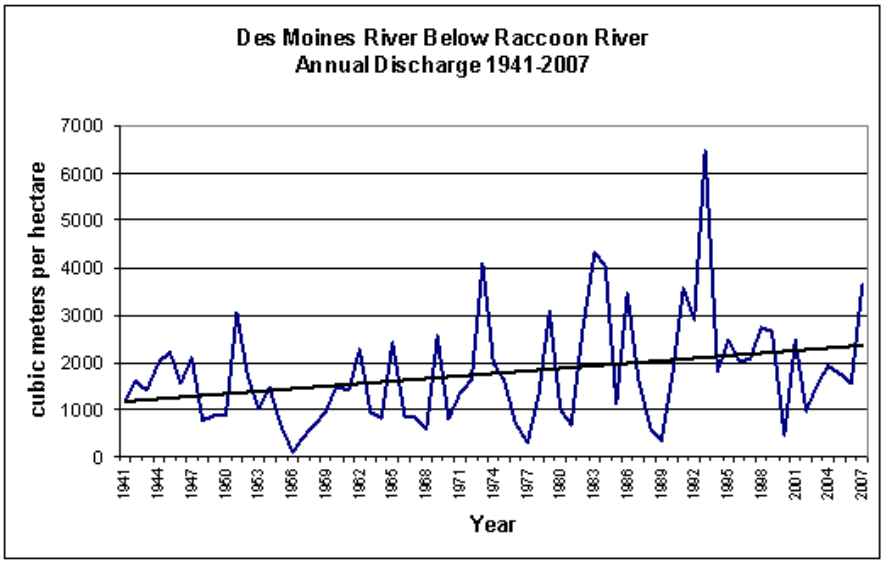
Research/Regulatory Coordinator

On behalf of DMWW staff:

Ted Corrigan, Director, Water Distribution (Work Group 1)
Dennis McAllister, Project Manager (Work Group 2)
Jennifer Puffer, Project Manager (Work Group 3)
Chris Jones, Ph.D., Laboratory Supervisor (Work Group 4)

ATTACHMENTS

Attachment 1



THE CITY OF
DUBUQUE
Masterpiece on the Mississippi

Dubuque
All-America City
2007

TO: Michael Van Milligen, City Manager

FROM: Laura Carstens, Planning Services Manager

SUBJECT: City Position Statement on WRCC Recommendations regarding HF 756

DATE: September 29, 2009

INTRODUCTION
This memo transmits a recommended City position statement on State proposals for floodplain and stormwater management in regard to HF 756. This position statement was developed by Planning, Engineering, and Public Works staff.

BACKGROUND
The Water Resources Coordinating Council (WRCC) has been meeting to discuss changes to floodplain and stormwater management in Iowa. A WRCC subcommittee was created to address the requirements of HF 756, which requires the WRCC to submit funding and policy recommendations to the Governor and Legislature by November 15, 2009. The funding and policy recommendations are intended to reduce the impact of flooding on residents, businesses and water quality within the state of Iowa. The WRCC Subcommittee recommendation summaries dated September 18, 2009 are enclosed.

HF 756 directs the WRCC to examine additional flood plain regulation, wetlands, statewide stormwater management standards, conservation easements and other land management, agricultural conservation practices, pervious pavement, bioswales, and other urban conservation practices, and permanent or temporary water retention structures.

DISCUSSION
City staff has reviewed the proposed funding and policy recommendations and has the following comments regarding the proposed changes. The WRCC is holding public input sessions and City staff will attend one of these meetings to present the City of Dubuque's position on the proposed recommendations.

The recommendations developed by the WRCC subcommittee are divided into four work groups that include:

1. Floodplain management and regulation
2. Lowland focus
3. Upland focus
4. Stormwater

Work Group 1: Floodplain Management:
Work Group 1 focuses on floodplain management. The primary recommendation impacting communities is the first one listed. Recommendation #1 is to change the regulatory floodplain from the 100-year floodplain to the 500-year floodplain (0.2% flood). The comments of the work group indicate that it realizes that expanding the regulatory floodplain to the 500-year floodplain will have serious implications for the citizens of Iowa. The City of Dubuque's primary concern should be the shift to the 500-year floodplain. The National Flood Insurance Program, since its inception, has used the 100-year floodplain as the regulatory floodplain. Citizens have made decisions about the location of their homes and businesses based on this regulatory floodplain. To change this regulatory floodplain at this point in time will have extremely significant impacts on local communities.

The City's current flood insurance rate maps (FIRM) for the Mississippi River and Catfish Creek branches indicate the area inundated by a 500-year flood as Zone X includes the entire Kerper Boulevard and Kerper Court industrial area, the 12th Street Peninsula where Peavey Grain and Koch Materials are located, as well as the north and south Ports of Dubuque. There are some 500-year floodplain areas shown on the City's branches of the Catfish Creek, but these generally are confined to the undeveloped stream valleys themselves.

The City of Dubuque should propose that rather than expand the regulatory floodplain to the 500-year flood event, the State should first look at the effectiveness of regulation within the 100-year floodplain. If 40 years of regulating the 100-year floodplain have not been effective in reducing flood damage, how does expanding these same regulations to the 500-year floodplain improve matters? It is important to note that whether you regulate the 100-year flood or the 500-year flood, current rules allow development within a floodplain as long as it's not in a floodway. A floodway is the portion of the floodplain where flood waters are typically flowing swiftly. Therefore, recommendation #2 reflects current requirements.

The problem is that even if a structure is not structurally damaged by flood water, the cost of rehabilitating the structure often exceeds the financial capability of many property owners. The City of Dubuque should recommend that before the State expands the regulatory floodplain beyond the 100-year flood, that a thorough analysis

be completed regarding the success of regulating property within the 100-year floodplain.

Recommendation #3 would restrict fill in the floodplain to three (3) feet. What is the rationale for this height? It appears to be arbitrary.

Recommendation #4 would exempt areas protected by a certified levee from the 500-year floodplain. City staff support this recommendation, as it exempts our protected riverfront.

The other recommendations of Work Group 1, numbers 5-11, are reasonable in their approach, in terms of flood control levees, the provision for grant programs to help in regulating floodplains, and flood risk education.

Recommendation #12 requires that new Class 1 Critical Facilities should be located outside the 500-year floodplain whenever practical. Class 1 Critical Facilities as defined by the Federal Government include: hospitals, fire and police stations, water and wastewater treatment facilities, and utilities. This is a sensible approach that should be expanded to include other important community assets, such as schools.

Work Group 2: Lowland Focus
Work Group 2 was charged with a lowland focus addressing wetland protection, restoration and reconstruction, conservation easements, and other land management practices. The recommendations in the planning and coordination, non-structural, projects, and educate and inform categories are reasonable. These recommendations would help the State of Iowa to understand the impact of land use on flooding statewide.

Work Group 3: Upland Focus
Work Group 3 was charged with an upland focus that deals with watershed level planning, agricultural practices, land development, and soil and water conservation. The recommendations were found to be appropriate, and if applied, would have a positive impact on flooding through an upland focus, calling for perennial ground cover and other agricultural conservation and water retention practices.

Work Group 4: Stormwater
Work Group 4 was charged with looking at stormwater, and specifically, promulgation and implementation of state-wide stormwater management standards, including pervious pavement, bioswales and other urban conservation practices.

Work Group 4 divided its recommendations between stormwater education, stormwater regulation, and financing. The recommendations for stormwater education appear reasonable and would help in controlling stormwater and flooding in the state.

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Recommendation #40 is that the State should require all cities and counties to implement stormwater management practices consistent with the Iowa Stormwater Management Manual (ISMM). They already do through the MS4 NPDES permits. Dubuque's MS4 NPDES Permit required the City to pass an ordinance that, "requires water quality and quantity components be considered in the design of new construction and implemented when practical." The ordinance also must "promote the use of stormwater detention and retention, grass swales, bioretention swales, riparian buffers and proper operation and maintenance of these facilities." These are some of the same practices outlined in the ISMM.

Recommendation #41 would require new and amended NPDES MS4 permits to include BMPs as outlined in the ISMM. The comments on Recommendation #40 above would apply here as well.

Recommendation #42 suggests the State of Iowa should demonstrate its commitment to water quality issues by requiring construction on State property, and any project utilizing State funds to use best practices to retain at least the first inch of rain that falls on the property. The City of Dubuque should support this as an important step that the State of Iowa lead by example and require that best management practices be followed during and for all State projects.

Recommendation #43 is to support and enhance existing funds currently available for stormwater projects. The two funds are the SRF program and the WIRB funds. **ISSUE: These funds are limited to water quality projects. There are no grant or loan funds available for strictly flood mitigation projects.** The City of Dubuque should recommend that stormwater and flood mitigation projects be eligible for these funds, or create a new fund.

Recommendation #44 is to give cities authority to establish a connection fee for stormwater drainage system utility districts based on SF 458. The City should further research how this recommendation could be implemented if this measure passes.

Recommendation #45 gives cities authority to establish a fee system and credit program based on the amount of impervious surface installed. The City of Dubuque already has such a system through its stormwater management utility. City staff's concern here is that there is no mention of how this would be applied – is this a state-wide utility fee program or are they just promoting the establishment of these types of utility fee programs on a City and County level?

Recommendation #46 would expand the authority of the Soil and Water Conservation Districts by allowing them to create watershed districts. As part of this recommendation, the watershed districts would be given the authority to levy taxes to create a sustainable funding source. Of concern is that this action would create a new taxing body, with very little in this recommendation about what authority the watershed districts would have

and how this would apply across existing jurisdictional boundaries. For instance, would the watershed districts pre-empt local jurisdiction control, whether it is City or County? The health of a watershed can best be managed by a watershed board that has jurisdiction over an entire watershed. The City should advocate for a watershed board concept, where this board assumes responsibilities now placed on MS4 cities for managing stormwater and health of a watershed.

The City of Dubuque should recommend the equitable application and enforcement any additional regulations mandated as a result of the WRCC recommendations. Too often cities are "islands of regulation in a sea of unenforcement." The City of Dubuque should stress to the WRCC, the importance of developing regulations and enforcing those regulations equally in populated and rural areas. The standards for development and enforcement are often times higher in cities than in rural communities and unincorporated areas. This puts cities at a disadvantage and consequently promotes sprawl, poor stormwater management and flooding. Regulation often occurs in populated areas, but rural development and farms contribute significantly to local, regional and state stormwater problems and flooding. Responsibility and enforcement needs to be shared by all, not just the larger cities who already are implementing best management practices similar to those outlined in the ISMM.

REQUESTED ACTION
City staff plans to attend one of the public input sessions being held by the WRCC to share the City's position, and requests that the City Council review and concur with staff's position.
Enclosure

Prepared by: Kyle L. Kritz, Associate Planner

cc: Gus Psihoyos, City Engineer
Don Vogt, Public Works Director
Deron Muehring, Civil Engineer II
Kyle Kritz, Associate Planner

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ADDED AFTER COMPILATION:

City of Onawa, 914 Diamond Street, Onawa, Iowa 51040

October 23, 2009

To Whom it May Concern:

RE: HF 756 Flood Plain Management Recommendations

Dear Sir/Madam,

As Mayor of the City of Onawa, I am totally dismayed at the recommendations of the Floodplain Subcommittee Work Group.

