

Kansas

Irrigation Water Use

2009



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INTRODUCTION

The data shown in this publication were prepared using information from Irrigation Water Use Reports submitted to the Kansas Department of Agriculture, Division of Water Resources (DWR), for the 2005 through 2009 calendar years. Annual Water Use Reports are required of all permitted water users as a condition of K.S.A. 82a-732 of the Water Appropriations Act. Each year, Irrigation Water Use Reports are reviewed by DWR to ensure that the information provided is as complete and accurate as possible. Any corrections to the reported information are made through follow-up letters and phone calls. DWR expresses their appreciation to all irrigation water users for completing these annual reports and participating in the follow-up process.

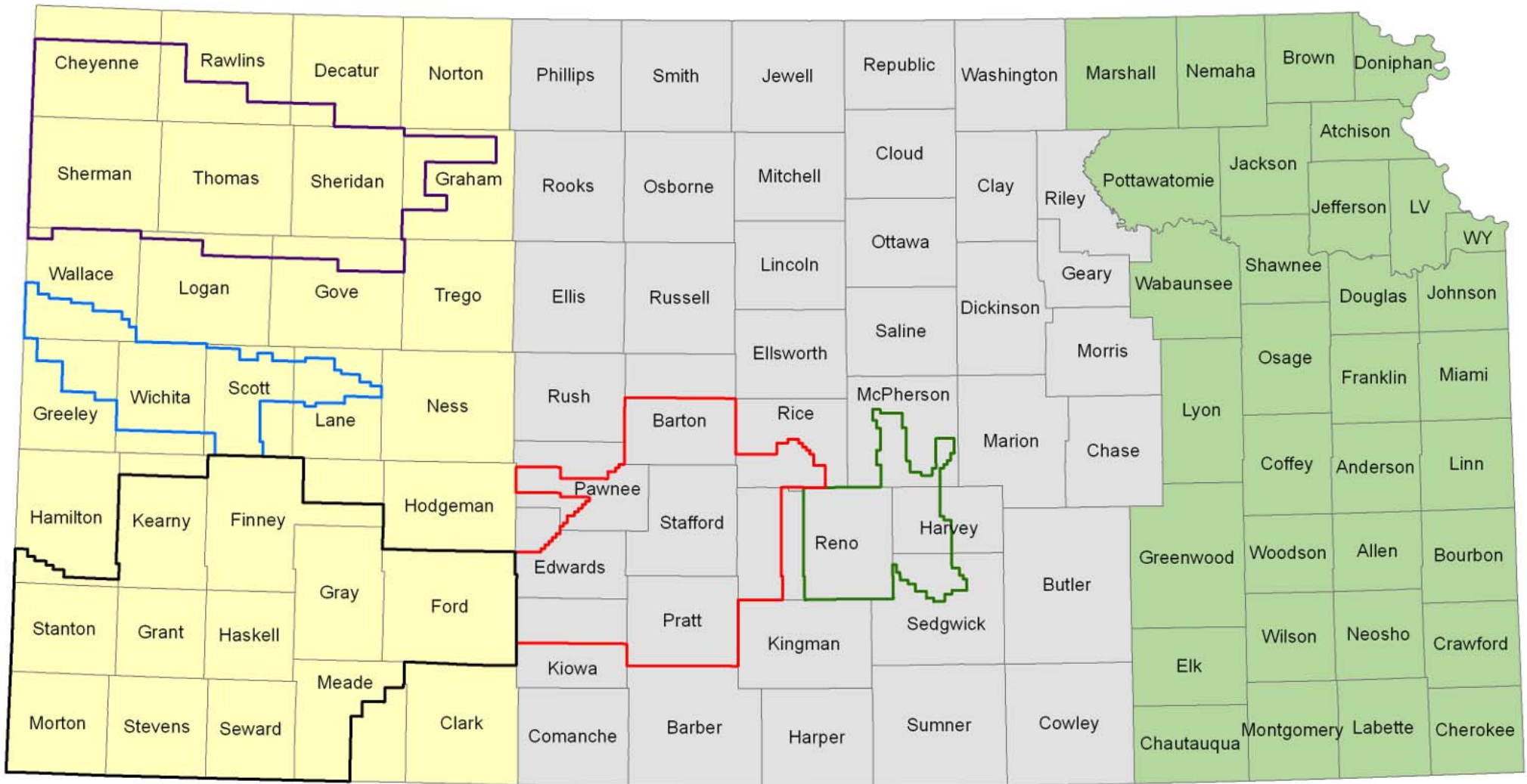
Irrigation is most prevalent in western Kansas where average annual rainfall is less than 20 inches and sufficient groundwater can be pumped to compensate for this lack of moisture. Irrigation water use decreases from western to eastern Kansas, where precipitation is greater and significant aquifers are not present. For many years, the maximum allowable quantities of water allowed for irrigation were 2.0 acre-feet per acre in western Kansas (from the Kansas/Colorado border to the Range 20 West/Range 21 West line), 1.5 acre-feet per acre in central Kansas (from the Range 20 West/Range 21 West line to the Range 5 East/Range 6 East line), and 1.0 acre-feet per acre in eastern Kansas (from the Range 5 East/Range 6 East line to the Kansas/Missouri border). As a result of revised regulations, appropriations of water for irrigation after Sept. 22, 2000 have been based on county-level net irrigation requirements for corn, as determined by the National Resources Conservation Service (NRCS). These county values shown on p. 68 of the Kansas Water Appropriation Act Rules and Regulations, available at http://www.ksda.gov/includes/statute_regulations/mainportal/KWAA_Rules_Regs_November_2010_FullVersion.pdf.

Irrigation water use data in this report are shown by county and by region. The three major regions used for analysis are similar to those originally used for allocation of reasonable quantities for irrigation, because those guidelines were in effect when the majority of irrigation water rights were issued. The division between central and eastern Kansas was adjusted to coincide with county boundaries (see figure 1). The western and central regions are further divided to distinguish the five Groundwater Management Districts from the remainder of each region.

Several factors should be considered when interpreting the irrigation water use data presented in this report, or when comparing these data to other sources of irrigation information:

- Quantities of water diverted and acres irrigated are as reported by irrigators, with possible corrections after review by DWR staff. Although the law requires accurate reporting, it is impossible to verify every measurement.
- This report compares irrigation water use with irrigated acres to produce application rates by county and by regional location. Water diverted under ditch irrigation water rights in southwest Kansas and by irrigation districts in north-central Kansas cannot be directly associated with irrigated acres in the same county or region of withdrawal, and for this reason these quantities of surface water are not included in the tables of this report.
- While the majority of irrigated lands in Kansas are in crops, some counties may have irrigation water use for golf courses, nurseries, and recreational areas.

Figure 1. Regions Used for Kansas Irrigation Water Use Analyses



Kansas Department of Agriculture
 Administrative Services, GIS
 October 20, 2011



Legend

- | | | | |
|----------------|-----------------------|-------------------------|-------------------------|
| Central Kansas | Western Kansas | Equus Beds GMD #2 | Northwest Kansas GMD #4 |
| Eastern Kansas | Western Kansas GMD #1 | Southwest Kansas GMD #3 | Big Bend GMD #5 |

Table 1
SELECTED WATER USE STATISTICS BY REGIONAL LOCATION
KANSAS, 2005-2009

Regional Location	2009					Acre-feet per acre (AF/A)					
	Total Number of Pd's ^{a/}	Water Use (AF) ^{b/}	Acres Irrigated	Use above Regional Standard (AF) ^{c/}	Percent Above Regional Standard	2005	2006	2007	2008	2009	Average
Western Kansas											
Western KS GMD No. 1	2,510	178,937	204,103	804	0.45	0.86	0.99	0.89	0.99	0.88	0.92
Southwest KS GMD No. 3	9,771	1,730,790	1,463,936	15,783	0.91	1.03	1.27	1.16	1.31	1.18	1.19
Northwest KS GMD No. 4	3,441	294,761	377,052	760	0.26	1.02	1.12	1.09	1.05	0.78	1.01
Remainder of Western KS	2,190	87,101	103,231	701	0.80	0.96	1.05	0.95	1.27	0.84	0.95
Central Kansas											
Equus Beds GMD No. 2	1,707	97,880	127,843	535	0.55	0.84	1.02	0.79	0.65	0.77	0.81
Big Bend GMD No. 5	4,439	443,381	453,370	1,897	0.43	1.02	1.11	0.86	0.94	0.98	0.98
Remainder of Central KS	5,036	141,257	229,912	1,644	1.16	0.73	0.83	0.66	0.68	0.61	0.67
Eastern Kansas											
All Eastern Kansas	1,441	11,557	54,155	554	4.80	0.46	0.54	0.43	0.30	0.21	0.39
State Total	30,535	2,985,664	3,013,602	22,678	0.76	0.97	1.14	1.01	1.10	0.99	1.04

^{a/} Total number of active points of diversion includes those that were not used in 2009.

