



Wisconsin Agricultural Land Prices

2018

Low commodity prices did not dampen average agricultural land prices in 2018. The WI Department of Revenue transfer return data finds average agricultural land values were higher in 2018.

Ag land
values up but
acres sold
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Wisconsin Agricultural Land Prices 2014-2018

A.J. Brannstrom¹ Simon Jette Nantel²*
University of Wisconsin Center for Dairy Profitability
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The weighted average price of agricultural land sold in Wisconsin in 2018 was \$4,345 per acre. This is an 8% increase from 2017. The number of acres sold in 2018 was lower than in 2017 by 11%. Low commodity prices and farm income, as well as higher interest rates dampened demand in 2018. Despite these difficult economic conditions and very large losses in the number of dairy farms across the state, land values have remained strong. The vast majority of landowners, even those forced to exit dairy, were not forced to sell their land. Most could continue cropping or rent the land, thus limiting the supply of land on the market. With cautious optimism regarding the 2019 commodity prices and farm income, and with stable or potentially lower interest rates, the demand for land could increase.

Farmland is generally the most valuable asset on a farmer’s balance sheet. However, estimating land values is always difficult. Individual land parcels are unique and local land markets differ. Reliable information on land values can be hard to come by. While many thousand homes are sold each year, only a small fraction (typically 1% to 2%) of the state’s agricultural land changes hands on the open market in any given year. Surveys of farmers, bankers, realtors and appraisers are sometimes used to estimate changes in land values. But these opinion surveys remain subjective and can be hard to interpret. Then, a few high-priced sales can make a lot of noise – but these sales are often exceptions and not reflective of the market in general.

Unbiased information from transfer return tax forms collected by The Wisconsin Department of Revenue (DOR) gives us an alternative source of agricultural land sales data. A transfer return tax is collected whenever a property is sold, and a transfer return form is collected with the tax payment. Information from these transfer return forms is the source for this paper.

Wisconsin’s agricultural land values are low compared to some of our neighboring states – but a larger portion of our land is not suitable for continuous row crop farming and more of our land is used for forage production, woodlots and pasture. The shorter growing season in northern Wisconsin also limits the potential agricultural value of the land.

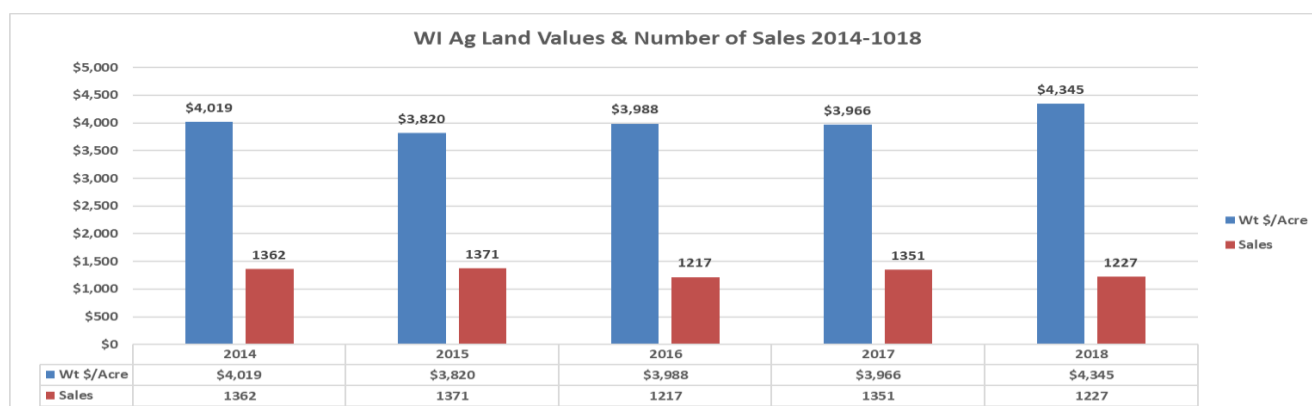


Figure 1. State-wide Ag Land Value Trends 2014-2018

¹ Arlin Brannstrom is a Faculty Associate Emeritus at the UW-Madison Center for Dairy Profitability and Secretary/Treasurer for the Wisconsin Chapter of the American Society of Farm Managers and Rural Appraisers.