Of particular concern and angst is the regulation recommendation #1: Change the regulatory area from the 1% (100 Year) flood plain to .2% (500 year) plain.

The economic consequences of such a change would be devastating to Onawa and other communities on the western side of Iowa as most are in the flats of the Missouri River (Floodway Fringe (FF) Zone) and its related drainages. Western Iowa does not have the rolling terrain of the majority of the rest of Iowa. Because of these geographic differences, the increase of regulatory control would likely apply to a much greater area than in communities east of the Loess Hills.

Obviously Onawa is not the only community in this predicament. Other communities such as Missouri Valley, Whiting, Salix and Sloan are in the Missouri River Valley flats and its related drainages. Of the list of committee members – 20 in all – 18 are from central and eastern Iowa. West-central Iowa's voice was not suitably heard due to a lack of representation on the WRCC Floodplain Subcommittee – Regulation Work Group #1. Of the 2 members from Western Iowa, one is from the Council Bluffs area and the other is from Sioux City.

Before this recommendation is put before the legislature, please consider the severe economic damages that will ensue to Onawa and like communities in West-Central Iowa. As the recommendations now stand, the result would absolutely paralyze any growth potential for our economies and communities. Who in their right mind would want to build in communities with such extreme state regulatory controls?

Sincerely,

Rebecca Tanner, Mayor
City of Onawa

City of **Sergeant Bluff, IA**

401 Fourth Street Sergeant Bluff, IA 51054 (712) 943-4244

October 27, 2009

To Whom it May Concern:

Re: HF 756 Flood Plain Management Recommendations

Dear Sir/Madam:

The City of Sergeant Bluff has reviewed the recommendations developed in response to HF756, and would like to express its appreciation for the work that has been performed and the focus given to the future development and protection of our state's resources. There are a few concerns, though, that we would like to express in regards to some of the components of the recommendation list as well as with the overall impact of the recommendations on the fiscal viability of the state and local units of government.

The first recommendation listed, changing the regulatory area from the 1% (100 year) flood plain to 0.2% (500 year) flood plain, is of particular concern to us as a community as well as to myself individually. At this time, we have no 500 year flood plain maps for our county. In discussions held with the Department of Natural Resources, we have been informed that FEMA maps identifying 500 year flood plains will not be developed for our county until next year at the earliest. Without these maps, we have no way of identifying the potential impact that this recommendation would have. We forcefully and sincerely echo the comment expressed on page 3 of the September 29, 2009 version of the WRCC's Policy Recommendations:

"The geographic boundaries and the economic impacts of delineating the 0.2% flood plain area as the regulated flood plain are currently unknown. A mapping project has been recently initiated that will produce flood maps for the entire state but it will not be completed and approved by FEMA for another five to seven years. The delineation of the 0.2% flood plains and floodways should be completed in order to educate property owners and local communities and to make an informed policy decision. Some in the workgroup believe that the policy decision to move to a 0.2% regulated flood plain should wait until delineation of the 0.2% flood plains and floodways is completed and the impacts of this change analyzed before making a policy decision which will have an impact on the property rights of many Iowans including the value of their property and risk of flood damage."

Asking for public comments on the flood plain set of recommendations is an inherently flawed process until there is knowledge of what the results would be on existing structures and potential future development across the entire state. We humbly request that these recommendations be held in abeyance until we reach a time where members of the public can fully understand the implications of the proposals.

The overall impact of the recommendations from all four workgroups may be very positive in terms of protecting our water quality, and may also be of significant benefit to flood mitigation and protection. Yet, there needs to be some measurement of the potential economic impact of the proposals to ensure that what is recommended is not just theoretically beneficial but also financially feasible. For example, within the recommendations made by the Flood Plain Management and Regulations group (workgroup #1), recommendations #7 and #8 identify recommendations for the state to provide grant assistance for flood levies to local entities that would bear the remainder of the costs. Each workgroup has made several comprehensive recommendations, each with its own (unmeasured) cost component, and several of the groups have made recommendations on how to fund their proposals that are comparable to Workgroup #1's funding mechanism. These funding requirements are being discussed at a time

when Governor Culver has asked for an across the board 10% reduction in general fund expenditures for our current fiscal year, and we are facing a potential $500 million to over $1 billion budget deficit on a $6 billion budget for Fiscal Year 2011.

The thought that the State of Iowa, given their current and anticipated budget constraints, will have the financial wherewithal to fund a major portion of the costs that would result from the implementation of these policy recommendations is not supportable. The majority of these costs would be borne by local communities and individual property owners, all of whom face the same type of budget constraints that are impacting our state as a whole. When Sergeant Bluff, an MS4 community, implements a new building regulation or capital project based on standards imposed by the State of Iowa based on a set of recommendations from the WRCC, there can be a significant financial impact on our local citizens, not just now but for several years to come if debt is incurred. When members of our community are faced with these new costs or limitations, their angst will be directed at us as a community, not at the State of Iowa. They have a right to know that any costs that they will incur are based on thoughtful standards that have taken costs averted into account; there needs to be a definite cost/benefit to analysis to justify the decision.

The City of Sergeant Bluff asks that this cost benefit analysis be performed prior to any recommendations being presented. While the recommendations being discussed are designed to achieve positive goals, presentation of the goals absent a full understanding of both the financial costs and limitations on land that would be imposed by regulation at the 0.2% (500 year) flood plain are foolhardy. Members of the public can make no reasonable evaluation of these recommendations until this is done. The City of Sergeant Bluff respectfully asks that patience be exerted in the development of recommendations, and that the decision-making process be slowed down until complete information is supplied to the constituents of the State of Iowa.

Sincerely,

Dale Petersen, Mayor
City of Sergeant Bluff

Water Resources Coordinating Council
Work Group Recommendation Template

HF 756 requires the WRCC to "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" and to submit these recommendations to the Governor and General Assembly by 11/15/09. The following template will used by the four WRCC work groups in making recommendations to ensure that the requirements of the legislation are met and to aid in determining best implementation of recommendations.

Fill in the box indicating the focus of this recommendation. Place an X in the box of any other areas affected by the recommendation.

☐ 1. Flood plain management and regulation
☐ 2. Lowland focus: Wetland protection, restoration and construction; and conservation easements and other land management
☐ 3. Upland Focus: Perennial ground cover and other agricultural conservation practices; and permanent or temporary water retention structures
☐ 4. Promulgation and implementation of statewide storm water management standards; and pervious pavement, bioswales, and other urban conservation practices

Who has been consulted regarding this proposal? List:

☐ 1. hydrological experts_____

☐ 2. land use experts_____

☐ 3. city representatives_____

☐ 4. county representatives_____

☐ 5. drainage and levee districts_____

☐ 6. agricultural interests_____

☐ 7. soil and water conservation districts_____

☐ 8. urban and regional planning experts_____

☐ 9. other_____

What resources and reports have been reviewed in considering this proposal? List:

Were examples identified of what is working well in the State of Iowa regarding this issue? Specify.

Were areas identified where improvements could be made? Specify.

Were examples of best practices identified from the local or regional level in Iowa, or in other states, that should be considered for statewide implementation in Iowa?

Outline how improvements can be made without legislative action.

If legislation is needed, would it establish new law or revise existing law? (specify Code sections when possible)

How would this proposal impact Iowans in a positive or negative way?

What agencies does this proposal affect?

Is this issue similar to any legislation that was filed in the past? What was the outcome?

Are there interest groups or associations that support or oppose this proposal or will present similar proposals themselves?

Funding considerations:

- Multi-year state fiscal Impact (please be as specific as possible, including tax credits and any FTE adjustments).
- Also, please identify funding source (General Fund or other funds),
- whether the proposal includes one-time costs or multi-year costs,
- and whether there are operating expenditures:

DETAILED BACKGROUND: WORK GROUP 1, FLOOD PLAIN MANAGEMENT

1. Flood Plain Management & Regulation Workgroup
    a. Introduction/scope of work

FLOODPLAIN REGULATIONS:

Put simply, Iowa's flood plain regulations are not working as desired. Buildings, houses, fill and other development are placed in flood plains and floods continue to damage structures, threaten lives and cost taxpayers millions of dollars. Flood plains act as natural conduits for flood waters and further development impairs this natural function. We cannot stop floods but we can reduce the amount of damage and the threat to public safety. The state flood plain regulations should focus on protection of public safety, property, and the integrity of the flood plain.

It would be impractical and unnecessary to prohibit all development in the flood plain. Some types of development such as youth ball fields, parks, trails and picnic areas are well suited for flood plains and do not impair the function of the flood plain. Development of this sort also does not have a high replacement or repair cost after a flood and does not increase the threat to public safety from flooding. Most agricultural uses are also appropriate uses of Iowa's flood plains.

Definitions

- **Floodway.** The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the flood without cumulatively increasing the water surface elevation of the 1% flood more than one foot. (A diagram is attached).
- **0.2% Flood.** Bigger floods happen less often than smaller floods. The size of a flood (the height of the flood water) can be described by the probability that it will occur in any year. Based on how frequently it has occurred in the past, the 0.2% flood has a 1 in 500 chance of occurring in any year. The probability of occurrence is the same regardless of how long it has been since a flood of that size has occurred.
- **1% Flood.** Bigger floods happen less often than smaller floods. The size of a flood (the height of the flood water) can be described by the probability that it will occur in any year. Based on how frequently it has occurred in the past, the 1% flood has a 1 in 100 chance of occurring in any year. The probability of occurrence is the same regardless of how long it has been since a flood of that size has occurred.

Recommendations:

- **Recommendation #1:** The 0.2% flood should be the regulated flood plain instead of the 1% flood. This change should be phased in as the 0.2% flood plains and floodways are identified on maps approved by the Federal Emergency Management Agency.

- **Recommendation #2:** The state should prohibit development (structures, fill and other restrictions to flood flows) in the floodway of the regulated flood plain. Reconstruction of substantially damaged structures already located in the floodway should also be prohibited.

- **Recommendation #3:** The use of fill to elevate new or reconstructed structures (excluding levees) in the flood plain should be restricted to no more than three vertical feet. Other means of elevating structures should be allowed. Structures in the regulated flood plain but outside the floodway should be constructed in a manner that will reduce the damage caused by the 0.2% flood. These restrictions should be phased in as the 0.2% flood plains are identified on maps approved by the Federal Emergency Management Agency.

