Wisconsin Agricultural Land Prices
2001-2008

A.J. Brannstrom
University of Wisconsin Center for Dairy Profitability
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Wisconsin land values have been increasing steadily for the past several years. The upward run in land prices is both a blessing and a curse for the Wisconsin dairy community. Increased equity from land appreciation provides security and potential borrowing power to the current owners, but high land prices also result in pressure for higher land rental rates and raise significant entry barriers for young farmers. Many factors combine to determine land values – earnings potential, financing costs and real estate taxes to name just a few. This paper examines more than 9,400 Wisconsin large bare farmland sales between non-related parties between 2001 and 2008.

The data for this analysis comes from the Wisconsin Department of Revenue's real estate transfer returns. The transfer return is a two-page document which is filed with the Wisconsin Department of Revenue (DOR) for every real estate transaction in the State of Wisconsin. The transfer return document includes basic information about the transaction, including the names of the grantor and grantee, location, size of the parcel, predominant use and sales price.

This analysis includes transactions between non-related parties of parcels between 35 and 1000 acres. It excludes all reported sales less than $300/acre and more than $10,000/acre – assuming they are not used for agricultural purposes. Parcels with water frontage or retained property rights are also excluded. The DOR transfer return documents indicate whether the property was bare land or improved property, but contain no information about the types of improvements. This analysis concentrates on bare land sales. The statewide price of large agricultural land parcels increased 54% between 2001 and 2007 and another 12% between 2007 and 2008.

Average agricultural land prices are reported by agricultural statistics districts. The map at the left (Figure 1.) displays the borders of the various National Agricultural Statistics Service (NASS) districts.

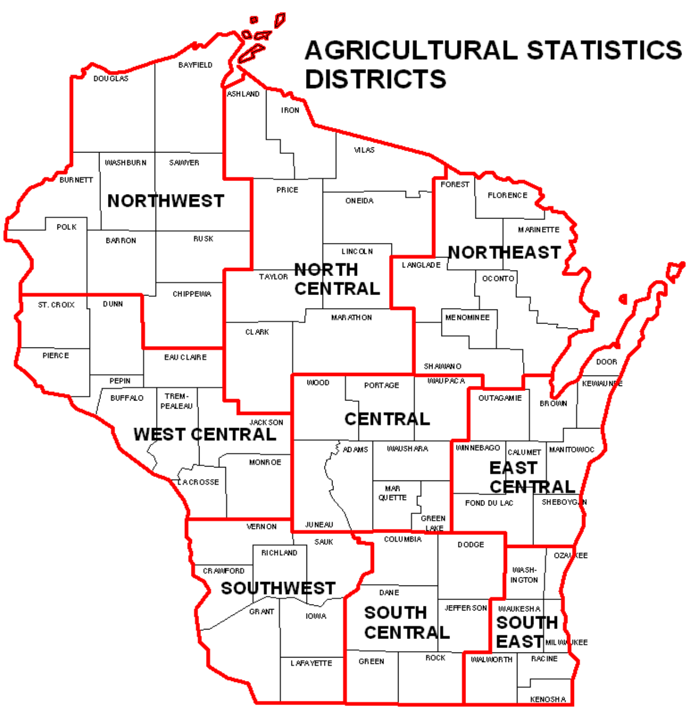

Figure 1. NASS Districts

Table 1 on the following page is a summary of the average sale price of bare farmland parcels larger than 35 acres between 2001 and 2008. The averages are computed based upon the National Agricultural Statistical Service (NASS) reporting districts. (Complete county listings are included in Appendix I,II and III.)

The DOR transfer return asks for both past and intended future use of the parcel. However, the State's use value taxation scheme encourages new land owners to declare their intent to farm the land as long as possible. Therefore all that can be assumed is that all properties were in agricultural use at the time of the sale.

The average price per acre for bare land was highest in Southeast Wisconsin, but increasing competition for land has increased values all across the state.

Table 1. Ag Land Values, # of Sales and Total Acres Sold 2001-2008

Bare Land > 35 Ac.

Wt Avg $/Acre	2001	2002	2003	2004	2005	2006	2007	2008
1 NW District	$1,090	$1,127	$1,300	$1,449	$1,604	$1,914	$1,864	$1,830
2 NC District	$943	$1,164	$1,345	$1,317	$1,546	$1,693	$1,835	$2,033
3 NE District	$1,242	$1,543	$1,583	$1,896	$2,044	$2,503	$2,320	$2,329
4 WC District	$1,321	$1,482	$1,818	$1,940	$2,220	$2,386	$2,716	$3,191
5 C District	$1,731	$1,920	$1,961	$1,853	$2,157	$2,320	$2,591	$3,005
6 EC District	$2,029	$1,911	$2,378	$2,702	$2,785	$2,909	$3,311	$3,658
7 SW District	$1,537	$1,747	$1,784	$2,146	$2,492	$2,717	$3,050	$3,206
8 SC District	$2,610	$2,579	$2,635	$3,266	$3,453	$3,581	$3,977	$4,581
9 SE District	$3,782	$3,931	$4,255	$4,970	$5,276	$5,394	$5,002	$5,245
Grand Total	**$1,745**	**$1,882**	**$2,041**	**$2,261**	**$2,554**	**$2,654**	**$2,896**	**$3,247**

