



# Drainage Water Management



USDA's Natural Resources Conservation Service (NRCS) offers technical and financial assistance for Drainage Water Management (DWM). Installation and implementation of DWM begins with a DWM Conservation Plan. Your plan can be prepared by local NRCS Field Office staff, private Technical Service Providers or a professional drainage contractor. NRCS program incentives can make managing farm tile drainage systems more productive and more profitable.

## What is DWM?

DWM is the process of managing the timing and the amount of water discharged from agricultural drainage systems. DWM is based on the premise that the same drainage intensity is not required at all times during the year. With DWM, both water quality improvement and production benefits are possible. Water quality benefits are derived by minimizing unnecessary drainage, reducing the amount of nitrate that leaves farm fields. DWM systems can also retain water in fields that could be used for crop production later in the season--when you need it. Producers who use DWM enjoy being able to better control their drainage water instead of the water always controlling them.

**Where does DWM work best?**

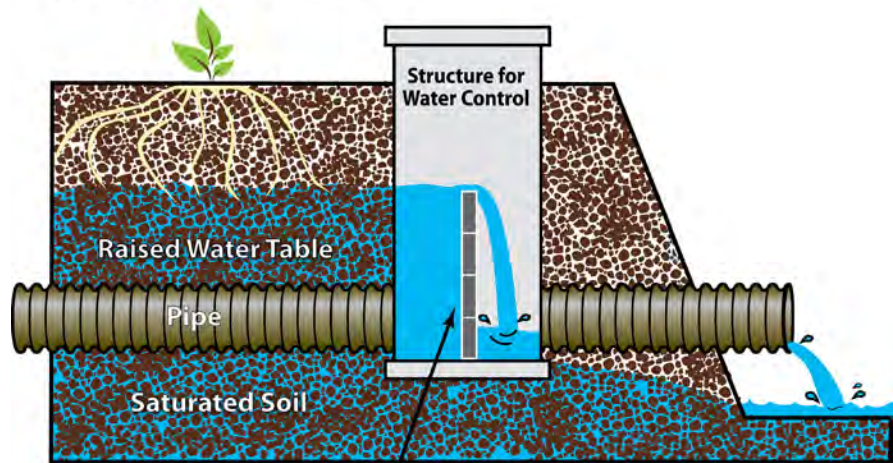
- On flat topography
- With more intensive tile systems
- On new drainage systems planned & designed for DWM

**Get a Plan!**

To successfully initiate a DWM system on an agricultural tile drainage system, it is essential to have a plan of action—a DWM Plan. When applying for NRCS programs or financial assistance, producers are more likely to be funded once they have a DWM plan. When successful, a DWM system can help:

- Provide potential yield increases
- Reduce risk during weather extremes
- Offer environmental trading credit options
- Use incentives from USDA
- Protect community water resources
- Ensure potential for regulatory "Certainty"
- Improve soil health; better vegetative growth
- Enable seasonal flooding for migratory birds

NRCS Conservation Solutions...  
**Drainage Water Management**



**Flow Control Mechanism**

DWM is the process of managing the timing and the amount of water that discharges from agricultural drainage systems. A structure for water control is installed in the tile line, which allows for management of the tile outlet elevation.

## What's In a DWM Plan?

A properly prepared DWM Plan ensures operators consider landscape, soils, slope, and current or planned drainage systems as they create and manage a functional DWM System. Here is a list of information needed to develop a DWM plan:

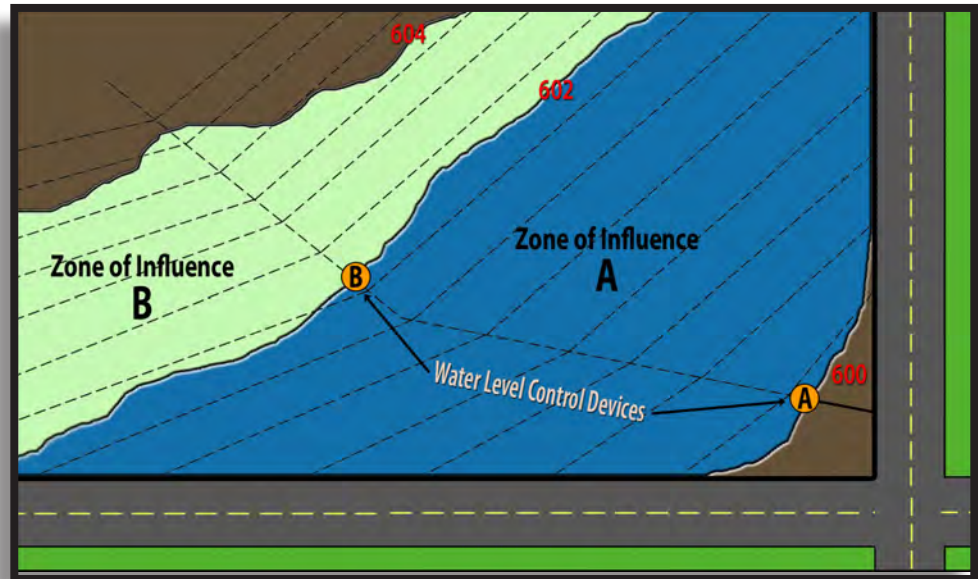
- farm & field identification/location
- field maps with field boundaries marked
- landowner goals & objectives
- maps--tile system, soils, topographic
- management schedule
- water control structure placement strategy

