

Kansas Water Use and the Governor's "Vision for the Future of Water in Kansas"

In 2014, the State of Kansas issued two drafts of documents concerning water use in Kansas. The first draft was made public on July 1, 2014, entitled [Vision for the Future of Water in Kansas](#). The second draft was released in November 2014. It is entitled [A Long-Term Vision for the Future of Water Supply in Kansas](#). Information on the Vision documents can be found at http://kwo.org/50_Year_Vision/50_Year_Vision.htm.

As stated in the second draft, "In October 2013, Governor Brownback issued a call to action to his Administration to develop a 50-year Vision for the Future of Water in Kansas stating, 'Water and the Kansas economy are directly linked. Water is a finite resource and without further planning and action we will no longer be able to meet our state's current needs, let alone growth.'"

The major issues in the documents were water use and water conservation as shown in the following listing. These topics are of particular interest to municipal and rural water district water suppliers and their customers.

Draft "Vision" documents

Below are examples of the suggestions that were included in the draft "Vision" documents. They were:

- 20 percent per capita reduction in water consumption
- reduce statewide water consumption by 20 percent
- 20 percent reduction per capita in municipal water demand
- Kansans will use 10 percent less water per person
- importance of...water conservation practices
- development of locally driven conservation and management plans
- develop a ...conservation guide for communities
- goals of reinforcing the value of water and reducing water consumption
- more efficient water use
- ensure water conservation is properly evaluated as an alternative for water supply when providing financial assistance
- effectiveness for rate structures and conservation

USGS Report summarizes water use

A report by the U.S. Geological Survey entitled, "Estimated Water Use in the United States in 2010", is a comprehensive 56-page report that provides great detail on the water use by state. Authors include Joan Kenny who worked at USGS and who worked in close association with staff at the Kansas Water Office and the Division of Water Resources on water use reporting and water conservation for many years. The report is available at <http://pubs.usgs.gov/circ/1405/>.

Credit is given to the authors of this tremendous assembly of data in this citation: Maupin, M.A., Kenny, J.F., Hutson, S.S., Lovelace, J.K., Barber, N.L., and Linsey, K.S., 2014, Estimated Use of Water in the United States in 2010: U.S. Geological Survey Circular 1405, 56 p., <http://dx.doi.org/10.3133/cir1405>.

The table on the next page shows the estimated use of water in the United States in 2010.



10 Estimated Use of Water in the United States in 2010

Table 2A. Total water withdrawals by water-use category, 2010, in million gallons per day.

[Values may not sum to totals because of independent rounding]