# of Sales	2001	2002	2003	2004	2005	2006	2007	2008
1 NW District	82	105	114	117	110	87	76	71
2 NC District	98	98	129	153	94	105	113	113
3 NE District	49	71	73	71	51	48	46	62
4 WC District	179	193	221	231	177	175	160	168
5 C District	90	80	114	107	117	97	125	124
6 EC District	160	170	160	174	173	121	149	183
7 SW District	260	254	278	288	252	241	206	207
8 SC District	158	176	196	164	157	120	119	158
9 SE District	64	76	56	47	47	30	31	32
Grand Total	**1,140**	**1,223**	**1,341**	**1,352**	**1,178**	**1,024**	**1,025**	**1,118**

# of Acres Sold	2001	2002	2003	2004	2005	2006	2007	2008
1 NW District	8,167	8,340	7,795	9,194	8,588	7,222	5,765	5,837
2 NC District	7,299	6,805	8,708	11,271	6,212	7,176	8,397	7,610
3 NE District	3,493	4,905	4,813	5,546	3,379	2,916	3,097	5,993
4 WC District	16,601	17,029	16,369	19,955	15,141	13,288	12,897	14,304
5 C District	6,431	6,676	8,109	10,770	10,439	8,075	10,487	12,177
6 EC District	13,437	12,935	11,763	14,695	12,873	9,118	9,547	13,032
7 SW District	22,740	26,876	25,951	25,376	22,054	20,976	17,606	18,092
8 SC District	13,063	15,025	18,058	14,842	13,042	10,018	9,958	12,648
9 SE District	4,748	5,960	4,662	4,594	4,426	2,187	2,225	2,623
Grand Total	**95,979**	**104,551**	**106,228**	**116,243**	**96,154**	**80,976**	**79,979**	**92,316**

Each weighted average price/acre was calculated by dividing the sum of the total sale prices in a year by the sum of all acres sold. Using weighted averages reduces the effect of a few high (or low) valued transactions. It is important to note that these are broad averages and that even within smaller geographic regions there can be wide variations in the value of individual parcels.