² Simon Jette-Nantel is an Assistant Professor at UW- River Falls and a Farm Management Specialist for the UW-Madison Center for Dairy Profitability.

While the state average increased slightly in 2018, there were wide variations in sale price per acre. Around 20% of the sales were valued at less than \$1000/acre and only 17% of sales had prices above \$7,000/acre. High priced sales make good headlines; however, there were very few sales above \$10,000/acre.

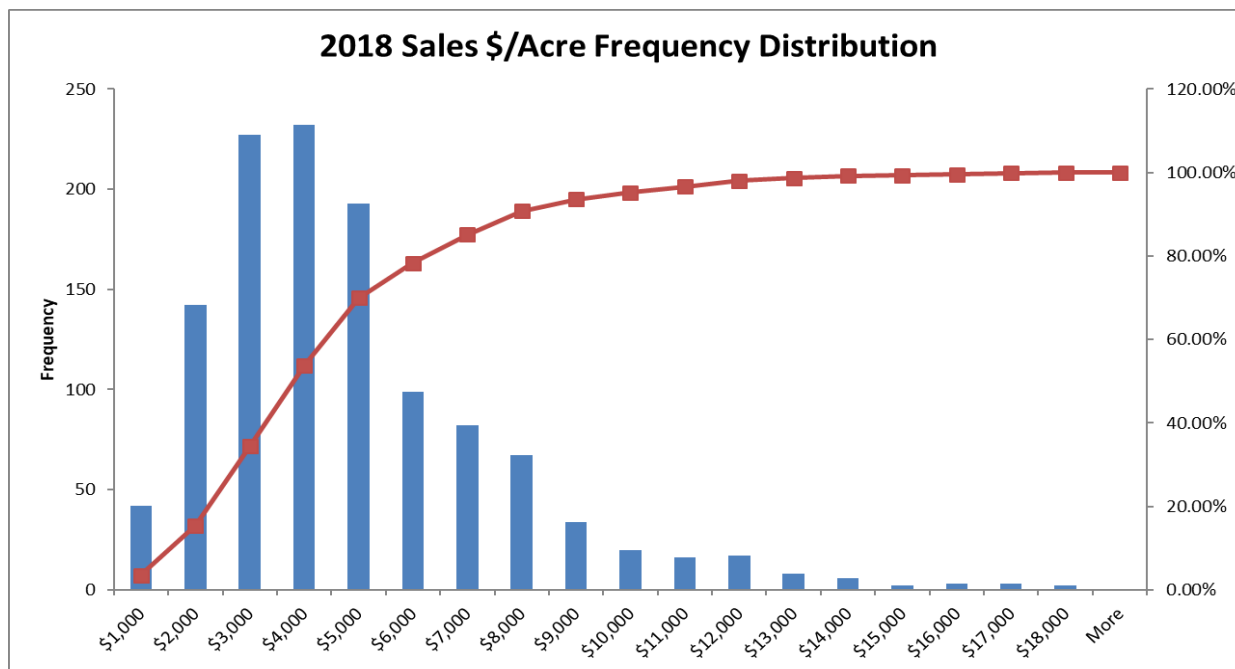


Figure 2. 2018 Distribution of weighted average \$/acre – statewide

Another way to emphasize the large range in the prices paid for bare land is illustrated in Appendix II. It reports the minimum and maximum sales price/acre for each county and NASS district between 2014-2018.

Methodology

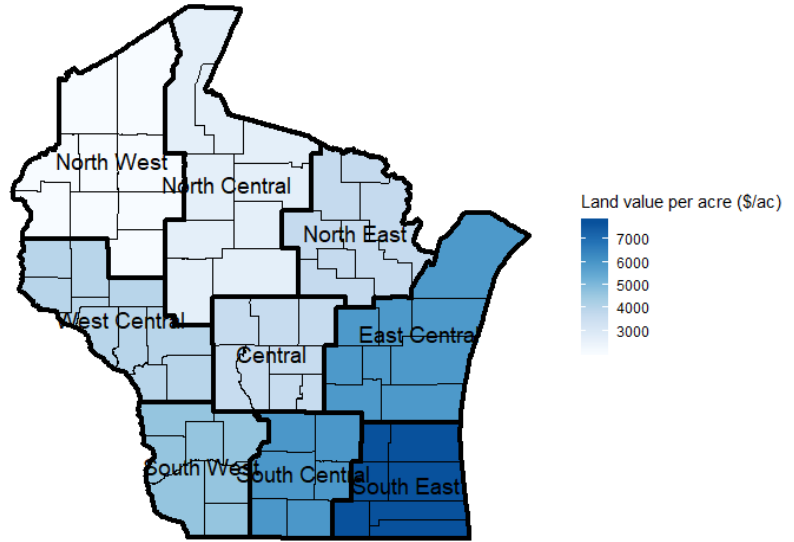
This report is based upon sales of bare land between non-related parties in Wisconsin. All transactions were between 35 acres and 2,000 acres and assessed for agricultural use at the time of the sale. Properties with water frontage and parcels sold with retained property rights were excluded.

