

MINNESOTA ▪ REVENUE

Alternative Methods of Valuing Agricultural and Rural Vacant Land

As required by Minnesota Laws 2011, Chapter 13, section 7

2/14/2012

MINNESOTA ▪ REVENUE

February 14, 2012

To Members of the Legislature of the State of Minnesota:

I am pleased to present to you this report on an exploration of alternative methods of determining the taxable value of agricultural and rural vacant land for purposes of the Green Acres and Rural Preserve programs, respectively. This report was undertaken with members of the Department of Revenue, the Minnesota Association of Assessing Officers, the Minnesota Farmers Union, the Minnesota Farm Bureau, and the Department of Applied Economics at the University of Minnesota. The report satisfies the requirements of Minnesota Laws 2011, chapter 13, section 7.

This report provides a summary of the current methodology for valuing agricultural and rural vacant lands for Green Acres and Rural Preserve, an outline of the research undertaken to explore alternative methods, and the group's resultant decision regarding the determination of taxable value for these programs going forward.

Sincerely,

A handwritten signature in black ink, appearing to read "Myron Frans", written in a cursive style.

Myron Frans
Commissioner of Revenue

Per Minnesota Statutes, section 3.197, any report to the Legislature must contain, at the beginning of the report, the cost of preparing the report, including any costs incurred by another agency or another level of government.

This report cost \$3,700

Contents

Introduction and Legislative Charge1

Executive Summary.....1

Discussion: Minnesota’s Current Process for Valuing Agricultural Lands and Rural Vacant Lands for Purposes of the Minnesota Agricultural Property Tax Law (“Green Acres”) and the Rural Preserve Property Tax Program (“Rural Preserve”)2

Discussion: Comparison of Other States.....7

Discussion: Changes in the Agricultural Economy.....9

Discussion: Alternative Methods for Valuing 2a Agricultural Lands for Green Acres 11

Discussion: Alternative Methods of Valuing 2b Rural Vacant Lands for Rural Preserve 16

Discussion: Valuation Going Forward 17

Introduction and Executive Summary

Introduction and Legislative Charge

As part of a bill related to the Green Acres program under Minnesota Statutes section 273.111 and the Rural Preserve Program under section 273.114, Legislature required a study and subsequent report. This requirement was enacted in 2011 and states:

“The commissioner of revenue, in consultation with the Minnesota Association of Assessing Officers, the Department of Applied Economics at the University of Minnesota, and representatives of major farm groups within the state of Minnesota, must explore alternative methods for determining the taxable value of tillable and nontillable land enrolled in the green acres program under Minnesota Statutes, section 273.111, and the rural preserves program under Minnesota Statutes, section 273.114. The commissioner must make a report to the legislature by February 15, 2012, describing the methodologies intended to be used for assessment year 2012 and thereafter.”

The following groups were represented as part of this undertaking:

Department of Applied Economics, University of Minnesota:

Dr. Steve Taff

Minnesota Association of Assessing Officers:

Doug Bruns, Renville County

Jeanne Henderson, Sherburne County

Minnesota Farm Bureau:

Chris Radatz

Minnesota Farmers Union:

Thom Peterson

Minnesota Department of Revenue:

John Hagen, Director, Property Tax Division

Eric Willette, Director, Property Tax Research

Lloyd McCormick, Supervisor, Property Tax Compliance Officers

Tom ErnsteReineke, Property Tax Compliance Officer

Andrea Fish, State Program Administrator

Meetings were held in 2011 and 2012 at the Department of Revenue building. The results of the group’s efforts are communicated in this report.

Executive Summary

As part of this report, the group reviewed current valuation methodology for these programs, how neighboring states determine agricultural and rural vacant land values, changes in the agricultural economy, and alternative methods of valuing agricultural and rural vacant lands based on the data available. The group’s decision related to the methodology to be used for determining these values is also discussed in this report.

Of all the data reviewed and analyzed, there was not clearly a methodology which would yield “truer” agricultural land prices. The current methodology for valuing tillable and non-tillable lands derives value from actual sales data. The resultant taxable values that are used often fall between the values based on the other data reviewed (e.g., the current value for a given county may be higher than a value derived from the Crop Productivity Index would reflect, but lower than a rental value would reflect). The group noted that some counties may need minor adjustments to their factors so that their Green Acres and Rural Preserve values were more indicative of that county’s agricultural land economy. The group intends on meeting again to further explore some of the ideas that were discussed, and to see if future improvements could be identified.

Current Processing for Valuing Agricultural and Rural Vacant Lands

Discussion: Minnesota's Current Process for Valuing Agricultural Lands and Rural Vacant Lands for Purposes of the Minnesota Agricultural Property Tax Law ("Green Acres") and the Rural Preserve Property Tax Program ("Rural Preserve")

For assessors, the most significant barrier to implementing Green Acres in the program's earlier years was determining the "actual" agricultural value of farmland in their counties. By law (M.S. 273.11), assessors must determine the "highest and best use" of property and then estimate the market value based on that determination. If the highest and best use of agricultural property is for residential, lakeshore, or commercial development, or for recreational purposes, the assessor must value the property as if it were to be converted to the highest and best use and disregard its value as property used agriculturally. Thus, in cases where the highest and best use of the property is for something other than agriculture, the assessor places a value on that property that exceeds its agricultural value, likely resulting in higher property taxes. It is because of these non-agricultural value influences that Green Acres exists.

Green Acres (M.S. 273.111) requires assessors to look at qualifying agricultural property in two ways. First, the assessor must value the property according to its highest and best use (as is done for all properties). Then the assessor must determine the agricultural value of the property. If the highest and best use value exceeds the agricultural value, then the assessor uses the agricultural value as the taxable market value. Unfortunately, in many areas of the state, "true" agricultural sales were growing increasingly rare as the residential and commercial markets performed strongly in the early 2000's. A law change in 2008 required the Department of Revenue to establish a fair and equitable method of determining agricultural values for each separate county. The agricultural value as determined by the department would serve as the basis for assigning Green Acres values when appropriate.

In order to achieve this fair and equitable method of valuing agricultural land values, a Green Acres Committee made up of members of the assessment community and the Department of Revenue was formed partly for the purpose of determining Green Acres agricultural values in 2007. The committee reviewed possible methods of determining agricultural values for the state's 87 counties. The committee determined that it would be prudent to review agricultural sales during a period of time (1990-1996) where there were few non-agricultural value influences, and to review the agricultural economies across the state.

Based upon available data, the 2007 committee located the most recent period in time when the non-agricultural influences on farmland sales were either minimal or non-existent throughout the state, with the exception of the seven-county metropolitan area. The committee also found that the southwest counties of Lyon, Murray, Nobles, Pipestone, and Rock were the most indicative of true agricultural sales. These now form what is referred to as the "base counties" for agricultural values.

A common misconception is that the base counties determine the agricultural values used throughout the state. The base counties are used to help define the current agricultural economy in general, but each county's individual agricultural economy is treated differently depending upon how it differs from the norm. In order to determine a county's relationship to the general agricultural economy, the 2007 committee established the 1990-1996 period of time when farmland property values faced the fewest non-agricultural influences statewide. Each individual county's median price for farmland sales during this time period was compared to that of the base agricultural counties in the same time period to establish a ratio, or factor. This factor serves to reflect the relationship between a county's individual agricultural economy and the agricultural economy as indicated by the base counties.

The factor was created to reflect the differences in farm economies based on the varying lengths of the growing season from southern to northern Minnesota, the differences in soil quality throughout the state, and the

different commodities that drive agricultural land values. For example, soil quality is typically better in the southern portion of the state, while lesser-quality land is more prevalent in the northeastern portion of the state. Counties with greater need for pastureland due to beef cattle farming practices typically had a smaller market for tillable agricultural land.

A county’s factor as developed by the committee was designed to be applied to the current median sales price per acre in the base counties to establish a current indicator of agricultural value. Median values are used to cull out the behavior at the extremes and focus on more typical behaviors that are better indicated by using median sales values.

As an example of how these factors work, from October 1990 through October 1996, the Green Acres base counties had 653 sales of agricultural land. Those sales yielded a median sales price of \$1,058 per acre. During that same timeframe, Dodge County had 109 sales of agricultural land with a median sales price of \$1,175 per acre. The agricultural sales in Dodge County therefore reflected a higher value was more likely compared to the base counties. To reflect these differing economies, the Green Acres “factor” for Dodge County was determined by dividing the median sales price per acre for Dodge County (\$1,175) by the median sales price per acre for the base counties (\$1,058).