^{b/} Water use does not include approximately 162,428 acre-feet of surface water withdrawn in 2009 under ditch irrigation water rights in southwest Kansas and by irrigation districts in north-central Kansas. These amounts are not included in any of the tables.

^{c/} Regional standards used for comparison are those that apply to the majority of appropriations for irrigation water use (see figure 1).

Table 2
IRRIGATION WATER USE, ACRES IRRIGATED, AND AVERAGE APPLICATION RATE
BY COUNTY, KANSAS, 2005-2009

County	2009		Average acre-foot per acre (AF/A)					
	Water Use (AF)	Acres Irrigated	2005	2006	2007	2008	2009	Average
Allen	114	275	0.16	0.38	0.00	0.13	0.42	0.22
Anderson	517	1,565	0.44	0.49	0.57	0.21	0.33	0.41
Atchison	78	268	0.19	0.47	0.42	0.17	0.29	0.31
Barber	4,321	4,549	0.95	1.15	0.79	0.80	0.95	0.93
Barton	30,949	36,353	0.97	1.01	0.87	0.68	0.85	0.88
Bourbon	0	0	0.28	0.17	0.13	0.00	0.00	0.12
Brown	516	1,906	0.36	0.40	0.42	0.41	0.27	0.37
Butler	1,146	1,857	0.51	0.56	0.35	0.46	0.62	0.50
Chase	0	11	0.11	0.85	1.10	0.34	0.03	0.49
Chautauqua	0	0	0.00	0.16	0.00	0.00	0.00	0.03
Cherokee	258	875	1.03	0.48	0.16	0.13	0.30	0.42
Cheyenne	41,151	45,517	1.06	1.23	1.26	1.22	0.90	1.13
Clark	3,656	4,796	0.87	1.26	1.09	0.93	0.76	0.98
Clay	10,509	23,396	0.59	0.72	0.66	0.47	0.45	0.58
Cloud	13,193	23,498	0.61	0.70	0.57	0.40	0.56	0.57
Coffey	206	755	0.26	0.53	0.32	0.19	0.27	0.31
Comanche	7,558	6,919	1.04	1.22	1.06	1.01	1.09	1.08
Cowley	1,401	2,762	0.55	0.66	0.36	0.44	0.51	0.50
Crawford	424	2,062	0.26	0.30	0.28	0.19	0.21	0.25
Decatur	8,152	10,853	0.96	1.09	0.99	0.97	0.75	0.95
Dickinson	2,322	4,704	0.72	0.81	0.70	0.52	0.49	0.65
Doniphan	97	635	0.21	0.25	0.29	0.16	0.15	0.21
Douglas	307	1,736	0.50	0.69	0.48	0.40	0.18	0.45
Edwards	100,951	98,186	1.05	1.17	0.92	1.10	1.03	1.05
Elk	0	0	0.00	0.00	0.00	0.00	0.00	0.00
Ellis	1,297	1,606	0.91	0.99	0.62	0.69	0.81	0.80
Ellsworth	121	546	1.02	0.96	0.47	0.19	0.22	0.57
Finney	257,402	219,143	1.13	1.33	1.18	1.33	1.17	1.23
Ford	90,946	84,106	0.97	1.14	0.95	1.13	1.08	1.05
Franklin	471	703	0.35	0.76	0.68	0.69	0.67	0.63
Geary	2,096	4,431	0.56	0.76	0.47	0.42	0.47	0.54
Gove	14,456	19,904	0.89	0.93	0.84	0.84	0.73	0.85
Graham	8,845	12,939	0.87	0.94	0.83	0.69	0.68	0.80
Grant	121,413	102,302	0.91	1.25	1.11	1.31	1.19	1.15
Gray	195,328	174,923	1.09	1.25	1.10	1.21	1.12	1.15
Greeley	20,903	21,525	0.82	1.01	0.98	1.00	0.97	0.96
Greenwood	39	78	1.04	0.82	0.69	1.00	0.50	0.81
Hamilton	35,588	31,390	1.06	1.25	1.17	1.25	1.13	1.17
Harper	916	1,803	0.78	1.10	0.71	0.60	0.51	0.74
Harvey	25,867	35,368	0.83	1.02	0.79	0.67	0.73	0.81
Haskell	195,413	185,250	0.91	1.19	1.06	1.18	1.05	1.08
Hodgeman	20,110	24,922	0.98	1.00	0.81	0.96	0.81	0.91
Jackson	72	125	0.31	0.38	0.41	0.36	0.58	0.41
Jefferson	370	3,091	0.48	0.58	0.51	0.34	0.12	0.41
Jewell	1,565	3,707	0.69	0.68	0.49	0.30	0.42	0.52
Johnson	2,043	4,536	0.81	0.81	0.76	0.53	0.45	0.67

Table 2
IRRIGATION WATER USE, ACRES IRRIGATED, AND AVERAGE APPLICATION RATE
BY COUNTY, KANSAS, 2005-2009

County	2009		Average acre-foot per acre (AF/A)					
	Water Use (AF)	Acres Irrigated	2005	2006	2007	2008	2009	Average
Kearny	127,098	98,994	1.26	1.48	1.41	1.57	1.28	1.40
Kingman	16,094	15,867	1.09	1.09	0.95	0.78	1.01	0.98
Kiowa	58,760	52,739	1.06	1.25	1.01	1.15	1.11	1.12
Labette	231	1,121	0.38	0.23	0.22	0.11	0.21	0.23
Lane	15,824	17,052	0.85	1.02	0.75	1.01	0.93	0.91
Leavenworth	235	1,357	0.45	0.47	0.54	0.32	0.17	0.39
Lincoln	162	595	0.39	0.59	0.25	0.12	0.27	0.32
Linn	53	220	0.66	0.94	0.55	0.51	0.24	0.58
Logan	4,365	8,251	0.86	0.91	0.87	0.91	0.53	0.82
Lyon	79	225	0.27	0.30	0.49	0.27	0.35	0.34
Marion	944	2,969	0.63	0.73	0.55	0.39	0.32	0.52
Marshall	1,084	2,879	0.61	0.60	0.53	0.38	0.38	0.50
McPherson	22,568	33,402	0.77	0.99	0.67	0.58	0.68	0.74
Meade	169,553	126,263	1.10	1.40	1.31	1.41	1.34	1.31
Miami	58	302	0.69	0.40	0.33	0.18	0.19	0.36
Mitchell	5,893	6,763	0.61	0.92	0.72	0.54	0.87	0.73
Montgomery	415	1,411	0.20	0.25	0.26	0.20	0.29	0.24
Morris	39	216	0.27	0.74	0.33	0.46	0.18	0.40
Morton	47,798	46,208	0.74	0.90	0.91	1.15	1.03	0.95
Nemaha	38	96	0.38	0.23	0.20	1.34	0.39	0.51
Neosho	46	125	0.46	0.61	0.69	0.71	0.37	0.57
Ness	3,480	3,802	0.94	1.05	0.65	0.95	0.92	0.90
Norton	7,215	10,667	0.82	0.97	0.88	0.82	0.68	0.83
Osage	20	91	0.27	0.41	0.25	0.14	0.22	0.26
Osborne	2,712	3,245	0.71	0.86	0.70	0.58	0.84	0.74
Ottawa	1,976	4,543	0.57	0.52	0.57	0.32	0.43	0.48
Pawnee	62,468	74,702	0.96	0.94	0.74	0.78	0.84	0.85
Phillips	5,483	7,642	0.79	0.85	0.69	0.73	0.72	0.76
Pottawatomie	1,462	11,543	0.46	0.55	0.34	0.22	0.13	0.34
Pratt	93,005	84,680	1.00	1.09	0.79	1.02	1.10	1.00
Rawlins	12,547	17,879	0.98	1.02	0.90	0.89	0.70	0.90
Reno	47,331	53,344	0.93	1.07	0.88	0.70	0.89	0.89
Republic	17,617	30,127	0.75	0.75	0.69	0.47	0.58	0.65
Rice	15,997	22,367	0.99	1.13	0.75	0.61	0.72	0.84
Riley	814	4,926	0.59	0.64	0.39	0.22	0.17	0.40
Rooks	794	1,830	0.68	0.80	0.41	0.36	0.43	0.54
Rush	8,387	10,125	0.76	0.88	0.72	0.60	0.83	0.76
Russell	49	136	0.06	0.57	10.55	0.15	0.36	2.34
Saline	1,482	3,913	0.75	0.76	0.66	0.39	0.38	0.59
Scott	45,342	51,614	0.89	0.96	0.88	0.98	0.88	0.92
Sedgwick	28,059	41,511	0.83	0.97	0.75	0.60	0.68	0.77
Seward	160,821	128,194	1.11	1.32	1.28	1.41	1.25	1.27
Shawnee	1,116	9,347	0.42	0.52	0.42	0.32	0.12	0.36
Sheridan	59,466	77,851	1.04	1.05	1.05	0.98	0.76	0.98
Sherman	98,827	113,480	1.03	1.13	1.15	1.15	0.87	1.07

