

UNIVERSITY OF MINNESOTA MORRIS

Center for Small Towns



*“BELIEVING IN A BRIGHT, PROSPEROUS
FUTURE FOR SMALL COMMUNITIES.”*

**Western Minnesota Home Values:
Analysis of Change, 2000-2005**

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Center for Small Towns

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TABLE OF CONTENTS

Introduction.....	3
Methodology.....	3
Findings.....	5

LIST OF TABLES

Table 1: Selected population characteristics by county.....	5
Table 2: Selected housing characteristics by county, 2000.....	6
Table 3: Number of valid study parcels by county.....	6
Table 4: Median Property Value, 2000 - 2005.....	7
Table 5: Median Land, Structure, and Property Values by County Typology.....	11
Table 6: Median Land Value 2000-2005 by 2000 Decile (n=47,176).....	12
Table 7: Median Structure Value 2000-2005 by 2000 Decile (n=47,176).....	12
Table 8: Median Property Value 2000-2005 by 2000 Decile (n=47,176).....	13
Table 9: Median Percent Change in Land Value by Year 2000 Decile by County.....	14
Table 10: Median Percent Change in Structure Value by Year 2000 Decile by County.....	14
Table 11: Median Percent Change in Property Value by Year 2000 Decile by County.....	15

LIST OF FIGURES

Figure 1: Change in Median Home Value, 2000 - 2005.....	7
Figure 2: Distribution of Land Values, 2000 and 2005.....	8
Figure 3: Distribution of Land Values, 2000 and 2005 (close-up).....	8
Figure 4: Distribution of Structure Values, 2000 and 2005.....	9
Figure 5: Distribution of Structure Values, 2000 and 2005 (close-up).....	10
Figure 6: Distribution of Property Values, 2000 and 2005.....	10
Figure 7: Distribution of Property Values, 2000 and 2005 (close-up).....	11
Figure 8: Percent Change in Land, Structure and Property Values, 2000-05.....	13

Introduction

With funding support from The Annie E. Casey Foundation, West Central Initiative (WCI) began working in rural western Minnesota in 2004 on a Family Economic Success framework. This approach strives to help low-income working families build strong financial futures. West Central Initiative (WCI), based in Fergus Falls, began to convene groups in three areas around this issue: Earn It, Keep It, and Grow It. This study of home values arose from the Grow It group in the need to develop a baseline of valid data from which to provide measures of progress. Are the low-income households able to maintain, and grow, the value of their home? This was the general question that led to this study.

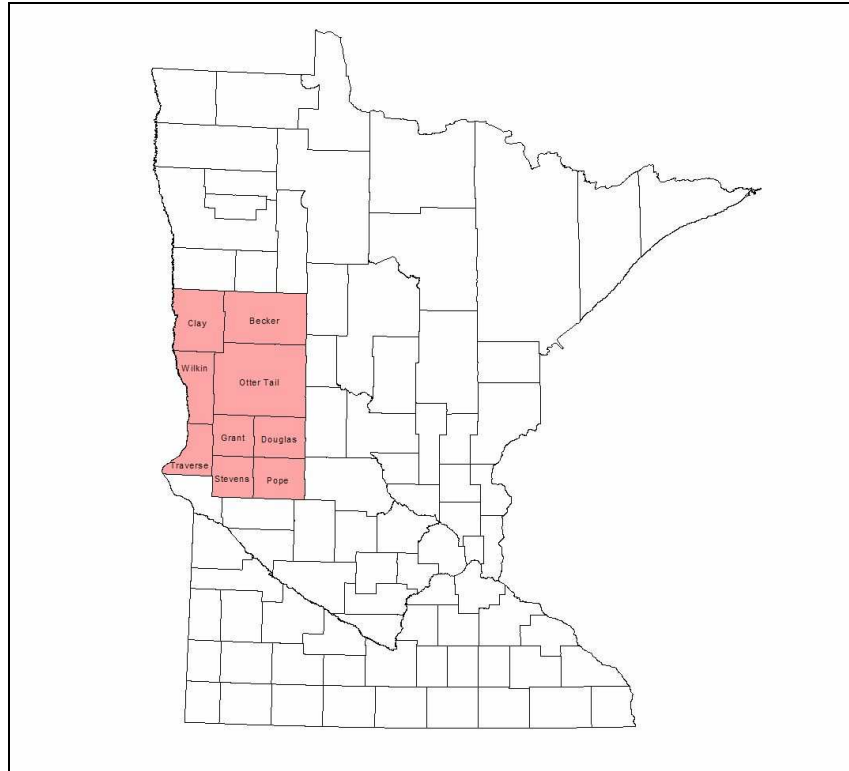
In 2006, the Center for Small Towns (CST) based at the University of Minnesota, Morris was engaged to provide this baseline analysis. The Center for Small Towns is a community outreach program housed at the University of Minnesota, Morris (UMM) and serves as a point-of-entry to the resources of the University of Minnesota. Small towns, local units of government, K-12 schools, non-profit organizations, and other University units are able to utilize the Center's resources as they work on rural issues or make contributions to rural society. A research team was created and involves the following personnel:

- Benjamin Winchester (CST staff)
- Matt Rousseau (CST student)
- James Gambrell (CST student)

This team located and secured the data, completed the analysis, and wrote the following report.

Methodology

There were nine counties specifically examined by this research in west central Minnesota. These counties are Becker, Clay, Douglas, Grant, Otter Tail, Pope, Stevens, Traverse, and Wilkin. It is important to note that this region consists of many different environments. Clay County contains Moorhead, the largest city in the region with a population of 32,177. The counties of Becker, Douglas, Otter Tail, and Pope have a strong recreational lake base which has attracted new populations over the past ten years. Two points of time are involved in this study, 1995 and 2000, which provides a baseline for future longitudinal analysis.



Map: Region of analysis in west central Minnesota

To obtain home value data, the assessor's office of each county was contacted. The type of data received varied by county. For the purpose of this study, we wished to examine data surrounding the low-income residential households. To accomplish this, the parcels were split into deciles – this sliced the data into 10 equal parts to examine, for example, changes in value of the lowest 10% of home values.

Additionally, to track the changes in home values, certain cases were removed:

- a. Parcels with a value in 2000 that had no corresponding value in 2005
- b. Parcels with a value in 2005 that had no corresponding value in 2000
- c. Parcels with no structure in either 2000 or 2005
- d. Non-residential parcels, including those labeled as seasonal.

The data contained three primary variables of interest. First is the value of the land itself. Second is the value of the structures (homes, garages, and outbuildings). Third is the value of the property – the value of the land plus the value of the structures. Not only is there a need to examine the variability of change by the starting value of the home, but also within each of the 9 counties in the region.

Please note: These are values based on assessor's office data. This does not reflect the actual market value that one may find when a parcel is actually purchased/sold.

Findings

County Analysis

In Minnesota, there are a number of environments in which our rural populations live. The Economic Research Service of the US Department of Agriculture has created a typology identifying Urban and Rural counties. Additionally, the Recreational status has been included since 1998 as an indicator for the growth that fueled the rural rebound of the 1990s.

	1990 Population	2000 Population	% change 1990-2000	2004 population estimate	2010 population projection	Primary County Type
Becker	27,881	30,000	7.6	31,813	32,690	Recreational
Clay	50,422	51,229	1.6	52,994	52,610	Urban
Douglas	28,674	32,821	14.5	34,590	36,970	Recreational
Grant	6,246	6,289	0.7	6,182	6,380	Rural
Otter Tail	50,714	57,159	12.7	58,658	63,240	Recreational
Pope	10,745	11,236	4.6	11,221	11,540	Recreational
Stevens	10,634	10,053	-5.5	9,874	10,090	Rural
Traverse	4,463	4,134	-7.4	3,866	3,810	Rural
Wilkin	7,516	7,138	-5	6,837	6,940	Rural
TOTAL	197,295	210,059	6.5	216,035	224,270	

Table 1: Selected population characteristics by county

(Source: U.S. Census Bureau)

The recreational counties experienced substantial population increases in the 1990's, with an average growth rate of 9.85%. The rural counties, on the other hand, saw an average decline of -4.65%.

Table 2 (below) examines data from the U.S. Census Bureau in 2000. This data provide a rough guide to estimate home values, and is used by many researchers and organizations as a valid measurement of this indicator. However, this data is collected though a sample, meaning just a fraction of the households received the questionnaire. This data is then extrapolated to the entire population. It has been found that this obscures the true value of home – especially in a rural environment. So, this data is to be used just as a guide. Also, it provides a measure of comparison with the *actual* data that is gathered from the assessors offices.