Example 1: Dodge County Factor (based on sales occurring 1990-1996)				
Dodge County Median (1990-1996)	÷	Base County Median	=	Dodge County Factor
\$1,175	÷	\$1,058	=	111.06% (rounded to 110%)

For the 2012 assessment the base county median is \$5,200 per acre. The Dodge County factor (110%) is applied to the 2012 base median to determine a 2012 tillable agricultural value for Dodge County of \$5,720 per acre. If the average tillable value based on local markets for Dodge County exceeds \$5,720 per acre, then the Green Acres value is applied to the tillable lands.

Example 1: Dodge County 2012 Base Value				
Base County Median Value per acre	X	Dodge County Factor	=	Dodge County GA Value per acre
\$5,200	X	110%	=	\$5,720 per acre

During that same time frame (1990-1996), Benton County had 51 sales of agricultural land with a median sales price of \$641 per acre. The number of sales and the median sales price per acre indicated that Benton’s agricultural economy was weaker than the base counties. The Green Acres factor for Benton County was determined by dividing the median sales price per acre for Benton County by the median sales price per acre for the base counties.

Example 2: Benton County Factor (based on sales occurring 1990-1996)				
Benton County Median	÷	Base County Median	=	Benton County Factor
\$641	÷	\$1,058	=	60.59% (rounded to 60%)

For the 2012 assessment the Benton County factor of 60% is applied to the 2012 base median to determine a 2012 tillable agricultural value for Benton County of \$3,120 per acre. If the average tillable value per acre based on local sales for Benton County exceeds \$3,120 per acre, then the Green Acres value is applied to tillable lands.

Example 2: Benton County 2012 Base Value				
Base County Median Value per acre	X	Benton County Factor	=	Benton County GA Value per acre
\$5,200	X	60%	=	\$3,120 per acre

This process has proved very effective for valuing tillable lands and - with a little blending of the values between counties - provides a fair, uniform, and equalized method to value tillable agricultural land throughout the state. Based on the best data available to the Department of Revenue and to Minnesota assessors, the method for establishing agricultural values for tillable agricultural properties in Minnesota that was developed by the Green Acres Committee and used by the Department of Revenue produces values for agricultural land that reflected true agricultural values in the state. Assessors must use the values as the basis for setting agricultural values for qualifying Green Acres properties in their counties.

While not perfect, this method of establishing agricultural values has also provided a uniform basis for valuation while still deriving agricultural values from the market. The result is a projection of what the current agricultural value of land would be in the absence of the current non-agricultural market influences. Also, while the Green Acres value for a county is determined by Department of Revenue, the values resulting from the factor may be “feathered” by the assessor to account for different land types throughout a county. While adjustments can be made for higher and lower quality lands, the overall county average value must not to go below the department’s guidelines. Additionally, the factors are appealable by the assessor if the assessor believes them to not represent the agricultural market in the county.

Some of the weaknesses of the current system include the fact that, for some counties, there were relatively few sales of agricultural land during the time period. Additionally, the knowledge of some particulars in various sales was not as great during the 1990-1996 timeframe as it is today. Subsequently, assessors continue to review those sales based on newly-gathered data to ensure that they were representative samples for purposes of establishing agricultural values. In order to complete the 1990-1996 study, assumptions had to be made related to the presence of non-agricultural influences. An additional weakness is that the study assumes that agricultural economies have changed at the same rate throughout the state, and therefore does not reflect changes in farming technology, crop hardiness, and changes in demand for various commodities.

Minnesota Statutes, section 273.111, subdivision 4, is effective beginning with the 2012 assessment and reads:

“(a) The value of any real estate [qualifying for Green Acres]... shall ... be determined solely with reference to its appropriate agricultural classification and value.... Furthermore, the assessor shall not consider any added values resulting from nonagricultural factors. In order to account for the presence of nonagricultural influences that may affect the value of agricultural land, the commissioner of revenue shall, in consultation with the Department of Applied Economics at the University of Minnesota, develop a fair and uniform method of determining the average value of agricultural land for each county in the state consistent with this subdivision. The values must be determined using appropriate sales data. When appropriate, the commissioner may make reasonable adjustments to the values based on the most recent available county or regional data for agricultural production, commodity prices, production expenses, rent, and investment return. The commissioner shall annually assign the resulting countywide average value to each county, and these values shall be used as the basis for determining the agricultural value for all properties in the county qualifying for tax deferral under this section. The county assessor, in consultation with the Department of Revenue, shall determine the relative value of agricultural land for each assessment district in comparison to the countywide average value, considering and giving recognition to appropriate agricultural market and soil data available.

(b) In the case of property qualifying for tax deferral only..., the assessor shall not consider the presence of commercial, industrial, residential, or seasonal recreational land use influences in determining the value for ad valorem tax purposes provided that in no case shall the value exceed the value prescribed by the commissioner of revenue for class 2a tillable property in that county.”

The Department of Revenue began discussing agricultural values with the Department of Applied Economics at the end of 2010 (prior to the 2011 assessment). The department also verified and reviewed the valuation process with members of the assessment community from different areas of the state. This valuation and review process was in place prior to the requirement of this study.

Non-tillable lands

As part of the analysis and review of Green Acres values by the department and counties, it became apparent that the relationships between tillable and non-tillable (e.g., pastureland) agricultural properties was not as clearly indicated by the factor process. The methodology described above was developed initially to review and determine *tillable* agricultural values. For valuing non-tillable lands in previous years, the department recommended using a value of 50% of the tillable value. Since that time, it has been determined that a statewide factor of 50% of the tillable value per county is not appropriate in all cases. The department further analyzed these values with representatives of the assessment community from different areas of the state.

In northwest Minnesota, tillable lands generally carry a lower value per acre than in the base counties due to the decreased length of the tillable farming season, the quality of the soil, and other factors. Conversely, non-tillable agricultural lands (pasturelands) carry higher values relative to the tillable lands due to the economic and physical sustainability of this type of soil use. For some counties in this region of the state, the 50% value was too low to reflect the actual agricultural values of non-tillable lands.

In southeast Minnesota, tillable lands carry a higher value than in the base counties due to higher per-acre yields and productivity. Non-tillable lands carry much lower values relative to the tillable values due to topography, composition of the land, and the very low demand for non-tillable farmland in this area of the state. Consequently, a 50% value for non-tillable lands is too high to reflect the actual agricultural value of non-tilled lands.

The department, along with assessors from different areas of the state including northwest, southeast, and central Minnesota, reviewed and analyzed the data available in early 2011. After discussions, the department developed a new method for valuing non-tillable agricultural lands that was first effective for the 2011 assessment. This method is based on comparisons between the average tillable values for each county relative to the values for non-tillable agricultural lands. The result is a compressed range in values when compared to the previous method (the range is from \$936 per acre to \$2,704 per acre). This compression acknowledges that different regions of the state have different economic forces affecting the values of non-tillable lands. The non-tillable land value is also used for Rural Preserve purposes.

One of the issues that is apparent when attempting to determine a non-tillable agricultural value is that there are much fewer sales of non-tillable properties in the state, or when there are sales of non-tillable lands, the sale is often part of a larger sale that includes tillable property. This requires attempting to isolate the value of the non-tillable portion from the value of the tillable portion. The process of valuing non-tillable agricultural lands will be further analyzed and studied. Assessors from various regions of the state will continue to be part of these discussions.

Because of the different values for tillable and non-tillable lands, and because of diverse non-agricultural influences in different areas of the state, it is possible that a county may only have non-tillable lands receiving Green Acres deferral if the average 2a tillable value does not exceed the tillable Green Acres value but the county's non-tillable value exceeds the Green Acres non-tillable value. Conversely, it is possible to have only tillable lands receiving deferral but not the non-tillable lands.

Wasteland

Unusable wasteland often carries a very low estimated market value, and does not always carry a value high enough that Green Acres or Rural Preserve values would be implemented. However, there may be some areas of the state where recreational uses are affecting the market value of these unusable wastelands that are part of a farm. The department and assessors have determined that 50% of the non-tillable value should be used in these cases.

For example, if a county has estimated the value of a wasteland swamp at \$1800 per acre because of recreational or other non-agricultural market value influences, and the value of non-tillable lands is \$2200 based on the value assigned to the county, then the recommended Rural Preserve value for the unusable swamp wasteland is \$1100 per acre (50% of \$2200), and the deferral is based on the \$700 difference in value.