Figure 2. Average Wisconsin bare land prices 2001-2008

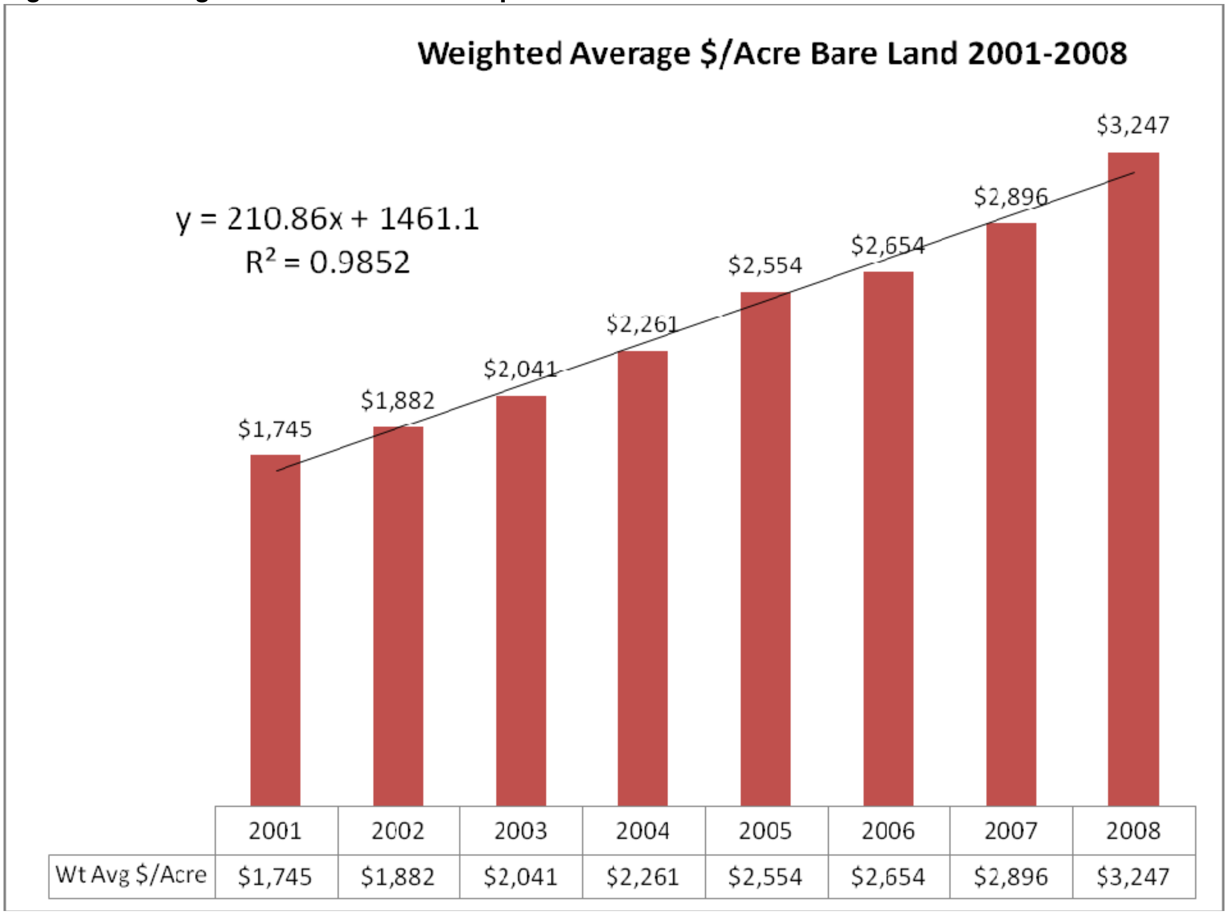

Figure 2 illustrates the long term trend in average bare land sales during this decade. A simple linear regression shows that average bare land prices have increased by about $210/acre for the past eight years. Obviously, many factors in the economy have changed dramatically in the past few years. Table II is an attempt to break the average land values down into quarterly figures. Although the general economy has entered a rather severe recession in 2008, land prices have held steady on average. Weaker commodity prices and tightening lending standards may limit land price increases in 2009.

Table 2. Quarterly Bare Ag Land Prices 2001-2008,

Quarterly Avg $/Acre	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
1st Qrt	$1,544	$1,815	$2,053	$2,166	$2,633	$2,485	$2,753	$3,170
2nd Qrt	$1,891	$1,812	$2,087	$2,326	$2,405	$2,873	$2,808	$3,082
3rd Qrt	$1,790	$1,955	$1,934	$2,298	$2,544	$2,466	$3,018	$3,386
4th Qrt	$1,789	$1,934	$2,131	$2,262	$2,619	$2,852	$2,970	$3,313
Grand Total	**$1,745**	**$1,882**	**$2,041**	**$2,261**	**$2,554**	**$2,654**	**$2,896**	**$3,247**

The unprecedented economic turmoil in 2008 did not appear to be reflected yet in the demand for bare land. Table 2 lists the average state-wide price / acre when tabulated on a quarterly basis. Figure 3 illustrates the point more dramatically – State-wide average land values have increased nearly continuously over this eight-year period.