	Number of housing units	# of owner-occupied units	# of renter-occupied units	Median housing value
Becker	16,612	9,534	2,310	\$84,100
Clay	19,746	13,371	5,299	\$84,300
Douglas	16,694	10,243	3,033	\$101,500
Grant	3,098	2,081	453	\$59,400
Otter Tail	33,862	18,143	4,528	\$84,400
Pope	5,827	3,654	859	\$79,900
Stevens	4,074	2,640	1,111	\$71,400
Traverse	2,199	1,383	334	\$41,100
Wilkin	3,105	2,223	529	\$64,700

Table 2: Selected housing characteristics by county, 2000

(Source: U.S. Census Bureau)

The number of housing units in the first column includes seasonal and vacant homes. Therefore, the total in the first column is not equal to the number of owner-occupied plus the number of renter-occupied. The median housing value in the region varies from a low in 2000 of \$41,100 in Traverse County to a high of \$101,500 in Douglas.

The assessors data provides the basis for this analysis. The number of valid parcels (containing data for both 1990 and 2000) for most counties was at least 50% of the Census Bureau's estimate of the number of housing units in 2000. The two exceptions are Clay county and Otter Tail County. Clay County did not maintain complete records back to 2000, so the number of valid parcels obtained was proportionately lower than for the other counties. Otter Tail County contained a large number of seasonal housing properties that were eliminated from the analysis.

	N
Becker	7,486
Clay	4,912
Douglas	8,972
Grant	1,873
Otter Tail	15,114
Pope	3,144
Stevens	2,582
Traverse	1,244
Wilkin	1,849
Total	47,176

Table 3: Number of valid study parcels by county

Table 4 examines the median property values for 2000 and 2005. Becker County had the highest increase in median property values at 60%. Traverse was the lowest at less than 11%. Inflation over this period amounted to 11%, so property values in Traverse county

declined in constant dollars. Stevens and Wilkin Counties showed mid-range increases of 20-25%, while the other Counties increased by 40-50%.

	2000	2005	Change in Median
Becker	\$67,509	\$108,224	60.3%
Clay	\$65,263	\$93,700	43.6%
Douglas	\$88,600	\$133,000	50.1%
Grant	\$38,600	\$58,400	51.3%
Otter Tail	\$61,900	\$87,800	41.8%
Pope	\$54,750	\$83,400	52.3%
Stevens	\$51,050	\$63,650	24.7%
Traverse	\$26,400	\$29,150	10.4%
Wilkin	\$50,200	\$61,100	21.7%
Total	\$64,195	\$93,100	45.0%

Table 4: Median Property Value, 2000 - 2005

There is a correlations between median property value growth rate and population growth rates, and this was highly significant ($r=.813$, $p=.008$). The r , or correlation coefficient, indicates that for every increase in growth rate, there is a direct increase in property value growth rates. The p , examines the probability that the relationship is significant. The smaller the p , the greater the significance. So, we find a higher correlation and this correlation is highly significant.

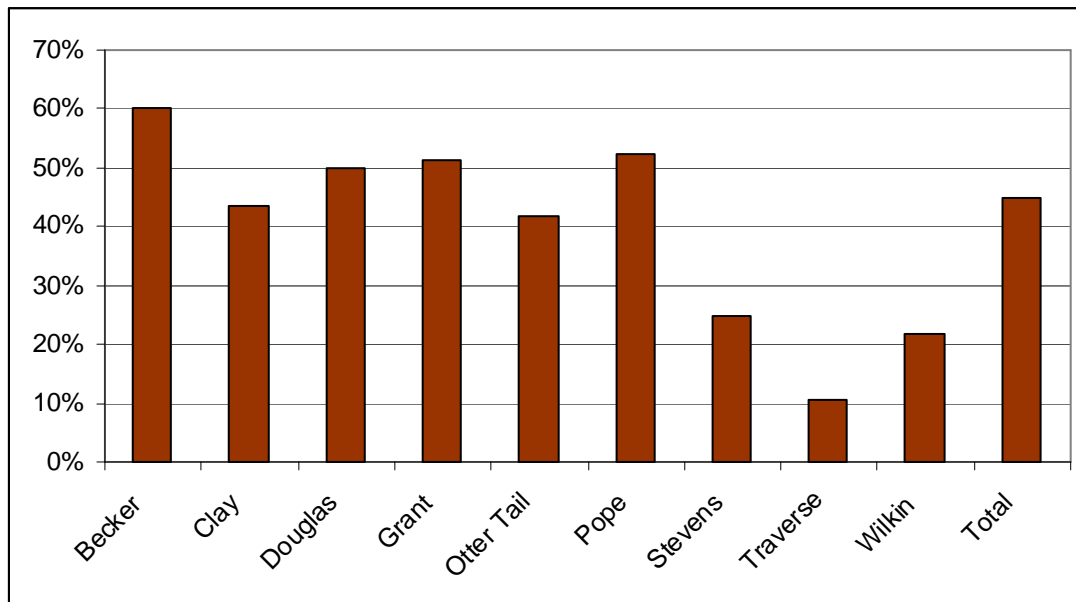


Figure 1: Change in Median Home Value, 2000 - 2005

Distributions of Land, Structure, and Property Values

This section will examine the distribution of total values for land, structure, and property for all the parcels in the study.