If the estimated market value (EMV) of the wasteland the property owner wishes to enroll in Rural Preserve is less than the recommended value for the Rural Preserve Program, the property may still be enrolled, but there are no deferred taxes. The Rural Preserve deferral is only applicable in cases where the EMV exceeds the indicated Rural Preserve value for any given property. For example, if a county has valued a swamp at \$900 per acre due to lack of non-agricultural market influences, and the recommended value for non-tillable value is \$2200 and 50% of that value is \$1100, there is no deferral because the swamp EMV is lower than the Rural Preserve wasteland value.

Land use vs. land type

While the *land use* will determine its classification as either 2a agricultural land (tilled, pastured) or 2b rural vacant land (not used for agricultural purposes), it is the *land type* that determines the value applied. Land that is tilled, pastured, or vacant may still be high-quality tillable land and the assessor would apply the corresponding tillable value whether enrolled in Green Acres or Rural Preserve. Additionally, non-tillable land might be pastured or vacant, and the assessor would apply a non-tillable value for purposes of either Green Acres or Rural Preserve. In other words, the land is valued based on its *potential* use, while it is classified according to its current actual use.

Comparison of Other States

Discussion: Comparison of Other States

Minnesota's neighboring states rely more heavily on income data when determining taxable agricultural values; while Minnesota has relied more strongly on market data derived from sales of agricultural land. The State of **Iowa**, for example, uses productive and net earning capacity to determine agricultural land values. This value is formulated using an owner-operation net income capitalization method. The elements of this methodology include the five-year average of total farmland acres of corn, soybeans, oats, hay, tillable pasture, non-tillable pasture, and other acreage; government subsidies; average bushel prices for corn, soybeans, oats, and hay; yields; landlord expenses; etc. If soil surveys are available in any county, they are considered when determining the productive and net earning capacity of agricultural property. Soil maps and surveys used by Iowa account for slope, erosion, and soil ratings. The soil ratings are based on corn suitability ratings, which reflect numerous factors that may influence corn and soybean yield potential.

In **North Dakota**, agricultural value is based on capitalized average gross return, except for inundated agricultural land. For tillable properties, North Dakota also regards soil type, soil surveys, and soil classification data. The annual gross return for cropland is determined by income produced by sugar beets and potatoes, income from other crops, and a share of government payments. The soil type and soil productivity are assessed prior to applying modifiers if needed, and land use is then considered when determining the "true and full value" of agricultural land. Modifiers may be used in cases of inaccessibility, nonconformity, poor drainage, rocks, salinity, and other criteria. For non-tillable properties, gross income potential based on animal unit carrying capacity is used. Most of the data are from the National Agricultural Statistics Service (NASS), the Natural Resources and Conservation Service (NRCS), and the Farm Service Agency (FSA). For non-cropland, North Dakota regards annual gross returns and the carrying capacity of rangeland (in animal unit months per acre). In North Dakota, the Department of Agribusiness and Applied Economics at North Dakota State University is responsible for computing agricultural land values on a per-acre basis.

South Dakota bases agricultural land valuation on "productivity value" which is based on a product of gross revenues and the landlord share percentages, divided by the capitalization rate. Landlord share percentages are assumed 100% for non-cropland and 35% for cropland. Official estimates are based on surveys of farmers, ranchers, and agribusiness. The data are calculated on a per-acre basis. Each county has its own productivity value based on its number of acres. South Dakota State University calculates gross revenue per acre using USDA/NASS data to establish an 8-year Olympic average (in which the highest and lowest years are discarded). The gross revenue per acre is established by reviewing a variety of crops and their commodity prices. For non-cropland, cash rents determine the gross revenue. Soil types are accounted for in determining agricultural land values for counties; the productivity value is adjusted by a soil factor, as determined by the University of South Dakota. Individual parcels are evaluated by a soil survey. The South Dakota Director of Equalization reserves the right to make adjustments to ensure uniform and fair valuations for all agricultural land in the state's counties.

Wisconsin also defines a use value that is based on income that could be generated from the land (based on potential rental income). Crop-share leases and corn yield and price are primarily used to determine the average gross income per acre. Land grades are also considered when valuing agricultural properties. The categories of agricultural lands (e.g. first, second, and third grade tillable) are based on soil productivity in terms of corn yield. Wisconsin does not consider actual use of the property when it is agriculture, but potential use. Therefore, first grade tillable property that is used for pasture is not valued as pastureland, but as first grade tillable. The capitalization rate is determined by a survey of Federal Land Credit Associations and Agricultural Credit Associations. The Wisconsin Department of Revenue uses the interest rate for a 1-year adjustable rate mortgage (ARM) as of January 1st of the year prior to the assessment year, as well as the stock purchase requirement for a

medium-sized loan to determine a capitalization rate. The effective 1-year ARM rate is calculated by dividing that ARM rate by (1 – stock purchase requirement). The Capitalization Rate is 11% or the sum of the 5-year moving average rate for the year prior to the assessment year plus the net tax rate of that municipality for the property tax levy two years prior to the assessment year, whichever is greater.

More information related to the calculations used in these states is available in Appendix A of this report.

Changes in the Agricultural Economy

Discussion: Changes in the Agricultural Economy

There has been increased attention lately to the increasing prices of agricultural land – not just in Minnesota, but in the nation. Farm land values are related to farm profitability, with higher yields and high commodity prices producing higher farm income. Higher yields and strong commodity prices, combined with low interest rates, are the main reasons for the increase in land prices. As interest rates fall, land prices increase, with future income discounted at lower rates.

The economics of supply and demand drive the prices of commodities and the land on which they are produced. One of the biggest unknowns that impact the supply of corn, for example, is the weather. Extreme droughts in grain producing parts of the world have put strains on stockpiles of grain. The number of acres of farmland has been steadily decreasing for the past several decades. With the exception of land set aside in conservation programs, agricultural land is limited in supply. Because of tight supplies due to increased demand, unfavorable weather anywhere in the world can result in strong upward movements in price.

Demand for corn and corn product has also increased in recent years. As demand for corn soars, so too does the price of corn and land. High farm revenues can result and may be expected to cause an increase in the number of acres devoted to corn production, which in turn may increase inventories, thereby placing downward pressure on pricing. It is also possible that increasing corn and soybean prices have increased the incentive to grow cattle on grassland (unimproved pastureland). Thus, the factors leading to high prices for crops and cropland may indirectly affect the demand for pasture, as well as returns to pastureland and pasture values.¹

Other sources of demand that have driven up the price of farmland in the past include developers buying farmland for residential and business development purposes. Also, 1031 exchanges impacted farmland that is not physically close to urban centers, as sellers can defer capital gains taxes when they exchange high-priced property with significant capital gains for lower-priced property not impacted by urban pressures. Recreational demand also impacted farmland prices up until the start of the recession, with properties near urban centers being converted from farming to recreational uses. It has also been suggested that other commodity prices including livestock, and the sale of agricultural land in close proximity to an existing farm could lead to increases in sales prices.²

Since 2008, investors outside of agriculture have been buying farmland as an investment alternative. Because farmland will generate returns for many years into the future, the perceived income potential has an important impact on the price people are willing to pay. Investors look at, among other things, yields on 10-Year Treasury Notes, which reached a low of 3.2% in 2010, decreasing to just over 2% in December 2011, as a measure of the likely return of investing in risk free U.S. Securities.³

¹ Doy, Damona and B. Wade Brorson. "Pasture Land Values: A 'Green Acres' Effect?" Choices Magazine. Retrieved from: <http://www.choicesmagazine.org/choices-magazine/theme-articles/farmland-values/pasture-land-values-a-green-acres-effect>

² Steil, Mark. "Farmland prices near record rates." December 8, 2011. Retrieved from: <http://minnesota.publicradio.org/display/web/2011/12/08/farmland-price-rates/>

³ Schnitkey, Gary D. and Bruce J. Sherrick. "Income and Capitalization Rate Risk in Agricultural Real Estate Markets". Choices Magazine. Retrieved from: <http://www.choicesmagazine.org/choices-magazine/theme-articles/farmland-values/income-and-capitalization-rate-risk-in-agricultural-real-estate-markets>

The model that describes the relationship between farm land value, income (cash rent), and rate of return an investor would require to own this asset is shown below.

$$\text{Farm Land Value} = \frac{\text{Income}}{\text{Discount Rate} - \text{Growth Rate}}$$

On the supply side, the price of farmland largely depends upon the supply offered up for sale to the market. High demand is chasing a relatively low supply of good farmland for sale. Sellers are holding onto land in hopes of receiving good returns in the form of increased rents. When farmland is offered for sale, it is typically available at an auction sale to the highest bidder. Auctions are generally more common during periods of high demand and low availability of land. In auctions of farmland today, it is not uncommon for the bidders to be farmers looking to increase their land holdings, as well as investors that may be placing their bids from other parts of the country and not even having seen the property they are bidding on. During an informal discussion, a farmer who recently purchased land at an auction stated that others who show up at auctions and have determined what they would be willing to pay often let their emotions take over and end up paying more for land than they wanted to because they consider the sale a “once in a lifetime” opportunity, and that this land may never come for sale again in their lifetime.