Table 2
IRRIGATION WATER USE, ACRES IRRIGATED, AND AVERAGE APPLICATION RATE
BY COUNTY, KANSAS, 2005-2009

County	2009		Average acre-foot per acre (AF/A)					
	Water Use (AF)	Acres Irrigated	2005	2006	2007	2008	2009	Average
Smith	1,398	2,768	0.58	0.75	0.46	0.39	0.50	0.54
Stafford	77,613	82,607	1.02	1.14	0.89	0.89	0.94	0.98
Stanton	123,917	110,804	0.79	1.20	1.06	1.20	1.12	1.07
Stevens	227,895	175,902	1.06	1.30	1.21	1.41	1.30	1.26
Sumner	4,281	9,958	0.73	0.86	0.56	0.32	0.43	0.58
Thomas	66,773	98,359	1.01	1.20	1.05	1.01	0.68	0.99
Trego	4,478	5,416	1.03	1.05	1.02	0.83	0.83	0.95
Wabaunsee	687	5,361	0.46	0.54	0.34	0.21	0.13	0.34
Wallace	48,382	53,490	1.01	1.08	1.01	1.03	0.90	1.01
Washington	4,381	10,454	0.50	0.62	0.45	0.32	0.42	0.46
Wichita	54,446	66,526	0.76	0.93	0.81	0.95	0.82	0.85
Wilson	223	847	0.32	0.39	0.32	0.33	0.26	0.32
Woodson	0	0	0.00	0.00	0.00	0.00	0.00	0.00
Wyandotte	300	620	0.74	0.92	0.75	0.59	0.48	0.70
Total	2,985,664	3,013,602	0.97	1.14	1.01	1.10	0.99	1.04

**TABLE 3
COMPARISON OF WATER USE AND ACRES IRRIGATED BY METER STATUS AND REGIONAL LOCATION
KANSAS, 2009**

Regional Location	Metered				Not Metered				Combined ^{a/}	Total No. of Pd's	Percent Metered ^{b/}
	No. of Pd's	Water Use (AF)	Acres Irrigated	AF/A	No. of Pd's	Water Use (AF)	Acres Irrigated	AF/A	No. of Pd's		
Western Kansas											
Western KS GMD No. 1	1,107	123,366	138,187	0.89	607	55,571	65,916	0.84	19	1,737	65%
Southwest KS GMD No. 3	7,712	1,692,164	1,428,065	1.18	203	38,626	35,752	1.08	151	8,171	97%
Northwest KS GMD No. 4	2,983	291,545	372,965	0.78	43	3,216	4,087	0.79	86	3,120	99%
Remainder of Western KS	1,189	80,879	98,051	0.82	64	6,222	5,180	1.20	253	1,546	95%
Central Kansas											
Equus Beds GMD No. 2	969	75,262	99,645	0.76	307	22,618	28,198	0.80	276	1,545	76%
Big Bend GMD No. 5	3,604	428,684	437,878	0.98	126	14,697	15,366	0.96	382	4,095	97%
Remainder of Central KS	2,280	123,597	195,945	0.63	386	17,660	33,738	0.52	666	3,230	86%
Eastern Kansas											
All Eastern Kansas	417	9,057	42,825	0.21	142	2,500	11,180	0.22	91	771	75%
State Total	20,261	2,824,554	2,813,561	1.00	1,878	161,110	199,417	0.81	1,924	24,215	91%

^{a/} Water use and acres irrigated from combined points of diversion are included with either metered or not metered points of diversion.

^{b/} Percent metered is the number of metered pd's divided by the total number of pd's excluding combined.

TABLE 4
WATER USE, ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY CROP AND REGIONAL LOCATION
KANSAS, 2009

Regional Location	Alfalfa			Corn			Grain Sorghum			Soybeans			Wheat			Other or Multiple Crops		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Western Kansas																		
GMD No. 1	1,623	1,596	1.02	59,318	53,245	1.11	1,050	2,336	0.45	774	803	0.96	2,819	6,897	0.41	113,353	139,226	0.81
GMD No. 3	157,454	101,732	1.55	630,173	434,772	1.45	14,811	17,003	0.87	32,212	27,332	1.18	49,660	64,532	0.77	846,480	818,565	1.03
GMD No. 4	5,145	5,827	0.88	183,855	198,899	0.92	1,280	3,426	0.37	12,401	17,470	0.71	3,829	9,991	0.38	88,251	141,439	0.62
Remainder	9,331	9,330	1.00	34,710	36,468	0.95	1,452	2,166	0.67	2,621	3,792	0.69	2,038	4,457	0.46	36,949	47,018	0.79
Central Kansas																		
GMD No. 2	1,167	1,487	0.78	40,402	47,321	0.85	469	1,493	0.31	24,909	33,693	0.74	206	607	0.34	30,726	43,242	0.71
GMD No. 5	19,329	23,273	0.83	226,733	212,157	1.07	4,775	6,194	0.77	82,216	83,434	0.99	3,579	8,181	0.44	106,749	120,131	0.89
Remainder	2,967	6,911	0.43	54,254	78,035	0.70	1,785	2,961	0.60	24,136	46,173	0.52	781	2,073	0.38	57,334	93,759	0.61
Eastern Kansas																		
All Eastern KS	4	65	0.05	4,589	22,578	0.20	0	0	0.00	1,450	10,943	0.13	12	100	0.12	5,503	20,469	0.27
State Total	197,020	150,221	1.31	1,234,034	1,083,475	1.14	25,622	35,579	0.72	180,719	223,640	0.81	62,924	96,838	0.65	1,285,345	1,423,849	0.90

TABLE 5
WATER USE, ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY CROP AND COUNTY
KANSAS, 2009

County	Alfalfa			Corn			Grain Sorghum			Soybeans			Wheat			Other or Multiple Crops		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Allen	0	0	0.00	114	275	0.42	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Anderson	0	0	0.00	245	720	0.34	0	0	0.00	7	60	0.12	0	0	0.00	264	785	0.34
Atchison	0	0	0.00	25	206	0.12	0	0	0.00	0	0	0.00	0	0	0.00	53	62	0.86
Barber	0	0	0.00	1,865	1,695	1.10	133	130	1.02	509	368	1.38	0	0	0.00	1,815	2,356	0.77
Barton	1,208	1,723	0.70	13,677	15,156	0.90	818	1,218	0.67	5,365	6,257	0.86	79	305	0.26	9,802	11,694	0.84
Bourbon	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Brown	0	0	0.00	469	1,671	0.28	0	0	0.00	37	215	0.17	0	0	0.00	10	20	0.50
Butler	0	0	0.00	650	1,138	0.57	0	0	0.00	0	0	0.00	0	0	0.00	496	719	0.69
Chase	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	11	0.03
Chautauqua	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Cherokee	0	0	0.00	123	338	0.36	0	0	0.00	126	394	0.32	0	0	0.00	9	143	0.06
Cheyenne	2,029	1,918	1.06	26,142	24,663	1.06	39	120	0.33	2,490	2,454	1.01	505	2,030	0.25	9,946	14,332	0.69
Clark	590	550	1.07	892	528	1.69	21	18	1.18	0	0	0.00	86	215	0.40	2,066	3,485	0.59
Clay	11	72	0.16	3,832	6,924	0.55	0	0	0.00	1,370	4,297	0.32	0	0	0.00	5,295	12,103	0.44
Cloud	59	255	0.23	4,151	6,624	0.63	69	176	0.39	1,553	3,497	0.44	17	117	0.15	7,346	12,829	0.57
Coffey	0	0	0.00	110	293	0.37	0	0	0.00	9	65	0.13	0	0	0.00	88	397	0.22
Comanche	121	120	1.01	1,352	950	1.42	208	260	0.80	1,320	1,003	1.32	409	722	0.57	4,148	3,864	1.07
Cowley	0	0	0.00	571	759	0.75	0	0	0.00	324	960	0.34	0	0	0.00	506	1,043	0.48
Crawford	0	0	0.00	59	325	0.18	0	0	0.00	102	606	0.17	0	0	0.00	263	1,131	0.23
Decatur	664	1,142	0.58	5,218	6,335	0.82	24	60	0.40	361	624	0.58	27	120	0.23	1,858	2,572	0.72
Dickinson	0	0	0.00	771	1,205	0.64	63	110	0.57	467	1,079	0.43	0	0	0.00	1,021	2,310	0.44
Doniphan	0	0	0.00	75	340	0.22	0	0	0.00	0	10	0.01	0	0	0.00	22	285	0.08
Douglas	0	0	0.00	103	814	0.13	0	0	0.00	5	63	0.08	0	0	0.00	198	859	0.23
Edwards	6,950	7,039	0.99	55,531	50,399	1.10	195	330	0.59	18,813	18,358	1.02	965	1,650	0.58	18,498	20,410	0.91
Elk	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Ellis	226	339	0.67	488	573	0.85	100	167	0.60	55	28	1.96	4	17	0.24	424	482	0.88
Ellsworth	32	100	0.32	0	0	0.00	0	0	0.00	3	21	0.14	10	125	0.08	75	300	0.25
Finney	57,733	40,297	1.43	75,092	51,460	1.46	2,305	3,263	0.71	6,613	5,169	1.28	11,130	12,456	0.89	104,529	106,498	0.98
Ford	5,827	4,247	1.37	39,833	30,906	1.29	5,269	5,315	0.99	7,676	6,976	1.10	1,478	1,954	0.76	30,863	34,708	0.89
Franklin	0	0	0.00	67	562	0.12	0	0	0.00	0	0	0.00	0	0	0.00	403	141	2.86
Geary	5	80	0.06	659	1,539	0.43	0	0	0.00	117	433	0.27	0	0	0.00	1,315	2,379	0.55
Gove	237	271	0.88	9,774	11,417	0.86	318	698	0.46	286	561	0.51	187	581	0.32	3,654	6,376	0.57
Graham	206	551	0.37	5,596	7,454	0.75	406	427	0.95	426	689	0.62	7	115	0.06	2,205	3,703	0.60
Grant	3,765	2,066	1.82	28,804	18,584	1.55	580	849	0.68	0	0	0.00	2,508	4,389	0.57	85,757	76,414	1.12
Gray	28,684	18,756	1.53	82,821	57,226	1.45	1,286	1,790	0.72	6,082	4,658	1.31	7,851	12,937	0.61	68,603	79,556	0.86
Greeley	488	366	1.33	10,744	9,997	1.07	81	68	1.19	0	0	0.00	268	677	0.40	9,322	10,417	0.89
Greenwood	0	0	0.00	21	63	0.34	0	0	0.00	0	0	0.00	0	0	0.00	18	15	1.18
Hamilton	5,442	4,000	1.36	7,399	4,763	1.55	384	463	0.83	10	68	0.15	4,757	5,033	0.95	17,597	17,063	1.03
Harper	30	90	0.33	364	504	0.72	0	0	0.00	145	483	0.30	1	16	0.07	377	710	0.53
Harvey	428	383	1.12	9,778	12,747	0.77	78	325	0.24	5,173	7,913	0.65	9	60	0.15	10,401	13,940	0.75