State	Public supply	Self-supplied domestic	Irrigation	Live-stock	Aqua-culture	Self-supplied industrial		Mining		Thermoelectric power		Total		
						Fresh	Saline	Fresh	Saline	Fresh	Saline	Fresh	Saline	Total
Alabama.....	831	38.0	159	26.5	59.1	574	0	20.2	0	8,250	0	9,960	0	9,960
Alaska.....	79.0	14.8	1.59	0.25	684	7.78	4.30	24.1	221	58.0	0	869	225	1,090
Arizona.....	1,210	27.2	4,570	27.0	47.3	12.9	0	86.6	0	104	0	6,090	0	6,090
Arkansas.....	429	12.8	8,720	39.0	268	271	5.05	44.3	0	1,540	0	11,300	5.05	11,300
California.....	6,300	172	23,100	188	973	400	0	36.4	236	65.4	6,540	31,100	6,860	38,000
Colorado.....	848	37.9	9,710	36.9	122	130	0	8.51	19.4	77	0	11,000	19.4	11,000
Connecticut.....	427	65.4	24.0	1.01	29.7	66.5	38.5	4.72	0	198	2,460	816	2,490	3,310
Delaware.....	78.1	14.8	101	1.31	0.06	96.0	0	0.85	0	7.82	417	300	417	717
District of Columbia	0	0	0.10	0	0	0	0	0	0	0	0	0.10	0	0.10
Florida.....	2,270	214	2,920	21.3	1.86	213	0	113	0	613	8,570	6,200	8,740	14,900
Georgia.....	1,120	115	839	29.3	49.8	487	0	27.7	0	1,770	283	4,440	283	4,720
Hawaii.....	274	8.02	323	1.83	4.54	4.63	0	1.51	0	53.2	603	671	603	1,270
Idaho.....	239	79.0	14,000	47.5	2,750	49.7	0	20.2	0	0.88	0	17,200	0	17,200
Illinois.....	1,500	92.4	226	36.1	32.0	390	0	70.9	25.5	10,700	0	13,100	25.5	13,100
Indiana.....	656	126	137	39.2	8.57	2,210	0	88.2	0	5,380	0	8,640	0	8,640
Iowa.....	393	38.4	42.8	136	18.9	125	0	79.6	0	2,240	0	3,070	0	3,070
Kansas.....	391	14.9	3,040	114	12.9	40.3	0	13.3	0	377	0	4,000	0	4,000
Kentucky.....	572	33.2	29.0	43.8	34.1	228	0	30.8	0	3,360	0	4,330	0	4,330
Louisiana.....	746	47.0	928	8.03	311	2,060	0	11.3	0	4,430	1.68	8,540	1.68	8,540
Maine.....	91.3	33.0	11.3	2.29	46.9	192	14.8	4.87	0	26.8	26.0	408	40.8	449
Maryland.....	790	85.6	72.1	8.25	20.8	50.0	146	9.43	0	436	5,760	1,470	5,910	7,380
Massachusetts.....	679	37.9	139	1.40	49.6	16.3	0	6.60	0	134	1,930	1,060	1,930	3,000
Michigan.....	1,090	231	209	19.6	82.7	612	0	76.2	0.57	8,520	0	10,800	0.57	10,800
Minnesota.....	542	79.0	197	59.3	16.9	134	0	285	0	2,510	0	3,820	0	3,820
Mississippi.....	395	44.6	2,090	18.4	133	203	0	8.78	12.6	956	69.5	3,850	82.0	3,930
Missouri.....	836	61.8	1,400	72.9	181	68.4	0	32.9	0	5,910	0	8,570	0	8,570
Montana.....	138	22.2	7,160	41.8	18.9	66.4	0	27.9	18.6	151	0	7,630	18.6	7,650
Nebraska.....	296	44.0	5,660	114	88.3	31.1	0	8.86	0.13	1,790	0	8,040	0.13	8,040
Nevada.....	581	29.8	1,570	5.06	49.5	5.23	0	345	0.95	21.6	11.0	2,610	11.9	2,620
New Hampshire.....	91.2	33.3	1.92	0.89	16.6	17.7	0	2.85	0	202	848	367	848	1,210
New Jersey.....	1,080	98.3	138	0.98	9.16	83.3	0	8.64	0	513	3,740	1,930	3,740	5,670
New Mexico.....	283	25.8	2,700	35.8	20.1	11.1	0	37.1	0	51.9	0	3,160	0	3,160
New York.....	2,260	152	70.4	22.6	40.2	352	0	72.4	0	2,760	4,850	5,730	4,850	10,600
North Carolina.....	960	231	367	72.0	1,470	271	0	32.6	0	7,660	1,360	11,100	1,360	12,400
North Dakota.....	68.8	3.68	165	21.6	5.92	18.7	0	13.4	13.6	837	0	1,130	13.6	1,150
Ohio.....	1,370	137	52.6	24.0	34.3	489	0	115	0	7,220	0	9,440	0	9,440
Oklahoma.....	657	26.8	564	88.8	10.7	20.8	0	18.0	1,400	385	0	1,770	1,400	3,170
Oregon.....	534	67.1	5,260	17.0	712	126	0	8.64	0	12.7	0	6,730	0	6,730
Pennsylvania.....	1,420	201	27.1	52.3	108	866	0	62.0	0	5,390	0	8,130	0	8,130
Rhode Island.....	108	8.02	2.69	0.18	14.5	7.52	0	0.92	0	1.44	232	135	241	376
South Carolina.....	619	115	125	12.0	11.0	388	0	8.43	0	5,500	0	6,780	0	6,780
South Dakota.....	124	5.37	362	47.4	48.4	9.48	0	18.2	0	10.3	0	626	0	626
Tennessee.....	918	38.7	71.9	27.5	52.6	776	0	14.6	0	5,800	0	7,700	0	7,700
Texas.....	3,990	259	6,830	259	31.4	680	610	203	810	10,500	661	22,600	2,160	24,800
Utah.....	673	8.44	3,220	16.5	97.1	47.6	70.6	4.19	246	69.6	11.0	4,130	331	4,460
Vermont.....	43.1	13.6	2.45	5.63	10.9	5.69	0	3.85	0	345	0	431	0	431
Virginia.....	665	124	61.4	27.4	295	383	56.1	34.9	0	2,860	3,150	4,440	3,210	7,650
Washington.....	910	113	3,150	27.8	213	458	33.1	16.7	0	37.9	0	4,920	33.1	4,960
West Virginia.....	189	31.5	0.09	5.08	52.3	764	3.80	14.5	1.02	2,470	0	3,530	4.82	3,530
Wisconsin.....	481	78.4	379	73.1	55.8	436	0	19.6	0	4,630	0	6,160	0	6,160
Wyoming.....	99.0	8.55	4,370	16.5	20.8	6.74	0	50.1	67.1	63.4	0	4,630	67.1	4,700
Puerto Rico.....	677	2.41	38.2	7.81	0.41	4.30	0	1.61	0.32	3.78	2,270	736	2,270	3,010
U.S. Virgin Islands...	5.86	2.67	0	0.02	0	0.22	2.62	0	0.04	0.17	116	3.99	124	128
TOTAL	42,000	3,600	115,000	2,000	9,420	15,000	986	2,250	3,070	117,000	43,900	306,000	48,300	355,000