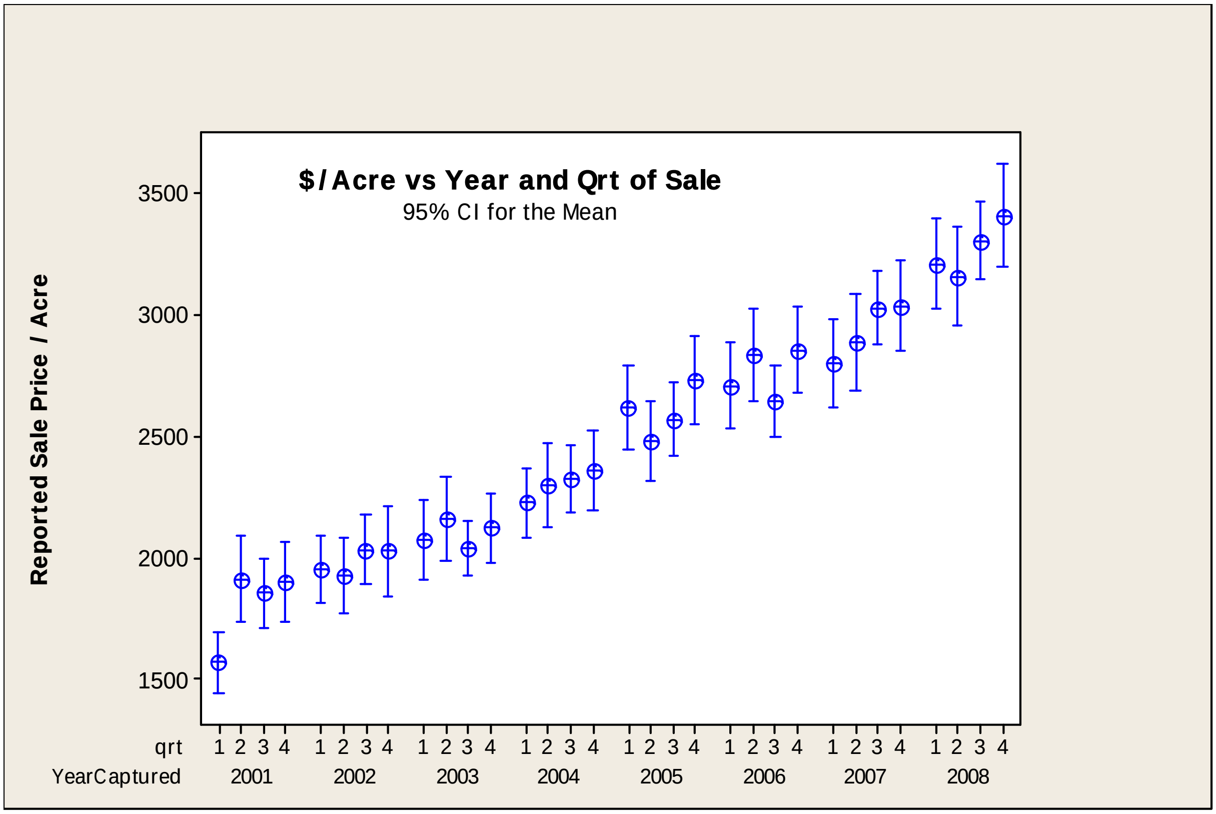

Figure 3. Quarterly State Wide Agricultural Land Prices 2001-2008.

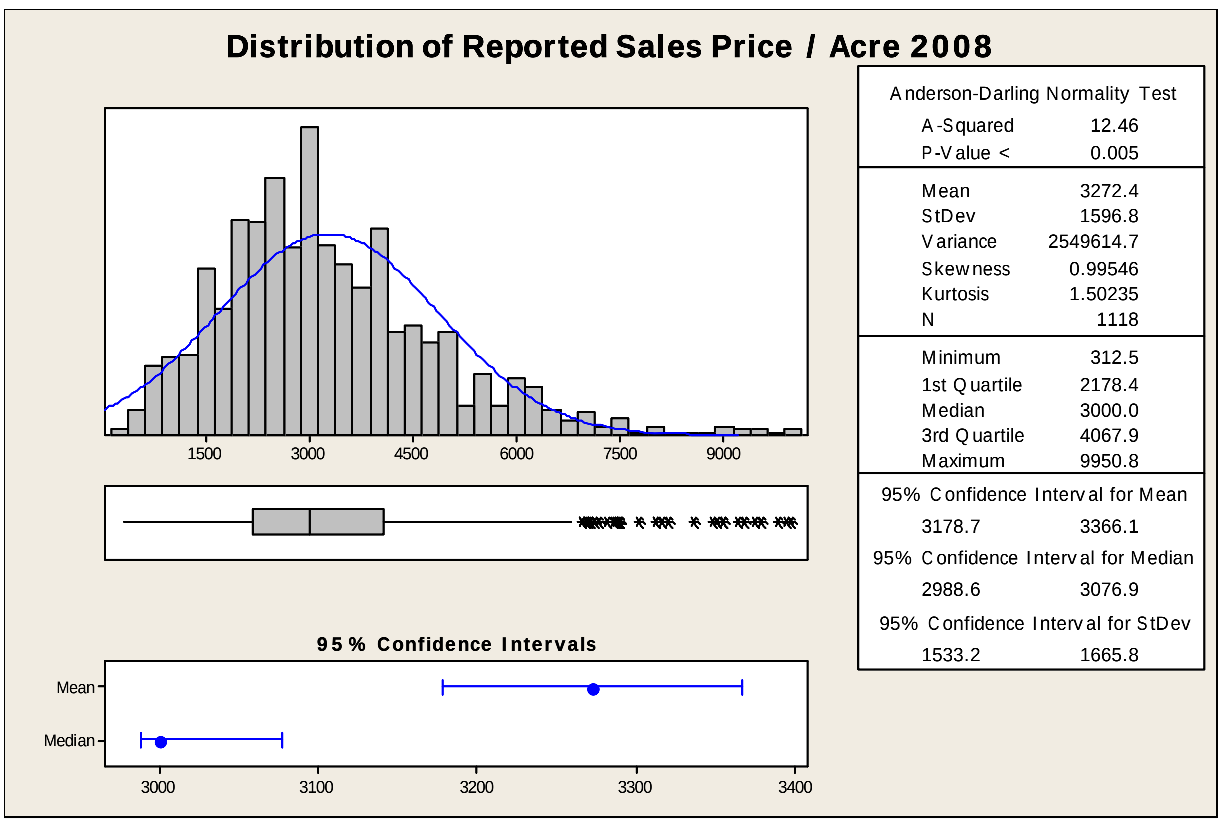

Figure 4. Statistical Summary of Bare Land Sales for 2008.

The histogram in Figure 4 illustrates that the distribution of sales is skewed to the right. A relatively small number of parcels sold for high prices. The 95% confidence interval around the mean sale price is between $3179 and $3366. The analysis also computes the quartiles of the distribution. In 2008 one-fourth of the sales were below $2178 and another one-fourth of the sales were above $4068/acre. These statistics are based upon 1,118 transactions reported in 2008 between non-related parties. Many of the highest priced sales were in southern and southeastern Wisconsin where the pressures for development are most severe.