TABLE 5
WATER USE, ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY CROP AND COUNTY
KANSAS, 2009

County	Alfalfa			Corn			Grain Sorghum			Soybeans			Wheat			Other or Multiple Crops		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Haskell	8,099	5,015	1.61	72,687	52,382	1.39	2,042	2,279	0.90	2,202	2,148	1.03	2,173	3,986	0.55	108,211	119,440	0.91
Hodgeman	521	474	1.10	8,665	9,089	0.95	151	397	0.38	784	676	1.16	279	1,128	0.25	9,711	13,158	0.74
Jackson	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	72	125	0.58
Jefferson	0	0	0.00	188	1,412	0.13	0	0	0.00	49	390	0.12	0	0	0.00	134	1,289	0.10
Jewell	45	136	0.33	735	1,773	0.41	0	0	0.00	367	974	0.38	0	0	0.00	417	824	0.51
Johnson	0	0	0.00	250	416	0.60	0	0	0.00	45	120	0.38	0	0	0.00	1,748	4,000	0.44
Kearny	42,215	24,419	1.73	42,831	30,933	1.38	2,138	2,091	1.02	2,482	1,960	1.27	3,008	4,651	0.65	34,424	34,940	0.99
Kingman	0	0	0.00	8,075	7,136	1.13	81	226	0.36	2,888	3,066	0.94	5	288	0.02	5,045	5,151	0.98
Kiowa	1,607	1,722	0.93	28,699	23,366	1.23	850	953	0.89	14,872	12,703	1.17	246	566	0.44	12,486	13,429	0.93
Labette	0	0	0.00	0	0	0.00	0	0	0.00	46	463	0.10	0	0	0.00	185	658	0.28
Lane	131	123	1.06	3,541	3,265	1.08	238	476	0.50	27	40	0.66	58	152	0.38	11,830	12,996	0.91
Leavenworth	0	0	0.00	77	503	0.15	0	0	0.00	47	561	0.08	0	0	0.00	111	293	0.38
Lincoln	0	0	0.00	20	35	0.57	0	0	0.00	26	130	0.20	0	0	0.00	116	430	0.27
Linn	0	0	0.00	20	135	0.15	0	0	0.00	0	0	0.00	0	0	0.00	33	85	0.39
Logan	72	40	1.80	1,767	2,483	0.71	8	82	0.10	45	121	0.37	111	322	0.35	2,362	5,203	0.45
Lyon	0	0	0.00	49	160	0.31	0	0	0.00	0	0	0.00	0	0	0.00	30	65	0.46
Marion	40	110	0.37	260	1,096	0.24	17	63	0.26	145	447	0.32	0	0	0.00	482	1,253	0.38
Marshall	0	0	0.00	606	1,235	0.49	0	0	0.00	226	781	0.29	0	0	0.00	252	863	0.29
McPherson	21	262	0.08	8,871	11,989	0.74	102	431	0.24	5,291	7,324	0.72	4	125	0.03	8,278	13,271	0.62
Meade	688	727	0.95	85,516	54,768	1.56	425	465	0.91	3,241	2,530	1.28	2,838	3,420	0.83	76,845	64,353	1.19
Miami	0	0	0.00	0	0	0.00	0	0	0.00	9	120	0.08	0	0	0.00	49	182	0.27
Mitchell	131	350	0.38	3,234	3,301	0.98	25	40	0.62	1,566	2,025	0.77	0	0	0.00	936	1,047	0.89
Montgomery	0	0	0.00	165	495	0.33	0	0	0.00	11	110	0.10	0	0	0.00	239	806	0.30
Morris	0	0	0.00	10	120	0.08	0	0	0.00	29	88	0.33	0	0	0.00	0	8	0.05
Morton	0	0	0.00	16,112	12,987	1.24	112	60	1.87	0	0	0.00	5,248	6,478	0.81	26,326	26,683	0.99
Nemaha	0	0	0.00	6	68	0.09	0	0	0.00	0	0	0.00	0	0	0.00	31	28	1.12
Neosho	0	0	0.00	25	85	0.29	0	0	0.00	0	0	0.00	0	0	0.00	22	40	0.55
Ness	3	20	0.16	1,215	1,001	1.21	48	220	0.22	73	120	0.61	82	239	0.34	2,059	2,202	0.94
Norton	142	354	0.40	4,003	5,198	0.77	15	42	0.36	775	1,328	0.58	19	120	0.16	2,260	3,625	0.62
Osage	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	20	91	0.22
Osborne	122	162	0.75	715	868	0.82	36	40	0.91	589	746	0.79	1	9	0.07	1,249	1,420	0.88
Ottawa	79	135	0.58	471	584	0.81	8	43	0.18	491	1,547	0.32	10	100	0.10	917	2,134	0.43
Pawnee	4,399	6,847	0.64	24,160	25,298	0.96	1,300	1,437	0.90	7,876	8,784	0.90	1,003	2,347	0.43	23,730	29,989	0.79
Phillips	111	80	1.39	2,610	3,428	0.76	0	0	0.00	329	891	0.37	80	215	0.37	2,353	3,028	0.78
Pottawatomie	0	0	0.00	568	4,291	0.13	0	0	0.00	353	3,164	0.11	0	0	0.00	541	4,088	0.13
Pratt	3,946	4,338	0.91	53,870	45,301	1.19	1,017	1,171	0.87	12,231	11,645	1.05	261	655	0.40	21,680	21,570	1.01
Rawlins	1,021	2,051	0.50	7,328	8,216	0.89	60	268	0.22	944	1,465	0.64	152	277	0.55	3,041	5,602	0.54
Reno	403	488	0.83	23,808	23,141	1.03	532	1,123	0.47	12,603	15,098	0.83	278	547	0.51	9,707	12,947	0.75
Republic	869	1,913	0.45	6,395	10,830	0.59	89	100	0.89	2,886	5,013	0.58	54	95	0.57	7,324	12,176	0.60
Rice	174	158	1.10	9,527	12,148	0.78	37	135	0.27	4,044	5,810	0.70	82	352	0.23	2,133	3,764	0.57

TABLE 5
WATER USE, ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY CROP AND COUNTY
KANSAS, 2009

