

KANSAS-BOSTWICK IRRIGATION DISTRICT
ON-FARM EFFICIENCY ESTIMATES

***** Typical Efficiency numbers from Chuck Schmitt, NRCS - Nebraska State Water Management Engineer

Gated Pipe Irrigation	50%
Gated Pipe with reuse	70%
Alternate Furrow	60%
Alt furrow with reuse	75%
Surge, well managed	80%
Center Pivot Irrigation	85% - 90%

Assumed ditch irrigation 45%
(5% less than gated pipe)

1990 SURVEY

Ride	PIPE		DITCH		PIVOT		TOTAL acres
	acres	%	acres	%	acres	%	
North	1902.4	53%	1683.6	47%	0	0%	3586
Ridge	775.9	17%	3711.2	83%	0	0%	4487.1
Blk I	825.3	69%	371	31%	0	0%	1196.3
4th Sec	1878.4	40%	2391.4	51%	447	9%	4716.8
4th Main	564.2	63%	329.6	37%	0	0%	893.8
Upper West	2824.9	60%	1888.2	40%	0	0%	4713.1
Lower West	2664	55%	2149.6	45%	0	0%	4813.6
Upper 5th	3243.1	56%	2552.3	44%	0	0%	5795.4
Lower 5th	2666.2	65%	1182.1	29%	273.2	7%	4121.5
Miller	3018.2	59%	1950.5	38%	120	2%	5088.7
White Rock	2437.8	65%	1333	35%	0	0%	3770.8
Total	22800.4	53%	19542.5	45%	840.2	2%	43183.1
Typical Efficiency		50%		45%		85%	
Weighted Efficiency		26.4%		20.4%		1.7%	48.4%

1994 SURVEY

Ride	PIPE		DITCH		PIVOT		TOTAL acres
	acres	%	acres	%	acres	%	
1	906.4	71%	361.7	29%	0	0%	1268.1
2	2083.3	53%	1378.4	35%	445.2	11%	3906.9
3	1466.2	30%	3365	69%	61.1	1%	4895.3
4	2026.3	49%	1970.5	48%	126.4	3%	4123.2
5	610.7	70%	256.8	30%	0	0%	867.5
6	2864.5	61%	1731.1	37%	85	2%	4680.6
7	3402.3	70%	1477.9	30%	0	0%	4880.2
8	2599.4	56%	1782.9	38%	264.2	6%	4646.5
9	3036.5	66%	974.9	21%	586.2	13%	4597.6
10	3000.5	61%	1681.6	34%	268.3	5%	4950.4
11	2516.8	68%	1198.6	32%	0	0%	3715.4
Total	24512.9	58%	16179.4	38%	1839.4	4%	42531.7
Typical Efficiency		50%		45%		85%	

Weighted Efficiency	28.8%	17.1%	3.7%	49.6%
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1998 SURVEY

Ride	PIPE		DITCH		PIVOT		TOTAL acres
	acres	%	acres	%	acres	%	
1	977.7	77%	290.4	23%	0	0%	1268.1
2	1910.6	52%	995.6	27%	740.7	20%	3646.9
3	1798.1	36%	2719	55%	422.2	9%	4939.3
4	1943.5	48%	1665.2	41%	480.7	12%	4089.4
5	867.5	100%	0	0%	0	0%	867.5
6	3021.2	64%	1276.1	27%	418.2	9%	4715.5
7	3177.2	64%	1381.9	28%	385.8	8%	4944.9
8	2684.3	57%	1381.1	29%	667.9	14%	4733.3
9	2771.4	61%	544.8	12%	1225.4	27%	4541.6
10	3090.4	62%	915.6	18%	953.2	19%	4959.2
11	2616.1	70%	1099.3	30%	0	0%	3715.4
Total	24858	59%	12269	29%	5294.1	12%	42421.1
Typical Efficiency		50%		45%		85%	
Weighted Efficiency		29.3%		13.0%		10.6%	52.9%

2002 SURVEY

Ride	PIPE		DITCH		PIVOT		TOTAL acres
	acres	%	acres	%	acres	%	
1	1037.8	80%	132.6	10%	126.8	10%	1297.2
2	2036.2	60%	685.1	20%	691.8	20%	3413.1
3	2053.9	42%	1040.1	37%	1052.1	21%	4946.1
4	2059.9	50%	915	22%	1127.6	27%	4102.5
5	757.7	74%	0	0%	261.6	26%	1019.3
6	3258.9	69%	768.7	16%	712.3	15%	4739.9
7	2881.3	58%	763.7	15%	1354.9	27%	4999.9
8	2747.6	57%	785.2	16%	1293.6	27%	4826.4
9	1943.7	42%	110.9	2%	2606.3	56%	4660.9
10	2722.8	53%	570.4	11%	1821.9	36%	5115.1
11	2426.3	64%	696	18%	653.5	17%	3775.8
Total	23926.1	56%	7267.7	17%	11702.4	27%	42896.2
Typical Efficiency		50%		45%		85%	
Weighted Efficiency		27.9%		7.6%		23.2%	58.7%

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SUMMARY

YEAR								
1960	PIPE		DITCH		PIVOT		TOTAL	1960
	acres	%	acres	%	acres	%	acres	
	0	0%	42500	100%	0	0%	42500	
	Typical Efficiency							
	50%		45%		85%			
	Weighted Efficiency							45.0%
	0%		45%		0%			
1990	PIPE		DITCH		PIVOT		TOTAL	1990
	acres	%	acres	%	acres	%	acres	
	22800.4	53%	19542.5	45%	840.2	2%	43183.1	
	Typical Efficiency							
	50%		45%		85%			
	Weighted Efficiency							48.4%
	26%		20%		2%			
1994	PIPE		DITCH		PIVOT		TOTAL	1994
	acres	%	acres	%	acres	%	acres	
	24512.9	58%	16179.4	38%	1839.4	4%	42531.7	
	Typical Efficiency							
	50%		45%		85%			
	Weighted Efficiency							49.6%
	29%		17%		4%			
1998	PIPE		DITCH		PIVOT		TOTAL	1998
	acres	%	acres	%	acres	%	acres	
	24858	59%	12269	29%	5294.1	12%	42421.1	
	Typical Efficiency							
	50%		45%		85%			
	Weighted Efficiency							52.9%
	29%		13%		11%			
2002	PIPE		DITCH		PIVOT		TOTAL	2002
	acres	%	acres	%	acres	%	acres	
	23926.1	56%	1267.7	17%	11702.4	27%	47896.2	
	Typical Efficiency							
	50%		45%		85%			
	Weighted Efficiency							58.7%
	28%		8%		23%			