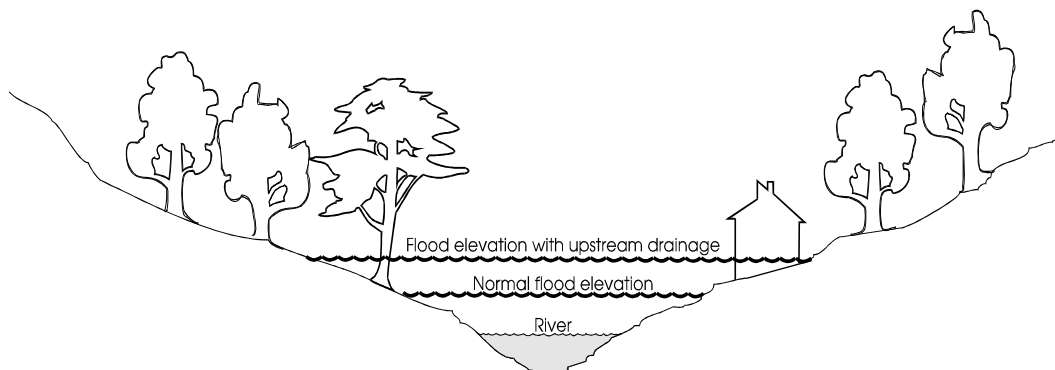


Drainage

Draining wetlands for agricultural and development purposes has been a common practice for many decades. Wetlands are generally perceived as a liability but their destruction has had an adverse impact at both the local and regional level. Wetlands should be recognized for their value in flood reduction, water quality enhancement, and as fish and wildlife habitat.

Wetlands serve as natural water treatment plants. Vegetation and bacterial action within the wetland purifies water by holding and breaking down nutrients, sediments and pollutants before they percolate into the soil or are released into surface waters such as lakes and streams. Wetlands also serve as a major source of groundwater recharge by retaining precipitation so it can percolate into the water table.

The storage capacity of wetlands also helps to reduce downstream flooding. Wetland buffers reduce the rate at which storm water reaches streams or lakes and decreases the total water volume reaching these surface features. When extensive drainage occurs within a watershed, flood levels and the frequency of flood events increase, and flood waters rise much more rapidly. Small individual projects may not have a detrimental effect on drainage but the cumulative impact of many actions can produce catastrophic events. All wetlands in a watershed assist in flood reduction but those within the flood plains are most critical in providing storage capacity for flood waters. Flood plain wetlands also are important to the recharge of shallow aquifers in the county.



