

Irrigation System / Surface and Subsurface

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 443 04/02



DEFINITION

An irrigation system (surface/subsurface) is a planned system in which all necessary components have been installed for efficient application of irrigation water.

PRACTICE INFORMATION

Surface and subsurface irrigation refers to irrigation water being applied by means other than trickle or sprinkler nozzles.

The purpose of the practice is to efficiently convey and distribute irrigation water to the point of application without causing erosion, water loss, or reduction in water quality.

An irrigation system must be designed as an integral part of a conservation plan based on the capabilities of the natural resources and

the needs of the farm enterprise. The planned irrigation system must be suited to the site conditions and the crops to be grown.

Surface irrigation systems may not be adapted to the site if the soils are sandy. Sprinkler irrigation systems are a better choice for sandy soils. Conversely, if the soils are very slowly permeable (clayey), the site may not be well adapted to sprinkler irrigation due to excessive runoff and erosion.

Additional information including design criteria and specifications are in the local NRCS Field Office Technical Guide.

The following pages list the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, and soil.

Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

STATE		FIELD OFFICE	DATE
PRACTICE: 443 Irrigation System - surface and subsurface		NOTES:	
RESOURCE: SOIL			
RESOURCE CONCERN: EROSION			
RESOURCE INDICATORS		PHYSICAL EFFECTS	
SHEET AND RILL		moderate reduction in sheet and rill erosion	
WIND		moderate reduction in wind erosion	
EPHEMERAL GULLY		moderate reduction in ephemeral gully erosion	
CLASSIC GULLY		N/A	
STREAMBANK		N/A	
IRRIGATION INDUCED		moderate reduction in irrigation induced erosion	
SOIL MASS MOVEMENT		N/A	
ROADBANK/CONSTRUCTION		N/A	
OTHER			
RESOURCE CONCERN: SOIL CONDITION			
SOIL TILTH		N/A	
SOIL COMPACTION		N/A	
SOIL CONTAMINATION			
• SALTS		N/A	
• ORGANICS		N/A	
• FERTILIZERS		N/A	
• PESTICIDES		N/A	
• OTHER			
DEPOSITION/DAMAGE			
• ONSITE		moderate reduction/onsite deposition damage	
• OFFSITE		moderate decrease/offsite deposition damage	
DEPOSITION/SAFETY			
• ONSITE		moderately improve onsite safety/deposition	
• OFFSITE		moderately improve offsite safety hazard/depos.	
OTHER			
RESOURCE: WATER			
RESOURCE CONCERN: WATER QUANTITY			
SEEPS		insignificant	
RUNOFF/FLOODING		N/A	
EXCESS SUBSURFACE WATER		N/A	
INADEQUATE OUTLETS		N/A	
WATER MGT. IRRIGATION			
• SURFACE		significant improvement in irrigation efficiency	
• SPRINKLER		N/A	
WATER MGT. NON-IRRIGATED		N/A	
RESTRICTED FLOW CAPACITY (H2O convey.)			
• ONSITE		N/A	
• OFFSITE		N/A	
RESTRICTED STORAGE		N/A	

RESOURCE: WATER	
RESOURCE CONCERN: WATER QUALITY	
RESOURCE INDICATORS	PHYSICAL EFFECTS
GROUNDWATER CONTAMINANTS	
• PESTICIDES	N/A
• NUTRIENTS AND ORGANICS	N/A
• SALINITY	N/A
• HEAVY METALS	N/A
• PATHOGENS	N/A
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	N/A
• NUTRIENTS AND ORGANICS	N/A
• SUSPENDED SEDIMENTS	moderate reduction in SWater contam./susp. sedi.
• LOW DISSOLVED OXYGEN	N/A
• SALINITY	N/A
• HEAVY METALS	N/A
• WATER TEMPERATURE	N/A
• PATHOGENS	N/A
AQUATIC HABITAT SUITABILITY	moderate improvement in Aqua. Hab. Suit.
OTHER	
RESOURCE: AIR	
RESOURCE CONCERN: AIR QUALITY	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	N/A
• OFFSITE SAFETY	N/A
• ONSITE STRUCT. PROBLEMS	N/A
• OFFSITE STRUCT. PROBLEMS	N/A
• ONSITE HEALTH	N/A
• OFFSITE HEALTH	N/A
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	N/A
AIRBORNE CHEMICAL DRIFT	N/A
AIRBORNE ODORS	N/A
FUNGI, MOLDS, AND POLLEN	N/A
OTHER	
RESOURCE CONCERN: AIR CONDITION	
AIR TEMPERATURE	N/A
AIR MOVEMENT (windbreak effect)	N/A
HUMIDITY	N/A
OTHER	

RESOURCE: HUMAN	
RESOURCE CONCERN: SOCIAL CONSIDERATIONS	
RESOURCE INDICATORS	PHYSICAL EFFECTS
PUBLIC HEALTH AND SAFETY	N/A
PRIVATE/PUBLIC VALUES	N/A
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	insignificant risk involved
TENURE	N/A
OTHER	
RESOURCE CONCERN: CULTURAL CONSIDERATIONS	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	situational regarding cultural resources
SIGNIFICANCE OF CULTURAL RESOURCES	situational regarding cultural resources
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	situational regarding cultural resources
OTHER	