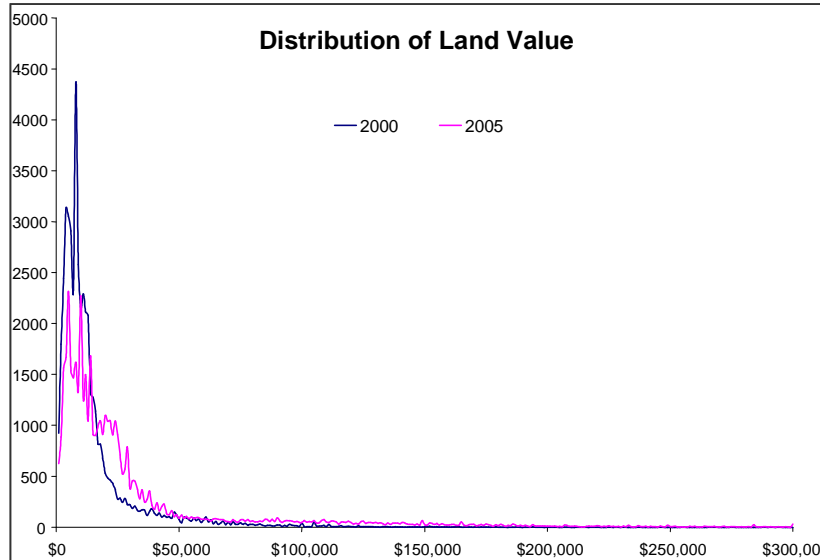


Figure 2: Distribution of Land Values, 2000 and 2005.

The land value distributions seem to be composed of fairly distinct plateaus and modes. The year 2000 distribution has its first plateau at \$4,000, a large spike at \$7,500, and then drops off suddenly at \$13,000. There is a mix of rural and recreational parcels in the initial \$4,500 spike, but the \$7,500 and \$12,500 spikes are mostly made up of parcels from recreational counties.

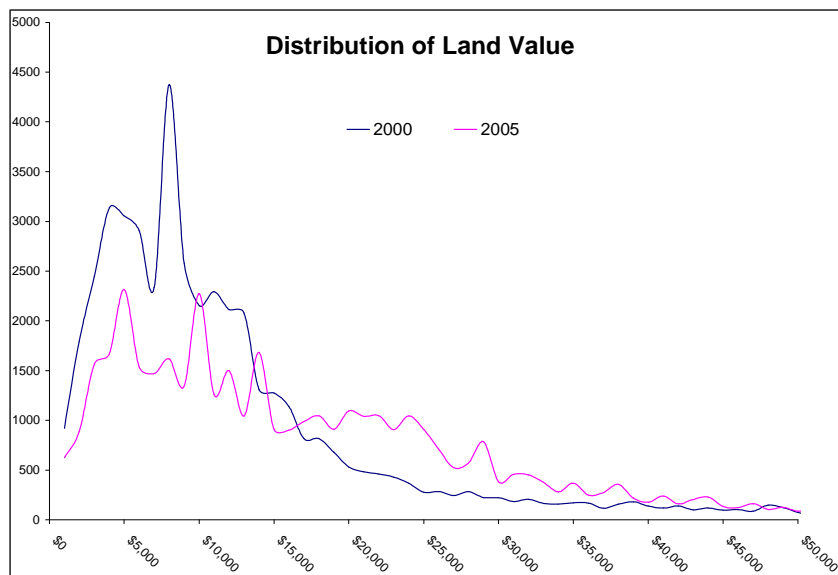


Figure 3: Distribution of Land Values, 2000 and 2005 (close-up)

In 2005 the main plateau of the distribution seems to have almost doubled in width. The large majority of land values in 2000 were under \$25,000 while in 2005 it extends all the way out to \$40,000. This newly extended part of the plateau is made up almost exclusively of parcels from recreational counties. Meanwhile, the main mode in the distribution has moved from \$7,500 to \$9,500, making for a much larger gap between the initial spike and the second spike. The distribution seems to be splitting apart with a large fraction of properties rising rapidly in value and leaving the others behind. These quickly rising properties are mostly in recreational counties. In another 5 years we may see this distribution split entirely in half, with recreational counties separated from rural counties.

