

## Get a Plan and Experience the Benefits of DWM

To successfully construct or retrofit a DWM system on existing tile drainage systems requires careful planning. When applying for NRCS programs, producers are more likely to be funded if they have a DWM plan. A successful DWM system can help private landowners:

- Protect and improve water quality
- Potentially enhance crop production
- Improve soil productivity and carbon sequestration
- Reduce erosion and loss of valuable soil and nutrients
- Provide seasonal shallow water for wildlife habitat

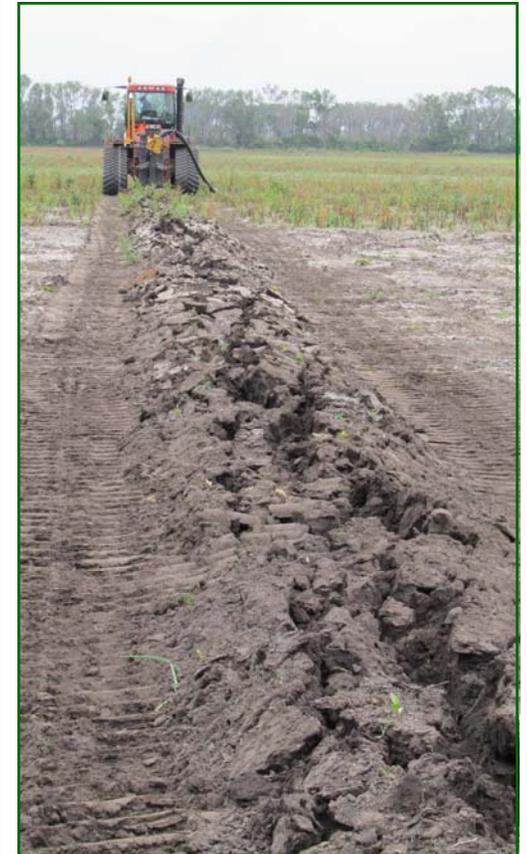
For additional information about DWM please visit your local NRCS Service Center or visit us on the web at [www.nd.nrcs.usda.gov](http://www.nd.nrcs.usda.gov)



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## Drainage Water Management: *Tile Systems With A Dual Function*



**Helping People Help the Land**

## Looking Into the Past and Planning for the Future.

Historically, subsurface drainage (tile) made profitable crop production possible on the Nation's flatter landscapes. One unwanted byproduct of this process is excess nutrients—nitrates and phosphorous—that ultimately enter creeks and streams through tile drain water and negatively impact the environment.



The question then becomes: How can we better use existing tile lines in a way that makes them part of the solution and not part of the problem?

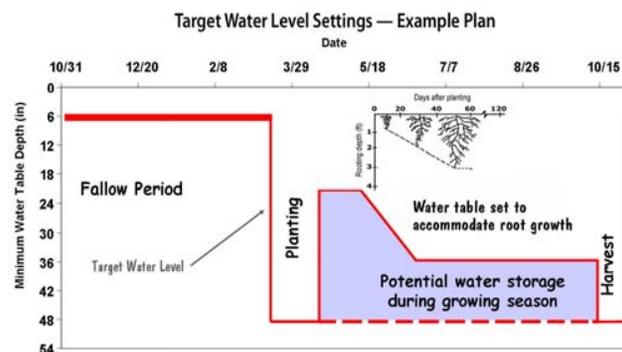
According to the Natural Resources Conservation Service (NRCS) and university researchers, agricultural producers can use concepts like Drainage Water Management (DWM) to help mitigate any adverse impacts to the environment.

DWM offers valuable options to landowners with very flat ground—particularly the Red River Valley region. NRCS conservation specialists and Technical Service Providers (TSP) can assist these landowners by helping them develop DWM Plans.

A properly prepared DWM Plan ensures factors of landscape, soils, slope, and current drainage systems are taken into consideration and incorporated into the function of a DWM System.

## What exactly is DWM?

DWM is an NRCS-approved conservation engineering practice. It holds water in the root zones when crops need it and drains it when there's too much.



More specifically, DWM manages the timing and amount of water discharge from agricultural drainage systems. The process is based on the premise that identical drainage intensity is not required at all times during the year.

Water quality benefits are possible by minimizing unnecessary tile drainage and reducing nitrate amounts that leave farm fields. DWM systems can also retain water needed for the late season crop production.

DWM systems work best on very flat ground—a fact that eliminates farms with steep or sloped ground. Even so, DWM still offers valuable options to many North Dakota landowners.



## How does DWM work?

To make it possible for operators to truly manage water table levels, they simply retrofit an existing tile system with a water control structure. Each structure controls an elevation-defined area, based on the lay of the land and the tile system layout already in place. Structures are small, reasonably priced, and operating instructions are fairly simple:

1. Prior to seedbed preparation, remove riser boards to drop water table levels prior to tillage/planting operations.
2. During the growing season, stack riser boards to raise water table high enough to provide capillary water to crop root zone.
3. Before harvest, remove boards to lower water table before fall fieldwork.
4. After harvest, raise water table up even further—near ground surface—to hold nutrients in the field/soil over winter.



All programs and services are offered on a non-discriminatory basis.