The Department of Revenue’s transfer return data is an objective and relatively timely data source for measuring changes in agricultural land values over time. Later each year the Wisconsin Agricultural Statistics Service posts a summary of agricultural land sales – both bare land and improved properties. The NASS information uses the same transfer return data as this study, with one exception. The delay allows county assessors to collect and verify each parcel’s intended future use.

There are a few other differences in our approaches. The NASS summary is not limited to parcels 35 acres and above and includes properties in cities. Land markets can change quickly. Using only the transfer return data enables us to make an earlier assessment of the direction of land values. The NASS reports (which typically are updated in late summer) are another good alternative with more information about tillable land and land diverted from agriculture. The link to obtain the most current land summary is: http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Land_Sales/.

Between 2014 and 2018, more than 6500 bare agricultural land transfer returns were used to compute weighted average sale prices per acre. Weighted averages reduce the influence of sales with smaller acreage. Weighted averages are computed by summing the dollars paid for all sales and the total acres sold in the county or NASS unit and then dividing the totals. For example, if four 100-acre tracts sold for \$2000/acre and a 5th sold for \$4000, but was only 50 acres - the weighted average would be $(400 * \$2,000) + (50 * \$4,000) / 450$ or \$2,222/acre as opposed to the simple average of \$2,400.

Average Land Value by Agricultural District, 2018



Data source: Wisconsin Department of Revenue - Transfer Return Data

Location is an important determinant of value. In addition to the state-wide averages, the adjacent map and the figure below show the land prices for each of the NASS districts.

Table 1. Weighted Average Wisconsin Bare Ag Land Sales 2014-2018.