FLOOD CONTROL STRUCTURES (LEVEES):
Flood control levees have been used for decades to reduce damage caused by flooding. However, levees do not eliminate the risks of flood damage. Levees have failed or been over-topped in the past. When this happens the sudden rush of flood waters can cause more damage than floods in areas without levees. Still, when designed, built and maintained properly levees are effective tools for managing flooding.
The Army Corps of Engineers has developed a comprehensive plan for controlling flooding on the upper Mississippi River which contains many alternatives. The report does not endorse any of the alternatives and congress has not appropriated funds to implement the plan. An existing levee system on the lower portions of the Mississippi River (below New Madrid, Missouri) was built with federal funds some years ago and financial support for maintenance continues today. Even without federal funding levee districts and communities in Iowa could use the plan to improve flood protection for their constituents. There is substantial value in developing local flood protection plans as part of a larger planning effort.

- **Recommendation #4:** Areas on the landward side of a flood control levee recognized by the Federal Emergency Management Agency as protecting against the 0.2% flood should not be considered as in the 0.2% floodplain and should not be subject to the regulations for the 0.2% flood plain.

- **Recommendation #5:** Flood control levees should primarily be used to protect areas with existing development if there are no practical alternatives for mitigating damage from floods.

- **Recommendation #6:** The governor should support and endorse Alternative H in the "Upper Mississippi River Comprehensive Plan - Final Report June 2008 (Revised Aug 14, 2008)" prepared by the Army Corps of Engineers. This alternative would improve the existing levee system to provide protection from the 0.2% flood along the Mississippi River (not the tributaries). [Note: The Army Corps of Engineers employees participating in the work group did not endorse any alternative.]

The Federal Emergency Management agency is requiring flood control levees shown on their official maps to be certified in the next two years before the levees can be recognized as protecting against the floods for which they were designed. The certification process can be expensive and communities may not be able to bear that cost alone.

- **Recommendation #7:** The state should create a grant program to help entities bear the cost of certifying existing flood control levees.

- **Recommendation #8:** The state should create a grant program to assist entities with improving existing levees as one way to meet the new 0.2% flood regulations.

PLANNING:
The best flood plain management planning is done by the local community whether it be a city, county, watershed or river basin. Local officials such as zoning and building administrators, community planners and emergency management service providers will have the bulk of the responsibility for implementing these plans. Local flood plain management plans are the key to reducing exposure to flood damage.

- **Recommendation #9:** The state should create a grant program to support local planning entities for developing local flood plain management plans. Preference should be given to planning activities that benefit a region or watershed. The goal of these flood plain management plans should be to reduce the flood exposure to people and property and thereby reduce flood damages.

FLOOD RISK EDUCATON:
The general public—including lenders, insurance professional and others—misunderstands the risks of building in a flood plain. It is common to hear someone state that the 1% flood occurs only once every one hundred years or to be dismayed with experts when they have seen more than one 100 year flood in their lifetime. This misunderstanding leads them to underestimate the risk of buying a house within the 1% flood plain without realizing that it has a 26% chance of being damaged in a 1% flood at least once before they can pay off a typical 30 year mortgage.
Local flood plain managers and planners need training, also. The Department of Natural Resources was appropriated additional funds in 2009 and part of those funds will go toward improving communication between local managers and the department as well as increasing training for local officials.

- **Recommendation #10:** The legislature and the governor should support the formation of a local chapter of the Association of State Flood Plain Managers in Iowa that would provide a vehicle for local managers and planners to discuss flood plain issues and learn from each other.

- **Recommendation #11:** The Iowa State University Extension Service should be tasked with and appropriated funds for educating the general public about flood plains, flood risks and basic flood plain management principles. The ISU Extension Service already has a network of educators across Iowa and should develop materials and programs in consultation with flood plain experts.

CRITICAL FACILITIES:
Definitions:

- Facility. Buildings or other structures, utilities, storage areas for equipment and materials.
- Class I Critical Facility. A facility to which access must be maintained during a flood so the facility may continue to function. Examples of Class I Critical Facilities include emergency operation centers, communication centers and hospitals. Class I Critical Facilities also include facilities that are difficult or time consuming to evacuate during a flood such as jails, nursing homes and assisted living centers.

Facilities that are critical to the health and safety of the public should be protected from flooding. Hospitals and emergency operation centers cannot maintain their function unless they are accessible during a flood. Jails and care centers can be difficult and time consuming to evacuate before and especially during a flood emergency. It is not enough for these types of facilities to be protected from flood waters. Access to these facilities must also be maintained. City halls, courts, record storage and similar facilities must be protected from flood damage but do not necessarily need to function during a flood. Relocating existing critical structures can be very expensive. When new critical structures are planned and designed, there is a genuine opportunity to reduce the damage from flooding and to ensure that their function can be maintained during a flood.

- **Recommendation #12:** New Class I Critical Facilities should be located outside the 0.2% flood plain whenever practical. New Class I Critical Facilities should also be designed and located as to maintain their function during a 0.2% flood whenever practical.

Stakeholder approval/opposition

OTHER OPINIONS EXPRESSED:

Whenever possible, the workgroup tried to reach consensus on the statements and recommendations. When consensus was reached it was rarely unanimous. Below are the viewpoints of those that did not necessarily agree with the statements and recommendations above.

- Government should not impose restrictions on the use of property. Many citizens that live in a flood plain are aware of and have accepted the risks and do not expect any help from the government.
- Flood control structures are not reliable enough to be used extensively in flood plain management. Any flood plain management strategy that uses structural flood controls in lieu of removing or flood proofing structures in the 0.2% flood plain is incomplete and will fail eventually. Structural controls do have their place—to protect existing development that cannot be mitigated in other ways. However, in many instances, structural controls are used because they are less intrusive and less costly and more effective mitigation measures.

- The geographic boundaries and the economic impacts of delineating the 0.2% flood plain area as the regulated flood plain are currently unknown. A mapping project has been recently initiated that will produce flood maps for the entire state but it will not be completed and approved by FEMA for another five to seven years. The delineation of the 0.2% flood plains and floodways should be completed in order to educate property owners and local communities and to make an informed policy decision. Some in the workgroup believe that the policy decision to move to a 0.2% regulated flood plain should wait until delineation of the 0.2% flood plains and floodways is completed and the impacts of this change analyzed before making a policy decision which will have an impact on the property rights of many Iowans including the value of their property and risk of flood damage.

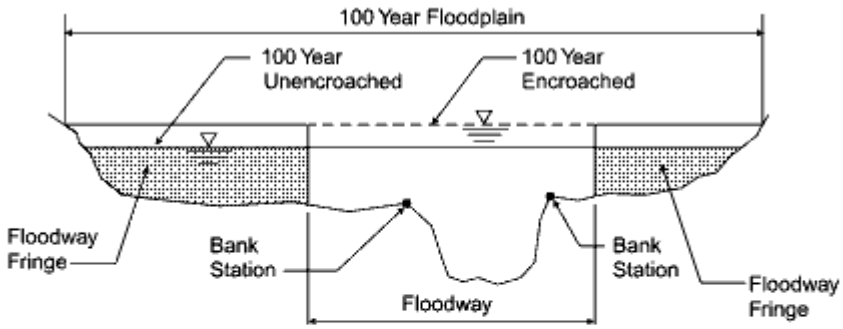
The workgroup realizes that the expanded or new policy recommendations made here have serious implications to the citizens of Iowa. Many residences and other buildings will have to be moved from the 0.2% flood plain after being damaged rather than being rebuilt in their current location. New development in the 0.2% flood plain, while not prohibited by these recommendations, will be more difficult and expensive than it is now. But the goal of these recommendations is to reduce the damage caused by flooding and that cannot be accomplished without changes in how we manage our flood plains.

Many of the workgroup members are representatives of different public interest groups. While the representatives participated with the full knowledge of the groups they represent, it should not be assumed that the groups or their representatives fully endorse the recommendations or statements made herein.

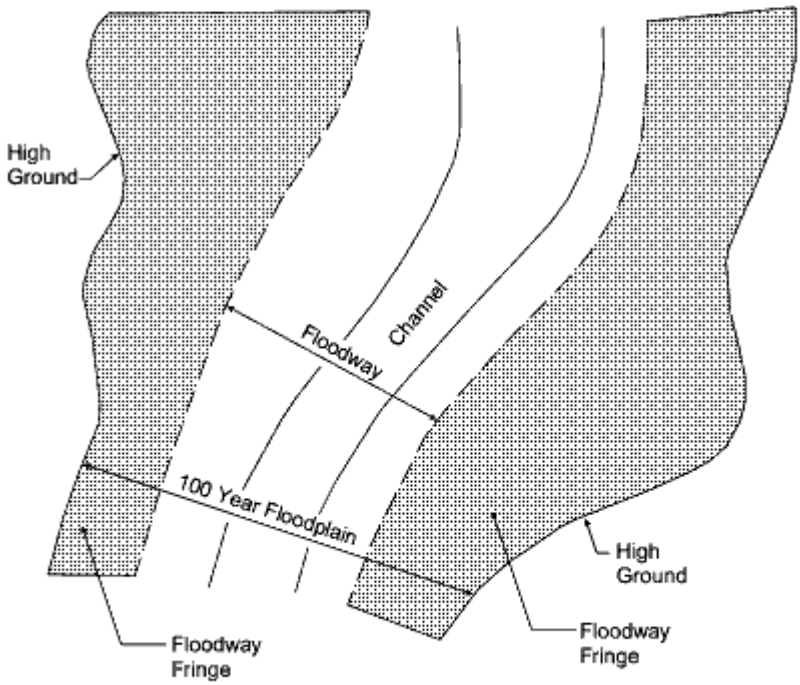
b. Resources considered

i. Documents

Floodway Diagram



(a) Cross Section



(b) Plan View

DETAILED BACKGROUND: WORK GROUP #2, LOWLAND WORK GROUP
DATE: 9/15/09

Introduction/ Scope of Work
Lowland work group was convened to consider policy and funding options for strategies to reduce the impact of flooding with a focus on wetland protection, restoration, and construction; and conservation easements and other forms of land management.

Examples of What is Working Well in Iowa
Inter-agency cooperation during floods and other emergency situations happens quickly in Iowa and with good results. Interagency coordination during disaster response and recovery operations has been dynamic between events with working arrangements that have evolved as identified in Iowa's Comprehensive Emergency Plan.

More recently, State and Federal interagency coordination on levee and floodplain recovery activities have been formalized through the Interagency Levee Work Group (ILWG) convened by the U.S. Army Corps of Engineers (USACE). A successor body, the Flood Risk Management Team (FRMT) begins ongoing coordination work in September 2009.

The State Hazard Mitigation Team (SHMT) provides for interagency information sharing and dissemination related to the mitigation of all natural and man-made hazards. The SHMT also invites Federal stakeholders and non-governmental organizations to participate as needed. The SHMT focus includes but is not limited to flooding. SHMT member agencies form SHMT sub-groups focus on specific issues as they arise.

The recently-convened Water Resources Coordinating Council (WRCC) is charged to provide interagency program coordination on water resource issues including those relating both to water quality (such as point and non-point pollution) and quantity (water supply, flooding, etc).

The USACE has initiated an Iowa/Cedar Watershed Study which is intended to provide an assessment of flood damage risks and contributing factors. This study is being conducted in cooperation with the FRMT, the WRCC, and their member agencies.

