



Story Soil & Water Conservation District  
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October 23, 2013

Ames Mayor and City Council  
515 Clark Ave  
Ames, IA 50010

Dear Mayor and City Council:

The Story County Soil and Water Conservation Commissioners would like to contribute to the discussion of flood mitigation in Ames. We realize that the study process is nearing completion. We have read with interest the series of reports from HDR Engineering as this study has progressed and we look forward to seeing their final recommendations to the City Council. Some of us have submitted individual comments to the consultants during the public forum process. We have noticed that many of the solutions that have been considered thus far have been engineering solutions that are either economically unfeasible or will have limited effects on flooding.

The Soil and Water Conservation Districts of the four counties that are part of the Squaw Creek Watershed have had a long history of soil and water management in this watershed. The partnering agencies that administer these Districts are convinced that the best approach to soil and water management is through a comprehensive watershed approach. Thus, the Story Soil and Water Conservation District was pleased to join with the other three districts and counties in the recent cooperative agreement with Ames, Gilbert, Stanhope and Stratford to form the Squaw Creek Watershed Authority. We believe this is an important step toward better cooperation in managing our land and water.

As we have worked with private landowners, we have learned that no one solution fits all situations. Our cooperating agencies have developed a diversity of practices that help alleviate problems. Our emphasis has been on controlling soil erosion on the land and improving water quality in our rivers and streams. Because we are located in the Des Moines lobe of the most recent glaciations, the land in this area of Iowa was slow to develop stream systems. Consequently, constructed drainage has been an important aspect of agricultural development for more than a century. No doubt, drainage and the resulting row crop agriculture that followed have contributed to increases in flooding in the lower reaches of our watersheds. Urban development has also been a factor. The Story Conservation District has worked with Polk and five other counties to pioneer urban conservation practices in central Iowa. We recognize that Ames has adopted many of these practices for storm water management, such as pervious pavement, rain gardens, bio-retention cells and low-impact development. We believe more can be done.

**THE MISSION OF THE STORY SWCD IS TO PROMOTE SOIL CONSERVATION AND WATER QUALITY TO LANDOWNERS, OPERATORS, AND RESIDENTS OF STORY COUNTY BY PROVIDING TECHNICAL INFORMATION AND FINANCIAL ASSISTANCE.**

However, we have learned recently of another important factor that may contribute to the flooding problem. Our soils have lost a significant portion of their organic matter. It has been estimated that the original prairie soils contained as much as 12 percent organic matter. Moreover, the deep rooted prairie plants allowed for better infiltration of water into the deeper soil horizons and the ground water. Today, our soils in this area may contain an average of less than two percent organic matter. Soil organic matter helps make soils more productive and holds water. A study by scientists at Michigan State University reports that one percent organic matter will hold 33,000 gallons of water per acre. The Squaw Creek Watershed includes about 140,000 acres and about 90 percent of those acres are in row crop agriculture. Thus, those 126,000 acres could potentially hold 4.158 billion gallons of water for every one percent increase in organic matter. A farm in Boone County that has had composted manure added to the fields for 30 years along with minimum tillage now averages six percent organic matter. Organic matter also results in a rich biota of bacteria, fungi, and worms that improve soil health and productivity.

So, how can we increase soil organic matter, improve infiltration, reduce flooding, maintain or increase productivity and conserve soil at the same time? It has taken more than 100 years to change the landscape to what it is today. It will take time perhaps decades, to rebuild healthy soils, increase organic matter, and improve infiltration. We believe it can be done by reducing tillage, planting a variety of fall cover crops, diversifying crop rotations, creating wetlands, and strategically planting a small percentage of the land in perennial vegetation. Understandably, rebuilding soil health takes time and it takes time to educate and convince producers to adopt new methods. We have seen a recent dramatic increase in enthusiasm for planting cover crops. There are big row-croppers even around Ames already using it. Major landscape scale change is possible.....we are already seeing it. It is imperative that we start now to improve our management of soil and water. The City of Ames might even give serious consideration to investing funds in conservation practices in the Squaw Creek and Skunk River watersheds.

We urge the City of Ames to continue to participate in the Squaw Creek Watershed Authority and work together with the county supervisors and soil and water conservation districts to find additional solutions to the flooding problem. We will recommend to the Watershed Authority that University scientists and extension personnel be engaged in a comprehensive planning process. We hope that the city joins with us for the long haul.

Sincerely,



Story Soil and Water Conservation District Commissioners  
Mark Tjelmeland, Chairman