

**KS523.2 Irrigation Assistance**

A. Irrigation assistance by Natural Resources Conservation Service (NRCS) personnel for irrigation water management (IWM) shall be in accordance with the applicable Kansas standards, guide specifications, and statements of work and the criteria listed in the [National Engineering Handbook Part 652 \(NEH 652\), Irrigation Guide](#). When creating an IWM plan, follow [Section KS652.0106\(f\), "Procedure guide for irrigation land development," in NEH 652](#). The IWM plan shall address planning, design, and establishment of irrigation systems and IWM.

B. The feasibility for irrigation land development shall be determined by the responsible technician using the criteria listed in the paragraph above and with due consideration given to the following:

- (1) Water quality has been determined to be within acceptable limits. (If a water test is needed, it will be the irrigator's responsibility to secure one.)
- (2) Water supply is adequate and dependable for the planned conservation use.
- (3) Soils are irrigable and are listed in [Section KS652.0204 in NEH 652](#). For soils not listed in Section KS652.0204, follow the instructions under Section [KS652.0106\(f\)\(2\)\(iv\), "Soils not listed in the guide."](#)
- (4) Topographic features lend themselves to the type of system planned with consideration given to any potential erosion, drainage, or IWM problems.

C. Planning

- (1) Conservation planning shall be a prerequisite to furnishing technical assistance for establishing any permanent part(s) of an irrigation system. Permanent part(s) of an irrigation system shall be addressed in the plan. These practices include land leveling, buried irrigation pipelines, sprinkler and microirrigation systems, irrigation canals and laterals, pumping plants, structures for water control, drainage mains and laterals, and tailwater recovery pits. Complete irrigation system planning may be required when deemed necessary to properly install any part of a system. A conservation plan shall include a plan map using Toolkit.
- (2) The irrigation plan for a gravity irrigation system will be done using a reliable topographic map. A topographic map ordinarily has survey shots on a maximum spacing of 330 feet with detailed shots taken between as needed. The plan will be periodically updated to show fields leveled, buried pipe and other practices installed, and dates completed.
- (3) The irrigation plan for a sprinkler or microirrigation system will be done using either a detailed topographic map or a United States Geological Survey (USGS) topographic map on a 7.5-minute scale (1:24,000) with 5-foot contour elevations and documented on the ArcView map for the conservation plan.

D. IWM

- (1) IWM will be promoted through the following:
  - (i) Maximizing the efficiency of water use
  - (ii) Minimizing soil erosion and loss of plant nutrients
  - (iii) Controlling undesirable water loss
- (2) Proper IWM should result in the following:
  - (i) Maintaining or improving water quality
  - (ii) Optimizing the quantity of available water

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(3) NEH 652 (with Kansas amendments) and the electronic Field Office Technical Guide (eFOTG) conservation practice standards provide sound criteria for an IWM plan. These references shall be used for irrigation system evaluation and to assist, advise, or train irrigators to attain IWM. For the irrigated acreage, IWM will be documented by completing applicable data sheets such as [Form KS-ENG-390, Irrigation Water Management - 449](#).

**E. Information for an IWM Plan**

(1) In order to promote IWM, NRCS personnel are to provide technical assistance to irrigators (including an IWM plan addressing the information listed below) so that they will have the knowledge to do the following:

- (i) Determine acceptable water quality
- (ii) Know when to irrigate by determining the available soil moisture in the root zone and by knowing the peak and seasonal consumptive use rates of the crops being irrigated—irrigation scheduling programs may be used to assist with computing the volume of water needing replacement based on inches of water depth
- (iii) Measure or compute the available water-holding capacity (AWC) quantity (for example, depth of water in inches for a given depth of soil)
- (iv) Understand the soil characteristics and system layout so as to determine the water application rate and time needed
- (v) Adjust the system operation (delivery rate and application time) to allow for changes in soil intake rates
- (vi) Control soil erosion caused by irrigation so that it does not exceed the soil's allowable annual rate of soil erosion (T)
- (vii) Apply corrective measures to prevent excessive irrigation runoff and/or percolation beneath the managed root zone
- (viii) Evaluate the effectiveness of the completed irrigation

(2) The IWM plan shall include a short statement explaining how each of the eight aforementioned irrigator knowledge requirements shall be accomplished.

**F. Individual NRCS conservation programs will dictate what type of evaluation will be needed and the extent or evaluation required.**

**G. Working with Other Entities**

(1) NRCS will cooperate with the Bureau of Reclamation (BOR) in the planning stages of irrigation projects to provide available information on the cost of irrigated land development in order that these costs may be made part of the economic analysis of project feasibility. BOR is responsible for land classification within the project.

(2) Technical assistance will be furnished by NRCS to any irrigation district or groundwater management district located within the boundaries of the conservation district. Assistance will be subject to mutual agreement by all parties. The kind and amount of assistance furnished by NRCS will be determined by mutual agreement between NRCS and the conservation district.

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- (3) A request for change in irrigable land classification, which is made by owners of land in a BOR project or proposed project, will be referred as follows:
- (i) If the request arises during or after the development period of the project, the matter will be referred to the irrigation district board, which will be expected to act in accordance with its memorandum of agreement with BOR. Contact offices are the Grand Island, Nebraska, BOR Area Office for the northern half of Kansas (Kansas River Basin) and the Austin, Texas, BOR Area Office for the southern half of Kansas.
  - (ii) If the request occurs in either the planning or pre-development stage of the project, it will be referred to the appropriate BOR office shown above.
- (4) For a request for change in irrigable land classification, which is made by owners of land in a state level change, the person(s) shall be referred to the Kansas Division of Water Resources, Water Rights Section.