

Alberta Irrigation Information 2010



ALBERTA IRRIGATION INFORMATION

FACTS AND FIGURES FOR THE YEAR 2010

WATER RESOURCES BRANCH
IRRIGATION AND FARM WATER DIVISION

JUNE 2011

This report is prepared by Alberta Agriculture and Rural Development. The purpose of this booklet is to provide a statistical overview of irrigation information and data relating primarily to the thirteen irrigation districts situated in southern Alberta, but also includes irrigation water use across the whole province.

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Table 2. Summary of Crops Grown within the 13 Irrigation Districts in 2010

CROPS	IRRIGATION DISTRICTS													TOTAL ASSESSMENT ROLL ACRES
	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	
Cereals	130	91,483	79,202	0	40,449	6,053	474	226	16,438	128,992	26,024	12,878	24,476	426,826
	3.0%	39.1%	27.3%	0.0%	22.9%	33.1%	12.8%	20.5%	35.5%	34.6%	31.5%	37.5%	25.6%	31.3%
Forages	1,991	46,526	141,184	4,600	108,042	8,698	2,995	777	22,445	101,825	23,290	14,824	35,113	512,310
	45.4%	19.9%	48.6%	96.0%	61.3%	47.5%	80.9%	70.6%	48.5%	27.3%	28.2%	43.1%	36.7%	37.5%
Oil Seeds	240	32,471	34,364	0	19,559	2,557	0	72	6,170	62,022	7,091	4,905	14,444	183,895
	5.5%	13.9%	11.8%	0.0%	11.1%	14.0%	0.0%	6.5%	13.3%	16.6%	8.6%	14.3%	15.1%	13.5%
Specialty Crops	0	43,327	29,377	0	4,898	417	0	0	444	74,097	22,296	1,353	8,291	184,499
	0.0%	18.5%	10.1%	0.0%	2.8%	2.3%	0.0%	0.0%	1.0%	19.9%	27.0%	3.9%	8.7%	13.5%
Other	2,028	20,118	6,302	193	3,334	575	231	26	805	6,082	4,027	411	13,303	57,434
	46.2%	8.6%	2.2%	4.0%	1.9%	3.1%	6.2%	2.4%	1.7%	1.6%	4.9%	1.2%	13.9%	4.2%
TOTAL ASSESSMENT ROLL ACRES	4,389	233,925	290,429	4,793	176,282	18,300	3,700	1,101	46,303	373,018	82,728	34,370	95,628	1,364,965

Note: Assessment roll acres include "irrigation", "terminable" and "annual" acres

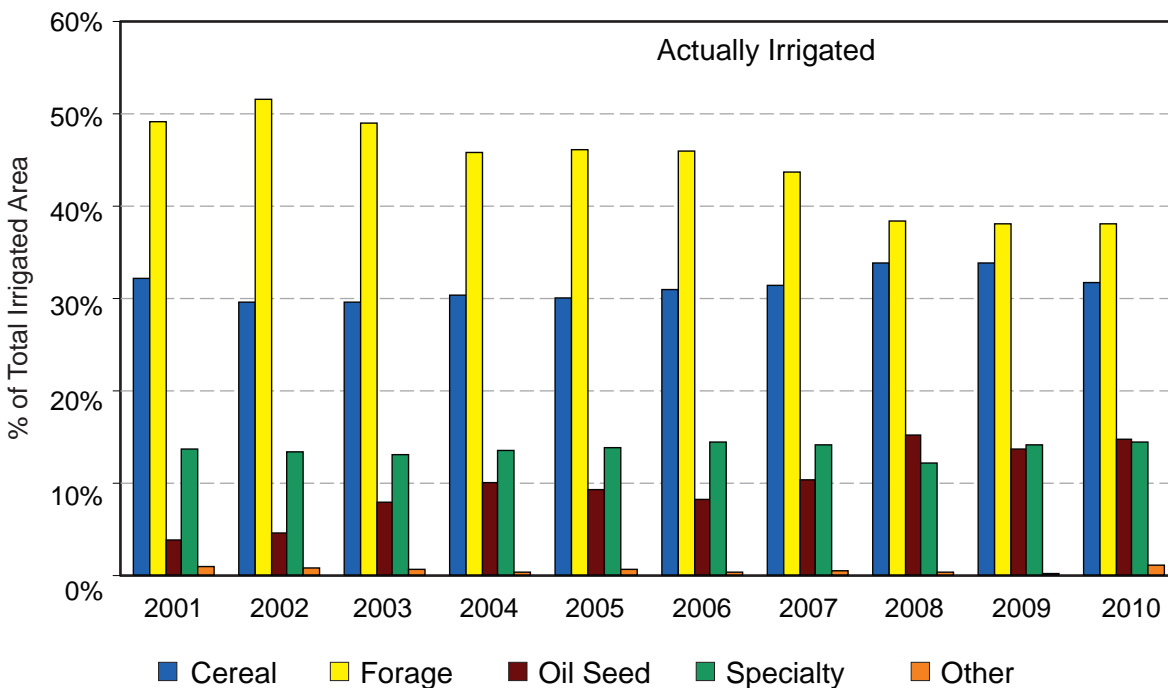


Figure 1. Irrigated Crops within the 13 Irrigation Districts in Southern Alberta (2001 - 2010)