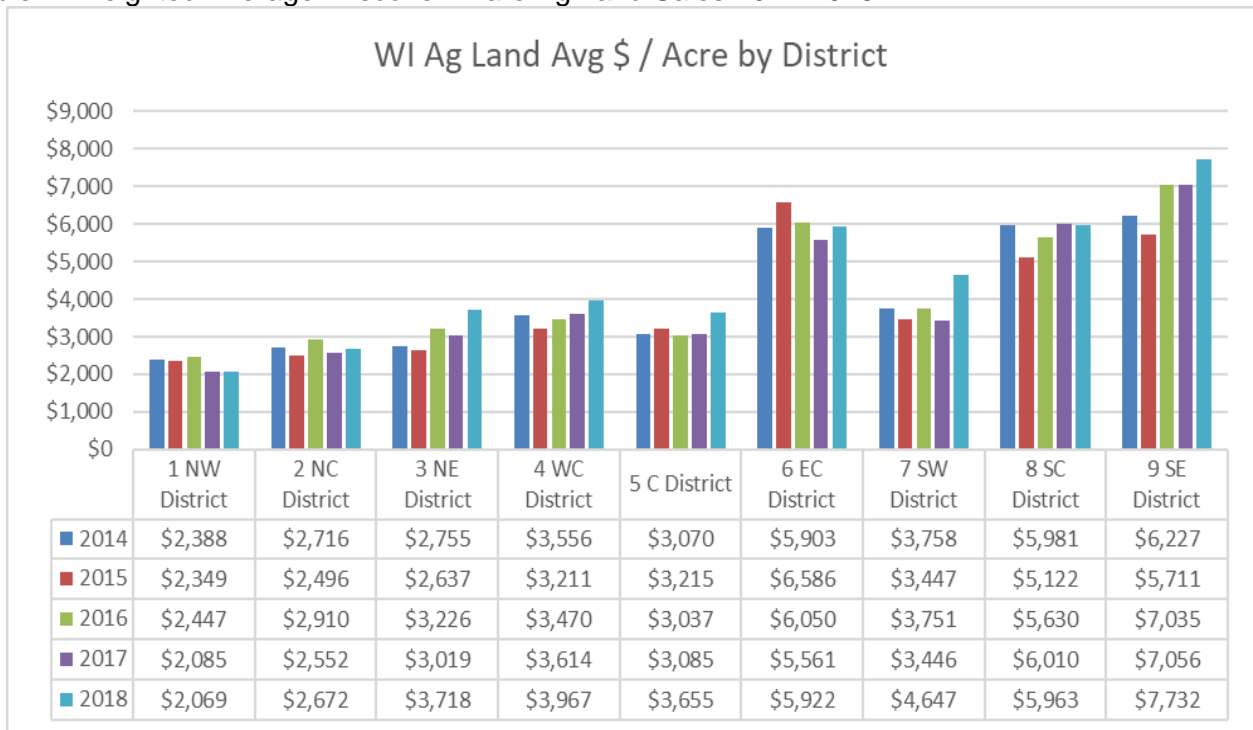


Table 1 lists the weighted average sales prices by district over the past decade in each of the nine NASS reporting districts. (Complete county details are included in Appendix I.) In 2018, there were higher average prices in eight of the nine districts. There are often wide variations in the value of individual parcels even within the same township or county.

Land Values vs Rental Rates

State-wide land rental rates are reported annually by NASS. Figure 5 on page six combines the state average land values with reported average rental rates. Even within a county, rental rates are highly variable. Some of the factors which affect rental rates are soil quality, field size, social contracts and demand for nutrient management. The 2018 NASS average rental rate was \$133/acre which is about 3.0% of the state-wide average sale price.

There has been a high demand for additional rented land in recent years and tenants bid up rental rates as a result. The following Wisconsin corn budget for 2019 illustrates the tight profit margins that are likely to exist this year if yields and harvest time prices are typical. Table 2 illustrates anticipated input costs associated with producing an acre of corn in 2019. Note that some of these costs are cash inputs and others non-cash such as repairs and depreciation. In the short run these fixed costs can be ignored – but they must be covered in the longer run.

Table 2 – 2019 Corn Budget

<u>Variable Costs</u>				
<u>Input</u>	<u>Units</u>	<u>Cost</u>	<u>Cost/ Unit</u>	<u>Value</u>
NH3	140	\$600	0.30	\$42.00
AMS	125	\$285	0.14	\$17.81
K2O	100	\$300	0.15	\$15.00
Starter	100	\$465	0.23	\$23.25
Lime	0.5	\$18	15.00	\$7.50
Seed	30000	\$280	0.00350	\$105.00
Chemicals		\$35		\$35.00
Insurance		\$28		\$28.00
Testing & Scouting		\$10		\$10.00
		Subtotal		\$283.56 44.50%
<u>Field Operations</u>				
Nitrogen Application		\$16		\$16.00
Spreading Fertilizer		\$6		\$6.00
Primary Tillage		\$16		\$16.00
Secondary Tillage		\$16		\$16.00
Planting		\$24		\$24.00
Spraying		\$15		\$15.00
Combining		\$32		\$32.00
		Subtotal		\$125.00 19.67%
<u>Trucking, Drying and Storage Costs</u>				
Trucking		\$30		\$30.00
Drying		\$35		\$35.00
Storage		\$30		\$30.00
		Subtotal		\$95.00 14.93%
Rent				\$133.00 20.90%
		Total Costs		\$636.56

The returns to labor and management with different yield and corn price assumptions appear in table 3. As an example, with these revenue and cost projections (including the state average \$133/acre for rent) an operator would lose \$110 /acre with a yield of 150 bu. and average corn price of \$3.50/bu. In this case renters are not able to cover their full cost of production and must hope for above average yields or improved commodity prices or both. The outlook for higher commodity prices in 2019 is somewhat encouraging with contract prices near \$4/bu. for corn at the time of writing this report.

