

Requirements for Irrigation Related Practices

2012 Environmental Quality Incentives Program (EQIP)

Purpose: To encourage proper irrigation scheduling using appropriate tools. Irrigation water management is applying water according to crop needs in an amount that can be stored in the plant root zone of the soil. The site must be equipped with an irrigation system adapted for site conditions (soil, slope, crop grown, climate, water quantity and quality, air quality, etc.) and must be available and capable of efficiently applying water to meet the intended purpose(s). This level of IWM is implemented in conjunction with a cropping/residue management system that is based on RUSLE2 requirements to meet RMS levels.

Measurement and determination of flow rate is a critical component of irrigation water management and must be a part of all irrigation water management purposes. The irrigator or decision-maker must possess the knowledge, skills, and capabilities of management coupled with a properly designed, efficient and functioning irrigation system to reasonably achieve the purposes of irrigation water management.

Eligible Land: Crop land irrigated 2 out of the past 5 years. **All irrigation practices require an Irrigation Water Management Plan (IWMP) and demonstrate appropriate water quantity savings.**

Requirements for an Irrigation Water Management Plan (449):

This payment is on a per crop monitoring unit basis for implementing all aspects of an advanced IWM plan. Can be used on sprinkler, micro (drip), and surface irrigation systems. Irrigation Scheduling will be done by monitoring the crop for critical stress such as plant canopy temperature. Records will include crop grown (ac), available water supply (gpm) soil moisture conditions prior to irrigation, amount(s) of irrigation applied (in) and effective rainfall (in). Irrigation water will be applied to match intake rates and the available water holding capacity of the soil. Applications will be timed to meet crop requirements. Soil moisture, as a minimum, will be checked and recorded using the "feel and appearance" method prior to the first irrigation for the crop year, this includes any pre-plant irrigations.

1. IWMPs must include the following components:
 - a. Timing of irrigation.
 - b. Method for measuring soil moisture.
 - c. Method for adjusting irrigation to compensate for changes in the soil infiltration rate.
 - d. Method for evaluating irrigation system uniformity.
 - e. Method for measuring irrigation system application rate.
 - f. Method for evaluating soil erosion.
 - g. Method for adjusting the irrigation schedule(s) for chemical application.
 - h. Method for recognizing excess runoff.

2. NRCS will certify submitted IWMPs if not developed by a TSP. For an example plan, see http://www.tn.nrcs.usda.gov/technical/engineering/irrigation/irrigation_water_management_plan.htm

Payment Options for Irrigation Water Management (449) for one year:

- Measurement and recording of irrigation water applications, rainfall during the growing season, and periodic measurement of soil moisture. When using soil moisture sensors, minimum of 3 per pivot or 1 per soil type. This along with crop water use (ET) and will be used for decision making to schedule irrigation water application in accordance with 449. Documentation/records of these items will be provided by participant to ensure that IWM is being practiced. \$10.50/acre;

or

- Real Time measurement of irrigation water applications, rainfall during the growing season, and real time measurement of soil moisture through the use of soil moisture sensors that can be monitored with dataloggers in order to record and download real time readings to computer, PDA or other device. This along with crop water use (ET) will be used for decision making to schedule irrigation water application in accordance with 449. Documentation/records of these items will be provided to ensure that IWM is being practiced. \$23.00/acre;

and

- Flowmeter installed to measure amount of water applied per irrigation event. \$1,000.00/no

Producer requirements for payment:

1. Have a certified "Irrigation Water Management Plan".
2. Demonstrate appropriate completion of NRCS designated training regarding irrigation water management. One of the irrigation water management courses available at http://www.wsi.nrcs.usda.gov/products/W2Q/water_mgt/Irrigation/irrig-training.html or take one of the education courses available at Irrigation Association's web site <http://www.irrigation.org/edu/> . Attendance and certificate of completion at NRCS Irrigation field day is also acceptable.
3. Install a flowmeter in the irrigation system.
4. Provide a completed "Irrigation Scheduling Worksheet" to the NRCS field office documenting the following on a daily or weekly basis:
 - The volume of water needed for each irrigation based on available water-holding capacity of the soil for the crop rooting depth, management allowed soil water depletion, irrigation efficiency and water table contribution.
 - The irrigation frequency based on the volume of irrigation water needed and/or available to the crop, the rate of crop evapotranspiration, and effective precipitation.
 - The application rate based on the volume of water to be applied, the frequency of irrigation applications, soil infiltration and permeability characteristics, and the capacity of the irrigation system.

Example of Records kept in Irrigation Scheduling Worksheet

Date	Actual Daily crop ET (in)	Forecast crop ET (in)	Cumulative total ET (in)	Rainfall (in)	Irrigation applied (in and gallons)	Cumulative total irrigation (in)	Soil water content (in)	Allowable depletion balance (in)
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Requirements for Irrigation System Design Practices:

When designed outside of NRCS, the design of the irrigation system and conveyance must be provided by someone meeting certification requirements of: 1) USDA NRCS TechReg Technical Service Provider; 2) Irrigation Association (IA) Certification as a Certified Irrigation Designer (CID) – Agriculture: Drip/Micro, Sprinkler, or Surface; or 2) Irrigation

Association (IA) as a Certified Agricultural Irrigation Specialist (CAIS).. If a design is provided by someone or some company that is not certified as described above, then NRCS must certify the design before implementation.

Requirement for Irrigation Storage Reservoir (436) and Irrigation Tailwater Recovery (447) Design: When designed outside of NRCS, the design of storage practices must be provided by someone meeting certification requirements of USDA NRCS TechReg Technical Service Provider. If a design is provided by someone not meeting the requirements of TechReg, then NRCS must certify the design before implementation.