The main risk to farmland prices is a drop in crop prices and an increase in interest rates. Other factors that could cause the value of farm land to decrease are increased productivity from around the world, and changes in renewable energy policy. Brazil is increasing its production of ethanol and plans on exporting to the United States. Increases in supply would tend to place downward pressure on prices.

Alternative Methods for Valuing Class 2a Agricultural Lands for Green Acres

Discussion: Alternative Methods for Valuing 2a Agricultural Lands for Green Acres

Two types of land are potentially enrolled in Green Acres. Each land type may have a different value for purposes of Green Acres:

- Tillable land (land that may be tilled for row crops, whether actively tilled or whether pastured).
- Non-tillable land (land that is not tillable, but is used for agricultural purposes such as pasture).

Land that is not used for agricultural purposes is not eligible for enrollment in Green Acres.

Items & Data Reviewed:

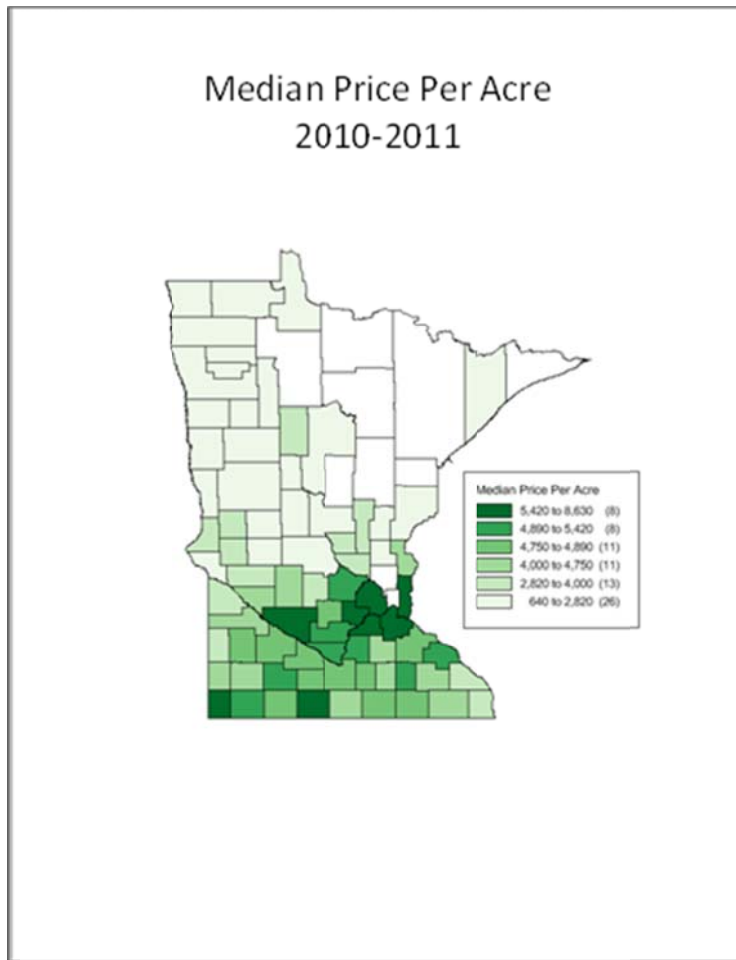
In order to compare the various methods for valuing farmland property, the group began by reviewing the **current methodology** and what agricultural values this would result in for Green Acres purposes. Farmland prices continued their upward trend in 2011, with the highest sale being recorded in Rock County at \$8,725 per acre as of September 30, 2011.

The following chart shows agricultural sales trends in Minnesota based on the Department of Revenue's analysis. The sales in the southwest "base" counties help to establish the Green Acres "base" value as an indicator of the agricultural land economy, as the sales are relatively represent purer agricultural sales (i.e., they are unlikely to be affected by non-agricultural influences such as residential or recreational development).

Agricultural Land Sales Trends 2006-2011
Median sale price per acre and number of sales
Bare land, 34.5+ acres, at least 75% tilled

		Oct. 2006- Sept. 2007	Oct. 2007- Sept. 2008	Oct. 2008- Sept. 2009	Oct. 2009- Sept. 2010	Oct. 2010- Sept. 2011
SW Base Counties	<i>Median Price Per Acre</i>	\$3,000	\$3,985	\$4,287	\$4,289	\$5,201
	<i># of Sales</i>	137	155	122	80	111
Rest of State	<i>Median Price Per Acre</i>	\$2,638	\$3,196	\$3,661	\$3,491	\$3,950
	<i># of Sales</i>	1,136	1,262	688	686	1162
Statewide	<i>Median Price Per Acre</i>	\$2,724	\$3,333	\$3,802	\$3,670	\$4,105
	<i># of Sales</i>	1,273	1,417	810	766	1,273

The following map provides a county-level overview of these median sales prices per acre (based on sales of bare land of 34.5 acres or more, at least 75% of which is tillable) for the 2010-2011 sales study period. As with the table above, these statewide sales may be affected by non-agricultural influences.



Sharply increasing land prices are not unique to Minnesota. The Chicago and Kansas City Federal Reserve Banks have reported that farmland across the Midwest has increased substantially between 2010 and 2011. There are reports that Nebraska farmland rose nearly 40% year-over-year from 2010⁴, and that Iowa farmland was up 31%⁵. Minnesota led the Ninth Federal Reserve District with irrigated, non-irrigated, and ranchland values increasing by 25% between 2010 and 2011 according to a Minneapolis Federal Reserve Bank survey⁶. The Seventh, Ninth, and Tenth districts all reported average farmland value increases of 25%. The US Agriculture Department also estimated that net cash income for 2011 for farmers would increase by 18.9%.⁷

As part of the exploration of alternative methods, the Minnesota **Crop Productivity Index** (which is available for all soils and locations at Minnesota Land Economics: <http://landeconomics.umn.edu>) was reviewed. The Crop Productivity Index (CPI) provides a relative ranking of soils based on their potential for intensive row crop production. An index can be used to rate the potential yield of one soil against that of another over a period of

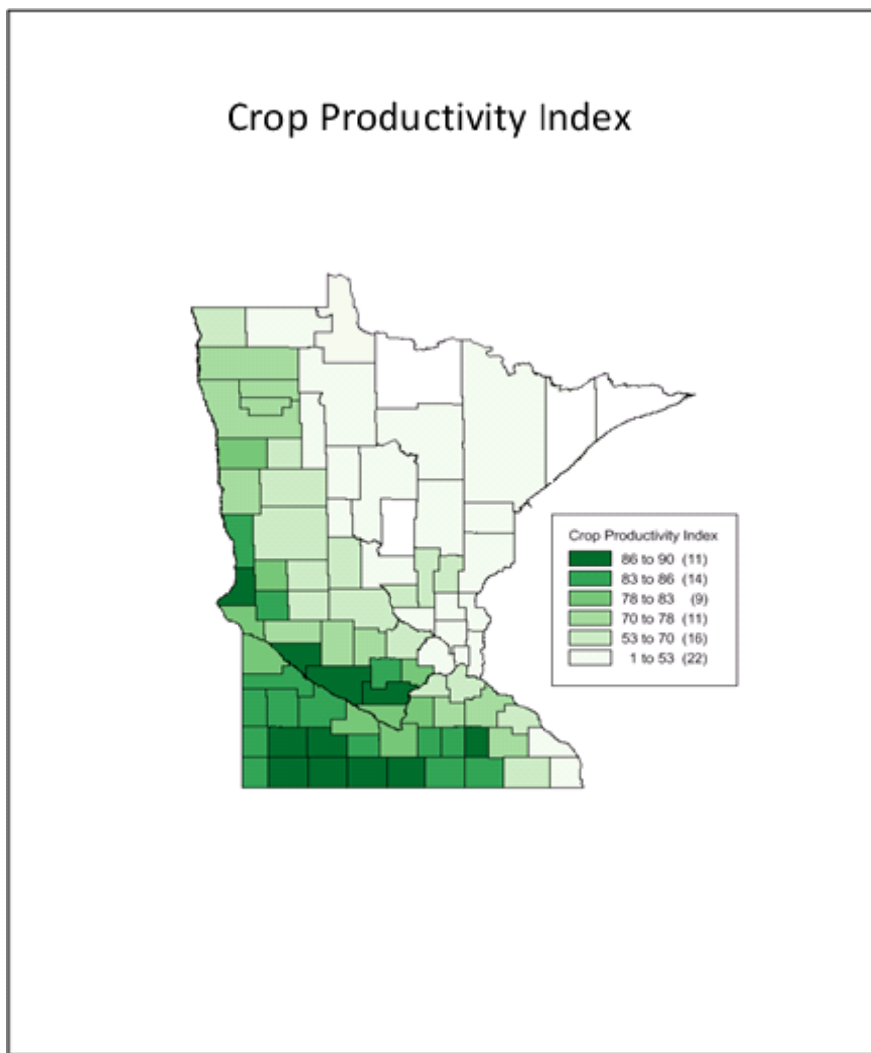
⁴ Federal Reserve Bank of Kansas City. Survey of Tenth District Agricultural Credit Conditions, Third quarter, 2011. Retrieved from: <http://www.kansascityfed.org/publicat/research/indicatorsdata/agcredit/AGCR3Q11.pdf>