Revenue/Acre						
Corn	Yield/Acre					
Price	100	125	150	175	200	225
\$2.75	\$ (360)	\$ (291)	\$ (222)	\$ (153)	\$ (85)	\$ (16)
\$3.00	\$ (335)	\$ (260)	\$ (185)	\$ (110)	\$ (35)	\$ 40
\$3.25	\$ (310)	\$ (228)	\$ (147)	\$ (66)	\$ 15	\$ 97
\$3.50	\$ (285)	\$ (197)	\$ (110)	\$ (22)	\$ 65	\$ 153
\$3.75	\$ (260)	\$ (166)	\$ (72)	\$ 22	\$ 115	\$ 209

Table 3. Projected net revenue per acre with various yield and price assumptions

In recent years, NASS rental rates have averaged between 2.4 and 3.4% of the average statewide ag land sales prices. Many more acres are rented than sold each year. With narrowing profitability going forward, there has been an increased use of flex lease contracts in the Midwest. Flex leases allow the owner and tenant to share the risks and rewards in good years and bad. (Examples of several types of agricultural leases can be found at <http://www.aglease101.org>.)

When the average cash rents are combined with land value appreciation, the returns to owning land look better than many other investment alternatives. Rents tend to be “sticky” when commodity prices soften – as we’ve seen in 2017 and 2018. But they tend to increase with commodity prices which might be our situation in 2019 and which may push up the competition and rental rate in 2020.

Implications for Farmers

Rising land values are a mixed blessing for established farmers. 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 does it directly benefit from changes in land values. High land values provide the retirement cushion for “last generation” farm businesses. However, high land prices make it more difficult for new entrants to get started without significant help from family members or other benefactors.

Dairy farming is a capital-intensive business. A typical dairy cow and her replacement consumes approximately 7.5 tons of forage dry matter and 100 bushels of grain each year. Manure management and nutrient balancing are a growing challenge. The typical Wisconsin dairy farm requires 2-3 acres of cropland to grow the forages and grain consumed by each dairy cow. In recent years, the demands for agricultural land have made farmland acquisition very difficult to amortize.

Wisconsin’s farmland use value assessment has greatly reduced the costs of holding agricultural real estate. The real estate taxes for agricultural land are much lower than they once were. 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 depends upon access to affordable land resources.

Few things are as illiquid as land. Unlike stocks, bonds and commodities, one can only estimate the value of real estate until a willing buyer and seller consummate a sale. In the past, agricultural land has been a better investment than many other alternatives. However, past performance is not always a good predictor of the future! A fragile farm economy along with continued trade tensions could constrain future upward price pressures.

Appendix I on the following page contains a more detailed breakdown of real estate sale prices on a county by district basis for 2015 - 2018. The limited numbers of sales in each county can cause wide variations from year to year, and the weighted average prices reported may not truly represent the local market. These figures should not substitute for an independent appraisal by a qualified professional. For this reason, Appendix II reports the maximum and minimum sales price per acre during this same period.