## What's In a DWM Plan?

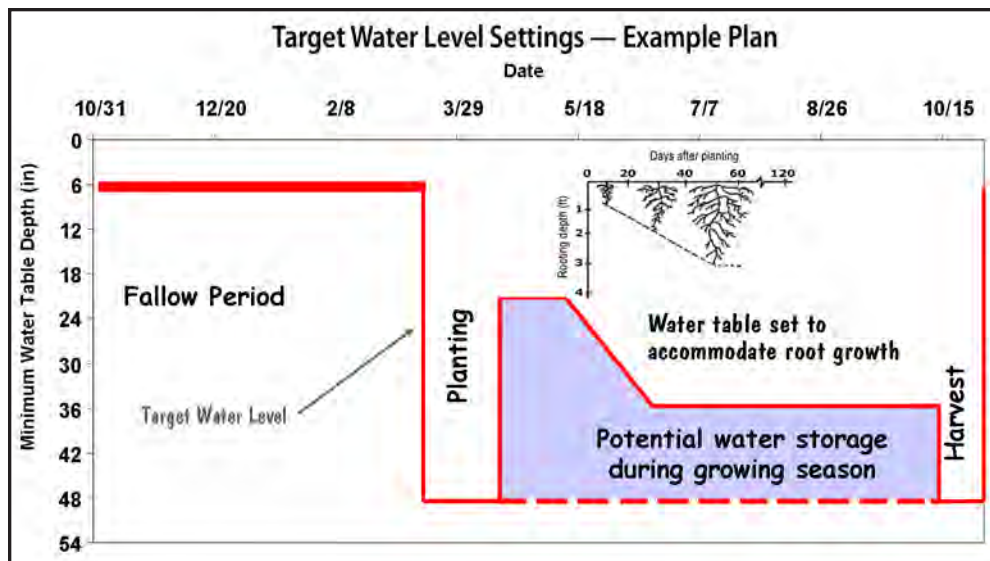
DWM plans identify the precise location and size for each planned structure for water control. To effectively use and benefit from a DWM system, the plan must include a detailed set of instructions for operation and maintenance. A tile drainage system with DWM is most beneficial if operated properly. Remember, the most important word in Drainage Water Management is **MANAGEMENT**. This means it is a conservation practice **MANAGED** by YOU.

Key to any DWM plan is a determination of the field area impacted by each water level control structure, or its 'zone of influence.' The DWM Plan clearly identifies critical dates and target water level elevation levels needed to accomplish management goals and objectives. Details of proper operation and maintenance include:

- Target water elevations needed **PRIOR** to tillage, planting or harvest operations. Water levels are managed to permit trafficable conditions required for field work.
- Target water elevations needed **AFTER** seasonal field work. Water levels are managed to permit infiltration of rainfall and bring water to crop root zones. Water level targets vary with crop, growth stage, and soil type.
- Target water elevation level needed prior to and during **HARVEST**.
- Target water level is near the soil surface or to a prescribed level during the **FALLOW** period.



Lines labeled 600, 602, and 604 represent ground surface elevation levels.



DWM is the process of managing timing and amount of water discharges from agricultural drainage systems. The DWM plan provides the target water table level settings needed at specific dates or seasons.

### The Golden Rule of Drainage:

Only release the amount of water necessary to ensure trafficable conditions for field operations and to provide an aerated crop root zone—any drainage in excess of this rule likely carries away nitrate and water that is no longer available for crop uptake.

**Is YOUR land suitable for a DWM System?  
Visit your county NRCS office for a field visit!**