County	Alfalfa			Corn			Grain Sorghum			Soybeans			Wheat			Other or Multiple Crops		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Riley	0	0	0.00	251	1,819	0.14	1	5	0.12	99	861	0.11	0	0	0.00	463	2,241	0.21
Rooks	232	583	0.40	164	310	0.53	48	160	0.30	167	429	0.39	27	40	0.68	156	308	0.51
Rush	321	415	0.77	1,997	2,468	0.81	362	444	0.81	938	1,281	0.73	22	90	0.24	4,747	5,427	0.87
Russell	45	130	0.35	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	4	6	0.67
Saline	148	461	0.32	183	424	0.43	39	111	0.35	324	1,154	0.28	0	0	0.00	788	1,763	0.45
Scott	483	566	0.85	13,028	11,018	1.18	316	567	0.56	411	418	0.98	254	718	0.35	30,851	38,327	0.80
Sedgwick	450	616	0.73	11,314	15,066	0.75	192	407	0.47	7,405	11,529	0.64	14	40	0.35	8,685	13,853	0.63
Seward	6,533	3,947	1.66	54,150	35,451	1.53	216	305	0.71	2,867	2,876	1.00	3,149	3,125	1.01	93,906	82,490	1.14
Shawnee	0	0	0.00	639	5,430	0.12	0	0	0.00	149	1,492	0.10	0	0	0.00	328	2,425	0.14
Sheridan	506	689	0.73	36,404	42,515	0.86	247	518	0.48	3,063	4,530	0.68	1,279	1,852	0.69	17,968	27,747	0.65
Sherman	1,721	1,861	0.92	64,031	60,837	1.05	396	760	0.52	1,899	2,295	0.83	1,337	3,485	0.38	29,443	44,242	0.67
Smith	37	87	0.43	908	1,662	0.55	0	7	0.01	121	277	0.44	0	0	0.00	331	735	0.45
Stafford	1,212	2,377	0.51	37,859	37,464	1.01	571	906	0.63	17,657	18,745	0.94	986	2,380	0.41	19,328	20,735	0.93
Stanton	250	120	2.08	34,975	21,817	1.60	336	286	1.17	51	120	0.43	2,157	3,207	0.67	86,148	85,254	1.01
Stevens	3,546	2,068	1.71	96,155	67,844	1.42	79	222	0.36	998	895	1.12	4,515	4,679	0.96	122,600	100,194	1.22
Sumner	0	0	0.00	1,876	4,207	0.45	60	130	0.46	1,827	4,295	0.43	0	0	0.00	517	1,326	0.39
Thomas	863	783	1.10	38,177	47,910	0.80	342	1,059	0.32	3,438	5,677	0.61	585	1,868	0.31	23,368	41,062	0.57
Trego	471	436	1.08	1,841	2,068	0.89	54	128	0.42	429	654	0.66	30	68	0.44	1,654	2,062	0.80
Wabaunsee	4	65	0.05	378	2,093	0.18	0	0	0.00	141	1,837	0.08	0	0	0.00	164	1,366	0.12
Wallace	102	87	1.18	23,079	21,084	1.09	256	639	0.40	0	0	0.00	711	2,798	0.25	24,235	28,882	0.84
Washington	0	100	0.00	1,688	3,466	0.49	0	0	0.00	1,276	3,741	0.34	0	0	0.00	1,417	3,147	0.45
Wichita	521	541	0.96	10,237	9,185	1.11	402	996	0.40	336	345	0.97	1,559	2,797	0.56	41,391	52,662	0.79
Wilson	0	0	0.00	146	460	0.32	0	0	0.00	56	260	0.22	12	100	0.12	7	27	0.28
Woodson	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Wyandotte	0	0	0.00	62	188	0.33	0	0	0.00	30	232	0.13	0	0	0.00	208	200	1.04
State Total	197,019	150,221	1.31	1,234,036	1,083,475	1.14	25,625	35,579	0.72	180,718	223,640	0.81	62,927	96,838	0.65	1,285,343	1,423,849	0.90

TABLE 6
ESTIMATED NUMBER OF ACRES IRRIGATED BY CROP AND REGIONAL LOCATION ^{a/}
KANSAS, 2009

Regional Location	Alfalfa	Corn	Grain Sorghum	Soybeans	Wheat	Other or Multiple Crops	Total
Western Kansas							
GMD No. 1	2,694	115,627	7,852	3,468	63,389	11,072	204,103
GMD No. 3	143,263	735,125	88,897	83,839	363,159	49,653	1,463,936
GMD No. 4	10,106	253,095	6,431	42,636	36,410	28,375	377,052
Remainder	15,610	49,405	7,172	8,148	15,783	7,113	103,231
Central Kansas							
GMD No. 2	3,209	62,117	2,773	50,617	5,097	4,029	127,843
GMD No. 5	30,145	244,112	13,372	120,652	34,864	10,226	453,370
Remainder	11,019	112,721	6,367	81,511	8,768	9,526	229,912
Eastern Kansas							
All Eastern KS	319	28,841	56	17,152	494	7,293	54,155
State Total	216,365	1,601,043	132,920	408,023	527,964	127,287	3,013,602

^{a/} The estimated number of acres of each type of crop was determined by adding single-crop acreages to prorated multiple-crop acreages. Figures may not add to totals due to independent rounding.

TABLE 7
ESTIMATED NUMBER OF ACRES IRRIGATED BY CROP AND COUNTY ^{a/}
KANSAS, 2009

County	Alfalfa	Corn	Grain Sorghum	Soybeans	Wheat	Other or Multiple Crops	Total
Allen	0	275	0	0	0	0	275
Anderson	0	1,083	0	453	0	30	1,565
Atchison	0	206	0	0	0	62	268
Barber	0	1,695	130	1,268	900	556	4,549
Barton	2,468	18,810	2,104	10,483	1,876	612	36,353
Bourbon	0	0	0	0	0	0	0
Brown	0	1,671	0	215	0	20	1,906
Butler	0	1,258	0	120	0	479	1,857
Chase	0	0	0	0	0	11	11
Chautauqua	0	0	0	0	0	0	0
Cherokee	0	403	0	459	0	13	875
Cheyenne	3,442	28,234	444	3,893	5,240	4,264	45,517
Clark	769	1,177	1,059	0	1,117	674	4,796
Clay	657	12,557	77	9,574	386	146	23,396
Cloud	620	12,373	620	9,150	554	181	23,498
Coffey	20	484	0	236	0	15	755
Comanche	681	1,288	570	1,486	1,604	1,290	6,919
Cowley	0	1,055	0	1,328	134	245	2,762
Crawford	0	756	0	1,127	90	90	2,062
Decatur	2,096	6,981	163	699	220	694	10,853
Dickinson	44	2,205	199	2,009	158	89	4,704
Doniphan	0	428	0	147	49	11	635
Douglas	0	1,014	47	364	129	183	1,736
Edwards	9,149	56,366	1,637	23,250	5,928	1,855	98,186
Elk	0	0	0	0	0	0	0
Ellis	339	679	273	134	17	164	1,606
Ellsworth	100	35	0	136	240	35	546
Finney	48,867	91,613	6,101	9,663	55,764	7,135	219,143
Ford	5,237	41,762	11,033	12,784	11,747	1,542	84,106
Franklin	0	562	0	0	0	49	611
Geary	278	2,472	0	1,330	0	351	4,431
Gove	426	14,151	958	1,480	2,054	835	19,904
Graham	764	8,955	513	1,562	809	336	12,939
Grant	6,639	45,186	7,081	591	36,662	6,143	102,302
Gray	21,301	86,691	9,127	8,605	42,229	6,970	174,923
Greeley	366	14,130	2,468	0	2,410	2,152	21,525
Greenwood	0	63	0	0	0	15	78
Hamilton	7,620	7,413	3,280	68	10,970	2,039	31,390
Harper	174	679	0	569	227	153	1,803
Harvey	684	18,641	635	14,221	929	257	35,368
Haskell	12,602	95,145	14,680	15,598	44,336	2,889	185,250
Hodgeman	873	14,183	1,152	2,280	5,491	944	24,922
Jackson	0	45	0	45	0	35	125
Jefferson	63	1,973	0	753	0	303	3,091
Jewell	233	2,031	86	1,358	0	0	3,707