	2015			2016			2017			2018		
	Count	Acres	Wt \$/Acre	Count	Acres	Wt \$/Acre	Count	Acres	Wt \$/Acre	Count	Acres	Wt \$/Acre
1 NW District	130	12195	\$2,349	128	10512	\$2,447	172	13631	\$2,085	125	10708	\$2,069
Barron	31	2730	\$4,031	21	1944	\$3,250	21	1428	\$3,454	10	919	\$2,188
Bayfield	9	1254	\$745	12	765	\$1,408	12	1578	\$762	4	176	\$1,082
Burnett	2	100	\$2,765	7	345	\$1,758	13	1272	\$1,501	9	1227	\$1,117
Chippewa	26	2433	\$2,460	33	3078	\$3,007	48	3616	\$2,374	34	3062	\$2,624
Douglas	18	1299	\$850	4	415	\$859	7	593	\$993	2	80	\$1,215
Polk	20	1275	\$2,989	28	2024	\$2,669	41	2680	\$2,663	33	2294	\$2,664
Rusk	16	1519	\$1,717	11	688	\$1,207	19	1745	\$1,323	18	1435	\$1,237
Sawyer	3	990	\$1,846	6	819	\$1,105	6	326	\$2,326	6	441	\$1,284
Washburn	5	595	\$1,846	6	434	\$2,231	5	393	\$2,539	9	1074	\$1,860
2 NC District	137	10663	\$2,496	122	9349	\$2,910	114	7940	\$2,552	121	8015	\$2,672
Ashland	10	1567	\$1,525	3	178	\$1,228	6	489	\$1,203	3	227	\$789
Clark	35	2480	\$3,328	44	3466	\$3,470	33	2526	\$2,679	28	2035	\$3,742
Iron	1	48	\$625	1	40	\$1,325	NA	NA	NA	1	40	\$875
Lincoln	5	468	\$1,937	2	240	\$1,354	4	213	\$1,292	13	740	\$1,758
Marathon	52	3386	\$2,991	43	2962	\$3,500	49	3334	\$2,833	50	2934	\$3,098
Oneida	4	389	\$1,259	1	72	\$1,729	1	52	\$1,601	NA	NA	NA
Price	8	961	\$1,580	9	501	\$971	6	360	\$1,434	7	596	\$1,078
Taylor	21	1328	\$1,848	19	1890	\$1,907	15	966	\$2,681	19	1443	\$1,771
Vilas	1	36	\$12,361	NA	NA	NA	NA	NA	NA	NA	NA	NA
3 NE District	82	6090	\$2,637	100	7254	\$3,226	71	4616	\$3,019	61	4004	\$3,718
Florence	2	95	\$1,527	2	80	\$1,350	2	102	\$1,392	1	40	\$2,000
Forest	3	246	\$1,358	1	39	\$1,538	NA	NA	NA	NA	NA	NA
Langlade	13	1761	\$1,734	18	1380	\$2,579	11	982	\$1,921	19	1423	\$2,226
Marinette	17	1150	\$1,868	31	2354	\$2,125	15	999	\$1,940	9	573	\$2,965
Oconto	21	1268	\$2,941	14	1299	\$4,393	19	1101	\$3,244	14	942	\$4,428
Shawano	26	1570	\$4,235	34	2102	\$4,267	24	1432	\$4,468	18	1026	\$5,624
4 WC District	255	20810	\$3,211	249	19506	\$3,470	260	20157	\$3,614	237	20085	\$3,967
Buffalo	19	2280	\$3,772	36	3415	\$3,500	30	2592	\$3,637	23	2615	\$4,141
Dunn	35	2873	\$2,879	44	3684	\$3,654	47	4353	\$2,747	32	3082	\$3,810
Eau Claire	21	1584	\$3,146	20	1124	\$3,364	27	1375	\$4,257	28	1590	\$3,778
Jackson	24	1798	\$2,724	17	1167	\$2,502	19	1960	\$3,119	21	2015	\$3,772
La Crosse	21	1314	\$3,701	9	1103	\$4,455	20	1502	\$4,109	15	1070	\$4,417
Monroe	36	2340	\$3,095	29	1892	\$2,636	30	1907	\$4,071	36	2448	\$3,511
Pepin	15	934	\$3,525	6	535	\$2,990	5	296	\$3,042	15	1410	\$3,491
Pierce	20	1519	\$3,538	29	2028	\$3,297	21	1359	\$3,974	21	1621	\$4,211
St. Croix	30	2736	\$3,410	33	2264	\$4,433	32	1828	\$3,925	32	3241	\$4,621
Trempealeau	34	3432	\$2,903	26	2294	\$3,206	29	2985	\$4,049	14	993	\$3,480
5 C District	136	10225	\$3,215	103	7191	\$3,037	115	8070	\$3,085	101	7429	\$3,655
Adams	18	1965	\$3,874	7	533	\$2,787	11	806	\$2,292	19	1445	\$3,358