⁵ Federal Reserve Bank of Chicago. The Agricultural Newsletter, Number 1954. November 2011. Retrieved from: http://www.chicagofed.org/digital_assets/publications/agletter/2010_2014/november_2011.pdf

⁶ Federal Reserve Bank of Minneapolis. Agricultural Credit Conditions Survey. September 2011. Retrieved from: http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=4741

⁷ Steil, Mark. "Farmland prices near record rates." December 8, 2011. Retrieved from: <http://minnesota.publicradio.org/display/web/2011/12/08/farmland-price-rates/>

time. Ratings range from 0 to 100. The higher numbers indicate higher production potential. In Minnesota, all but four counties (Cook, Crow Wing, Koochiching, and Lake) have CPI ratings. The following map illustrates climate-adjusted CPI ratings by county. The higher ratings are shown in the southwestern and western portions of the state.



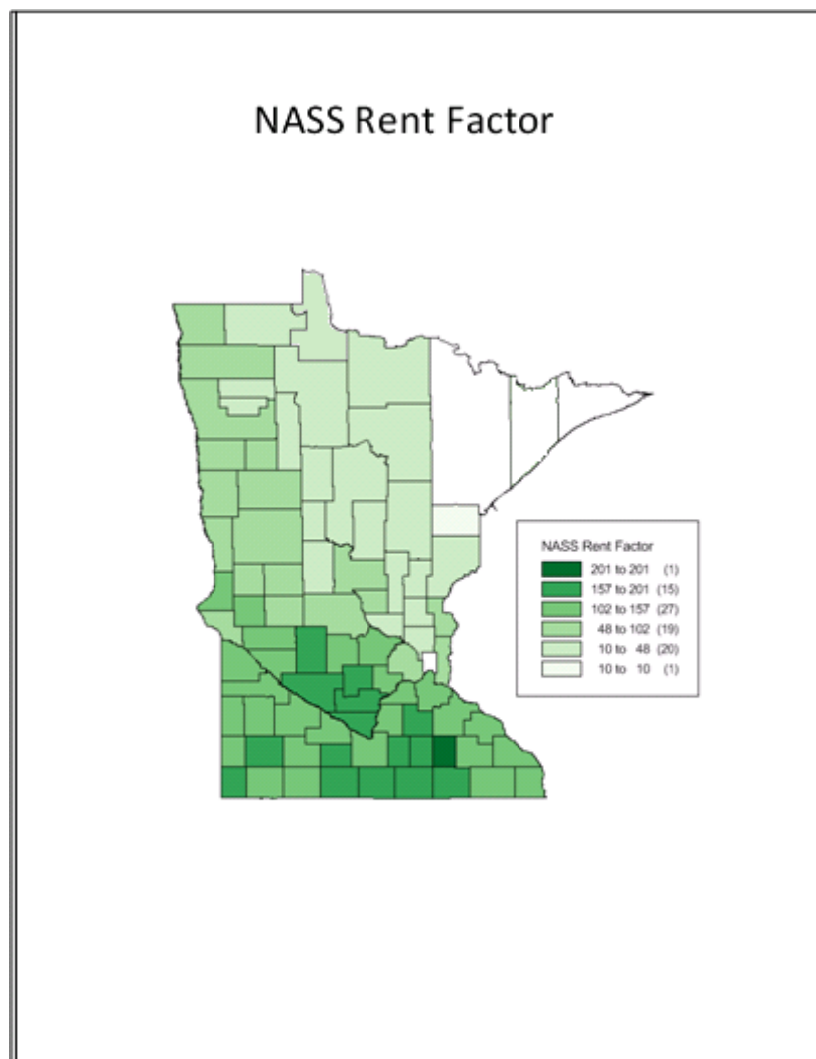
The ratings are based on physical and chemical properties of the soils and on such hazards as flooding or ponding. Available water capacity, reaction (pH), slope, soil moisture status, cation-exchange capacity (CEC), organic matter content, salinity, and surface fragments are the major properties evaluated when CPI ratings are generated. The soil properties selected are those that are important for the production of corn.

Published CPI ratings do not take into account climatic factors, such as the differences in precipitation or growing degree days across Minnesota. Consequently, the non-location weighted CPI values published on Minnesota Land Economics and on the USDA Web Soil Survey should not be compared across the entire span of the state. In other words, it may be helpful to compare county borders, but not to compare counties in different areas of the state. The highest CPI ratings do occur in the state's more agricultural counties in the west and southwest.

The CPI reflects productivity, which in turn affects agricultural land values. The CPI, along with other physical and locational factors, can be used in statistical models that estimate land values with a reasonable degree of consistency. These models function only as well as they reflect the underlying motivations for buyers and sellers

reaching an agreed-upon sale price for a particular piece of land. That said, the models do result in transparent and consistent estimates of land value. The group in its exploration reviewed the published CPI ratings as well as climate-adjusted CPI ratings.

The group also reviewed **income and cash rent** information, primarily from the National Agricultural Statistics Service (NASS) of the U.S. Department of Agriculture. The NASS county-level rental value series is generated for almost all counties in Minnesota. It is not based upon actual rent data; rather, it is a distillation of the judgment of a relative handful of local officials, smoothed by the USDA to be somewhat consistent with other data series, such as the agricultural census. Another Minnesota cropland rental study comes from the University’s Center for Farm Financial Management. It is based upon actual farm records. The disadvantage of the latter study is that data is strong only for about half of the state’s counties. A challenge with using cash rent information is that it is difficult to know what motivates these prices, nor is all of the necessary information to make determinations of value from rental data available. The following map is a county-level illustration of this NASS rental information. The rents are shown as estimates of dollars per acre. Higher rents are apparent in the southern part of the state.



The group also reviewed a preliminary analysis of agricultural values conducted by Steven J. Taff, Department of Applied Economics at the University of Minnesota in December 2011. It is based upon actual sales from 2003 onward, with preliminary 2011 data provided by the Department of Revenue.

The procedure involved regressing observed land sales per-acre prices on the property's productivity (CPI), location, and several variables (known at the township level) that reflected development pressure, amenity values, and other factors. The core of the approach is to estimate full equations involving all variables, which are then used to calculate land values with and without "non-agricultural" variables set to zero. The result is a ratio of what the property is "worth" for agricultural purposes alone—a hypothetical value—to the value of the property in the open market.

The analysis is intended to be a "proof of concept"; Professor Taff suggested that no decisions or formula should be based upon its findings at this stage.

Of all the data reviewed and analyzed, there was not clearly a methodology which would yield "truer" agricultural land prices. As noted, there were concerns with the reliability of data available for other methods of deriving agricultural land values. Based on the current methodology, the Green Acres values used often fell between the values based on the other data reviewed. The group noted that some counties may need minor adjustments to their factors so that their Green Acres values were more indicative of that county's agricultural land economy. The group believes that there would be benefits to meeting again to further explore some of the ideas that were discussed, and to see if future improvements could be identified. A table of the data reviewed and the results is included in the appendix of this report.

