



DWM Benefits

- Reduces loading of nitrates and pesticides into the drainage system and off the farm
- Improves plant/crop productivity & profitability
- Reduces oxidation of soil organic matter
- Provides seasonal wildlife habitat
- Prevents leaking of manure into tile drains during land application by raising riser boards

Financial Assistance Available

Private landowners may be eligible for technical & financial assistance to implement DWM through the Environmental Quality Incentives Program (EQIP), which is managed by USDA's Natural Resources Conservation Service (NRCS).

Iowa farmers may receive assistance to create a drainage water management plan, install control structures, or manage the control structures throughout the year. Visit your local NRCS office for more details.



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Drainage Water Management

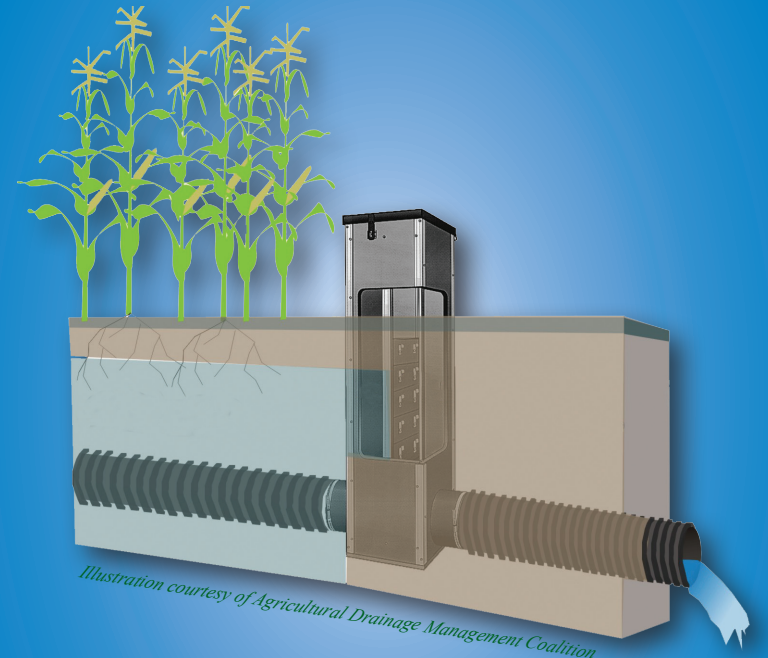


Illustration courtesy of Agricultural Drainage Management Coalition

Tile Systems With A Dual Function



United States Department of Agriculture
Natural Resources Conservation Service

February 2012 Des Moines, IA

Looking Back

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

For years, talk of the Gulf of Mexico's "Dead Zone" pinned a large portion of ecological blame on agricultural production in the Midwest. Agriculture has been similarly targeted closer to home, where amounts of nitrogen in Iowa's drinking water supplies have increased dramatically throughout the last century.

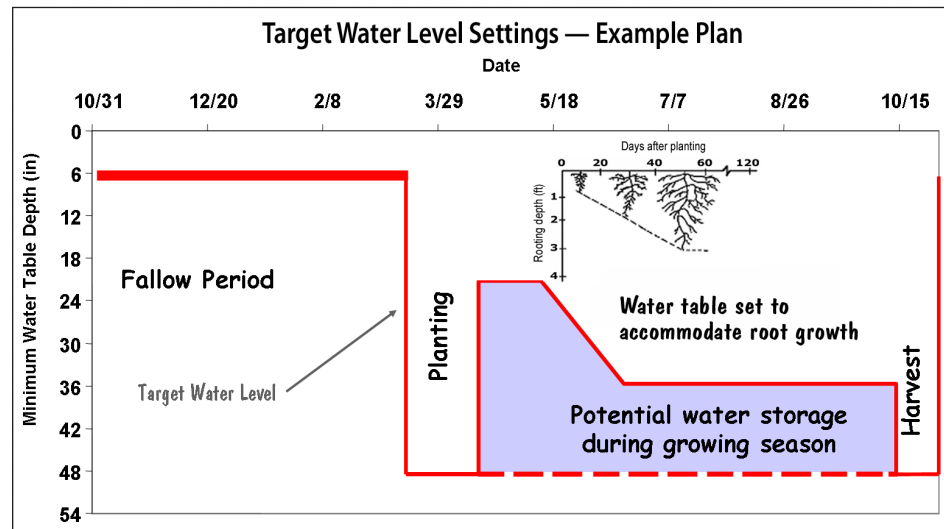
According to a 2000 U.S. Geological Survey study, average annual nitrate concentrations in the Des Moines

and Cedar Rivers have increased nearly seven times over the last 100 years, from about 0.6 milligrams per liter to as much as 4.6 milligrams per liter.

Now there is a way for farmers with "flat" ground (.5 or 1% slopes and flatter) to join the fight against excess nitrate runoff by using Drainage Water Management (DWM) on their farms.

This system uses existing tile lines in a way that makes them part of the **solution** and not part of the **problem**.

DWM offers valuable options to Iowa landowners with very flat ground. These are the producers NRCS conservation specialists and Technical Service Providers (TSP) can assist by developing Drainage Water Management Plans.



DWM Improves Water Quality

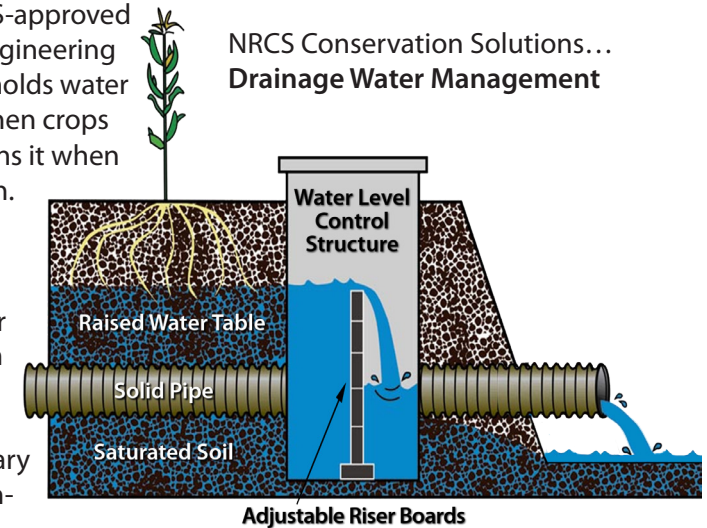
DWM is an NRCS-approved conservation engineering practice. DWM holds water in root zones when crops need it and drains it when there's too much.

It manages the timing and amount of water discharged from agricultural drainage systems. Unnecessary subsurface drainage and nitrate amounts leaving farm fields are reduced, improving water quality. With appropriate management, DWM systems may also retain water needed for late season crop production.

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 lay of the land and the tile system layout already in place. Structures are small, reasonably priced, and operating instructions are fairly simple:

- 1 Before tillage, remove riser boards to drop water table levels about 10 days prior to planting fieldwork/operations.
- 2 During the growing season, stack riser boards to potential-

NRCS Conservation Solutions...
Drainage Water Management



ly raise water table high enough to provide capillary water to crop root zone.

- 3 Before harvest, if needed, remove boards to lower water table 10 days before Fall fieldwork.
- 4 After harvest, install riser boards to potentially raise water table up even further—near ground surface—to hold water and nutrients in the field/soil over winter.

For Example

In a 75-acre field with five control structures, a farmer would need to make about six trips per year to adjust elevation in the control structure.