Table 4. Average bare land parcel size (in acres)

Sale Size	2001	2002	2003	2004	2005	2006	2007	2008
1 NW District	100	79	68	79	78	83	76	82
2 NC District	74	69	68	74	66	68	74	67
3 NE District	71	69	66	78	66	61	67	97
4 WC District	93	88	74	86	86	76	81	85
5 C District	71	83	71	101	89	83	84	98
6 EC District	84	76	74	84	74	75	64	71
7 SW District	87	106	93	88	88	87	85	87
8 SC District	83	85	92	91	83	83	84	80
9 SE District	74	78	83	98	94	73	72	82
Grand Total	**84**	**85**	**79**	**86**	**82**	**79**	**78**	**83**

As shown in Table 4, the state-wide average parcel size for bare land sales between 2001 and 2008 has remained relatively constant. The average bare parcel size in 2008 was 83 acres which is only slightly smaller than the 84-acre average parcel size in 2001. During this period more than 100 square miles of bare land changed hands.

Figure 5. Weighted Average Price / Acre by District and Year.

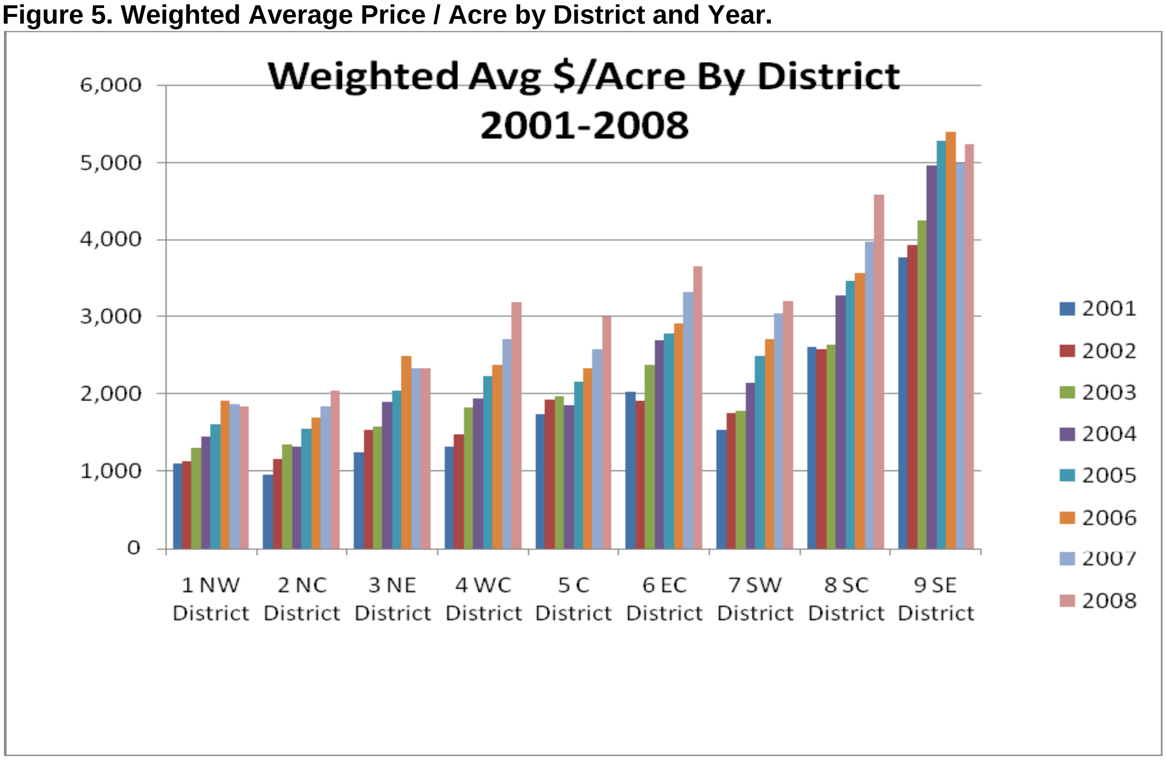

Figure 5 plots the weighted average sales price / acre within each of the nine statistical reporting districts of Wisconsin by year. Land values have been increasing state-wide, but the highest prices paid for land are in South Central and Southeastern parts of the state. There have been very few bare land sales in Southeastern Wisconsin in recent years – which makes it difficult to determine market values trends.

Appendix I contains a more detailed breakdown of real estate sale prices on a county by county basis for 2001 - 2008. It is important to remember that, due to the relatively small number of sales in some counties, the weighted average prices may not truly represent the local market. Appendix I lists only the average price/acre of bare land transfer in each county, while Appendix II lists the number of sales for each county within the NASS reporting districts.

