Irrigation System, Surface and Subsurface (443)

An irrigation system for surface or subsurface irrigation is a system that includes all the components necessary for the efficient application of irrigation water by surface means or by subsurface means.

Practice Information

With surface irrigation systems, water is directly applied to the soil surface in a way that does not cause excessive water loss, erosion, or water quality impairment. This can be done with delivery ditches or above ground multi-outlet water pipes. The soils in the field should not be excessively permeable to avoid seepage losses. Water that runs off the end of the field can be captured and recycled with the use of a tailwater recovery system.

Subsurface irrigation systems are designed to maintain the water table at predetermined design elevations below the ground surface at all points in the field. The soils in the plant root zone must be permeable enough to allow lateral water movement from the ditches or perforated irrigation pipes. These soils must be underlain by a slowly permeable water-restrictive layer to keep the desired water table height. This combination of soils allows the producer to alter the water table elevation in a timely manner in order to meet the plant needs.

This practice has a minimum expected life of 15 years. Maintenance requirements include regular inspections, removal of sediment and debris, repair and revegetation of eroded areas and outlets, inspection and testing of pipeline and pumping equipment, and regrading the fields to maintain the design grade in the direction of flow.

Common Associated Practices

An Irrigation System, Surface or Subsurface (443) must be applied in conjunction with Irrigation Water Management (449). Other practices it is commonly applied with include Irrigation Pipeline (430), Irrigation Reservoir (436), Irrigation System, Tailwater Recovery (447), Irrigation Field Ditch (388), Structure for Water Control (587), Pumping Plant (533), and Subsurface Drain (606).

For further information, contact your local NRCS field office.