TABLE 7
ESTIMATED NUMBER OF ACRES IRRIGATED BY CROP AND COUNTY ^{a/}
KANSAS, 2009

County	Alfalfa	Corn	Grain Sorghum	Soybeans	Wheat	Other or Multiple Crops	Total
Johnson	0	416	0	120	0	4,000	4,536
Kearny	26,738	42,258	4,483	1,960	15,046	8,509	98,994
Kingman	91	7,578	567	4,846	2,470	315	15,867
Kiowa	2,157	26,268	2,209	15,971	5,311	822	52,739
Labette	0	296	0	573	0	253	1,121
Lane	123	8,490	1,882	2,756	3,334	466	17,052
Leavenworth	0	503	0	561	0	293	1,357
Lincoln	90	185	65	255	0	0	595
Linn	0	135	0	0	0	85	220
Logan	221	4,469	164	585	1,769	1,044	8,251
Lyon	0	160	0	0	0	65	225
Marion	176	1,546	129	914	17	188	2,969
Marshall	64	1,645	0	1,127	0	43	2,879
McPherson	855	17,247	964	12,823	1,080	433	33,402
Meade	4,540	80,127	5,124	10,479	22,704	3,289	126,263
Miami	0	0	0	120	0	182	302
Mitchell	374	3,605	40	2,269	60	415	6,763
Montgomery	0	800	0	415	0	196	1,411
Morris	0	120	0	88	0	8	216
Morton	288	22,928	3,087	0	18,339	1,566	46,208
Nemaha	0	68	0	0	0	28	96
Neosho	0	85	0	0	0	40	125
Ness	427	1,096	794	574	783	127	3,802
Norton	758	6,712	332	2,418	326	121	10,667
Osage	0	0	0	0	0	91	91
Osborne	223	1,429	97	1,201	97	199	3,245
Ottawa	209	1,530	69	2,421	257	57	4,543
Pawnee	8,650	33,946	3,606	18,316	8,759	1,425	74,702
Phillips	494	4,869	52	2,003	215	10	7,642
Pottawatomie	0	6,160	0	5,033	0	350	11,543
Pratt	4,743	50,044	2,261	18,441	6,534	2,657	84,680
Rawlins	2,617	9,797	678	2,581	1,220	987	17,879
Reno	1,558	24,889	1,526	19,859	3,946	1,566	53,344
Republic	1,968	16,761	127	10,829	360	82	30,127
Rice	241	12,627	323	7,242	1,214	719	22,367
Riley	94	2,515	17	1,664	0	636	4,926
Rooks	621	462	160	429	154	4	1,830
Rush	941	4,402	1,521	2,892	225	144	10,125
Russell	130	0	0	0	0	6	136
Saline	648	800	277	1,533	93	562	3,913
Scott	883	28,839	2,562	720	17,966	645	51,614
Sedgwick	890	18,365	923	15,157	1,322	4,853	41,511
Seward	9,365	63,256	8,113	13,929	28,836	4,694	128,194
Shawnee	27	6,279	0	2,465	66	510	9,347
Sheridan	1,995	54,058	1,469	14,049	5,122	1,158	77,851

TABLE 7
ESTIMATED NUMBER OF ACRES IRRIGATED BY CROP AND COUNTY ^{a/}
KANSAS, 2009

County	Alfalfa	Corn	Grain Sorghum	Soybeans	Wheat	Other or Multiple Crops	Total
Sherman	2,656	77,507	1,050	2,979	13,682	15,606	113,480
Smith	110	2,008	29	530	0	91	2,768
Stafford	3,871	43,484	1,373	25,558	6,269	2,053	82,607
Stanton	2,637	57,846	10,486	1,194	37,643	999	110,804
Stevens	4,566	105,967	8,011	6,152	44,487	6,719	175,902
Sumner	126	4,644	130	4,606	126	325	9,958
Thomas	1,185	64,877	1,895	15,967	8,710	5,725	98,359
Trego	642	2,603	211	1,189	379	391	5,416
Wabaunsee	142	2,688	0	2,510	0	21	5,361
Wallace	316	33,297	1,305	113	12,425	6,034	53,490
Washington	100	5,024	0	5,267	0	63	10,454
Wichita	1,204	33,381	2,068	622	27,617	1,634	66,526
Wilson	0	460	0	260	100	27	847
Woodson	0	0	0	0	0	0	0
Wyandotte	0	188	0	232	0	160	580

^{a/} The estimated number of acres of each type of crop was determined by adding single-crop acreages to prorated multiple-crop acreages. State totals by crop type not shown on county table due to rounding error. See Table 6 for State totals of estimated acres by crop type.

TABLE 8
WATER USE , ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY TYPE OF IRRIGATION SYSTEM BY REGIONAL LOCATION
KANSAS, 2009

Regional Location	Flood			Center Pivot			Center Pivot with Drop Nozzles			Other Sprinkler			Combination Center Pivot and Flood			Subsurface Drip and Comb. Drip & Other			Other or Unspecified		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Western Kansas																					
GMD No. 1	17,251	18,961	0.91	9,484	11,791	0.80	134,589	153,653	0.88	318	495	0.64	15,828	17,790	0.89	1,467	1,413	2.07	0	0	0.00
GMD No. 3	49,242	46,069	1.07	192,337	171,117	1.12	1,288,149	1,063,384	1.21	4,652	3,587	1.30	181,963	168,254	1.08	11,657	9,003	2.60	2,790	2,522	1.11
GMD No. 4	3,016	3,214	0.94	20,944	27,446	0.76	257,518	329,314	0.78	1,041	1,679	0.62	9,808	12,497	0.78	1,474	1,781	1.61	960	1,121	0.86
Remainder	15,474	14,859	1.04	8,522	10,582	0.81	48,672	61,494	0.79	1,074	1,828	0.59	12,422	13,016	0.95	424	522	1.64	514	930	0.55
Central Kansas																					
GMD No. 2	18,135	19,651	0.92	8,118	10,694	0.76	62,695	84,315	0.74	862	1,430	0.60	4,686	7,108	0.66	2,946	3,936	1.55	439	709	0.62
GMD No. 5	16,810	18,463	0.91	56,629	56,544	1.00	360,474	366,123	0.98	521	700	0.74	7,833	10,285	0.76	1,114	1,255	2.17	0	0	0.00
Remainder	27,081	34,236	0.79	20,543	36,515	0.56	80,519	136,138	0.59	3,361	5,452	0.62	8,664	15,044	0.58	766	1,740	0.87	322	787	0.41
Eastern Kansas																					
All Eastern KS	1,006	3,618	0.28	3,491	14,675	0.24	4,412	27,977	0.16	2,233	5,407	0.41	256	2,125	0.12	35	200	0.31	125	153	0.81
State Total	148,015	159,071	0.93	320,068	339,364	0.94	2,237,028	2,222,398	1.01	14,062	20,578	0.68	241,460	246,119	0.98	19,883	19,850	1.00	5,150	6,222	0.83

TABLE 9
TOTAL WATER USE, ACRES IRRIGATED , AND PERCENT BY SYSTEM TYPE AND REGIONAL LOCATION
KANSAS, 2009

	Total Acres Irrigated	Percent of acres irrigated by system type						
		Flood	Center Pivot	Pivot with Drop Nozzles	Other Sprinkler	Comb. Pivot & Flood	Subsurface Drip and Comb. Drip & Other	Other or Unspecified
Western Kansas								
Western KS GMD No. 1	204,103	9.3%	5.8%	75.3%	0.2%	8.7%	0.7%	0.0%
Southwest KS GMD No. 3	1,463,936	3.1%	11.7%	72.6%	0.2%	11.5%	0.6%	0.2%
Northwest KS GMD No. 4	377,052	0.9%	7.3%	87.3%	0.4%	3.3%	0.5%	0.3%
Remainder of Western KS	103,231	14.4%	10.3%	59.6%	1.8%	12.6%	0.5%	0.9%
Central Kansas								
Equus Beds GMD No. 2	127,843	15.4%	8.4%	66.0%	1.1%	5.6%	3.1%	0.6%
Big Bend GMD No. 5	453,370	4.1%	12.5%	80.8%	0.2%	2.3%	0.3%	0.0%
Remainder of Central KS	229,912	14.9%	15.9%	59.2%	2.4%	6.5%	0.8%	0.3%
Eastern Kansas								
All Eastern Kansas	54,155	6.7%	27.1%	51.7%	10.0%	3.9%	0.4%	0.3%
State Total	3,013,602	5.3%	11.3%	73.7%	0.7%	8.2%	0.7%	0.2%
Percent of water use by system type								
	Total Water Use (AF)	Flood	Center Pivot	Pivot with Drop Nozzles	Other Sprinkler	Comb. Pivot & Flood	Subsurface Drip and Comb. Drip & Other	Other or Unspecified
Western Kansas								
Western KS GMD No. 1	178,937	9.6%	5.3%	75.2%	0.2%	8.8%	0.8%	0.0%
Southwest KS GMD No. 3	1,730,790	2.8%	11.1%	74.4%	0.3%	10.5%	0.7%	0.2%
Northwest KS GMD No. 4	294,761	1.0%	7.1%	87.4%	0.4%	3.3%	0.5%	0.3%
Remainder of Western KS	87,101	17.8%	9.8%	55.9%	1.2%	14.3%	0.5%	0.6%
Central Kansas								
Equus Beds GMD No. 2	97,880	18.5%	8.3%	64.1%	0.9%	4.8%	3.0%	0.4%
Big Bend GMD No. 5	443,381	3.8%	12.8%	81.3%	0.1%	1.8%	0.3%	0.0%
Remainder of Central KS	141,257	19.2%	14.5%	57.0%	2.4%	6.1%	0.5%	0.2%
Eastern Kansas								
All Eastern Kansas	11,557	8.7%	30.2%	38.2%	19.3%	2.2%	0.3%	1.1%
State Total	2,985,664	5.0%	10.7%	74.9%	0.5%	8.1%	0.7%	0.2%

TABLE 10
WATER USE , ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY TYPE OF IRRIGATION SYSTEM BY COUNTY
KANSAS, 2009