Five other assessments are being done that will provide support to the USACE Iowa/Cedar study. Rapid Watershed Assessments (RWAs) have been or are being completed by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) on all the sub-watersheds of the Cedar River Basin. This work will provide useful background information for the USACE study. In addition, the Department of Natural Resources (DNR) and NRCS are collaborating on a high-cut assessment of all floodplains in Iowa to identify floodplain segments that should be top priorities for more detailed study and perhaps focused conservation easement program investments.

The Federal Emergency Management Agency (FEMA) and Iowa Homeland Security and Emergency Management Division (IHSEMD) have helped communities reduce future flood damage risks through the 404 and 406 Hazard Mitigation programs under the Stafford Act. These projects have included property acquisitions, flood proofing, structural relocation, and flood control projects to protect critical facilities. In communities like Cherokee, Des Moines, Cedar Falls and Independence, FEMA 404 Hazard Mitigation funds have enabled home and business owners to relocate from high-risk areas, and helped communities convert former residential and business areas to useful but low-risk green spaces.

The FEMA 406 Hazard Mitigation program has helped local governments cover the cost of repairs to make infrastructure more resistant to flood damages during future flood events.

The USACE and Iowa DNR, through their responsibilities under the Clean Water Act, and the Iowa DNR and local jurisdictions, through their responsibilities for floodplain regulation, provide opportunities for interagency comment and coordination on projects that are planned for or will affect floodplains. The Clean Water Act also provides for public input.

Other state and federal programs that have shown success in Iowa include:

- Technical and financial support is provided through the USACE to levee districts and communities that participate in its PL84-99 _____ Program. Program requirements require participating local sponsors to build and maintain levees to USACE standards, and in return the USACE provides technical and financial assistance in the event levees are damaged during flood events.
  The USACE also provides program and technical support to efforts aimed at encouraging non-structural alternatives to levee repairs in the aftermath of 2008 flooding. This support was fed through the Regional Interagency Levee Task Force (now the Regional Flood Risk Management Team) and the Iowa FRMT. As a result, a non-structural alternative (NSA) is being implemented at the Louisa Levee District 11. This NSA will make more efficient use of public dollars, provide for additional flood storage, improve wildlife habitat and decrease flood damage risks to two communities while maintaining flood damage protection to a locally important county highway. The Louisa LD11 project will provide an example and case study for future NSA projects throughout the Midwest.
- Wetland mitigation banking provides for cost-effective and science-based mitigation for mitigating negative effects on wetlands from public infrastructure projects, private development and agriculture. The first wetland mitigation bank restored previously-drained land in the Prairie Pothole area. Wetland banking can help expedite well-planned projects that improve floodplain management. Safeguards need to be in place to avoid wetland banks being used to accommodate inappropriate development in floodplains.
- The Wetland Reserve Program (WRP) is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property. The NRCS provides technical and financial support to help landowners with their wetland restoration efforts. The NRCS goal is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection. There are _____ acres of WRP easements in Iowa, with approximately _____% being located in floodplains.
- The Emergency Watershed Protection (EWP) Program undertakes emergency measures including the purchase of flood plain easements for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed. EWP Floodplain Easement funds allocated to Iowa as a response to 2008 flooding were focused in several floodplain corridors based on input provided by state agencies and non-governmental organizations. Similar actions were taken after extensive flooding in 1993, which helped to establish the Iowa River Corridor and to enable the buy-out of the former Levee District 8 in Louisa County.
- The Conservation Reserve Program (CRP) administered by the USDA Farm Services Agency (FSA) has been very successful in providing year-around cover. CRP enrollments have provided for localized increases in water infiltration. Soil conservation from well-developed roots also decreases surface runoff and keeps water on the landscape.
- Conservation Reserve Enhancement Program (CREP) is providing focused nitrate reduction benefits where it has been implemented. Around 35 projects are in place, with another 18 under construction and another 70 in the process of being enrolled. Existing sites provide

localized nitrate reduction and flood water attenuation benefits where they have been installed.

- The U.S. Fish and Wildlife Service (FWS) Private Lands Program has been used to purchase the residual value of some land tracts that have been enrolled into USDA conservation easement programs. The FWS Private Lands Program has also been used to purchase some easements in high priority wildlife areas. These purchases have resulted in local floodplain land use changes and have provided for limited flood water storage. _____ acres have been purchased through the FWS Private Lands Program.
- The PL83-566 Watershed Protection and Flood Prevention (PL-566) Program administered by the NRCS has a long history of flood damage reduction success in watersheds and communities across the state. These projects have provided other benefits including agriculture pollution control, erosion control, fish and wildlife habitat, water supply and recreation.

  PL-566 authority is broad enough to provide for a variety of flood damage reduction approaches, including the purchase of floodplain easements, and the implementation of both structural and non-structural upland run-off reduction measures.
- The Iowa Department of Economic Development (IDED) has recently required new development projects receiving IDED assistance to conform to Low Impact Development principles in an effort to reduce negative hydrologic impacts of development projects.
- The Iowa Department of Transportation (IDOT) has water resources and engineering staff focused on water resource issues in order to better consider floodplain and wetland issues during project planning and implementation.

Areas where improvements can be made:

- The WRCC as authorized can be an effective body for interagency coordination. However, to this point the WRCC has not moved past information exchange to actual program coordination. There is a need for greater planning, program coordination and collaboration among state and federal agencies and local entities.

- Consistently appropriate land use decisions in urban areas require rational zoning, skilled administrators, educated and ethical elected and appointed officials, and sustained political courage. The absence of any one of these traits may result (and has resulted) in poor land use decisions and increased risk of flood damages in the future.

  Improved land use management will require a more sustained commitment to local support, strengthened state regulations, and state staffing adequate to ensure accountability of local officials.

- The NRCS in Iowa has given partner agencies and non-governmental organizations the opportunity to nominate special project areas for focused WRP funding. This is a good practice and should be enhanced through planned and targeted WRP project areas (in addition to the self selection that already happens).

- Planned, targeted CRP enrollments on critical portions of watersheds could be a tool (in combination with other upland strategies and improved floodplain management) to help reduce downstream flood damages. The CRP has a 10-year renegotiable term, but it does not lock-in perpetual land use through an easement or similar agreement. CRP rental rates have not risen to match farm land rental market values.

- The CREP program has been implemented on a very limited scale relative to the overall need. It has not yet provided a significant reduction in nitrate concentrations on major Mississippi River tributaries and will not do so unless the concept is implemented extensively throughout the tile-drained areas of the state. CREP sites will not provide significant flood damage reduction benefits unless flood water detention is planned and provided for in CREP structure placement and designs.

- Several state water resource programs are providing useful if limited assistance to water resource projects. Generally these programs have been focused on the maintenance of soil productivity or improving water quality. With a few exceptions, these programs have generally not focused on the floodplain management or flood damage reduction. State water resource programs include:
    - Department of Natural Resources (DNR):
        - 319 Program (EPA program administered by DNR)
        - Lake Restoration Program
        - Clean Water Revolving Fund
    - Iowa Department of Agriculture and Land Stewardship (IDALS)
        - Iowa Financial Incentives Program (IFIP)
        - Watershed Protection Program (WSPF)
        - REAP Water Protection Fund (WPF)

  The IFIP and WSPF programs could be targeted to focus more on upland run-off reduction. However, there would be associated opportunity costs in the form of other objectives that would receive less attention than they are currently.

- The Farm and Ranch Land Protection Program (FRPP) works well in Iowa but is underutilized. So far, only ____ acres have been protected through FRPP easements. This program provides matching funds to help purchase development rights to keep productive farm and ranchland in agricultural uses. Working through existing programs, USDA partners with State, tribal or other local governments and non-governmental organizations to acquire conservation easements or other interests in land from landowners. USDA provides up to 50 percent of the fair market easement value of the conservation easement.

- The Grassland Reserve Program (GRP) works well in Iowa but is also underutilized. To date there are only _____ acres of land in Iowa covered by thirty-year GRP easements. This is a voluntary conservation program that emphasizes support for working grazing operations, enhancement of plant and animal biodiversity, and protection of grassland under threat of conversion to other uses. Participants voluntarily limit future development and cropping uses of the land while retaining the right to conduct common grazing practices and operations related to the production of forage and seeding, subject to certain restrictions during nesting seasons of bird species that are in significant decline or are protected under Federal or State law. A grazing management plan is required for participants.

  The GRP could be used as a tool both for upland run-off reduction and for floodplain management.

- The Federal PL 83-566 Watershed Protection and Flood Prevention (PL-566) Program has a long history of flood damage reduction success in watersheds and communities across the state. However, appropriations for this program have dwindled such that only a relative few

earmarked projects currently receive funding for new construction or for the rehabilitation of older project dams.

Federal funds for planning new PL-566 projects have not been available for several years. New planning currently underway in Iowa is being funded by local project sponsors that are primarily interested in the development of new surface water supplies.

The PL-566 program could provide a focused, flexible tool for managing local flood risks if it were funded adequately.

- Existing water-related programs are in different agencies. There is a need for a common clearinghouse for applicants to accommodate referrals to appropriate programs.

- There is an apparent lack of understanding by the general public about flood threats, land use, and long-term vs. short-term needs. An example is the need for better public information/education in understanding risks relating to property being considered for purchase. Also, flood risk information is not readily available for individuals considering the purchase of property.

- Continue to use EWP/WRP style easement programs to protect floodplains, but pursue partnerships to provide for expedited restoration, more focused management and more frequent monitoring.

- The WRCC is not well staffed or equipped to ensure ongoing inter-agency coordination including federal, state, NGO's, private, and special teams.

- Many agency program funding sources do not fit flood risk management. There is a need for program funding specific to flood damage reduction.

- All too often, there is not an emphasis on response, recovery and mitigation planning until a disaster has occurred. Planning, responding and recovery begin at the local level. All levels of government need to help communities move towards more appropriate land use to reduce flood damage risks.

- There are FEMA, USACE and NRCS authorities that could help implement community watershed-based plans. More state resources are needed for project planning and required non-federal match.

- The WRCC, SHMT and FRMT need to continue to integrate the efforts of "traditional" water resource agencies (USACE, DNR, etc.) with agencies such as IDOT and IDED whose activities impact water resources.

- The Iowa Code in Chapter 161 (E and F) provides authorities for county boards of supervisors to provide local dollars and management frameworks for water and floodplain management. Current authorities need to be studied to identify needed modifications that would better provide for proactive local project development and implementation.

- More needs to done to reconnect streams and rivers to their respective flood plains where it can be done while avoiding increased flood damage risks to critical infrastructure and vulnerable

populations. In agricultural areas currently protected to some extent by levees, opportunities should be identified to allow for low velocity flood flows that would provide for flood water storage while minimizing cropland damage from concentrated, high-velocity currents. The planned modifications of Louisa Levee District 11 may provide a case study for similar projects in the future.

