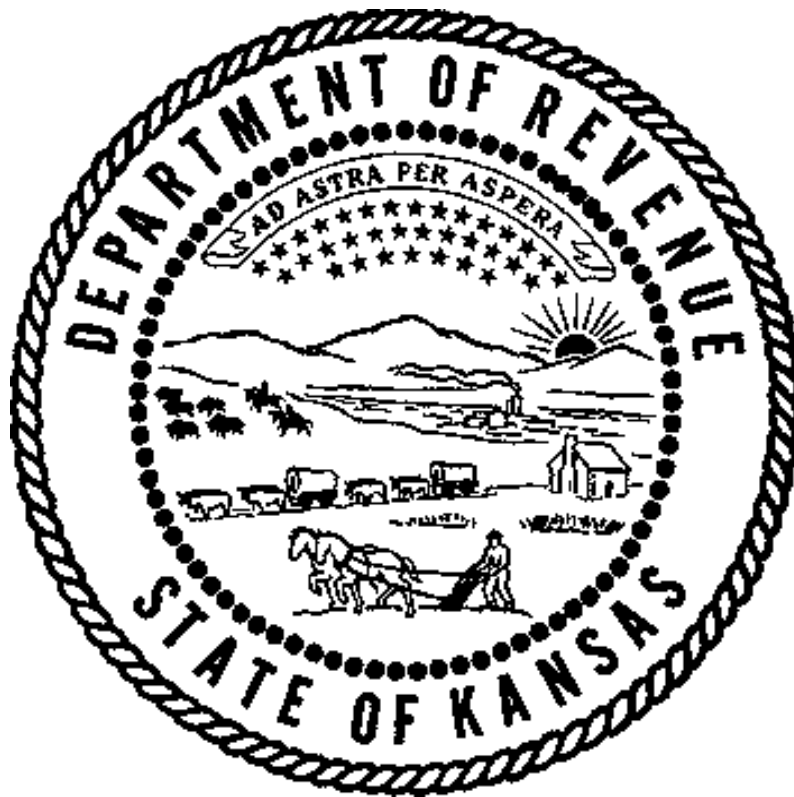


# STATE OF KANSAS

## Department of Revenue

### Division of Property Valuation



**Director's Report  
on  
Kansas Agricultural Land Valuation**

Issued September 1, 2002

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## **BACKGROUND**

A provision of Senate Bill 553 (also SB 39) from the 2002 session of the Kansas Legislature required the Director of the Property Valuation Division of the Kansas Department of Revenue to prepare a report concerning the implementation of K.S.A. 79-1476 relating to the procedures used to value agricultural land. The report is to summarize the changes in each class of land which have been implemented since tax year 1993, identify when the change was made, and explain the rationale for each change. It must be noted here that there is no record of implementation of any changes in methodology for tax year 1993. In addition, the 1993 values were certified for use in 1994 and 1995. Thus the report will, of necessity, commence describing the valuation methodology as it was developed for 1996 and subsequently revised in later years.

## **HISTORY**

The Kansas legislature passed a law in 1985 requiring agricultural land to be valued for ad valorem tax purposes based on the agricultural income or productivity attributable to the inherent capabilities of the land. Use value appraisal of agricultural land was first implemented in 1989. Highly simplified, the process consists of estimating the landlord net income (LNI) for each class of land in every county based on median production levels, and capitalizing that income using a statutorily prescribed capitalization rate to determine a per acre value. The law requires the use of an 8-year average of net income with the most recent data being two years old. From 1989 through 1993, agricultural land values were updated annually. The county appraiser applied the values to irrigated land, dryland, and range or pasture based on soil types grouped by productivity.

In 1992 and 1993 several western Kansas counties challenged the procedures the Property Valuation Division (PVD) was using to determine irrigated land values. The lawsuits were settled when the division agreed to look into all facets of use value. The 1993 values were also certified to the county appraisers for tax years 1994 and 1995.

In 1993 the legislature appropriated funds for Kansas State University (KSU) to conduct the underlying research necessary to determine agricultural land values. KSU was responsible for determining landlord gross income and expenses for each county in the state under the direction of the PVD. In addition, KSU was to determine the crop share (between landlord and tenant) and develop a new water ratio table for valuing irrigated land.