Implications for Dairy Farmers

For established dairies the rise in land values is a mixed blessing. The appreciation in land value is only realized when the assets are sold. In most cases the ongoing business is neither directly responsible for nor directly benefited by changes in land values. High land values provide the retirement cushion for “last generation” dairy businesses. However, high land prices make it more difficult for new entrants to get started in dairy production without significant help from family members or other benefactors.

Agricultural lands in North Central and Southwestern Wisconsin are more competitively priced than other more populated portions of the state. Dairy farming in Southeastern Wisconsin and South Central Wisconsin appears to be under great pressure from competing land uses. If these trends continue, dairy production will continue to shift away from these parts of Wisconsin.

Wisconsin dairy farming is a capital intensive business. A typical dairy cow consumes approximately 8 tons of forage and 100 bushels of grain each year. Manure management and nutrient balancing is a growing challenge. The typical Wisconsin dairy farm requires 2-3 acres of cropland to dispose of the nutrients generated by each dairy cow. In recent years the demands for rural real estate have made dairy farm acquisition and expansion very difficult.

Farmland use value assessment has greatly reduced the costs of holding agricultural real estate in the past decade. Record low interest rates and changing population demographics have also increased demands for open space. Expanding dairy businesses may need to rely on long term leases or manure trading arrangements to assure compliance with environmental regulations and land use constraints.

Although dairy farming is well suited to the climate, topography and infrastructure of Wisconsin, the continued survival of a viable dairy industry is impacted by land use policies and land prices. Land prices have been known to soften during economic downturns. A few factors which may negatively affect future land price increases include tighter lending standards, higher transportation costs and changing demographics. Few things are as illiquid as land. Unlike stocks, bonds and commodities, the actual value of real estate can only be estimated until a willing buyer and seller consummate a transaction. At least in recent years, land has been a much better investment than most other investment alternatives.

Appendix 1. Weighted Average Bare Land Sales 2008

County Detail	2001	2002	2003	2004	2005	2006	2007	2008
1 NW District	**1,090**	**1,127**	**1,300**	**1,449**	**1,604**	**1,914**	**1,864**	**1,830**
Barron	986	1,172	1,268	1,456	1,546	1,789	1,892	2,194
Bayfield	1,506	767	736	1,044	1,266	1,471	1,552	1,453
Burnett	1,050	1,179	1,210	1,264	2,239	1,685	1,990	1,659
Chippewa	984	1,214	1,235	1,437	2,404	1,402	1,618	2,235
Douglas	482	NA	600	847	1,500	871	1,500	739
Polk	1,190	1,226	2,134	2,377	2,134	3,424	3,050	2,572
Rusk	604	853	829	884	934	2,335	1,186	2,044
Sawyer	916	971	724	2,466	1,423	1,946	NA	1,211
Washburn	1,250	1,680	1,028	1,000	2,091	2,675	1,468	1,814
2 NC District	**943**	**1,164**	**1,345**	**1,317**	**1,546**	**1,693**	**1,835**	**2,033**
Ashland	NA	740	1,081	1,269	891	992	3,651	906
Clark	947	1,153	1,026	1,183	1,458	1,652	1,786	1,911
Iron	NA	NA	NA	NA	NA	NA	908	950
Lincoln	1,033	1,434	1,302	1,347	1,632	1,688	1,525	2,282
Marathon	949	1,298	1,904	1,578	1,748	1,998	1,913	2,563
Oneida	1,196	1,125	1,302	2,012	NA	1,772	1,746	1,661
Price	481	NA	870	1,217	938	1,294	2,500	1,412
Taylor	808	893	818	864	1,278	1,272	1,466	1,156
Vilas	NA	NA	NA	NA	NA	NA	2,875	2,623
3 NE District	**1,242**	**1,543**	**1,583**	**1,896**	**2,044**	**2,503**	**2,320**	**2,329**
Florence	1,011	2,091	NA	NA	1,047	NA	NA	NA
Forest	1,022	1,231	667	725	NA	1,510	NA	704
Langlade	1,039	1,217	1,046	1,577	1,283	2,050	1,434	1,345
Marinette	1,229	1,655	1,284	1,653	2,395	1,881	2,005	3,475
Oconto	1,372	1,548	1,755	1,963	2,318	2,401	2,368	2,795
Shawano	1,348	1,740	1,809	2,118	2,086	2,830	2,537	2,745
4 WC District	**1,321**	**1,482**	**1,818**	**1,940**	**2,220**	**2,386**	**2,716**	**3,191**
Buffalo	1,144	1,201	1,528	1,674	1,884	2,469	3,720	3,470
Dunn	1,727	1,298	1,797	1,969	2,095	2,316	2,114	3,478
Eau Claire	1,080	1,195	1,393	2,068	1,846	2,221	1,940	2,009
Jackson	1,045	1,217	1,393	1,375	1,731	2,201	2,086	2,583
La Crosse	1,661	1,568	2,599	2,737	3,121	2,229	2,671	3,172
Monroe	1,220	1,226	1,725	1,702	1,830	2,388	2,570	3,069
Pepin	1,361	1,377	1,782	1,689	2,029	3,203	3,979	3,288
Pierce	1,092	1,926	2,716	2,525	2,527	3,056	3,674	3,128
St Croix	1,755	2,802	2,251	2,885	4,250	3,255	2,794	3,020
Trempealeau	1,251	1,246	1,506	1,568	1,642	1,878	2,282	3,402
5 C District	**1,731**	**1,920**	**1,961**	**1,853**	**2,157**	**2,320**	**2,591**	**3,005**
Adams	1,570	1,750	1,777	1,852	1,968	1,474	2,611	3,697
Green Lake	1,627	2,467	2,478	2,442	2,549	3,212	3,397	3,220
Juneau	1,426	1,351	1,801	1,661	1,809	2,382	2,186	2,549
Portage	3,526	1,465	1,806	1,695	2,547	2,171	2,456	2,819
Waupaca	1,875	1,806	2,236	2,354	2,364	2,940	2,890	3,501