County	Flood			Center Pivot			Center Pivot with Drop Nozzles			Other Sprinkler			Combination Center Pivot and Flood			Subsurface Drip and Comb. Drip & Other			Other or Unspecified		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Allen	56	170	0.33	58	105	0.55	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Anderson	52	115	0.45	138	433	0.32	327	1,017	0.32	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Atchison	0	0	0.00	62	235	0.26	0	0	0.00	16	33	0.49	0	0	0.00	0	0	0.00	0	0	0.00
Barber	192	192	1.00	775	672	1.15	3,349	3,678	0.91	5	7	0.67	0	0	0.00	0	0	0.00	0	0	0.00
Barton	6,548	7,652	0.86	1,916	2,638	0.73	20,075	22,347	0.90	113	222	0.51	1,980	3,160	0.63	316	334	2.04	0	0	0.00
Bourbon	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Brown	0	0	0.00	166	579	0.29	340	1,307	0.26	10	20	0.50	0	0	0.00	0	0	0.00	0	0	0.00
Butler	0	0	0.00	555	409	1.36	205	969	0.21	367	444	0.83	0	0	0.00	0	0	0.00	19	35	0.54
Chase	0	0	0.00	0	11	0.03	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Chautauqua	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Cherokee	0	0	0.00	223	691	0.32	0	0	0.00	35	184	0.19	0	0	0.00	0	0	0.00	0	0	0.00
Cheyenne	501	373	1.34	2,748	3,442	0.80	35,901	39,471	0.91	441	558	0.79	1,164	1,321	0.88	185	203	1.00	209	149	1.40
Clark	145	256	0.57	722	800	0.90	2,788	3,712	0.75	1	28	0.02	0	0	0.00	0	0	0.00	0	0	0.00
Clay	2,613	3,984	0.66	1,019	2,127	0.48	5,525	14,698	0.38	37	60	0.62	1,216	2,219	0.55	55	198	0.28	43	110	0.39
Cloud	3,104	3,880	0.80	842	2,290	0.37	7,329	14,020	0.52	19	81	0.24	1,898	3,207	0.59	0	0	0.00	1	20	0.05
Coffey	0	0	0.00	17	103	0.17	178	612	0.29	0	0	0.00	0	0	0.00	0	0	0.00	10	40	0.26
Comanche	291	150	1.94	1,661	1,467	1.13	5,593	5,292	1.06	12	10	1.23	0	0	0.00	0	0	0.00	0	0	0.00
Cowley	1	14	0.06	278	756	0.37	1,051	1,761	0.60	71	231	0.31	0	0	0.00	0	0	0.00	0	0	0.00
Crawford	0	0	0.00	324	1,577	0.21	74	395	0.19	26	90	0.28	0	0	0.00	0	0	0.00	0	0	0.00
Decatur	909	848	1.07	1,099	1,650	0.67	5,188	7,179	0.72	101	308	0.33	521	496	1.05	0	0	0.00	333	372	0.90
Dickinson	371	453	0.82	540	1,191	0.45	1,269	2,777	0.46	124	164	0.75	18	119	0.15	0	0	0.00	0	0	0.00
Doniphan	0	0	0.00	16	176	0.09	80	448	0.18	0	0	0.00	0	0	0.00	0	11	0.04	0	0	0.00
Douglas	0	0	0.00	258	1,164	0.22	36	518	0.07	11	15	0.74	0	0	0.00	2	39	0.06	0	0	0.00
Edwards	490	571	0.86	12,804	12,780	1.00	87,281	84,343	1.03	63	42	1.51	295	366	0.81	18	84	0.21	0	0	0.00
Elk	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Ellis	427	426	1.00	140	167	0.84	512	741	0.69	218	272	0.80	0	0	0.00	0	0	0.00	0	0	0.00
Ellsworth	32	91	0.35	46	230	0.20	42	225	0.19	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Finney	16,153	15,030	1.07	37,042	32,364	1.14	183,916	151,750	1.21	1,717	1,477	1.16	17,722	17,773	1.00	559	504	2.15	292	245	1.19

TABLE 10
WATER USE , ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY TYPE OF IRRIGATION SYSTEM BY COUNTY
KANSAS, 2009

County	Flood			Center Pivot			Center Pivot with Drop Nozzles			Other Sprinkler			Combination Center Pivot and Flood			Subsurface Drip and Comb. Drip & Other			Other or Unspecified		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Ford	1,009	911	1.11	7,317	6,584	1.11	78,726	72,763	1.08	342	320	1.07	3,125	2,863	1.09	426	665	1.12	0	0	0.00
Franklin	0	0	0.00	434	253	1.72	36	450	0.08	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Geary	366	513	0.71	34	144	0.23	1,321	3,190	0.41	70	111	0.63	272	375	0.72	34	98	0.35	0	0	0.00
Gove	836	1,085	0.77	474	409	1.16	11,173	15,847	0.71	203	338	0.60	1,513	1,794	0.84	235	402	0.59	21	29	0.72
Graham	0	0	0.00	1,997	3,220	0.62	6,224	8,860	0.70	4	54	0.07	425	474	0.90	36	116	0.31	159	215	0.74
Grant	2,275	2,422	0.94	15,261	12,482	1.22	93,611	75,692	1.24	39	63	0.62	10,090	11,473	0.88	138	170	0.81	0	0	0.00
Gray	3,086	2,675	1.15	35,747	32,007	1.12	146,150	132,901	1.10	1,048	686	1.53	7,454	5,171	1.44	1,791	1,333	2.41	53	150	0.35
Greeley	296	240	1.23	279	405	0.69	20,147	20,678	0.97	181	202	0.90	0	0	0.00	0	0	0.00	0	0	0.00
Greenwood	15	23	0.67	0	0	0.00	6	40	0.15	18	15	1.18	0	0	0.00	0	0	0.00	0	0	0.00
Hamilton	2,372	2,074	1.14	3,066	2,805	1.09	25,144	22,022	1.14	0	0	0.00	5,006	4,489	1.12	0	0	0.00	0	0	0.00
Harper	81	70	1.16	121	407	0.30	685	1,245	0.55	28	81	0.35	0	0	0.00	0	0	0.00	0	0	0.00
Harvey	6,782	6,898	0.98	1,094	1,888	0.58	15,976	23,558	0.68	78	280	0.28	971	1,436	0.68	860	1,143	1.51	106	165	0.64
Haskell	7,478	6,661	1.12	11,737	13,603	0.86	125,549	113,996	1.10	108	89	1.22	46,235	47,651	0.97	4,018	3,000	2.83	289	250	1.16
Hodgeman	4,763	4,468	1.07	1,941	2,417	0.80	7,829	11,567	0.68	23	11	2.11	5,274	6,132	0.86	280	327	1.37	0	0	0.00
Jackson	0	0	0.00	0	0	0.00	46	90	0.51	26	35	0.75	0	0	0.00	0	0	0.00	0	0	0.00
Jefferson	90	284	0.32	77	540	0.14	133	1,981	0.07	41	61	0.68	30	225	0.13	0	0	0.00	0	0	0.00
Jewell	354	520	0.68	455	1,419	0.32	498	1,168	0.43	0	0	0.00	258	600	0.43	0	0	0.00	0	0	0.00
Johnson	22	2	11.23	818	1,952	0.42	0	0	0.00	1,055	2,344	0.45	67	150	0.44	30	70	1.04	51	18	2.85
Kearny	4,012	5,511	0.73	13,683	12,094	1.13	98,172	69,842	1.41	14	25	0.56	10,695	11,162	0.96	0	0	0.00	521	360	1.45
Kingman	0	0	0.00	2,475	2,523	0.98	13,571	13,232	1.03	49	112	0.43	0	0	0.00	0	0	0.00	0	0	0.00
Kiowa	101	134	0.75	8,001	7,442	1.08	50,343	44,898	1.12	0	0	0.00	315	265	1.19	0	0	0.00	0	0	0.00
Labette	0	0	0.00	108	551	0.20	52	220	0.24	71	350	0.20	0	0	0.00	0	0	0.00	0	0	0.00
Lane	2,962	3,018	0.98	684	919	0.74	7,562	8,662	0.87	0	0	0.00	4,254	4,019	1.06	362	434	1.68	0	0	0.00
Leavenworth	0	0	0.00	47	746	0.06	93	458	0.20	95	153	0.62	0	0	0.00	0	0	0.00	0	0	0.00
Lincoln	20	35	0.57	19	130	0.15	123	430	0.29	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Linn	0	0	0.00	0	0	0.00	20	135	0.15	33	85	0.39	0	0	0.00	0	0	0.00	0	0	0.00
Logan	100	123	0.81	243	479	0.51	3,879	7,036	0.55	138	550	0.25	0	0	0.00	3	3	1.16	1	60	0.01
Lyon	0	0	0.00	49	160	0.31	0	0	0.00	30	65	0.46	0	0	0.00	0	0	0.00	0	0	0.00

TABLE 10
WATER USE , ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY TYPE OF IRRIGATION SYSTEM BY COUNTY
KANSAS, 2009