- Water needs to remain on the landscape within a watershed. The rapid drainage of surface runoff and subsurface flow needs to be reversed to mitigate the magnitude of peak flows. The landscape's ability to store water can be increased through targeted placement of practices that infiltrate and retain surface runoff. These practices could reduce flooding from high-frequency (smaller) storm events and be a useful complement to floodplain management strategies to manage flood damages from lower-frequency (larger) storm events.

- Good restoration planning and follow up is needed. It is common for large blocks of retired farmland in the floodplain to become monocultures of reed canary grass and other noxious weeds. This is only prevented with annual maintenance. Partnerships with DNR, TNC, private landowner groups (watershed groups) should be explored for monitoring, management and (in some cases) public access.

  At the same time, there is a need to examine the current state of knowledge on issues that could present unintended consequences from wetland restoration, water detention and other practices intended to reduce flood damage risks. Issues to examine might include bu are not limited to cyanobacteria, disease transmission, ecosystems changes and fate of nutrients.

LOWLAND RECOMMENDATIONS

PLANNING & COORDINATION:

Recommendation #1: Provide funding for watershed project planning and the implementation and maintenance of high priority flood damage reduction projects.

Required Action Not Including Legislation:

Legislation Required: Chapter 161 A provides necessary authorities for this work.

Impact to Iowans: High priority projects could be implemented without dependence on federal funding decisions.

Agencies Affected: IDALS-DSC, SWCDs, County governments, NRCS

Interest Groups that Support or Oppose: Not aware of any.

Funding Considerations: Annual funding of not less than $6.0 Million is recommended.

Recommendation #2: The WRCC should move more quickly from information sharing to actual interagency program coordination.

Required Action Not Including Legislation: None.

Legislation Required: No legislation is required.

Impact to Iowans*:* State and Federal program dollars would be used more effectively to address water resource issues.

Agencies Affected: All WRCC agencies.

Interest Groups that Support or Oppose: Not aware of any.

Funding Considerations:

Recommendation #3: Provide interagency assessment and project planning to support and inform infrastructure / easement / land purchase investment decisions in floodplain areas.

Required Action Not Including Legislation: Flood plain assessment work is underway by DNR and NRCS.

Legislation Required: No legislation is required.

Impact to Iowans: More cost efficient and effective investment decisions by state and federal agencies. Easement program funds might be less available for applicants outside of targeted areas.

Agencies Affected: DNR, IDOT, IDED, NRCS, FSA, USACE, U.S. Dept of Housing and Urban Development (HUD), U.S. Economic Development Administration (EDA), Federal Highway Administration (FHWA)

Interest Groups that Support or Oppose: The Nature Conservancy supports.

Funding Considerations: Would require increased or redirected funding for coordinated planning.

NON-STRUCTURAL:

Recommendation #4: Reconnect streams and rivers to their flood plains and floodways. This practice involves the modifications of levees, roads, channels and diversions. The State of Iowa should consider levee district buyouts when they are needed in order to accomplish stream-floodplain reconnections.

Required Action Not Including Legislation: This could be done with local interagency coordination combined with the use of state and federal conservation and transportation programs.

Legislation Required: Changes modifying Iowa Code Chapter 161A for easier establishment of SWCD watershed and flood prevention sub-districts and for greater property tax revenue would be needed. Modify Chapters 161E and 161F for easier establishment and greater property tax revenues for soil conservation and flood control districts.

Impact to Iowans: Floodplain land values would be lowered in some locations. Some communities located in floodplains could be more exposed to flooding. Other communities could experience reduced flood damage risks if peak flows are reduced as a result of increased temporary floodplain storage. Increased recharge of all alluvial aquifers, appropriate and lower risk land use, more sediment and nutrients trapped, and increased wildlife habitat and biodiversity.

Agencies Affected: Metropolitan Planning Organizations, Regional Planning Authorities

County governments, County Conservation Boards (CCBs), SWCDs, DNR flood plain management, Iowa Flood Center, FEMA (404 & 406), IDED (CDBG), CRNS, NRCS-(EWP & WRP), FSA (CRP)

Interest Groups that Support or Oppose: INHF -support

Funding Considerations: Infrastructure modification would require funds for planning and construction. Anticipated public service savings, including savings from reduced infrastructure maintenance, would be evaluated as part of levee district buyout decision making.

Recommendation #5: Drainage Water Management to allow for the seasonal retention of water in tile drained fields should be supported technically. This practice is most easily adopted in very flat landscapes.

Required Action Not Including Legislation: This practice could be promoted within existing authorities.

Legislation Required: None.

Impact to Iowans: This practice could reduce nitrate losses from fields to streams. This practice could increase peak runoff if significant rainfall or snowmelt occurs while soils are still saturated.

Agencies Affected: ISU Extension

Interest Groups that Support or Oppose: Des Moines Water Works Supports

Funding Considerations: Installation could be done as an alternative to other subsurface drainage work.

Recommendation #6: Provide authority for the purchase of easements in upland areas that are part of planned flood risk reduction projects. The easements would stipulate the use of water infiltration practices that are appropriate for each situation. Practices might include contour farming, strips of perennial vegetation, ponds, wetlands, no-till, and other measures.

Required Action Not Including Legislation: None.

Legislation Required: An authority and funding stream would need to be established.

Impact to Iowans: Run-off reduction for high frequency rain events could be gained in selected areas.

Agencies Affected: IDALS-DSC

Interest Groups that Support or Oppose: Not aware of any.

Funding Considerations: Funds would need to be provided by the State for this purpose.

Recommendation #7: Provide a means of indemnification that would allow levees to be modified or removed and floodplains to be farmed with the agreement that if there is flooding the land will be used for back up and holding water.

Required Action Not Including Legislation: None.

Legislation Required: An authority and funding stream would need to be established.

Impact to Iowans: Flood storage could be gained in selected areas that would benefit critical infrastructure and/or vulnerable populations.

Agencies Affected: DNR

Interest Groups that Support or Oppose: Not aware of any.

Funding Consideration: Indemnification would be compared to costs of other flood damage risk reduction options.

PROJECTS:|

Recommendation #8: Integrate multi-purpose wetlands into watersheds with drainage districts or larger drainage systems. Systems would be retrofitted to enable nutrient trapping and treatment; more water infiltration and evapotranspiration; greater retention of run-off; and habitat to support biodiversity. Maintain a holistic view of watershed management and targeting funds and programs within those watersheds.

Required Action Not Including Legislation: Action by county boards of supervisors with help from county engineers, county conservation boards and soil and water conservation districts (SWCDs). IDALS-DSC with assistance from the State Soil Conservation Committee. Help for coordination, technical planning, engineering design, use of conservation programs, and tax incentives; watershed planning and wetland mitigation. State financial assistance leveraged with federal conservation funds. NRCS through the WRP and FSA through the CRP (as well as the enhancement programs allowed for both programs.)

Legislation Required: None. This action could be accomplished through a transition of alternative drainage and CREP budgets to support DSC efforts. It would also require redirection of some WRP and CRP funds by NRCS and FSA respectively.

Impact to Iowans: Costs for monitoring and planning. Water quality improvements. Potential improvements in wildlife habitat. Potential for increased cyanobacteria blooms due to the introduction of high nutrient water in the wetland, increased wetland water storage capacity.

Agencies Affected: Individual drainage districts and county governments, IDALS-DSC, IDNR, NRCS, FSA, U.S. Fish and Wildlife service, EPA

Interest Groups that Support or Oppose: Iowa Drainage District Association and Iowa Land Improvement Association support. Other state and federal agencies are working with IDALS to develop pilot projects to refine this concept.

Funding Considerations: Could be funding-neutral for the public once any research and evaluation is complete if existing wetland restoration programs are redirected for this purpose. If done as part of drainage infrastructure replacement, costs would be borne by drainage district landowners to cover required mitigation.

Recommendation #9: Develop, implement, monitor and document a watershed project that has as a primary goal high infiltration of rainfall under non-saturated soil moisture conditions in both rural and urban areas.

Required Action Not Including Legislation: None.

Legislation Required: None.

Impact to Iowans*:* Primary impacts are rural and on cropland.

This could demonstrate reduced negative impacts from high-frequency rainfall events and benefits to soil quality.

Agencies Affected: DNR, IDALS, NRCS. Most crop producers not already using comprehensive conservation systems will need significant technical assistance to comply with this requirement.

Interest Groups that Support or Oppose: Not aware of any.

Funding Considerations: Funding needs are not the biggest barrier for this action. Practices to achieve this requirement would be low cost UNLESS land use changes are needed.

Recommendation #10: Conduct a cooperative pilot project for the evaluation of strategies for reducing severe scour erosion and sand deposition by floodwaters under various soils/geology conditions. Strategies would include but are not limited to levee and road modifications, reforestation and grassland seeding. This project should be part of an overall watershed plan at the HUC 8 scale or larger.

Required Action Not Including Legislation: Flood Risk Management Team (FRMT) to facilitate coordination of work by USACE, NRCS and FSA. NRCS through the Wetlands Reserve Program and FSA through the Conservation Reserve Program (as well as the enhancement programs allowed for both programs.)

Legislation Required: None.

Impact to Iowans: Could provide information on strategies that could be used state-wide.

Agencies Affected: USACE, NRCS, FSA, DNR, County governments, County conservation boards (CCBs), SWCDs, Drainage and levee districts, Iowa Flood Center

Interest Groups that Support or Oppose: Iowa Natural Heritage Foundation (INHF) -support

Funding Considerations: Funds used for reforestation or permanent seeding would likely be drawn from other conservation priorities. Sources for funding of levee modifications are yet to be identified.

Recommendation #11: Enhance WRT, EWP, FRPP, and CRP programs with state matching funds.

Required Action Not Including Legislation: Existing state authorizes could be used.

Legislation Required: Allocated state matching funds to leverage maximum usage of federal dollars.

Impact to Iowans: Could provide for more targeted land management; could result in more public land ownership.

Agencies Affected: DNR, IDALS-DSC

Interest Groups that Support or Oppose: Not aware of any.

Funding Considerations: Would require not less than $5.0 million annually.

EDUCATE & INFORM:

Recommendation #12: Include floodplain or alluvial soils information as part of the disclosure form used as part of real estate transactions.

Required Action Not Including Legislation: None.

Legislation Required: This action will require legislative action and modification of related regulations.

Impact to Iowans: Real estate buyers will be able to make more informed purchase decisions.

Agencies Affected: County recorders, DNR, SWCDs, NRCS

Interest Groups that Support or Oppose:

Funding Considerations: Implementation costs are minor.

Recommendation #13: "I-Farm" is a farm resource management and business planning tool developed at ISU. I-Farm could help farmers plan and create infiltration systems to accommodate one inch rainfalls. I-Farm should be used by ISU Extension and other agencies to support conservation and business planning.

Required Action Not Including Legislation: This tool could be used within existing authorities.

Legislation Required: Allocate funds for education program.

Impact to Iowans: The tools could benefit farmers by helping them make better business and resource management decisions.