**From 2010 USGS Report Entitled
"Estimated Use of Water in the United States in 2010"**
All values are in million gallons per day (MGD)
based on yearly usage divided by 365 days.

Public Water Supply	391.0	9.77%
Self-supplied domestic	14.9	0.37%
Irrigation	3040.0	75.94%
Livestock	114.0	2.85%
Aquaculture	12.9	0.32%
Self-supplied Industrial	40.3	1.01%
Mining	13.3	0.33%
Thermoelectric	377.0	9.42%
Total	4003.4	100.00%

Table 1

In the summary report of use by state, (see Table 1) the results for Kansas may be surprising. For 2010 the public water supply water use is a small percentage of the total water use in Kansas. For 2010 the water use by public water systems in Kansas was 9.8 percent of total water use. This percentage is even less in 2011 and 2012 due to more irrigation because of drier conditions. Of that 9.8 percent,

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Per Capita Water Use by State
This table shows per capita water use data from the USGS Circular 1405 referenced in this article. The table shows the USA, Kansas, nearby states to Kansas, the lowest state, and highest state data. Only ten states have a public water supply per capita water use less than Kansas.

Gallons per person per day

USA	89
Kansas	72
Nebraska	88
Oklahoma	85
Missouri	91
Colorado	110
Maine	51
Utah	167

Table 2

surface water provided 5.8 percent or 231 MGD and groundwater provided 4.0 percent or 160 MGD.

Four large, water utilities in northeast Kansas accounted for more than 60 percent of the surface water used by public water systems in 2010. Any public water supply conservation there would have only resulted in the water "conserved" flowing down the Missouri River Basin / Mississippi

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Another interesting note is that the amount of groundwater used by public water supply systems was 160 MGD. This is small compared to the total groundwater use of 3,200 MGD and the total (by far mostly groundwater but also some surface water) irrigation use of 3,040 MGD.

Keeping water conservation in perspective

Water used by public water systems in the U.S. decreased by five percent between 2005 and 2010. Many public water systems in Kansas have had steady or decreasing water use since about 2000; in fact 10 percent to 20 percent reduction in not uncommon. Decreasing water sales generally results in increases in water rates to make up for the lost revenue.

Nationally, public water system use based on a per person basis has essentially been constant since 1985, with decreasing water use since 2000.

Water conservation is needed (only) where water conservation is needed. PWS water conservation is not needed everywhere in Kansas. We must be vigilant so that the Governor's Vision does not include mandated reductions by public water systems. Such a public policy will result in unintended, unnecessary, financial consequences for public water systems and their customers.

Many public water systems in Kansas have developed water conservation plans. These plans allow for the orderly imposition of conservation steps when needed. Many water systems have implemented water conservation measures because these measures are needed. The decisions are local. Where water is not abundant, the State already has the authority to restrict water rights and has done so.

But new state policy for public water systems of across-the-board water conservation measures, goals, mandates, or requirements on public water use is unnecessary and unwise.

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An interesting and important aspect in achieving any proposed conservation by public water systems is who will monitor, police, and enforce the conservation. The city councils and rural water district boards are not

asking that additional water conservation measures be implemented by the State. The public water systems already have authority to address water shortage situations where the situation warrants.

If there is a real need for water conservation statewide by public water systems and their customers, then to implement such restrictions, either the State will require city councils and RWD boards to force water use reduction by their customers, or the State will directly require the citizens to reduce water use. The latter is unlikely.

Water conservation requirements on public water systems will need to be either regulations written by State employees or statutes written by the Legislature. If additional water conservation measures are deemed necessary, then this is a serious matter and it should be addressed by the Legislature.

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