

KANSAS REQUIREMENTS FOR IRRIGATION WATER CONSERVATION PLANS

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The Chief Engineer of the Kansas State Board of Agriculture's Division of Water Resources is responsible for administering the Water Appropriation Act, which governs the use of water in Kansas. The Division processes applications for permits to appropriate water as well as applications to change the point of diversion, place of use or the beneficial use made of the water. As a part of these applications, a water conservation plan is frequently required. When required, a conservation plan becomes a limitation on the approved permit.

Kansas' current policies regarding water conservation plans can be traced to the 1985 edition of the Kansas Water Plan. The purpose of the Kansas Water Plan is "...the management, conservation, and development of water resources of the state." (State Water Resources Planning Act) One section of the Water Plan is titled Conservation and has three subsections - Agricultural, Industrial and Municipal Water Conservation. The underlying theme of the Conservation section is the philosophy of managing both supply and demand to diminish the uncertainty of water availability and water quality.

Implementation of the Conservation section of the Water Plan led to several legislative and administrative actions, including two of interest to us: a requirement that the Kansas Water Office develop guidelines for agricultural, municipal and industrial water conservation plans and amendments to the Kansas Water Appropriation Act authorizing the Chief Engineer to require conservation plans in conjunction with water right applications. Recently, this authority was extended to include all water rights in the state.

KANSAS WATER OFFICE GUIDELINES

In December, 1986, the Kansas Water Office published guidelines for agricultural, industrial and municipal water conservation plans. With the exception of guidelines for municipal water conservation plans which were revised in November of 1990, the original publication provides guidelines to assist water users in plan preparation and state agencies in reviewing and approving plans. For irrigation water conservation plans the Water Office established four basic guidelines:

1. Irrigation system design and water management practices should conform to the Soil Conservation Service's Kansas Irrigation Guide or other acceptable standard.
2. Irrigation systems must meet certain target water application efficiencies. For sprinkler irrigation systems the guidelines establish a target water application efficiency of 75%. Gravity flow systems have target water application efficiencies of 70%.

These are the minimum acceptable application efficiencies for a water conservation plan to meet the guidelines. The guidelines also note potential efficiencies for all types of irrigation systems of 80%.

3. When developing a water conservation plan an irrigation scheduling program shall be considered and shall include metering.
4. All water conservation plans will address runoff control.

An important, and unfortunately often neglected, part of proper irrigation planning is monitoring and evaluating the plan's implementation and effectiveness and making changes to the irrigation system when indicated. The guidelines suggest agencies responsible for conservation plans should "sample the effectiveness of such plans...."

DIVISION OF WATER RESOURCES' IMPLEMENTATION

In virtually all instances when the State of Kansas requires a water conservation plan for irrigation, the Division of Water Resources is the administrating agency. Between January 1, 1989 and the beginning of 1992, water conservation plans were required of all applicants for new permits to use water for irrigation, as well as for municipal and industrial use. In addition, applications for change in place of use which substantially increased the acres irrigated and applications to change the use made of water required water conservation plans. Flow meters are consistently required when water conservation plans are deemed necessary by the Chief Engineer. Water conservation plans required under these circumstances became a condition of the permit to appropriate water when approved.

The 1991 Kansas Legislature amended the Water Appropriation Act, to give the Chief Engineer specific authority to require water conservation plans not only of applicants for new permits, but also of owners of existing water rights or permits. The new language in the Act describes who should be targeted for conservation plan requirements, including those sharing a source of supply that might be inadequate during a drought, water users who have historically used more water than their peers and water users requesting state loans or grants for water related projects.

In early 1992, the Division of Water Resources made several policy changes to better align the water conservation program with this legislative guidance.

1. Irrigators in portions of eastern Kansas with little or no serious water shortages are no longer routinely required to provide plans with new applications.
2. Irrigators proposing applications to appropriate water from deep aquifers outside of groundwater management districts are required to submit plans only when the Division of Water Resources' review indicates that it would be in the public interest to require a plan in conjunction with the proposed application.

3. Irrigators proposing applications within groundwater management districts may be required to submit plans for reasons outlined in #2 above, but normally are required to submit plans only as required in their groundwater management districts' management programs.
4. Irrigators with existing rights or permits will be targeted to prepare plans if they have a history of tailwater complaints or use substantially more water than irrigators in their peer group. One's peer group consists of irrigators operating under similar climatological conditions, growing similar crops and possibly using similar irrigation systems. An irrigator required to submit a conservation plan for an existing right or permit will have that requirement made a condition of his permit.

DIVISION OF WATER RESOURCES REQUIREMENTS FOR CONSERVATION PLANS

As required by law, the Division's requirements for conservation plans follow the Kansas Water Office guidelines. Water conservation plans are reviewed to assure that they conform to the Soil Conservation Service's irrigation guide and meet the target efficiencies established by the guidelines. Hydrologists also review the conservation plan to ensure themselves that the rate of diversion and total annual quantity of water proposed to be diverted in the application to appropriate water agree in general with the numbers proposed on the conservation plan and are reasonable for the intended crops and geographical area. All irrigation systems required to have water conservation plans are also required to be properly metered.

One of the most important requirement of water conservation plans is that they properly address control of tailwater. All irrigation conservation plans are scrutinized to insure that the designer has carefully addressed the issues of controlling runoff from the field.

MONITORING AND EVALUATION

The Division of Water Resources has begun a program to monitor and evaluate the effectiveness of water conservation plans required of irrigators inside groundwater management districts. To this end the legislature authorized monies to contract with groundwater management districts for conservation plan evaluation and review. At this time, Northwest Kansas and Southwest Kansas Groundwater Management Districts are participating. This program began in the summer of 1991, but has progressed slowly because of contract preparation and, ironically, wet weather in the fall which reduced irrigation for wheat. The purposes for monitoring include evaluating whether or not the plans have been properly implemented and demonstrating the effectiveness of water conservation plans by comparing water use records of water users in similar conditions but without established water conservation plans. The program should also provide the groundwater management districts with a tool for addressing irrigation water management education. For areas outside of groundwater management districts the Division hopes to implement a similar if less extensive program in the future.