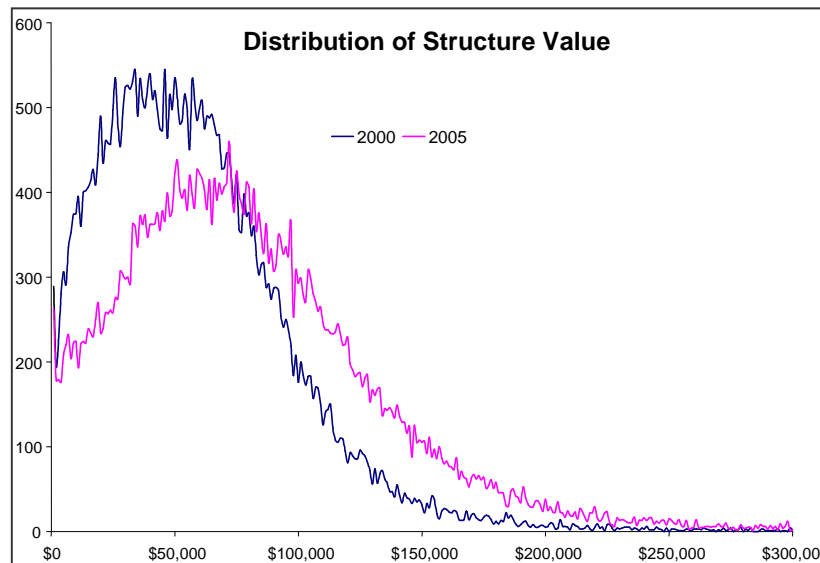


Figure 4: Distribution of Structure Values, 2000 and 2005.

The distribution of structure values has not undergone the same dramatic shift as land values. It has widened and flattened, but the shape is unchanged. The shape is relatively normal, although extremely positively skewed – meaning that the data is aggregated at the lower values yet has cases at the higher values – but they are fewer and dispersed. The figure below provides a close-up of the data with values under \$150,000.

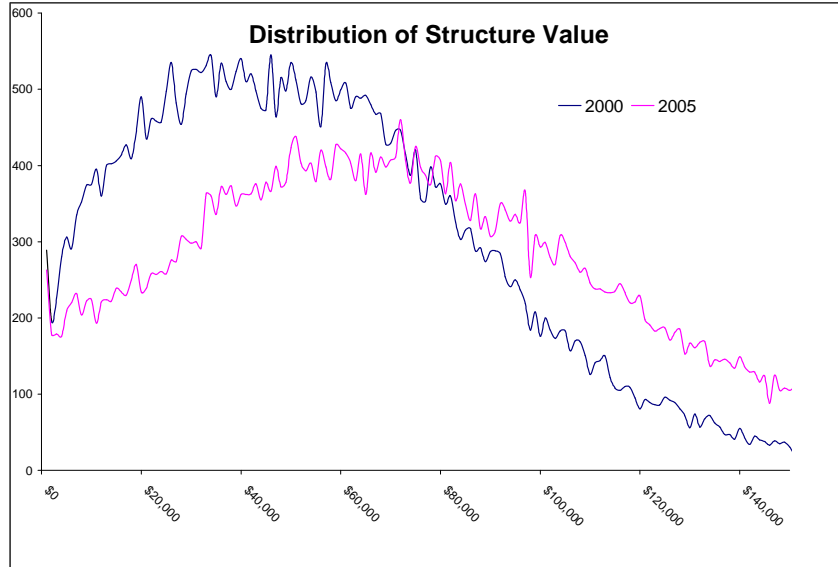


Figure 5: Distribution of Structure Values, 2000 and 2005 (close-up).

There does seem to be an impressive reduction in the proportion of parcels with structures under \$32,000. These parcels have increased in value, and in many cases a healthy increase. The line has flattened a bit indicating that values are becoming more distributed amongst a diversity of values.