Agencies Affected: ISU Extension, IDALS-DSC, NRCS

Interest Groups that Support or Oppose: ISU Extension Supports

Funding Considerations: Funds to provide for more extensive I-Farm education would be needed.

Resources and Reports Reviewed and Considered:

- 2001 Iowa Watershed Taskforce Report, IDALS
- Green Paper: Recovering from the Storms, Planning for the Future: A Safer, Smarter, Stronger Iowa, Rebuild Iowa Office
- NRCS Wetland Conservation Easements Map – Iowa as of July 1, 2009
- 2008 State of Iowa Maps (3)
- County WRP Easements
- County ERP Easements
- County EWRP Easements
- Farm Bill 2008:
    - At a Glance Wetlands Reserve Program
    - At a Glance Grassland Reserve Program
- Farm and Ranch Lands Protection Program

The Following Experts Have Been Consulted:

- Hydrological: Rob Middlemis-Brown
- Land Use: Marty Adkins
- City Representatives: Duane Sand, Dennis McAllister
- County Representatives: Nate Bonnett
- Drainage and Levee Districts:
- Agricultural Interests: Darrel McLaren
- Soil and Water Conservation Districts: Jean Eells
- Urban and Regional Planning Experts: Scott Marler
- Other: Jennifer Filipiak, Steve Zimmerman, Tom Oswald, Annette Mansheim

DETAILED BACKGROUND: WORK GROUP 3, UPLAND WORK GROUP

MINUTES

Work Group #3 Uplands of the
Flood Plain Management Subcommittee
of the Water Resources Coordinating Council

August 20, 2009
9:30 AM
Rebuild Iowa Office, Conference Room 2
Wallace Building
502 E. Ninth Street, 2nd Floor
Des Moines, IA 50319

Attendees:

Work Group Members:
Tom Oswald, HSEMD, Work Group Chair
Leah Maass, producer
Rick Cruse, Iowa Water Center
John Goode, Monroe County Engineer
Kirk Siegle, Iowa Corn Growers
Paul Assman, Crawford County Engineer
Jim Gillespie, IDALS
Larry Weber, IIHR – U of Iowa
Witold Krajewski, Iowa Flood Center – U of Iowa
Jeri Neal, Leopold Center for Sustainable Agriculture
John Myers, NRCS
Ken Tow, Rebuild Iowa Office
Susan Judkins, Rebuild Iowa Office
Linda Kinman, Des Moines Water Works
Steve Hopkins, DNR

1. Work Group Chair Tom Oswald welcomed the group. The minutes of the 8/5/09 meeting were approved.

2. The order of the agenda was revised slightly to prepare A-V equipment. The Chair reviewed a matrix of prior recommendations from the Iowa Watershed Taskforce (2001), the Iowa Water Summit (2003), and the Watershed Quality Planning Task Force (2007). The matrix is posted on the WRCC Resources page of the Rebuild Iowa Office web site. http://www.rio.iowa.gov/wrcc/assets/flood_plain_prior_recommendations.pdf

3. The chair also discussed the concept of field level conservation planning systems.

4. Witold Krajewski from the U of I presented a Power Point (posted to the RIO web site at http://www.rio.iowa.gov/wrcc/assets/Krajewski-08202009-WG3.pdf) and led a discussion

about potential flood mitigation from upland structures. He referenced the concept of "distributed storage," which involves many small water storage structures instead of a large reservoir. To be viable, the system must be controllable – an active system. Multiple objectives direct the "best" decisions on activating the system – generating the question of who decides? The entire drainage network in a watershed, including both rivers and streams, is key. The City of Palo is considering distributed storage. Water in their basin travels about three miles per hour. Flooding is a confluence issue. Sometimes a "traffic jam" occurs in a drainage system, and that's exactly what caused the 2008 Cedar Rapids flood when a storm dropped water on top of an already filled system.

Paul Assman, Crawford County Engineer, said that holding even some water provides some benefit. This was proven with the retention structures in Crawford County that prevented flooding in 1993. The construction cost was covered as follows: state 75%, county 12.5%, city 2.5%, landowner 10%.

Larry Weber from the U of I said that 500,000+ acre feet of storage would be needed to have protected Cedar Rapids from the 2008 flood, based on a recent study.

John Goode, Monroe County Engineer, said four counties (Appanoose, Wapello, Monroe and Davis) are affected by the Soap Creek watershed retention project that has been going on for 30 years. This is a passive project (no human intervention required), with approximately 10 acres of storage per retention structure. He feels the impact of the project has been positive and "tremendous."

Kirk Siegle commented that landowners will probably want access to any retained water on their land for livestock or irrigation use.

Larry Weber and Witold Krajewski from the U of I said the potential water storage capacity in various parts of the state is not yet known but is being researched.

Ken Tow agreed that flooding is a confluence issue and reminded the group that Coralville and Louisa County experienced confluence problems during the 2008 flood.

<u>Consensus was reached to recommend a demonstration project or project, also to be potentially called a "priority watershed" or pilot project.</u> LIDAR mapping being conducted by the DNR is 90% complete and can inform the potential site selections. John Myers recommended that a watershed be selected and an active project begun, not just continue studying. We will need to decide if the project should handle an event at 2008 levels, or by some other measure. Other questions involve what can be done within reason, and can and should myths be dispelled.

Paul Assman said, "In Crawford County, we 'did' instead of studying and we know it works." He advised the group to be careful with any recommendations involving dredging; "We're seeing the results of that in Western Iowa." He said a decision needs to be made on what is socially and economically acceptable.

Larry Weber suggested that a project needs the flexibility to start small but to go to a larger scale.

Jeri Neal of the Leopold Center urged that the group consider dispelling myths such as "it will never happen again" or "we can control the flooding," and doing our best to explain what we'll get from a demonstration project the next time we do flood. The group agreed that a wealth of information has been generated from PL-534 and PL-566 in Western Iowa.

Jim Gillespie from IDALS reminded the group that not all flooding is an "Upland" (Work Group #3) problem and project planners will need to look downstream to the Lowlands.

Linda Kinman from Des Moines Water Works recommends forming a picture of what Iowa will look like and at what cost when outlining a proposed project. Jim Gillespie said a scale model would be helpful. Larry Weber thinks more information is needed to determine the "sweet spot" that would be the best site for a demonstration project. John Goode said a place should be chosen where the benefit will be obvious and can be measured in a positive direction. Witold Krajewski said that's the problem with the scale of the project since the network controls what happens in the flatlands. In order to say if something works, <u>we will need a "hybrid" model – academics will study and practitioners will implement, and they need to work together</u>.

Tom Oswald of HSEMD reminded that group that Lyle Asell of the DNR often said, "What does it do to fishing? That's what people will ask."

Steve Hopkins of the DNR said that funding is available for impaired waters, so if a demonstration area can be identified where impaired waters exist and improvements can be documented, that will enable a funding source to assist with the project.

The group agreed that there could be benefits from identifying a site in the Iowa/Cedar Basin since it was heavily impacted in 2008, including that it would take advantage of other studies already underway in that area as a result of the flooding. John Myers suggested that an area with existing retention structures that could be supplemented with additional structures could be a good choice.

Kirk Siegle mentioned that development means municipalities don't act like a sponge as farmland does, which has impact downstream. Tom Oswald said the Storm Water Work Group #4 is focusing on this issue.

Witold Krajewski said it would be useful to gather information on soil moisture. A 70-square-kilometer area drains through Palo, and a fast moving river can impede drainage of a small creek, causing it to back up and flood.

Tom Oswald said many groups should be involved in recommending a site and studying the impacts, including the agricultural community, livestock groups, cities, state agencies and universities. Targeted funding and research should be sought. Linda Kinman suggested adding water, waste water, and rural water interests to the list. Ken Tow said the NRCS and

DNR are looking at HUCS in conducting a rapid watershed assessment for the state, helping to identify risk.

Factors in identifying a site should include potential storage capacity, ability to both implement and study, ideally in the Iowa/Cedar basin, a community that was impacted in 2008 yet somewhat isolated (i.e. the top of the watershed) to quantify results, ability to collect soil moisture data, an area with a gaging station or recommend installation of a gage in the area, and an area where cities, utilities, and drainage districts will participate voluntarily. The merits of an active vs. passive system were discussed again.

Education will be an important component of any project. The public will want to believe that something will help without understanding all of the complexities. Linda Kinman suggested that an institution like the Science Center of Iowa could install a rainfall simulation model to assist with education. Witold Krajewski said even zooming in with Google Earth allows one to realize the impact of a drainage area.

Tiling issues were discussed. Rick Cruse of the Iowa Water Center asked if studies exist on the impact of tile. Linda Kinman said tile may speed flow and short-circuit the ability of soils to remove contaminants, and agreed that we need to know more about the benefits and consequences of tile drainage. Kirk Siegle stated that tile allows a more controlled flow of runoff from agricultural fields which may allow the soil to act as a sponge, thereby reducing some flow – a give-and-take impact. John Goode asked if tiles could be replaced with a structure that would impede the water flow. Perhaps some storage could be achieved from natural ponds. Jim Gillespie commented that some drains are overtaxed and not draining properly. Steve Hopkins asked if a targeted retrofit could help. Tom Oswald said compensation should be considered for crop loss and inconvenience. Leah Maass suggested looking at using existing programs for taking land out of production; Kirk said perhaps CRP around intakes might be an idea. Leah said she knows of perfect areas to try that. Complications could result with Farm Service Agency (FSA); we need to understand the political and regulatory impacts. Tom Oswald expressed a preference for planning for a resource, identifying the needs for that resource, then identifying the potential funding sources including existing programs. Resources include people (i.e. landowners). John Goode agreed that resource planning is critical, and Leah said NRCS boundaries would be the ideal boundaries.

5. Jeri Neal of the Leopold Center and Rick Cruse of the Iowa Water Center briefly discussed research needs. Many of today's decisions are based in a soil survey conducted in the 1950's, with soil types drawn in arbitrarily based on slopes, etc. Updated information is needed as today's needs are more sophisticated. Jeri suggested that we consider how to make data into a community education tool.

6. Jim Gillespie from IDALS provided an update on perceived soil conservation needs, which include planning and development, resources, and people. They especially need the "right" people with the education and background to work with NRCS and hydrologists to provide engineering and technical assistance. Knowledge of new tools like LIDAR is important.

7. Discussion was held on the HF756 requirement to consider perennial ground cover and other agricultural conservation practices. Handouts were distributed from Roger Wolf of the Iowa Soybean Association (in absentia) http://www.rio.iowa.gov/wrcc/assets/Flood_Landscape_Paper.pdf and John Myers of the NRCS. The current corn/bean rotation may not be sustainable beyond 100 or more years. Perennials improve soil quality and infiltration. Perhaps increasing the soil conditioning index (SCI) could be used as a tool, but Rick Cruse pointed out that once the profile is full, runoff will occur during a catastrophic flood to SCI is a long-term measure.