Alternative Methods for Valuing Class 2b Rural Vacant Lands for Rural Preserve

Discussion: Alternative Methods of Valuing 2b Rural Vacant Lands for Rural Preserve

Land that is used for agricultural purposes is not eligible for enrollment in Rural Preserve. Three types of land are potentially enrolled in Rural Preserve. Each land type may have a different value for purposes of Rural Preserve:

- Tillable land (land that may be tilled for row crops, but is not tilled or pastured).
- Non-tillable land (land that is not tillable and is not used for agricultural purposes).
- Unusable wasteland (land that is not usable for agricultural purposes including tilling or pasturing).

The group determined that Green Acres and Rural Preserve properties should be valued using the aforementioned criteria: tillable, non-tillable, and unusable wasteland values will be used for either Green Acres or Rural Preserve. The land is to be valued based on its potential use. This method maintains the symbiotic relationship between the programs, and makes the programs more transparent and understandable to property owners. Keeping the values related also allows properties to continue to be valued based on land type, rather than uses. The use of the property will drive its classification and special program eligibility.

The group did not identify a better alternative for valuing unusable wasteland, either. There is scant data available with which to analyze an agricultural value for wasteland. Most often, wasteland carries so little value and is uninfluenced by non-agricultural pressures since it cannot be developed for residential or commercial purposes. There are few cases where wasteland would require a separate, lower value than its estimated market value. In those cases where a separate value is necessary, perhaps due to recreational influences, 50% of the lower, non-tillable value seems appropriate.

Valuation Going Forward

Discussion: Valuation Going Forward

Based on the data reviewed, the current method seems to most accurately reflect the agricultural markets of the state's 87 counties. There may need to be continued review and possible modifications, but overall the method that has been used holds up very well. The Department of Revenue will also allow appeal options for County Assessors who believe the Green Acres value given to them is not necessarily indicative of their counties' true agricultural land markets.

For either 2a lands in Green Acres or 2b lands in Rural Preserve, the Department of Revenue would use the three values developed for tillable, non-tillable, and unusable waste as previously described with potential modifiers based on additional data related to CPI, crop yields, or other factors that may be applicable. As other states base valuation on land type rather than land use, this methodology will be consistent and transparent for property owners.

Under the current methodology, for the 2012 assessment year, the values were based on a median agricultural land value in the base counties of \$5,200 per acre. This value is multiplied by each county's factor to determine the value to be used for Green Acres or Rural Preserve purposes in those counties. The value is applicable to tillable lands. The range of values per acre for tillable lands is \$1,040 to \$6,760. Assessors may appeal their factors if they believe the relationship to the agricultural market has changed or is not accurately reflected by the factor.

In some areas of the state, the increases in agricultural land values may cause farm properties to take on a greater burden of the local tax share, while commercial and residential properties bear less of an increased burden comparatively (assuming commercial and relative markets stagnate or decrease).⁸

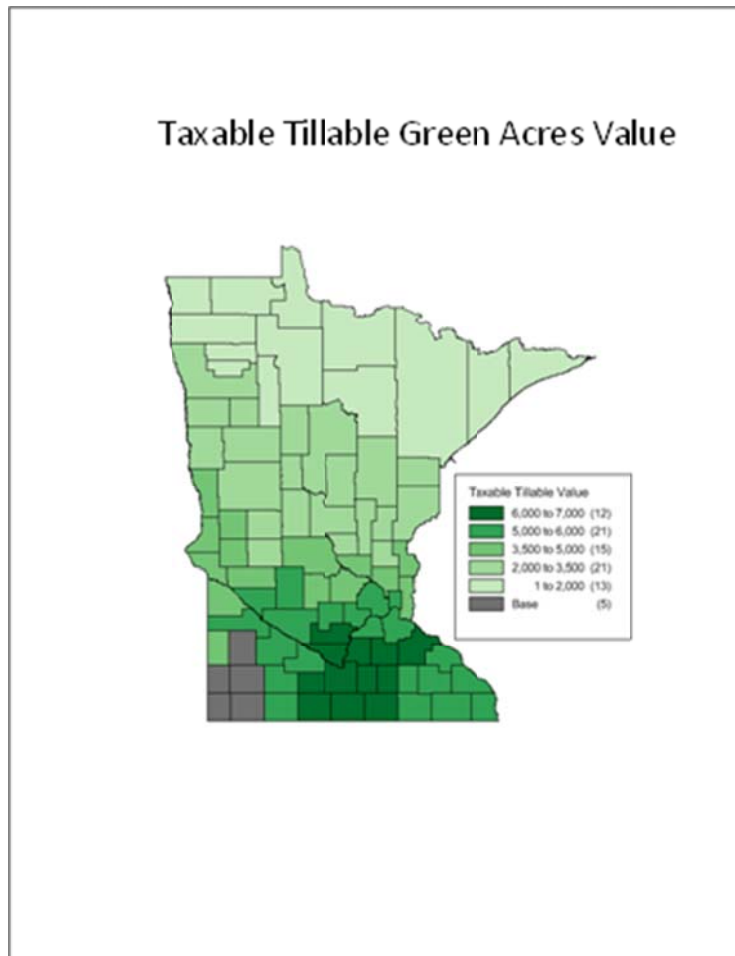
The values for the non-tillable lands are a range of \$936 to \$2,704 per acre for 2012. Assessors may appeal these values if they believe the values do not accurately reflect the non-tillable land values. For unusable wasteland, the county uses 50% of its non-tillable land value if the wasteland is affected by non-agricultural forces (e.g. recreational uses).

The Department of Revenue will continue to analyze the agricultural markets of each of the state's 87 counties in an ongoing effort to review whether the counties' factors should be changed or altered. Assessors are also eligible to provide new data on the 1990-1996 sales if they believe that some of the sales included are not representative samples for these purposes.

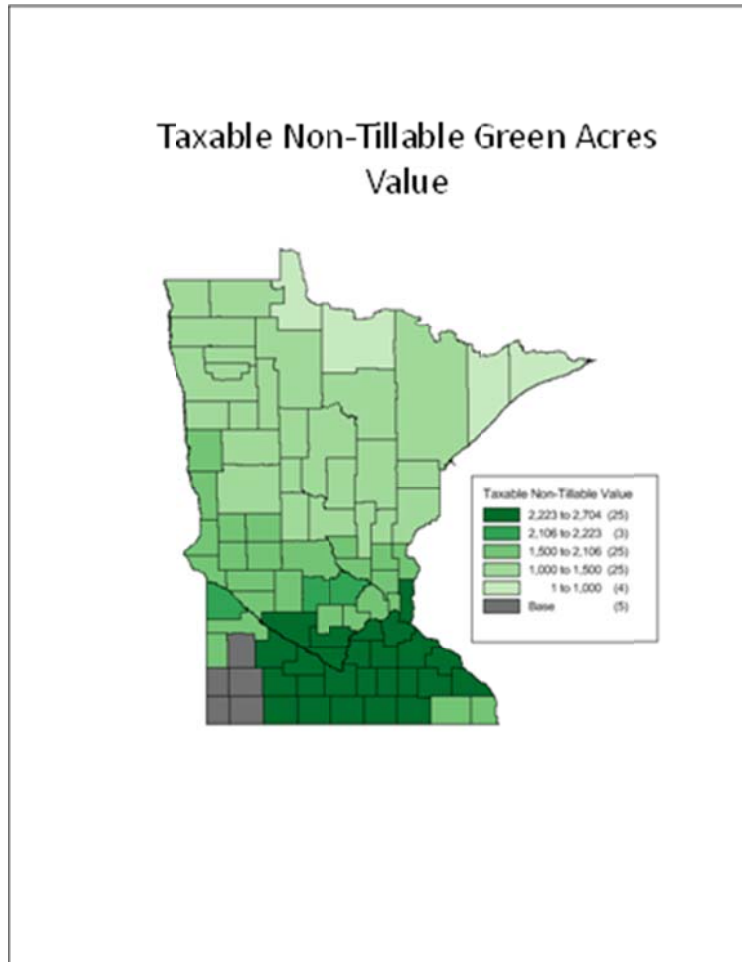
Maps of the tillable and non-tillable taxable values as they are used for Green Acres and Rural Preserve purposes are shown on the following pages.