Green Lake	11	622	\$5,094	6	488	\$4,748	14	932	\$4,168	12	652	\$6,663
Juneau	20	1702	\$3,049	8	687	\$2,572	23	2161	\$2,919	13	1291	\$2,579
Portage	23	1465	\$2,787	25	1758	\$3,116	21	1470	\$3,296	23	1391	\$3,856
Waupaca	21	1650	\$3,306	30	1564	\$3,653	26	1309	\$3,268	20	1679	\$3,548
Waushara	21	1493	\$2,554	26	2121	\$2,338	20	1392	\$2,683	14	971	\$3,404
Wood	22	1328	\$2,676	1	40	\$3,000	NA	NA	NA	NA	NA	NA
6 EC District	202	13401	\$6,586	150	11319	\$6,050	177	12660	\$5,561	158	10884	\$5,922
Brown	24	1808	\$10,667	15	1094	\$8,303	26	1804	\$9,452	13	1018	\$10,265
Calumet	18	1495	\$8,508	13	789	\$9,593	6	356	\$9,272	20	1437	\$7,805
Door	21	1015	\$3,926	15	1208	\$3,358	13	706	\$3,953	4	239	\$4,075
Fond du Lac	28	2125	\$5,490	21	2303	\$6,488	35	2814	\$4,909	19	1385	\$5,523
Kewaunee	18	1198	\$4,680	6	311	\$4,066	15	1179	\$5,659	10	588	\$6,656
Manitowoc	26	2079	\$7,398	12	971	\$7,294	17	1148	\$5,742	27	1571	\$7,041
Marquette	20	1030	\$3,073	14	708	\$2,366	25	2212	\$3,016	24	1800	\$2,618
Outagamie	12	606	\$7,969	20	1503	\$6,943	16	878	\$6,433	15	834	\$5,839
Sheboygan	21	1133	\$5,559	22	1531	\$5,038	18	1119	\$5,502	16	1295	\$4,225
Winnebago	14	912	\$5,832	12	901	\$5,172	6	444	\$3,844	10	717	\$5,775
7 SW District	189	16173	\$3,447	175	14162	\$3,751	193	18648	\$3,446	225	19177	\$4,647
Crawford	17	1664	\$2,713	18	1778	\$2,868	21	2205	\$2,685	15	1120	\$2,978
Grant	36	3554	\$3,359	23	2134	\$4,472	27	2953	\$3,461	58	5722	\$5,810
Iowa	24	1915	\$3,870	25	2298	\$3,892	34	3801	\$3,697	42	3794	\$4,479
Lafayette	15	1409	\$5,114	24	1742	\$5,821	16	1447	\$5,957	21	1673	\$6,392
Richland	26	2026	\$2,506	22	1679	\$2,792	23	2303	\$2,837	18	1290	\$3,092
Sauk	31	2294	\$4,010	37	2486	\$3,555	35	2505	\$3,643	41	3297	\$3,789
Vernon	40	3311	\$3,142	26	2045	\$2,868	37	3434	\$2,849	30	2281	\$3,668
8 SC District	176	14440	\$5,122	141	10484	\$5,630	173	14053	\$6,010	154	12482	\$5,963
Columbia	36	2682	\$4,196	28	1665	\$4,924	48	4168	\$4,614	27	1525	\$5,374
Dane	36	2582	\$6,912	30	2373	\$7,074	36	2669	\$7,510	41	2700	\$7,050
Dodge	22	1566	\$5,656	26	2285	\$4,940	19	1468	\$6,368	21	1884	\$4,877
Green	28	2224	\$5,105	16	1145	\$5,196	27	2523	\$5,738	18	1646	\$5,791
Jefferson	20	1651	\$4,090	22	1616	\$6,350	13	630	\$5,674	24	2067	\$5,763
Rock	34	3735	\$4,794	19	1400	\$4,672	30	2595	\$6,851	23	2660	\$6,227
9 SE District	64	4402	\$5,711	49	3789	\$7,035	76	5245	\$7,056	45	2911	\$7,732
Kenosha	11	721	\$6,290	3	207	\$7,029	7	498	\$5,334	10	633	\$8,971
Ozaukee	10	681	\$6,041	5	509	\$7,797	12	784	\$4,919	3	198	\$5,927
Racine	5	364	\$5,680	7	509	\$5,168	17	1023	\$8,631	11	641	\$6,979
Walworth	25	1874	\$5,612	20	1654	\$6,751	21	1506	\$7,344	12	857	\$7,451
Washington	12	692	\$4,527	11	641	\$6,747	12	847	\$8,075	6	341	\$7,555
Waukesha	1	70	\$11,071	3	269	\$11,571	7	587	\$6,419	3	241	\$9,212
Grand Total	1371	108399	\$3,820	1217	93566	\$3,988	1351	105020	\$3,966	1227	95695	\$4,345

Appendix I Sales, Acres & Weighted Average \$ / Acre