   Witold Krajewski reiterated the need for more education, suggesting that that a media campaign should be undertaken to convey the complexity and integral nature of being prepared, water quality, and quality of life. He participated in another meeting where it was suggested that ISU Extension would deliver the message while others would develop the materials, but ISU Extension resisted since they felt the message was so complex that it required more specific background than their professionals possess. Linda Kinman said that members of the Water Quality Task Force have also recommended a media campaign, including a distribution to organizations to share with members. John Myers commented that people will forget the flood soon, and a media campaign will help them to remember.

   John Goode said his experience in Monroe County underscores that a good perennial ground cover can keep the ditches from filling, and the size of culverts can be reduced. Kirk Siegle said perennial ground cover issues boil down to economics since the cover can only be used by cow-calf operations, and there are dwindling numbers of those in Iowa. Absentee landlords are also an issue; since operators aren't guaranteed to continue past the current year's operation, they can't afford to sink costs into conservation practices. John Goode pointed to the water quality degradation that occurred at Lake Rathbun after switchgrass was taken out as a reason to incentivize growing switchgrass. Leah Maass said people need to understand how things work, not just on their land but in their region. She mentioned a program for women (now the largest percentage of landowners and many of whom are absentee) about not just renting out their property but caring for the land for long-term benefit. John Myers said that landowners work under so many rules, such as those from FSA, but we need to find a way to get stewardship back in the forefront and he's unsure how to do that. Rick Cruse said a landowner will have the long-term benefit from stewardship, and shouldn't just think about the rent check from tenant farmers. Perhaps there can be an effort to match owners with tenants for better conservation. Kirk Siegle agrees that property is farmed that shouldn't be, but no till and other farming methods help to prevent some erosion. We have a problem looking long-term since legislators and bankers only look at a year or two at a time.

8. Engineering issues were covered throughout today's discussion by Paul Assman of Crawford County and John Goode of Monroe County, so won't be repeated in the interest of time.

9. Steve Hopkins of the DNR provided a handout outlining watershed project steps. He said the same steps might hold true for a "watershed flood project." He recommends 25,000 – 30,000 acre and smaller watershed projects "because that's where impact can happen." He highlighted a need to partner with the NRCS, IDALS, Division of Soil Conservation and others in any way to leverage funding. It's usually best to have a project coordinator on the ground.

It is hoped that outcomes include water quality improvement. Once a project is in place, both modeling and monitoring are beneficial. Many projects are reviewed for three to four years, but longer monitoring is needed up to 25 years or more. Currently, projects are often initiated by local members of the Division of Soil Conservation. Tom Oswald said locally led projects are often a key to success. Leah Maass agrees with the need for local buy-in. it helps to understand that everyone within a watershed counts. Unsewered communities have had some of the most successful projects to date.

10. Ken Tow of the Rebuild Iowa Office reviewed the benefit of coordinating program planning and efforts. The RIO Green Paper on Smart Planning responds to a recommendation from the Rebuild Iowa Advisory Commission that we need a renewed emphasis on planning at all levels. Federal partners are important in this effort. We may need a week-long facilitated process to identify needed improvements.

11. Participants briefly reviewed Work Group members' submissions regarding issues outlined in the "recommendation template" (see http://www.rio.iowa.gov/wrcc/assets/WRCC_Recommendation_Template.doc) for issues to be submitted to the Water Resources Coordinating Council for their consideration prior to submitting recommendations to the legislature and governor. Tom Oswald recommended that all prior recommendations from 2001, 2003 and 2007 be incorporated into the 2009 recommendations. Rick Cruse expressed a concern that the prior recommendations are more water quality focused. Tom Oswald and Susan Judkins will compare recommendations generated from Work Group #3 to the prior recommendations to identify the best mix.

12. Review of Recommendations from Work Group #3

    Reserving the right to thoroughly review the minutes to add anything that has been missed, the following general recommendation ideas were identified as having been generated today:

    - A "hybrid" demonstration project involving both implementation and study should be identified based on specified criteria
        - Capture distributed storage as a concept for the project
        - Include impaired waters as a criterion to enable some funding
        - A tax on municipal water, sales tax on bottled water, and/or collecting a fee on bottled water similar to pop bottles could serve as additional funding sources
    - Information should be generated on tiling, potholes and ponds
    - We need better soil survey data and soil mapping
        - A soil moisture monitoring network is needed
        - The Soil Conditioning Index should serve as a tool
    - Education and a media campaign are needed
        - Landowner/tenant issues should be considered as part of this campaign
    - John Myers suggested that climate change should be considered as a factor in the possible need to reassess criteria for conservation practices more frequently
        - Criteria are included in the Field Office Technical Guide
        - Conservation criteria are revised every five years, but design criteria may need to be revised also

    - Storm likelihood needs to be considered; the current basis of a “ten-year-storm” should be analyzed for accuracy of predictions
- Recommend continued State funding of the Iowa Flood Center
- Jim Gillespie reminded the group that a 2010 referendum will decide if three-eighths of a cent of the money raised by a future increase in state sales tax would go to a new protected account for natural resources projects, including soil and water conservation, and parks and trails. It is expected that such funding would generate $150 million annually and this could serve as a funding source.
- All prior recommendations from 2001, 2003 and 2007 will be considered for inclusion in the recommendations from 2009

13. Future Meetings

    Minutes, including a list of recommendations, will be forwarded to Work Group Members. An optional meeting date will be set f necessary, perhaps on 9/3/09. Work Group members may attend the next WRCC Subcommittee for Flood Plain Management Recommendations at 10 AM on 9/11/09, or the full WRCC Committee meeting at 1 PM on 9/11/09. Attendance will be encouraged at public meetings that are planned for 9/22/09 in Storm Lake, 9/24/09 in Lewis and Ankeny, 9/29/09 in Mount Pleasant and West Branch, and 10/1/09 in Waverly.

14. Public Input – None as no public representatives were in attendance. Public input will continue to be encouraged at upcoming meetings.

15. Meeting adjourned at 1:55 AM.

Water Resources Coordinating Council

Work Group #3 Recommendation

Upland Focus: Perennial ground cover and other agricultural conservation practices; and permanent or temporary water retention structures

c. Introduction/scope of work

d. What is working well in Iowa

- Crawford County/East Boyer Watershed – Tom contact Lynn Betts
- Soap Creek Watershed in SE Iowa – Tom contact John Goode
- Conservation and agronomic practices that are matched to the need of the land and objective of the landowner will improve sustainability over the long term, potentially increasing profitability, reducing impacts of flooding, and improving water quality. One example of a best practice is use of perennial ground covers. An improved Soil Conditioning Index score is an indication of good agronomic and conservation practices.

e. Areas where improvements can be made

f. Recommendations

i. Without legislation

- Manage existing water resources programs to address flood risk management
- Research on the flooding impacts of tiling when the soil profile is saturated. Consider impacts of potholes, wetlands and water retention structures.
- Extensive use of the NRCS Soil Conditioning Index tool
- Education and a media campaign are needed
  - We are <u>all</u> affected by, and have an impact on, watershed issues
  - Landowner/tenant issues should be considered as part of this campaign
  - Very broadly based
  - ISU Extension could be a major vehicle for conveying the message
- Reassess criteria for conservation practices because of changing climate
  - NRCS Field Office Technical Guide (conservation criteria)
  - NRCS Engineering Field Manual (design criteria)
- Storm frequency needs to be analyzed for accuracy of predictions (i.e. basis for a "ten-year storm")

1. Impact on Iowans

2. Agencies affected

3. Stakeholder approval/opposition

ii. Legislative action required

1. Revision or new policy?

- Highlights from prior flood plain-related recommendations brought forward by water resources task forces in 2001, 2003 and 2007 should be reconsidered (See Exhibit)
- Watershed level planning requires effort at the research level to actual watershed level down to the field level working with individual farmers. Current staffing levels among state and federal resources agencies are not sufficient to provide the level of technical expertise that would be required. Private consultants (engineering firms, etc.) would not be sufficient to fill the gap.
- Fund a pilot/demonstration project involving a "hybrid" of both implementation and research, implementing best practices as well as hydrologic studies at the Iowa Flood Center (U of I) and management for flood reduction
    - Based on criteria including isolated community (at top of watershed) impacted in 2008, impaired waters (for funding), willingness of watershed stakeholders, geographic MLRA, flexibility to expand to larger scale, visible and quantifiable results, take advantage of other ongoing research (e.g. Iowa/Cedar Basin), input from stakeholder groups including agriculture community, livestock groups, cities, state agencies, universities, water interests (water, waste water and rural water), ability to collect soil moisture data, an area with a gaging station or recommend installation of a gage in the area
    - Multi-jurisdictional effort and funding, leverage one program with another (multi-programmatic)
    - Funding sources ranging from individual to all levels of government, private sector including commodity groups
- Develop a soil moisture monitoring network through the Iowa Water Center and Leopold Center, both at ISU
- Recommend multi-year state funding for the Iowa Flood Center
- Recognize that voters may approve a 2010 referendum question amending Iowa's Constitution to provide that if the state raises the sales tax in the future, 3/8ths of the increase will go to a new protected account for natural resources projects, including soil and water conservation; a one-penny increase would generate about $150 million annually which could serve as a funding source

2. Similar legislation filed in the past

a. Outcome

From Deb Kozel, LSA: from our Fiscal Note run

In 2002:

SF 2145/hf2469 Water Quality Improvements -- passed but not floodplain

HCR 106 Water Quality Interim Study Resolution --water quality interim committee resolution but didn't pass

SF 2213 Clean Water Revolving Loan --not floodplain and did not pass

in 2003

hf 525 Environmental Oversight Council -- passed house not senate and created a new Committee

HF 495 Flooding Prevention Act --introduced in Local Government Committee but never passed

in 2004

HF 2120 Water Quality Interim Study -- Did not pass

HF 2104 Watershed Districts --Created a watershed task force. Did not pass

in 2005

HF 200 Clean Water Standards--WIRB was established and projects can included in floodplain

sf 329 Water Quality Program -- didn't pass

HF 291 Water Qualtiy Protection Fund -- didn't pass

2006

SF 2363 Water Quality Standards -- passed

2007

SF 495 Water Quality Initiative --didn't pass

SF 600 Water Quality Program --didn't pass

HF 626 Water Quality annual assessment -didn't pass

2008

HF 2672 Water Resource Management Appropriations Bill -- didn't pass

2009

SF 367 -- Floodplain Urban Standards -- didn't pass

HF 742 Flood Recovery Bill -- didn't pass

HF 268 Floodplain Map Plan --- didn't pass

HF 759-- Flood Insurance for Cities & Counties -- passed

SSB 1069 -- Flood Impact Prevention -- didn't pass

SF 370 -- Flood Center Basin Study -- didn't pass

HSB 192 --Flood and Erosion Control --didn't pass

2. Funding considerations such as:
    a. Multi-year state impact including tax credits or FTE adjustments
        i. Operating
        ii. Investment
    b. Funding source
3. Impact on Iowans
4. Agencies affected
5. Stakeholder approval/opposition
    a. Resources considered
        i. Documents
        ii. Best practices
        iii. Group Membership

DETAILED BACKGROUND: WORK GROUP 4, STORMWATER WORK GROUP RECOMMENDATIONS
September 2009

STORMWATER REGULATION:

Recommendation A – Utilize a Phase-In Approach to Implement Statewide Stormwater Standards Consistent with the Iowa Stormwater Management Manual

The State should require all cities and counties to implement stormwater management practices consistent with the Iowa Stormwater Management Manual (ISMM). Communities and counties should be given the opportunity to develop a phased-in approach to allow sufficient time to secure necessary technical and financial assistance for effective implementation.