County	Flood			Center Pivot			Center Pivot with Drop Nozzles			Other Sprinkler			Combination Center Pivot and Flood			Subsurface Drip and Comb. Drip & Other			Other or Unspecified		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Marion	84	202	0.42	447	1,376	0.32	315	1,203	0.26	53	79	0.67	0	0	0.00	13	80	0.16	33	29	1.14
Marshall	26	106	0.24	150	523	0.29	873	2,178	0.40	15	52	0.29	0	0	0.00	0	0	0.00	21	20	1.05
McPherson	5,943	7,013	0.85	1,999	3,174	0.63	11,003	17,288	0.64	19	112	0.17	1,451	2,756	0.53	2,009	2,781	1.51	145	278	0.52
Meade	7,217	5,683	1.27	16,443	12,539	1.31	113,623	82,233	1.38	2	22	0.10	29,143	23,495	1.24	1,803	1,274	2.73	1,322	1,017	1.30
Miami	0	0	0.00	9	120	0.08	7	59	0.12	41	123	0.34	0	0	0.00	0	0	0.00	0	0	0.00
Mitchell	2,152	1,746	1.23	240	349	0.69	3,219	4,276	0.75	0	0	0.00	282	392	0.72	0	0	0.00	0	0	0.00
Montgomery	0	0	0.00	0	0	0.00	337	1,200	0.28	75	207	0.36	0	0	0.00	0	0	0.00	3	4	0.71
Morris	25	48	0.51	14	160	0.09	0	0	0.00	0	8	0.05	0	0	0.00	0	0	0.00	0	0	0.00
Morton	840	1,176	0.71	9,929	9,184	1.08	32,713	31,150	1.05	474	325	1.46	3,834	4,203	0.91	3	45	0.07	4	125	0.03
Nemaha	0	0	0.00	6	68	0.09	0	0	0.00	7	6	1.08	0	0	0.00	0	0	0.00	25	22	1.13
Neosho	0	0	0.00	0	0	0.00	25	85	0.29	22	40	0.55	0	0	0.00	0	0	0.00	0	0	0.00
Ness	2,375	2,132	1.11	266	208	1.28	763	1,315	0.58	3	20	0.16	65	82	0.79	7	42	0.16	1	3	0.34
Norton	2,555	2,737	0.93	493	803	0.61	3,306	5,905	0.56	285	396	0.72	575	826	0.70	0	0	0.00	0	0	0.00
Osage	0	1	0.28	0	0	0.00	0	0	0.00	20	90	0.22	0	0	0.00	0	0	0.00	0	0	0.00
Osborne	1,943	1,908	1.02	107	220	0.49	554	897	0.62	1	9	0.07	3	72	0.04	104	139	0.75	0	0	0.00
Ottawa	56	165	0.34	262	690	0.38	1,500	3,288	0.46	27	32	0.84	128	366	0.35	0	0	0.00	2	2	0.87
Pawnee	8,275	8,786	0.94	2,852	3,798	0.75	46,978	56,308	0.83	40	114	0.35	4,110	5,439	0.76	213	257	0.83	0	0	0.00
Phillips	1,008	1,249	0.81	880	1,739	0.51	2,906	3,727	0.78	1	9	0.13	464	501	0.93	213	412	0.52	10	5	2.06
Pottawatomie	229	866	0.26	156	1,677	0.09	832	7,396	0.11	141	350	0.40	104	1,254	0.08	0	0	0.00	0	0	0.00
Pratt	624	518	1.20	19,039	16,911	1.13	72,066	66,076	1.09	127	115	1.11	669	588	1.14	480	472	1.02	0	0	0.00
Rawlins	235	441	0.53	1,044	1,661	0.63	10,538	14,495	0.73	297	551	0.54	260	246	1.06	0	0	0.00	173	485	0.36
Reno	1,252	1,700	0.74	6,563	6,499	1.01	37,999	42,781	0.89	253	440	0.58	933	1,466	0.64	140	176	0.80	191	282	0.68
Republic	4,213	5,686	0.74	4,057	7,501	0.54	7,248	13,271	0.55	0	0	0.00	2,056	3,563	0.58	43	106	0.90	0	0	0.00
Rice	371	469	0.79	1,486	2,195	0.68	13,912	19,523	0.71	156	98	1.59	73	82	0.89	0	0	0.00	0	0	0.00
Riley	25	273	0.09	142	623	0.23	490	3,330	0.15	132	676	0.20	0	0	0.00	24	24	1.02	0	0	0.00
Rooks	45	128	0.36	137	293	0.47	612	1,409	0.43	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Rush	4,930	5,282	0.93	119	136	0.88	2,588	3,742	0.69	0	0	0.00	717	904	0.79	32	61	0.67	0	0	0.00
Russell	0	0	0.00	0	0	0.00	45	130	0.35	4	6	0.67	0	0	0.00	0	0	0.00	0	0	0.00

TABLE 10
WATER USE , ACRES IRRIGATED, AND AVERAGE APPLICATION RATE BY TYPE OF IRRIGATION SYSTEM BY COUNTY
KANSAS, 2009

County	Flood			Center Pivot			Center Pivot with Drop Nozzles			Other Sprinkler			Combination Center Pivot and Flood			Subsurface Drip and Comb. Drip & Other			Other or Unspecified		
	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A	Water Use (AF)	Acres Irrig.	AF/A
Saline	307	483	0.64	115	438	0.26	510	2,085	0.24	341	416	0.82	176	371	0.47	29	109	0.41	4	11	0.34
Scott	7,777	9,007	0.86	1,429	1,591	0.90	29,099	31,497	0.92	76	269	0.28	6,662	8,925	0.75	299	325	2.05	0	0	0.00
Sedgwick	6,314	7,495	0.84	1,947	3,389	0.57	15,702	24,710	0.64	2,065	2,836	0.73	1,848	2,593	0.71	98	160	0.61	85	328	0.26
Seward	4,157	3,910	1.06	15,176	13,544	1.12	115,935	89,758	1.29	648	433	1.50	24,905	20,549	1.21	0	0	0.00	0	0	0.00
Shawnee	346	1,480	0.23	209	2,337	0.09	329	4,589	0.07	194	671	0.29	23	221	0.10	0	0	0.00	14	49	0.29
Sheridan	494	488	1.01	6,201	7,770	0.80	47,839	63,786	0.75	42	76	0.55	4,318	5,056	0.85	435	443	2.03	138	232	0.59
Sherman	1,295	1,342	0.97	5,231	5,803	0.90	90,067	103,113	0.87	282	239	1.18	1,601	2,488	0.64	261	342	0.76	91	153	0.59
Smith	718	1,161	0.62	309	684	0.45	276	777	0.36	15	19	0.81	41	57	0.72	38	70	0.54	0	0	0.00
Stafford	1,158	1,261	0.92	10,192	10,382	0.98	65,541	69,976	0.94	133	225	0.59	503	655	0.77	87	108	0.81	0	0	0.00
Stanton	2,058	1,330	1.55	4,768	6,242	0.76	95,813	84,682	1.13	129	65	1.98	18,537	16,646	1.11	2,612	1,839	2.86	0	0	0.00
Stevens	1,023	830	1.23	23,754	19,396	1.22	192,150	147,778	1.30	130	82	1.59	10,223	7,268	1.41	307	173	1.77	309	375	0.82
Sumner	0	0	0.00	198	303	0.65	3,901	9,314	0.42	95	116	0.82	66	101	0.65	20	119	0.17	1	5	0.12
Thomas	229	122	1.87	3,988	5,819	0.69	60,335	89,625	0.67	175	207	0.85	1,387	1,971	0.70	317	272	1.17	342	343	1.00
Trego	301	417	0.72	1,141	1,278	0.89	2,881	3,490	0.83	29	91	0.32	122	138	0.88	4	2	2.19	0	0	0.00
Wabaunsee	37	281	0.13	136	453	0.30	463	4,201	0.11	17	71	0.24	33	275	0.12	2	80	0.02	0	0	0.00
Wallace	990	1,053	0.94	1,919	3,367	0.57	41,448	45,397	0.91	90	80	1.12	3,623	3,213	1.13	306	370	0.83	6	10	0.57
Washington	809	1,194	0.68	1,408	4,202	0.34	1,574	3,893	0.40	27	155	0.17	442	784	0.56	0	0	0.00	121	226	0.54
Wichita	6,540	6,740	0.97	5,465	6,051	0.90	40,458	51,643	0.78	62	24	2.59	1,289	1,633	0.79	632	435	1.45	0	0	0.00
Wilson	133	290	0.46	0	0	0.00	65	410	0.16	25	147	0.17	0	0	0.00	0	0	0.00	0	0	0.00
Woodson	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Wyandotte	0	0	0.00	30	232	0.13	62	188	0.33	208	200	1.04	0	0	0.00	0	0	0.00	0	0	0.00
State Total	148,014	159,071	0.93	320,066	339,364	0.94	2,237,028	2,222,398	1.01	14,059	20,578	0.68	241,464	246,119	0.98	19,879	19,850	1.00	5,149	6,222	0.83