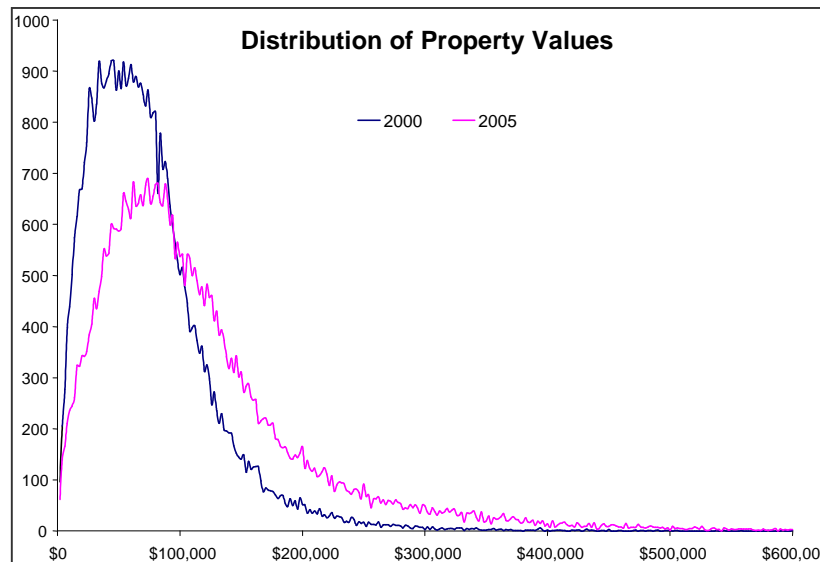


Figure 6: Distribution of Property Values, 2000 and 2005.

The property value distribution looks a lot like the one for structure value. Note that the scale has been increased to \$600,000, so the mounds look thinner although they are actually thicker. Here again the 2005 mound is shorter and thicker, indicating an increase in both average value and diversity of values. The percentage of homes with values over \$200,000 increased from 2.5% in 2000 to 12.7% in 2005. The figure below examines values below \$200,000.

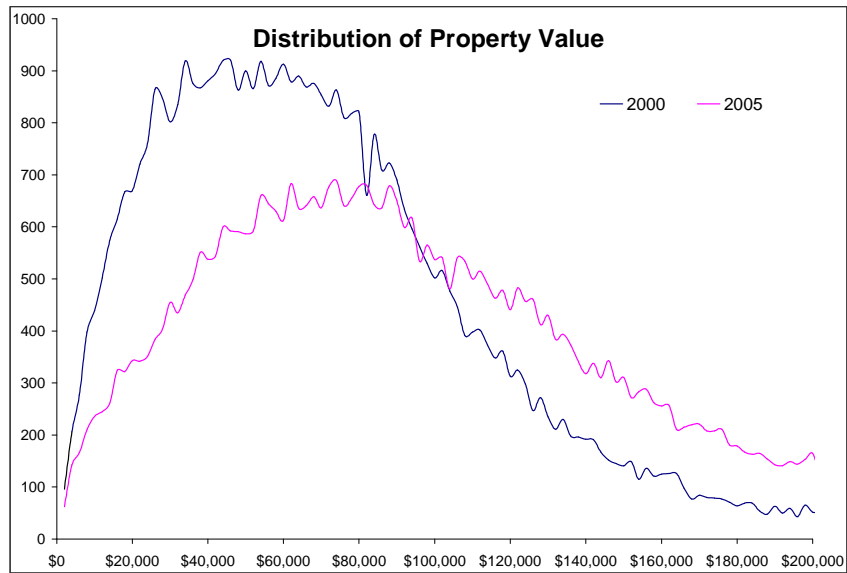


Figure 7: Distribution of Property Values, 2000 and 2005 (close-up).

County Typology

A typology allows us to examine the various contexts that exist in western Minnesota. The Economic Research Service of the US Department of Agriculture provides the Urban/Rural/Recreational status of our counties. The listing of the counties and their associated type are identified earlier in table 1. Table 5 below examines the changes in median land, structure, and property values for each of these types.

County Typology	Land Value			Structure Value			Property Value		
	2000	2005	% Change	2000	2005	% Change	2000	2005	% Change
Urban	\$7,380	\$12,000	62.60%	\$56,114	\$78,750	40.34%	\$65,255	\$93,700	43.59%
Rural	\$7,400	\$8,700	17.57%	\$26,700	\$33,350	24.91%	\$42,700	\$55,900	30.91%
Recreational	\$10,300	\$21,100	104.85%	\$56,000	\$77,200	37.86%	\$69,049	\$103,493	49.88%

Table 5: Median Land, Structure, and Property Values by County Typology

This table shows the gaps in performance between county types. The median land value of parcels in recreational counties grew at almost six times the rate of rural counties. Structure value growth differences were not so dramatic, with recreational counties growing about 13% faster than rural counties.