Appendix I continued.

County Detail	2001	2002	2003	2004	2005	2006	2007	2008
Waushara	2,402	3,256	2,371	2,799	1,968	4,089	3,175	4,126
Wood	1,040	1,493	1,049	1,338	1,639	1,772	1,361	2,655
6 EC District	**2,029**	**1,911**	**2,378**	**2,702**	**2,785**	**2,909**	**3,311**	**3,658**
Brown	2,961	4,008	3,294	3,365	3,961	1,941	3,892	4,850
Calumet	1,395	2,027	2,566	2,040	2,138	3,111	3,180	3,396
Door	2,226	1,671	2,917	2,791	2,509	2,070	3,538	3,133
Fond du Lac	1,963	1,811	1,967	2,258	2,727	2,779	3,599	4,130
Kewaunee	1,515	1,667	2,277	2,436	2,258	2,941	3,432	3,301
Manitowoc	1,262	1,584	1,757	1,960	2,647	2,569	2,748	3,218
Marquette	1,429	1,559	1,945	1,637	2,568	2,442	2,627	3,051
Outagamie	3,996	2,964	3,739	3,477	3,259	4,565	4,337	4,633
Sheboygan	1,405	2,043	2,307	2,887	3,922	3,439	3,417	3,385
Winnebago	1,625	1,254	2,101	2,111	2,172	2,225	2,651	2,730
7 SW District	**1,537**	**1,747**	**1,784**	**2,146**	**2,492**	**2,717**	**3,050**	**3,206**
Crawford	1,169	1,096	1,207	1,587	1,888	2,174	2,396	2,353
Grant	1,383	1,501	1,619	2,219	2,254	2,629	3,164	3,333
Iowa	1,959	2,149	2,083	2,337	2,837	2,997	3,163	2,716
Lafayette	1,620	2,046	1,910	2,654	2,992	3,060	3,744	4,188
Richland	1,356	1,542	1,588	1,684	2,220	2,332	2,805	2,397
Sauk	1,864	1,821	2,274	2,424	2,851	2,962	2,924	3,417
Vernon	1,334	1,440	1,531	1,615	2,180	2,553	2,640	2,998
8 SC District	**2,610**	**2,579**	**2,635**	**3,266**	**3,453**	**3,581**	**3,977**	**4,581**
Columbia	2,511	2,504	2,884	3,301	3,542	3,608	4,023	4,417
Dane	3,780	3,864	2,928	5,154	4,274	3,908	4,622	5,108
Dodge	1,895	1,962	2,287	3,236	3,196	3,354	3,503	4,282
Green	1,568	1,661	2,539	2,380	2,942	3,269	3,342	4,385
Jefferson	2,747	2,371	2,524	2,702	3,520	3,412	3,950	3,729
Rock	2,736	2,284	2,972	3,270	3,700	3,900	4,843	4,863
9 SE District	**3,782**	**3,931**	**4,255**	**4,970**	**5,276**	**5,394**	**5,002**	**5,245**
Kenosha	4,399	4,251	5,205	5,496	4,099	6,263	NA	5,513
Ozaukee	2,566	4,061	3,216	4,088	3,304	4,560	3,135	8,252
Racine	4,725	4,482	3,794	7,964	5,086	8,096	4,841	4,152
Walworth	3,386	3,445	3,873	4,410	5,939	5,071	5,100	6,299
Washington	3,061	5,111	5,688	4,540	4,285	4,487	5,793	3,615
Waukesha	5,258	3,930	7,974	6,090	5,895	8,411	5,092	NA
Grand Total	**1,745**	**1,882**	**2,041**	**2,261**	**2,554**	**2,654**	**2,896**	**3,247**