Effects of Drainage on Downstream Flooding

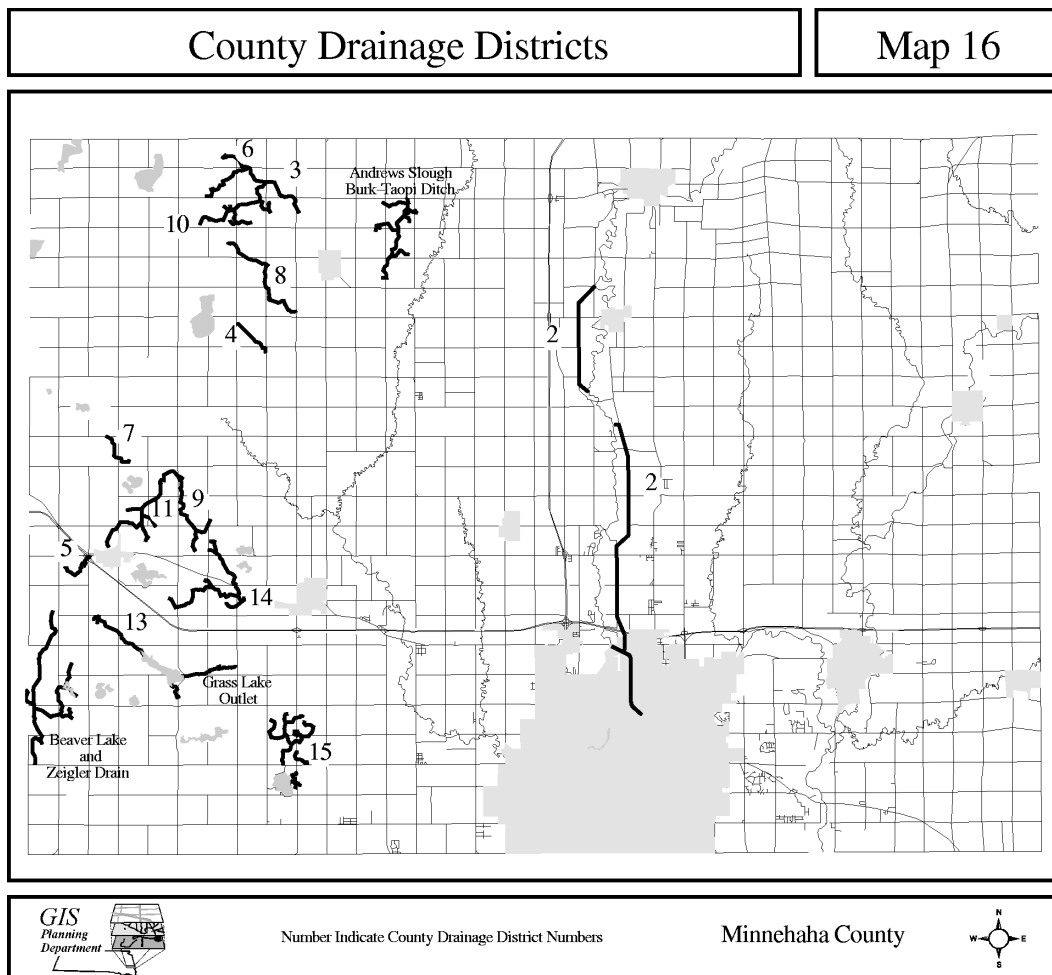
In 1985, the South Dakota Legislature assigned counties the responsibility for drainage matters. South Dakota Codified Law 46A-10A authorized county commissions to develop drainage plans and implement regulatory measures. The law also requires that a board of resolution be appointed to address drainage disputes. The Minnehaha County Commission currently serves in this capacity.

In response to SDCL 46A-10A, Minnehaha County adopted a drainage ordinance which includes a permit system for drainage projects proposed within a watershed of 40 acres or more. Drainage projects

within watersheds of less than 40 acres, routine repair of existing drainage works and work projects performed under the auspices of the township boards, the Natural Resources Conservation Service or Army Corps of Engineers are exempt from the permit requirements provided the county is informed of the drainage project prior to commencing the work.

SDCL 46A-10A also required any person with existing drainage improvements on their property to file the location of such drainage with the Register of Deeds by July 1, 1991 in order for the drainage to vested. Many drainage projects were never filed so are not vested which means a drainage permit is required before any alteration or repair work is done.

Several drainage districts were formed during the 1920's and 30's, consisting of underground tile systems located mainly in western Minnehaha County. These districts are shown on Map 16. Much of the tile has deteriorated and is in such a state of disrepair that drainage no longer occurs. Collapsing tile is also creating dangerous situations where large holes form due to erosion.



Poor record keeping and the absence of detailed maps will make it difficult to determine the benefitted area of these drainage districts if improvements are to be made in the systems. Prior to the 1985 state drainage law, a drainage district was granted the power to assess properties for the purpose of maintaining the drainage structures. Legislative changes now require counties to determine benefitted areas, solicit bids for repair work, and assess costs.

Due to potential liability exposure, Minnehaha County should move very cautiously in dealing with existing or proposed drainage projects. The county should identify coordinated drainage areas and work with landowners to assess the costs and benefits of drainage improvements. The county's experience in addressing drainage matters should also be used to evaluate the present drainage ordinance and identify changes in the regulations.