In early 1995, Secretary of Revenue John D. LaFaver appointed an agricultural advisory committee consisting of producers, legislators, farm managers, appraisers and farm organizations to advise him and Mark S. Beck, Director of Property Valuation, concerning issues pertaining to use value. The committee has met since April 1995 and reviewed all facets of use value methodology. The agricultural advisory committee continues to play a vital role in the decision making process affecting all aspects of agricultural land valuation.

In 1996, agricultural land values were issued for the first time in 3 years. The underlying methodologies for the 1996 values should not be characterized so much as a change from prior practice, but rather a totally new construction of the formula using data from published sources.

## **1996**

(1) KSU and the PVD performed comprehensive research to establish an equitable method of crafting the initial 8-year average LNI. After extensive discussion with the advisory committee, it was determined that for 1996, the dryland and pasture eight-year average LNI would be comprised of five years of existing historical data (1987 through 1991) and three years (1992 through 1994) of data calculated using current survey information. The mixture of historical and new data was chosen because it was concluded that this methodology would provide the most stability to the process as values were issued for the first time in three years.

(2) It was also determined that it would be necessary to recalculate the irrigated LNI for all formula years. Using a combination of historical and newly calculated data was not appropriate because the water ratio table had been entirely reconstructed (see 1996 paragraph 3). A complete reconstruction of the irrigated LNI was essential due to the use of a crop mix and district yield as opposed to the use of a single crop and a statewide yield.

(3) The water ratio table used to adjust irrigated land values to account for water capacity is totally reconstructed. The previous table used one crop (corn) and a single standardized yield, and adjusted irrigated land values downward as water capacity fell. The new water ratio table uses a crop mix and average published yields on a district basis, and adjusts irrigated values up or down based on water capacity. This change was necessary due to the use of a crop mix and district yield to determine the irrigated LNI as opposed to the use of a single crop and yield statewide.

(4) County agricultural tax rates are used as part of the capitalization rate to account for property taxes as an expense. Previously, a single statewide average agricultural tax rate was used. A county specific agricultural tax rate is appropriate because actual tax dollars can vary significantly across the state. The effect of using a single statewide rate was to cause land in a county with a high tax rate to be overvalued with the opposite effect occurring in low tax rate areas.

(5) Planted acres are used rather than harvested acres to calculate yields and expenses. This recognizes the expense incurred in planting acres that are subsequently abandoned, resulting in a more accurate accounting of typical landlord expense.

(6) The method of moving averages was incorporated to calculate the 8-year average crop yield. Previously the yields were determined based on a simple 8-year average to develop the final LNI. Thus the yield attributable to each year had a one-eighth impact on the LNI. This tended to cause large fluctuations in the LNI from year to year, *e.g.*, when a good or poor crop year was added or dropped. Under the method of moving averages each year of the crop yield is an eight-year average; thus reducing the sudden impact of very good or very poor crop years on the final LNI and ultimately the value. The initial reason for requiring the use of an eight-year average was to avoid large fluctuations in land values from year to year. Use of the method of moving averages adds further stability.

(7) The expenses associated with center pivot and flood irrigation are combined in order to provide uniformity to irrigated land. The gross income derived from center pivot irrigation and flood irrigation is similar, however accounting for irrigation expenses separately caused some disparity in the LNI and thus the values. Combining expenses tends to reduce the disparity by recognizing that while more depreciation is associated with center pivot irrigation, flood irrigation has higher expenses as a result of it being more labor intensive.

## **1997**

(1) Cash rent for pasture is calculated by crop reporting district, replacing the previous use of a single statewide cash rent. This allowed the original stocking rates to be adjusted for the acreage within each crop reporting district in recognition of the fact that each of the nine districts has a different average stocking rate. The change acknowledges the advisory committee's consistent recommendation that data used be from the smallest area possible.

(2) Water costs are included as an expense item for pasture and rangeland. This covers such items as ponds, stock tanks, wells, windmills, spring development and hauling water. KSU conducted extensive research and while these costs are highly variable depending on weather, location, pasture size and government cost sharing, it was determined that an average cost of \$1.00 per acre should be used.

(3) The method of moving averages is applied in the calculation of the 8-year average crop price. Again, the rationale is to avoid dramatic rising and falling of the LNI from one year to the next due to price fluctuations. (See 1996 paragraph 6)

(4) In the portion of Morton and Stevens Counties commonly referred to as sandy land, the consideration of summer fallow is discontinued. Continuously cropped grain sorghum is found to be the typical practice on the sandy soils.