⁸ Steil, Mark. "Farmland prices near record rates." December 8, 2011. Retrieved from: <http://minnesota.publicradio.org/display/web/2011/12/08/farmland-price-rates/>

Values to be used for tillable properties enrolled in Green Acres or Rural Preserve for a given county are the product of the county's factor and the base county tillable value, which is \$5,200 for the 2012 assessment for taxes payable in 2013. Higher taxable values are shown in the southern portion of the state, while lower taxable values are shown in the northeastern part of the state.



Values to be used for non-tillable properties enrolled in Green Acres or Rural Preserve do not vary as widely as the values used for tillable properties. The range in taxable values for non-tillable agricultural properties enrolled in Green Acres or Rural Preserve is from \$936 per acre to \$2,704 per acre (compared to the range for tillable properties, which is from \$1,040 per acre to \$6,760 per acre). The non-tillable values are closer to the tillable values in the north half of the state.



Appendix

Appendix A: Land Value Calculations in Neighboring States

Iowa

"Agricultural Real Property is assessed by law according to its Productive Use Value." This value is formulated using an owner-operation net income capitalization method. The ingredients in this methodology are as follows:

1. $5yrAvg_{TFA}$ = five-year average of total farmland acres of corn, soybeans, oats, gov't payments, hay, tillable pasture, non-tillable pasture and other acreage.
2. $5yrAvg_{CSOH}$ = 5 year average of corn, soybeans, oats and hay.
3. $\frac{5yrAvg_{CSOH}}{5yrAvg_{TFA}}$ = Yields for corn, soybeans, oats and hay: $Yield_{CSOH}$
4. P_{CSO} = 5-year average of per bushel prices for corn, soybeans and oats.
 P_H = 5 year average of statewide price per ton received for hay.
5. $Y_{landlord}$ = Sum of the 5-year average of landlord income for CSOH, gov't payments, tillable and non-tillable pasture. Income for a given year is the product of Prices and Yields for given factors.
6. $K_{landlord}$ = Total landlord expenses, the sum of landlord expenses, fertilizer cost adjustment, and liability insurance. Total operating expenses are the 5-year average expense for growing CSOH, gov't programs, tillable and non-tillable pasture.
7. $Y_{landlord} - K_{landlord} = TotalNetY_{landlord}$
8. $\frac{TotalNetY_{landlord}}{TotalAcres_{TFA}} = NetY_{peracre}^{landlord}$
9. $NetY_{peracre}^{landlord} \cdot 0.17 \cdot TotalAcres_{other} = TotalNetY_{perother}^{landlord}$
10. $NetY_{peracre}^{landlord} \cdot (1 - .106) = AdjNetY_{peracre}^{landlord}$
11. $AdjNetY_{peracre}^{landlord} - 5yrAvgTaxes_{peracre}^{realestate} = NetYAfTax_{peracre}^{landlord}$
12. $UseValueFarmland_t = \frac{5yrAvgNetYAfTax_{peracre}^{landlord}}{Capitalization_t}$

In 1995, the Capitalization rate was 7%

North Dakota

In North Dakota, agricultural value is based on capitalized average gross return, except for inundated agricultural land. For tillable properties, North Dakota also regards soil type, soil surveys, and soil classification data.

1. $10\text{yrAvg}_{\text{acres}}$ = Obtain the 10 year average of acres for different land types for each county, drop the highest and the lowest years
2. $10\text{yrAvg}_{\text{AGRC}}$ & $10\text{yrAvg}_{\text{AGRNC}}$ = Obtain 10 year average of annual gross returns for cropland and non-cropland. Total cropland revenue is $\Sigma(\text{gross revenue from cropland, government payments, CRP payments})$. (Gross revenue from cropland) $\text{AGRC} = (P_{\text{commodity}} \cdot Q_{\text{commodity}})$, where $Q_{\text{commodity}} = (\text{Acres Harvested} \cdot \text{Yield per Acres Harvested})$.
Gross return from non-cropland) $\text{AGRNC} = \text{Carry Capacity} \cdot \text{Value}_{\text{beef}}$. Carrying Capacity of Rangeland = 0.55 Animal Unit Month (AUM) per acre, Pasture = 0.6 AUM. Carrying Capacity is multiplied by acres of the different types of land in each county to calculate the "Carrying Capacity" of beef used in the GRCN formula.
3. Landowner Share of Gross Returns Agricultural Land ($\text{LSGR}_{\text{agland}}$) = $(0.3 \cdot \text{AGRC}) + (0.25 \cdot \text{AGRNC})$. $(0.3 \cdot \text{AGRC}) = \text{LSGR}_{\text{crop}}$, $(0.25 \cdot \text{AGRNC}) = \text{LSGR}_{\text{noncrop}}$.
4. $\frac{\text{LSGR}}{\text{CPI}}$ For each type of land = Adjusted LSGR. CPI = Cost of Production Index.
5. $\text{LSGR}_{\text{peracre}} = \frac{\text{AdjLSGR}}{\text{AvgAcres}}$ where AvgAcres is designated by type of acres to each type of land (AAL, average acres to land)
6. $\frac{\text{LSGR}_{\text{peracre}}}{r}$ = Use Value Per Acre. Interest rate "r" is specified by the ND State Legislature, and referred to as variable **DR**. Minimum of 9.5 in 2003, 8.3 in 2005.
7. $\text{UVPA} \cdot \text{TotalAcres}_{\text{county}}$ = Reported Total Values (RALC) for cropland, RALNC for non-cropland.
8. $(\text{RALC} + \text{RALNC}) \frac{(\text{RALC} + \text{RALNC})}{\text{TotalAgAcres}}$ = Average Use Value of Ag Land (AUV), calculated by county.

Or:

$$\text{AUV} = \frac{\left[\frac{\{ \text{AGRC} * 0.3 + \text{AGRNC} * 0.25 \}}{\text{CPI}} \right]}{\text{AAL}} * \text{RAL} \quad \text{DR}$$

South Dakota

Productivity Value Formula: Data from USDA/NASS. Official estimates based on surveys of farmers, ranchers and agribusiness. Data is calculated on a per-acre basis. Each county will have its own Productivity Value based on its number of acres.

$$ProductivityValue = \frac{(Gross\ Revenue \cdot Landlord\ Share\ \%)}{Capitalization\ Rate}$$

1. $GrossRevenue_{cropland}$ = 8-year Olympic average of yields and commodity prices
2. $GrossRevenue_{noncrop}$ = 8-year Olympic average of cash rents
3. Landlord Share % = 35% for Cropland, 100% for non-cropland. Established by Statute.
4. Capitalization Rate = 6.6%. Established by Statute

Olympic Average: Low and High years are thrown out; remaining 6 years (of an 8-year study) are averaged. Each year the newest year of data is added and the oldest is discarded.

5. $AdjPValue = ProductivityValue \cdot SoilFactor$
6. $TotalPValue = \sum (AdjPValue_{soiltype} \cdot TotalAcres_{soiltype})$

Productivity Value is adjusted by a soil factor, determined by the University of South Dakota. Parcels are evaluated by a soil survey.

The South Dakota Director of Equalization reserves the right to make adjustments to ensure uniform and fair valuations for all agricultural land in the counties.

Wisconsin

Value based on land's ability to produce farm income.

Use Value = Net Rental Income per acre/Localized capitalization rate

$$UseValue_{peracre} = \frac{NetRentalIncome_{peracre}}{CapitalizationRate_{local}}$$

1. $AvgGrossIncome_{pA} = (5YearAvgCornYield_{pA} \cdot ProductivityFactor) \cdot 5YearAvgCornPrice$
2. $AvgGrossIncome_{pA} \cdot 0.50 =$ Crop-share lease. This number is used as the Average Gross Income per acre.
3. $AvgTotalCost_{pA} = (5YearAvgCornYield_{pA} \cdot ProductivityFactor) \cdot 5YearAvgCornCost$
4. $AvgTotalCost_{pA} \cdot 0.50 =$ Adjusted for Crop-Share Lease. Ingredients for the cost calculation are determined by statute.
5. $NetRentalIncome_{pA} = AvgGrossIncome_{pA} - AvgTotalCost_{pA}$
6. $CapitalizationRate_{local} = 11\%$ or $[(\sum 5YearAvgARM) + PropertyTaxRate]$, whichever is larger

Capitalization rate is determined by survey of Federal Land Credit Associations and Agricultural Credit Associations. WDOR uses the interest rate for a 1-year adjustable rate mortgage as of January 1st of the year prior to the assessment year, as well as the stock purchase requirement for a medium-sized loan. The effective 1-year ARM rate is calculated by dividing that ARM rate by (1 – stock purchase requirement). The Capitalization Rate is 11% or the sum of the 5-year moving average rate for the year prior to the assessment year plus the net tax rate of that municipality for the property tax levy 2 years prior to the assessment year, whichever is greater.