The ISMM presents planning and design guidelines for the management of stormwater quality and quantity in the urban environment, and encourages the use of enhanced design practices for stormwater management, including best management practices and low impact development (LID). Iowa-specific and part of the Iowa Statewide Urban Designs and Specifications (SUDAS) Manual, the ISMM outlines eleven minimum standards as community development guidelines.

Three Iowa communities (Spirit Lake, Okoboji and Wahpeton) and Dickinson County have adopted ordinances requiring LID in new construction to improve water quality. Further, the ordinances require LID practices to comply with ISMM design standards.

Statewide stormwater management standards should be applicable to new development, retrofits, redevelopment, and improvements to property.

The phased-in approach could begin with:

- The 43 communities and three universities with municipal separate storm sewer systems (MS4s)
- Communities over 10,000 and counties greater than 20,000 in population
- Communities under 10,000 and counties under 20,000 in population

Two alternative approaches to consider include beginning with flood-impacted communities first, then MS4s, communities over 10,000 and so on. A second alternative phase-in approach could utilize population levels and growth rates. Census information from the State Data Center of Iowa could be used to chart population, growth rates, etc.[5]

Before a city or county is required to implement statewide stormwater standards, they should be directed to the educational resources for stormwater management (see Recommendation H). Additionally, enhanced funding and mechanisms for raising those funds are needed (see Recommendations D-G).

[5] State Data Center of Iowa, www.iowadatacenter.org

Other states have embraced stormwater best management practices. In Washington, the Puget Sound Pollution Control Hearings Board now requires all communities to implement LID within NPDES permits; "Phase I Permit must be modified to require the use of LID where feasible, as it is necessary to meet the MEP [maximum extent practicable] and AKART [all known and reasonable technology] standards of federal and state law, respectively"[6].

As an alternative to new legislation, Senate File 367 (SF 367) could be amended to address the above recommendations. As is, SF 367 requires cities and counties to adopt development standards to incorporate stormwater management standards and limit development in a 500-year floodplain, unless the development is designed to mitigate future flood damage. This bill passed the Senate in 2009; it now sits in subcommittee.

SF 367 covers new development only; it would need to be amended to address retrofit, redevelopment, and improvements to existing developments. It does not distinguish between upstream versus downstream; does not include regulation of agricultural stormwater drainage; does not state you cannot build, just that you cannot build with state funds without incorporating stormwater management.

Last, Senate File 367 should be amended to include requiring cities and counties to incorporate the ISMM and adopt a phase-in approach to implement statewide stormwater standards.

Recommendation B – Require New or Amend Renewal National Pollutant Discharge Elimination System (NPDES) MS4 Permits to Include Stormwater Best Management Practices as Outlined in the Iowa Stormwater Management Manual.

Require new or amend renewal NPDES permits to include stormwater best management practices as outlined in the ISMM.

Other states are requiring statewide standards be included in a community's NPDES Phase II permit. For example, a Washington court ruled that, "Phase I Permit must be modified to require the use of LID where feasible…" including, "…non-structural preventive actions and source reduction approaches [such as], including Low Impact Development Techniques, to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation where feasible." Similarly, the ISMM section 2A-1 recommends "non-structural best management practices to be implemented to reduce pollutant sources and to reduce the transfer of urban pollutants to runoff before more expensive structural controls are instituted."[7]

Recommendation C – Increase State Government's Utilization of the Iowa Stormwater Management Manual

The State can demonstrate its commitment to effective stormwater management by requiring construction of vertical infrastructure, pursuant to 2009 Iowa Code chapter 8.57 and in suit with Recommendation A, on State property or projects funded in full or in-part by State funds to use stormwater best management practices described in the ISMM.

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[6] *Puget Soundkeeper Alliance v. Ecology*, Pollution Control Hearings Board, PCHB Nos. 07-021, 07-026, 07-027 07-028, 07-029, 0-030, 07-037 August 2008.

[7] Iowa Stormwater Management Manual, www.ctre.iastate.edu/PUBS/stormwater/index.cfm

This commitment would provide demonstration projects to serve as an example for city and county officials and developers. For example, the Iowa Department of Transportation's (DOT) Context Sensitive Solutions and Living Roadways Trust Fund developed and uses practices outlined in the ISMM. Please note, the ISMM is not considered an official DOT document at this time.

FINANCIAL:

Recommendation D – Support and Enhance Existing Stormwater Funds; Establish a New Fund Similar to the Property Assessed Clean Energy (PACE) Program

Support and enhance the existing funds currently available for stormwater projects. Two existing funds exist.

The State Revolving Loan Fund provides funds for stormwater quality projects with low-interest loans. The loans are available to cities, counties, non-profits, developers, businesses and individuals.

The Watershed Improvement Review Board (WIRB) awards competitive grants for local watershed improvements through the Watershed Improvement Fund. The Legislature makes annual appropriations to the Watershed Improvement Fund. An eligible applicant includes local watershed improvement committees, soil and water conservation districts, public water supply utilities, cities and county conservation boards. In 2005, six of 17 WIRB-funded projects had an urban stormwater component. In 2006, three of the 16 projects funded by WIRB had an urban stormwater component or focus.

Additional funds should be made available for implementation of stormwater best practices as defined by the ISMM. The funds should also target high-growth counties because these areas typically produce more impervious surfaces, thus increased runoff.

A new funding mechanism for stormwater projects could mimic the Property Assessed Clean Energy[8] (PACE) Program.

A PACE bond is a bond where the proceeds are lent to commercial and residential property owners to finance energy retrofits (efficiency measures and small renewable energy systems) and who then repay their loans over 20 years via an annual assessment on their property tax bill.[9] PACE bonds can be issued by municipal financing districts or finance companies and the proceeds can be typically used to retrofit both commercial and residential properties.

The impact of the PACE Program has allowed property tax lien oriented financing to dramatically improve the economics of energy retrofits (efficiency measures and micro renewable energy). Additionally, the overall benefits include significant job creation, acceleration of the movement toward energy independence, and very low fiscal cost and high probability of success.

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[9] Property Assessed Clean Energy Program, www.pacenow.org

Recommendation E – Give Cities Authority to Establish a Connection Fee for Stormwater Drainage Utility Systems

Give cities authority to establish a connection fee for stormwater drainage system utility districts for purposes of funding construction of stormwater infrastructure. Senate File 458 (SF 458) accomplishes this goal and should be supported. SF 458 passed the Senate 32-18 on a primarily partisan vote in 2009; however, it ended in the House Ways & Means Committee. It remains alive for discussion in 2010.

Recommendation F – Give Cities and Counties Authority to Establish a Fee System and Credit Program Based on the Amount of Impervious Surface Installed[10]

Fee System

Cities and counties should be given the authority to establish a fee system that is based on the amount of impervious surfaces installed. For the purpose of this recommendation, impervious surface includes a surface not connected to potable water, or non-metered customers. This could include, but is not limited to, a parking lot, driveway, rights-of-way, and rail lines.

For example, the City of Philadelphia created a Citizens Advisory Council that authorizes the city to charge a fee to non-metered customers, such as rail lines, parking lots and utility rights-of-way that account for significant impervious space within the city.[11, 12]

Further, Philadelphia, Pennsylvania, Lenexa, Kansas, and Portland, Oregon, calculate user fees for commercial, multi-family residential and industrial properties by total lot size and percentage of imperviousness installed.[13] These rates are measured through GIS and flyover image data that accurately account for the stormwater runoff inputs of these large customer parcels.[14] Further, Portland, Oregon, manages 65% of stormwater runoff on-site, 35% off-site.[15]

Credit Program

The goals of stormwater credit programs are to reduce or mitigate imperviousness, promote on-site stormwater management, reduce runoff volume, and promote or direct use of specific stormwater best management practices. The mechanism for fee reduction could include percent fee reduction or water quantity and water quality credits.

Recommendation G – Allow Soil and Water Conservation Districts to Create Watershed Districts

Soil and Water Conservation Districts (SWCD) should be allowed to create watershed districts to develop integrated water management plans. Watershed districts could utilize 28E Agreements

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[10] Environmental Protection Commission, publication intended to assist local stormwater managers understand the alternatives available to fund their stormwater program.www.epa.gov/npdes/pubs/region3_factsheet_funding.pdf

[11] Eighty percent of the Philadelphia's new stormwater fee is based upon a property's impervious area, with the remaining 20% based upon the property's gross area.

[12] Dickinson County, Iowa has adopted an impervious surfaces standard.

[13] *Funding Options for Municipalities*, University of North Carolina, Environmental Finance Center, www.efc.unc.edu/publications/pdfs/gi_munichandbook_funding.pdf

[14] *Id.*

[15] *Id.*

to work across county boundaries and collaboratively with local governments. The Watershed Districts could create a sustainable funding source by leveraging taxes. Iowa Code 161A would need to be amended to implement this recommendation.

Minnesota has created the Minnesota Association of Watershed Districts, which are local, special-purpose units of government that work to solve and prevent water-related problems.[16] The boundaries of each district follow those of a natural watershed and consist of land in which all water flows to one outlet.

STORMWATER EDUCATION:

Recommendation H – Support and Enhance Existing Educational Efforts

Stormwater education should include and reach all parties, including, but not limited to, State, county and city officials, engineers, planners, realtors, and developers, and consider the various needs and circumstances of residential and commercial and industrial properties. Stormwater education should focus on stormwater best management practices as outlined in the ISMM, including issues of water quality, water quantity and the potential for environmental impact and damage to cities and counties.

Current programs that exist within the State include the Iowa Stormwater Partnership, Iowa Stormwater Education Program, Urban Conservationists, RainScaping Iowa Initiative, and the Council of Governments. These programs' efforts should be supported and enhanced to reach a larger audience and provide more technical assistance as stormwater standards are phased-in and stormwater best management practices are implemented (Recommendation A).

Recommendation I – Conduct a Hydrological Tiling Study

There is a general lack of understanding of how tile drainage functions. Some think more tile drainage means more flooding; while others think it is unlikely that tile flow alone could cause out of control bank flows and might even reduce peak flows by helping the landscape infiltrate more rainfall and shed less runoff. A scientific hydrologic study is needed to determine the impact of tile drainage on infiltration, surface runoff, and flooding.

[16] Minnesota Association of Watershed Districts, www.mnwatershed.org