Analysis by Year 2000 Decile

The aim of this analysis is to examine the low-income home values. To do this, we split the property into intervals with an equal number of values. Parcels were assigned a decile ranging from 1 to 10. The 1st decile contains the lowest 10% of values. The 10th decile contains the top 10% of values. This is done according to their value in 2000. Land, structure, and property median value growth is then analyzed to compare performance across deciles. Each parcel's decile membership was computed separately for land, structure, and property. So, the 1st decile contains

Decile	2000	2005	% Change
1 st	\$1,950	\$2,700	38.5%
2 nd	\$3,800	\$5,100	34.2%
3 rd	\$5,200	\$8,000	53.8%
4 th	\$7,100	\$11,600	63.4%
5 th	\$8,300	\$13,500	62.7%
6 th	\$10,100	\$18,700	85.1%
7 th	\$12,430	\$23,200	86.6%
8 th	\$15,600	\$30,300	94.2%
9 th	\$23,000	\$53,600	133.0%
10 th	\$50,800	\$139,550	174.7%
Total	\$9,100	\$17,000	86.8%

Table 6: Median Land Value 2000-2005 by 2000 Decile (n=47,176)

Table 6 provides an idea of how highest land values performed compared to the lowest land values. Land values show the largest inequality of growth by decile, rising from 30-63% increases in the lower half of the distribution to 80-200% increases in the upper half. Note that these increases are highly variable from county to county.

Decile	2000	2005	% Change
1 st	\$8,300	\$11,900	43.4%
2 nd	\$19,855	\$28,800	45.1%
3 rd	\$29,700	\$41,197	38.7%
4 th	\$38,800	\$52,300	34.8%
5 th	\$48,100	\$63,736	32.5%
6 th	\$57,600	\$75,437	31.0%
7 th	\$67,200	\$87,800	30.7%
8 th	\$78,700	\$103,000	30.9%
9 th	\$94,200	\$123,900	31.5%
10 th	\$126,900	\$169,700	33.7%
Total	\$52,837	\$72,700	37.6%

Table 7: Median Structure Value 2000-2005 by 2000 Decile (n=47,176)

Table 7 compares structures at different initial starting values to show how performance differs from high value to low value structures. Structure values seem to have followed the reverse pattern from land values. Structures at the low end of the scale outperformed those on the high end by as much as 10%.

Decile	2000	2005	% Change
1 st	\$13,600	\$21,100	55.1%
2 nd	\$26,700	\$40,600	52.1%
3 rd	\$37,739	\$54,900	45.5%
4 th	\$48,205	\$68,600	42.3%
5 th	\$58,900	\$82,000	39.2%
6 th	\$69,600	\$96,500	38.6%
7 th	\$81,200	\$114,894	41.5%
8 th	\$95,200	\$135,500	42.3%
9 th	\$116,509	\$171,200	46.9%
10 th	\$164,700	\$279,000	69.4%
Total	\$64,154	\$93,100	45.1%

Table 8: Median Property Value 2000-2005 by 2000 Decile (n=47,176)

This data is visualized in the figure below. The property value growth has a U shaped distribution, with high and low deciles doing better than mid-range deciles. This is the result of combining the two opposite patterns. While land values have grown much faster than structure values, structures on average make up a much larger portion of the total property value. If the top 5% or so of properties are ignored, then the two patterns combine to produce a relatively symmetrical U shape with a depth of about 17% percentage points. Of course those seventeen percentage points translate into many more dollars at the high end. In the figure below, the changes by decile are compared to one another based on the land, structure, and property values. There is a high correlation between land values and the percentage growth witnessed between 2000 and 2005. This is not true for structures.