Appendix B: Table of Factors Reviewed

County	2010-11 Median Sales Price Per Acre	Climate- Adjusted CPI	NASS Rental – Est. \$/acre	Green Acres Factor	Taxable Tillable Value	Taxable Non- Tillable Value
Aitkin		23	21	40%	\$ 2,080	\$ 1,248
Anoka		31	42	80%	\$ 4,160	\$ 2,080
Becker	\$ 1,967	31	59	50%	\$ 2,600	\$ 1,430
Beltrami		20	32	25%	\$ 1,300	\$ 1,040
Benton	\$ 3,250	46	50	60%	\$ 3,120	\$ 1,716
Big Stone	\$ 2,792	53	94	70%	\$ 3,640	\$ 1,820
Blue Earth	\$ 4,864	77	155	130%	\$ 6,760	\$ 2,704
Brown	\$ 4,750	70	148	115%	\$ 5,980	\$ 2,392
Carlton		24	10	40%	\$ 2,080	\$ 1,248
Carver	\$ 5,505	71	138	100%	\$ 5,200	\$ 2,080
Cass	\$ 1,488	27	17	40%	\$ 2,080	\$ 1,248
Chippewa	\$ 4,224	72	151	100%	\$ 5,200	\$ 2,080
Chisago	\$ 4,738	41	49	75%	\$ 3,900	\$ 1,950
Clay	\$ 2,407	47	90	60%	\$ 3,120	\$ 1,716
Clearwater	\$ 933	28	26	30%	\$ 1,560	\$ 1,092
Cook		0		20%	\$ 1,040	\$ 936
Cottonwood	\$ 4,951	73	146	110%	\$ 5,720	\$ 2,288
Crow Wing		0	17	40%	\$ 2,080	\$ 1,248
Dakota	\$ 6,101	56	126	110%	\$ 5,720	\$ 2,288
Dodge	\$ 4,997	80	201	110%	\$ 5,720	\$ 2,288
Douglas	\$ 2,500	46	75	60%	\$ 3,120	\$ 1,716
Faribault	\$ 4,662	87	164	120%	\$ 6,240	\$ 2,496
Fillmore	\$ 4,135	65	141	100%	\$ 5,200	\$ 2,080
Freeborn	\$ 4,803	81	169	120%	\$ 6,240	\$ 2,496
Goodhue	\$ 4,886	69	154	120%	\$ 6,240	\$ 2,496
Grant	\$ 3,000	53	98	70%	\$ 3,640	\$ 1,820
Hennepin	\$ 5,748	46	83	100%	\$ 5,200	\$ 2,080
Houston	\$ 2,892	44	128	100%	\$ 5,200	\$ 2,080
Hubbard	\$ 3,000	23	19	40%	\$ 2,080	\$ 1,248
Isanti	\$ 2,571	33	42	65%	\$ 3,380	\$ 1,690
Itasca		25	20	30%	\$ 1,560	\$ 1,092
Jackson	\$ 4,793	74	155	110%	\$ 5,720	\$ 2,288
Kanabec	\$ 1,805	42	32	50%	\$ 2,600	\$ 1,430
Kandiyohi	\$ 4,512	65	164	100%	\$ 5,200	\$ 2,080
Kittson	\$ 1,181	28	62	30%	\$ 1,560	\$ 1,092
Koochiching		0	24	20%	\$ 1,040	\$ 936
Lac qui Parle	\$ 3,165	65	125	90%	\$ 4,680	\$ 2,106

County	2010-11 Median Sales Price Per Acre	Climate- Adjusted CPI	NASS Rental – Est. \$/acre	Green Acres Factor	Taxable Tillable Value	Taxable Non- Tillable Value
Lake of the Woods	\$ 1,081	13	23	20%	\$ 1,040	\$ 936
Lake	\$ 838	0		20%	\$ 1,040	\$ 936
Le Sueur	\$ 5,022	71	154	130%	\$ 6,760	\$ 2,704
Lincoln	\$ 3,050	60	132	70%	\$ 3,640	\$ 1,820
Lyon	\$ 4,855	67	146	NA	Base	Base
McLeod	\$ 4,804	67	164	100%	\$ 5,200	\$ 2,080
Mahnomen	\$ 1,743	41	66	40%	\$ 2,080	\$ 1,248
Marshall	\$ 1,208	37	62	30%	\$ 1,560	\$ 1,092
Martin	\$ 5,500	83	172	120%	\$ 6,240	\$ 2,496
Meeker	\$ 3,750	60	128	90%	\$ 4,680	\$ 2,106
Mille Lacs	\$ 3,078	39	47	50%	\$ 2,600	\$ 1,430
Morrison	\$ 2,719	36	49	50%	\$ 2,600	\$ 1,430
Mower	\$ 4,795	80	184	110%	\$ 5,720	\$ 2,288
Murray	\$ 4,208	63	158	NA	Base	Base
Nicollet	\$ 5,400	68	160	130%	\$ 6,760	\$ 2,704
Nobles	\$ 4,988	74	148	NA	Base	Base
Norman	\$ 2,096	49	73	50%	\$ 2,600	\$ 1,430
Olmsted	\$ 4,186	67	151	110%	\$ 5,720	\$ 2,288
Otter Tail	\$ 1,750	35	77	50%	\$ 2,600	\$ 1,430
Pennington	\$ 918	40	43	25%	\$ 1,300	\$ 1,040
Pine	\$ 1,659	1	24	50%	\$ 2,600	\$ 1,430
Pipestone	\$ 4,000	62	136	NA	Base	Base
Polk	\$ 1,917	44	72	50%	\$ 2,600	\$ 1,430
Pope	\$ 2,703	49	85	60%	\$ 3,120	\$ 1,716
Ramsey		17		100%	\$ 5,200	\$ 2,080
Red Lake	\$ 850	41	44	25%	\$ 1,300	\$ 1,040
Redwood	\$ 4,750	70	156	110%	\$ 5,720	\$ 2,288
Renville	\$ 5,421	72	163	115%	\$ 5,980	\$ 2,392
Rice	\$ 4,637	69	160	120%	\$ 6,240	\$ 2,496
Rock	\$ 5,692	72	172	NA	Base	Base
Roseau	\$ 644	24	35	25%	\$ 1,300	\$ 1,040
St. Louis		12		30%	\$ 1,560	\$ 1,092
Scott	\$ 6,250	62	150	110%	\$ 5,720	\$ 2,288
Sherburne	\$ 3,512	28	43	75%	\$ 3,900	\$ 1,950
Sibley	\$ 5,000	70	168	120%	\$ 6,240	\$ 2,496
Stearns	\$ 2,819	50	100	70%	\$ 3,640	\$ 1,820
Steele	\$ 4,670	78	169	120%	\$ 6,240	\$ 2,496
Stevens	\$ 3,510	63	103	80%	\$ 4,160	\$ 2,080
Swift	\$ 3,706	62	126	80%	\$ 4,160	\$ 2,080
Todd	\$ 1,792	37	44	50%	\$ 2,600	\$ 1,430

County	2010-11 Median Sales Price Per Acre	Climate- Adjusted CPI	NASS Rental – Est. \$/acre	Green Acres Factor	Taxable Tillable Value	Taxable Non- Tillable Value
Traverse	\$ 3,558	59	102	75%	\$ 3,900	\$ 1,950
Wabasha	\$ 4,898	58	151	110%	\$ 5,720	\$ 2,288
Wadena	\$ 1,750	25	27	40%	\$ 2,080	\$ 1,248
Waseca	\$ 4,792	78	157	130%	\$ 6,760	\$ 2,704
Washington	\$ 8,625	48	81	95%	\$ 4,940	\$ 2,223
Watonwan	\$ 4,750	73	166	120%	\$ 6,240	\$ 2,496
Wilkin	\$ 2,577	55	94	75%	\$ 3,900	\$ 1,950
Winona	\$ 3,078	48	147	110%	\$ 5,720	\$ 2,288
Wright	\$ 5,011	57	111	90%	\$ 4,680	\$ 2,106
Yellow Medicine	\$ 4,183	69	148	100%	\$ 5,200	\$ 2,080