Appendix II # of Sales Bare Land Sales > 35 Acres by County 2001-2008

# of Sales	2001	2002	2003	2004	2005	2006	2007	2008
1 NW District	**82**	**105**	**114**	**117**	**110**	**87**	**76**	**71**
Barron	23	45	40	39	37	29	15	13
Bayfield	9	6	4	10	9	12	4	12
Burnett	2	11	4	5	2	3	9	5
Chippewa	13	20	26	29	17	16	20	17
Douglas	3	NA	NA	4	NA	2	2	NA
Polk	14	7	23	16	16	17	12	8
Rusk	2	10	8	11	11	4	9	8
Sawyer	4	3	2	2	14	2	NA	4
Washburn	12	3	6	NA	3	2	5	3
2 NC District	**98**	**98**	**129**	**153**	**94**	**105**	**113**	**113**
Ashland	NA	3	NA	NA	2	5	3	6
Clark	36	43	48	62	24	32	39	40
Iron	NA	NA	NA	NA	NA	NA	3	NA
Lincoln	5	4	10	13	10	3	9	7
Marathon	42	37	49	62	41	44	36	41
Oneida	4	NA	3	2	NA	NA	5	2
Price	2	NA	4	2	NA	2	2	7
Taylor	9	10	14	11	16	18	15	8
Vilas	NA	NA	NA	NA	NA	NA	NA	NA
3 NE District	**49**	**71**	**73**	**71**	**51**	**48**	**46**	**62**
Florence	3	NA	NA	NA	2	NA	NA	NA
Forest	NA	NA	NA	3	NA	3	NA	NA
Langlade	10	13	10	8	7	5	3	10
Marinette	5	3	6	6	2	3	3	6
Oconto	17	17	24	26	17	11	22	20
Shawano	13	36	32	28	23	26	18	25
4 WC District	**179**	**193**	**221**	**231**	**177**	**175**	**160**	**168**
Buffalo	19	25	31	30	17	12	25	20
Dunn	23	22	45	48	30	33	14	22
Eau Claire	17	13	12	6	12	8	14	5
Jackson	20	23	17	29	21	24	20	15
La Crosse	9	6	14	11	6	9	10	7
Monroe	20	28	38	28	24	34	26	25
Pepin	5	7	8	11	6	4	6	10
Pierce	17	11	12	16	11	16	16	25
St Croix	24	29	20	25	24	9	6	19
Trempealeau	25	29	24	27	26	26	23	20
5 C District	**90**	**80**	**114**	**107**	**117**	**97**	**125**	**124**
Adams	18	8	25	12	7	12	15	9
Green Lake	6	13	12	8	16	13	16	14
Juneau	14	12	16	11	18	18	16	16
Portage	5	11	15	28	25	13	23	26
Waupaca	27	25	24	21	25	21	25	26

Appendix II continued.

	2001	2002	2003	2004	2005	2006	2007	2008
Waushara	6	8	12	8	7	6	12	9
Wood	14	3	10	19	19	14	18	24
6 EC District	**160**	**170**	**160**	**174**	**173**	**121**	**149**	**183**
Brown	16	7	5	14	16	9	12	11
Calumet	17	23	22	20	11	19	10	11
Door	16	9	13	16	13	6	6	12
Fond du Lac	24	29	27	27	27	21	33	31
Kewaunee	14	15	16	18	14	17	8	21
Manitowoc	25	31	18	23	26	17	26	32
Marquette	12	10	8	6	9	5	9	8
Outagamie	19	19	18	26	31	13	14	26
Sheboygan	8	12	13	10	9	7	9	14
Winnebago	9	15	20	14	17	7	22	17
7 SW District	**260**	**254**	**278**	**288**	**252**	**241**	**206**	**207**
Crawford	25	26	15	25	23	23	20	18
Grant	51	41	57	55	44	34	39	51
Iowa	43	47	53	56	39	43	36	32
Lafayette	45	63	46	44	41	32	29	29
Richland	33	26	26	39	47	38	23	16
Sauk	22	22	46	29	33	40	32	33
Vernon	41	29	35	40	25	31	27	28
8 SC District	**158**	**176**	**196**	**164**	**157**	**120**	**119**	**158**
Columbia	36	31	32	24	37	24	29	36
Dane	36	48	27	28	18	12	11	15
Dodge	27	30	54	23	23	27	29	30
Green	24	15	29	34	35	24	19	19
Jefferson	19	22	24	17	15	9	12	9
Rock	16	30	30	38	29	24	19	49
9 SE District	**64**	**76**	**56**	**47**	**47**	**30**	**31**	**32**
Kenosha	5	7	8	7	3	3	NA	NA
Ozaukee	6	9	6	2	5	4	3	2
Racine	8	10	13	5	11	2	3	13
Walworth	27	27	18	25	20	15	15	13
Washington	9	11	9	6	5	5	9	3
Waukesha	9	12	2	2	3	NA	NA	NA
Grand Total	**1,140**	**1,223**	**1,341**	**1,352**	**1,178**	**1,024**	**1,025**	**1,118**