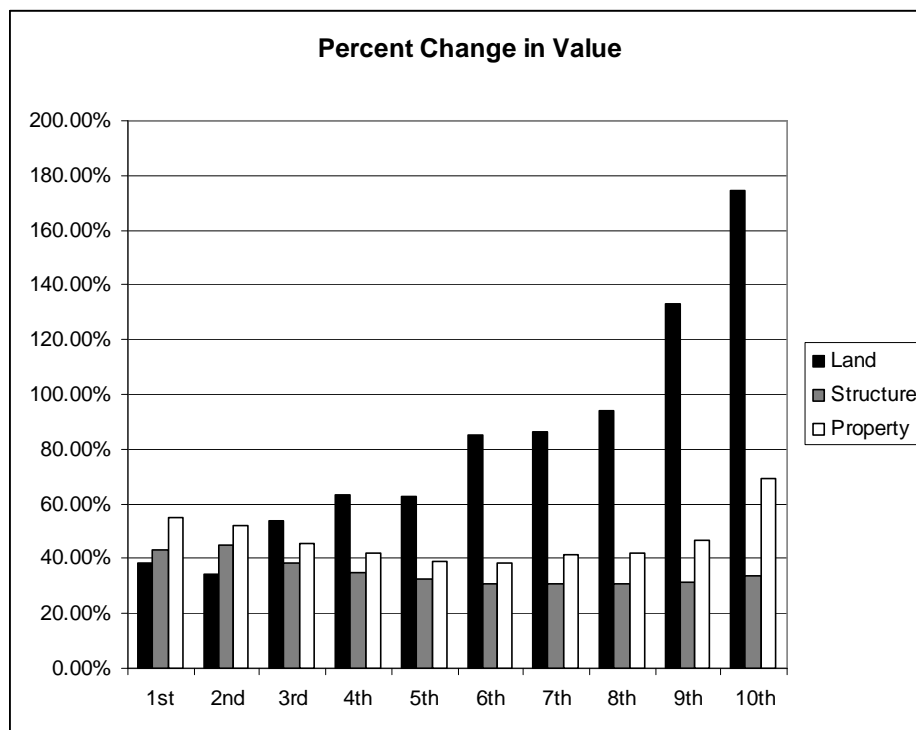


Figure 8: Percent Change in Land, Structure and Property Values, 2000-05

Bottom 30% In-Depth

The table below shows the percentage increase. The deciles were computed using overall year 2000 land values; they are not within-county deciles.

	1 st Decile	2 nd Decile	3 rd Decile
Becker	314.3%	159.8%	184.3%
Clay	42.9%	44.4%	58.7%
Douglas	131.0%	131.0%	127.5%
Grant	10.7%	0.0%	19.0%
OTC	53.3%	35.0%	37.9%
Pope	155.8%	51.6%	50.0%
Stevens	0.0%	11.6%	5.2%
Traverse	0.0%	0.0%	0.0%
Wilkin	0.0%	0.0%	0.0%

Table 9: Median Percent Change in Land Value by Year 2000 Decile by County

Table 9 gives us an idea of how parcels that were in the bottom three value classes in 2000 changed over the years. The values given for medians indicate the experience of the middle of each decile in each county. For example, in Becker County the median change for the first decile was an incredible quadrupling of land value. Many parcels had far more extreme growth, while many others experienced less than a 100% increase.

In fact the numbers received for Becker County are difficult to understand. Almost 22% of the 444 parcels in the 1st decile experienced more than eight-fold growth in 5 years. Many of these may be agricultural parcels that were divided up and turned into residential parcels. Unfortunately the county did not provide zoning information on the parcels.

Growth in the 2nd and 3rd deciles was more regular than that of the 1st decile and yet still strong in many counties. In Douglas for example, the growth rate stayed at about 130% in all three deciles. Growth in other counties was not so dramatic, but there does seem to be a trend especially in the recreational counties for the cheapest properties to have seen the most growth. Again, this could just be an effect of turning agricultural land into residential land.

	1 st Decile	2 nd Decile	3 rd Decile
Becker	43.5%	47.1%	41.0%
Clay	73.9%	54.1%	42.4%
Douglas	33.3%	35.9%	32.2%
Grant	68.3%	58.1%	50.4%
OTC	35.3%	42.5%	36.5%
Pope	45.8%	65.9%	56.2%
Stevens	13.6%	17.0%	24.2%
Traverse	5.0%	4.9%	9.1%
Wilkin	9.2%	16.9%	16.3%

Table 10: Median Percent Change in Structure Value by Year 2000 Decile by County

While structure values did not appreciate as fast as land, their growth is still impressive. Grant, Clay, and Pope Counties seem to have done the best in the bottom three deciles, with growth from 42%-74% in five years. Traverse had the lowest numbers at 5%-9%, less than inflation. Wilkin was also slow at 9%-17%, although there was enough variation in Wilkin to indicate that at least the top 25% of the parcels have structures that are experiencing healthy appreciation.

	1 st Decile	2 nd Decile	3 rd Decile
Becker	92.4%	71.0%	61.6%
Clay	70.4%	53.6%	44.5%
Douglas	77.3%	62.2%	49.8%
Grant	52.6%	49.0%	44.7%
OTC	64.4%	52.2%	41.7%
Pope	74.4%	72.1%	55.6%
Stevens	19.5%	24.3%	25.2%
Traverse	5.6%	8.7%	11.3%
Wilkin	7.3%	16.4%	14.9%

Table 11: Median Percent Change in Property Value by Year 2000 Decile by County

The poorest properties in most of the counties analyzed did quite well over the period from 2000-2005. In fact the lowest 10% often experienced more percentage growth in value than those in higher brackets. Of course these percentages refer to smaller amounts of money for those in lower brackets, but they are still impressive.

Unfortunately Traverse, Wilkin, and to some extent Stevens did not show such large gains. Growth in Stevens was only twice the rate of inflation, while Traverse and Wilkin barely kept up with inflation. This is quite a contrast to Becker County, where the lowest decile experienced a doubling in their property value over this five year period.