## **1998**

(1) Productivity Groups are disaggregated to recognize the individual soil mapping units of which the groups were originally comprised. This facilitated the use of the newly developed Soil Rating for Plant Growth (SRPG) index. Historically, soils were grouped together into what was known as Productivity Groups. A Productivity Group was originally comprised of soil types with similar production capabilities. These Productivity Groups were developed by what was the Soil Conservation Service (now the Natural Resources Conservation Service or NRCS). When the NRCS designed and implemented the new soil rating system that rated each soil independently, they stated that they could no longer provide the documentation and support necessary to continue the use of the Productivity Groups. Thus, the SRPG's were employed to replace the often-arbitrary Productivity Groups.

This change corresponds to the statutory requirement that: “A *classification system for all land devoted to agricultural use shall be adopted by the director of property valuation using criteria established by the United States Department of Agriculture Soil Conservation Service.*”

(2) The crop mix threshold is reduced to 5% from 10%. The crop mix is the percentage of planted acres for each crop in a county or district, relative to the total planted acres in that county or district. Only those crops comprising 5% or more of the total planted acres for a county are considered in the calculations. By allowing crops to enter and exit the formula at the 5% threshold, this change once again mitigates potential dramatic fluctuations that may occur when a high net income crop enters the formula or a low net income crop exits.

(3) The method of moving averages is applied in the calculation of the eight-year average crop mix. Again, the rationale is to avoid dramatic changes in the LNI from one year to the next. (See 1996 paragraph 6)

(4) A new productivity index is developed and native and tame grazing rates are established independently. Dr. Paul D. Ohlenbusch, Extension Specialist, Range and Pasture Management, Department of Agronomy, Kansas State University in cooperation with the NRCS developed the Productivity Index for each soil-mapping unit for both native and tame pasture. Each soil-mapping unit is assigned a productivity index that measures the forage producing capability of the soil. This change makes it possible to account for the factors that affect plant growth and forage production all the way down to the individual range site. The factors include weather, soil characteristics (depth, texture, slope, fertility, and moisture holding capacity), and plant growth and development.

(5) Separate native and tame cash rents are developed. Because the new Productivity Index (see immediately preceding paragraph) established separate grazing rates for native and tame grass, it became necessary to develop separate cash rents in order to appropriately account for fertilizer expenses.

(6) Discontinued establishing tame net rental rates for Districts NW-10, WC-20, and SW-30. This was based on recommendations by Dr. Ohlenbusch suggesting that there is a minimal increase in managed pasture forage capabilities in the western third of the state.

(7) Alfalfa is no longer adjusted for summer fallow.

## **1999**

No methodology changes

## **2000**

(1) Discontinued the practice of separately calculating the LNI for soils designated as hard land and sandy land in Morton and Stevens Counties. The issue was brought to our attention by an affected taxpayer. Consultation with soil scientists and crop scientists indicated that the separation of crop type and crop practice in these two counties is no longer the typical farming practice. The original observation that only continuous crop sorghum was produced on the sandy soil with the hard soil producing only summer fallow wheat is no longer valid. With this change the crop mix calculation is identical in all 105 counties.

(2) Land subject to the federal wetlands reserve program is classified as native grassland. An amendment to K.S.A. 79-1476 provides that *“For all taxable years commencing after December 31, 1999, all land devoted to agricultural use which is subject to the federal wetlands reserve program shall be classified as native grassland for the purpose of property valuation for property tax purposes”*.

(3) Ditch irrigation districts are reviewed and certain fixed costs identified as typical expenses. Historically the LNI for the Bostwick Irrigation District was calculated in isolation from all other ditch irrigation districts in the state. Bostwick management had provided information regarding specific expenses for operating and maintenance. Research by KSU and the PVD found that other districts across the state were similarly situated with respect to fixed costs but had not been as aggressive in providing the necessary information. Further work by KSU identified a method to account for and include the landlord share of operating, maintenance and repayment as an expense for all ditch irrigation districts in the state.

## **2001**

No methodology changes

## **2002**

No methodology changes

**Note:** When implementing a new methodology or procedure, whether it is a calculation modification or data source change, implementation occurs from the year of the change and forward. The previous 7 years of data are not recalculated to incorporate the change. The formula is an 8-year average with each single data year calculated separately, and thus is a representation for that point in time.