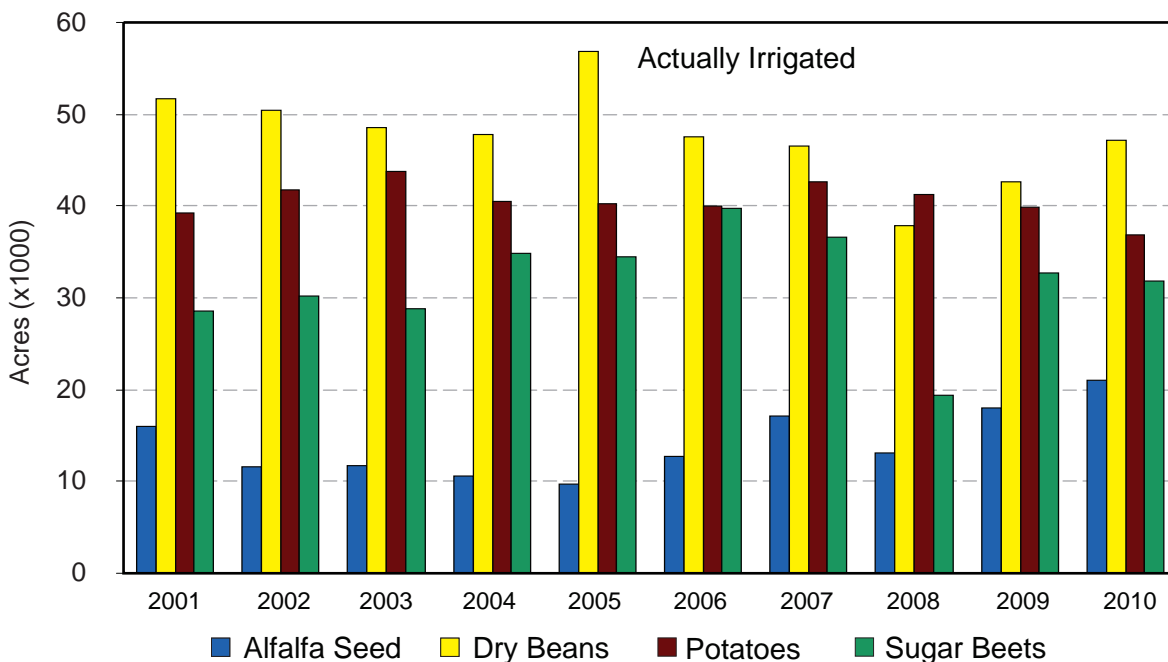


Figure 2. Acres of Four Major Irrigated Specialty Crops – Alfalfa Seed, Dry Beans, Potatoes and Sugar Beets within the 13 Irrigation Districts in Southern Alberta (2001 - 2010)

Table 3. Alberta Potato Acreage (seeded acres)

Year	Process	Seed	Table	Total
1990	15,383	5,117	7,882	28,382
91	12,300	5,735	6,509	24,544
92	9,700	5,515	6,970	22,185
93	13,115	5,850	6,115	25,080
94	13,210	7,390	6,075	26,675
1995	13,450	7,400	5,765	26,615
96	13,870	8,485	5,085	27,440
97	12,225	9,430	5,025	26,680
98	12,800	10,250	5,100	28,150
99	24,616	10,886	4,698	40,200
2000	32,563	12,037	4,331	48,931
01	34,877	12,595	3,883	51,355
02	37,296	14,644	3,241	55,181
03	40,960	13,690	4,125	58,775
04	38,077	11,062	3,508	52,647
2005	38,508	10,531	2,567	51,606
06	36,428	11,878	1,615	49,921
07	40,535	9,729	2,245	52,509
08	38,860	8,082	2,535	49,477
09	37,656	9,251	2,605	49,512
2010	35,500	9,500	2,500	47,500

- Notes: – data are obtained from the Potato Growers of Alberta
– the above acreage is from the whole province of Alberta, but does not include the potato acreage from market gardens of less than 5 acres
– typically, the processed and the table potatoes are irrigated

Table 4. Alberta Processed Vegetable Acreage (seeded acres)

Year	Carrots	Corn	Peas
1995	740	3,884	3,163
96	710	3,869	2,775
97	367	3,044	3,125
98	856	2,818	2,983
99	1,170	2,442	2,646
2000	854	2,577	2,563
01	994	3,992	3,967
02	479	3,712	4,053
03	441	4,329	4,534
04	1,009	3,365	4,534
2005	647	2,068	3,346
06	817	3,055	4,675
07	518	3,395	4,750
08	50	2,804	4,317
09	165	2,923	3,940
2010	325	2,288	2,913

- Notes: – data are obtained from the Alberta Vegetable Growers (Processing)
– processing is defined as fresh, canned, or frozen vegetables for human consumption
– all acres are assessed for irrigation

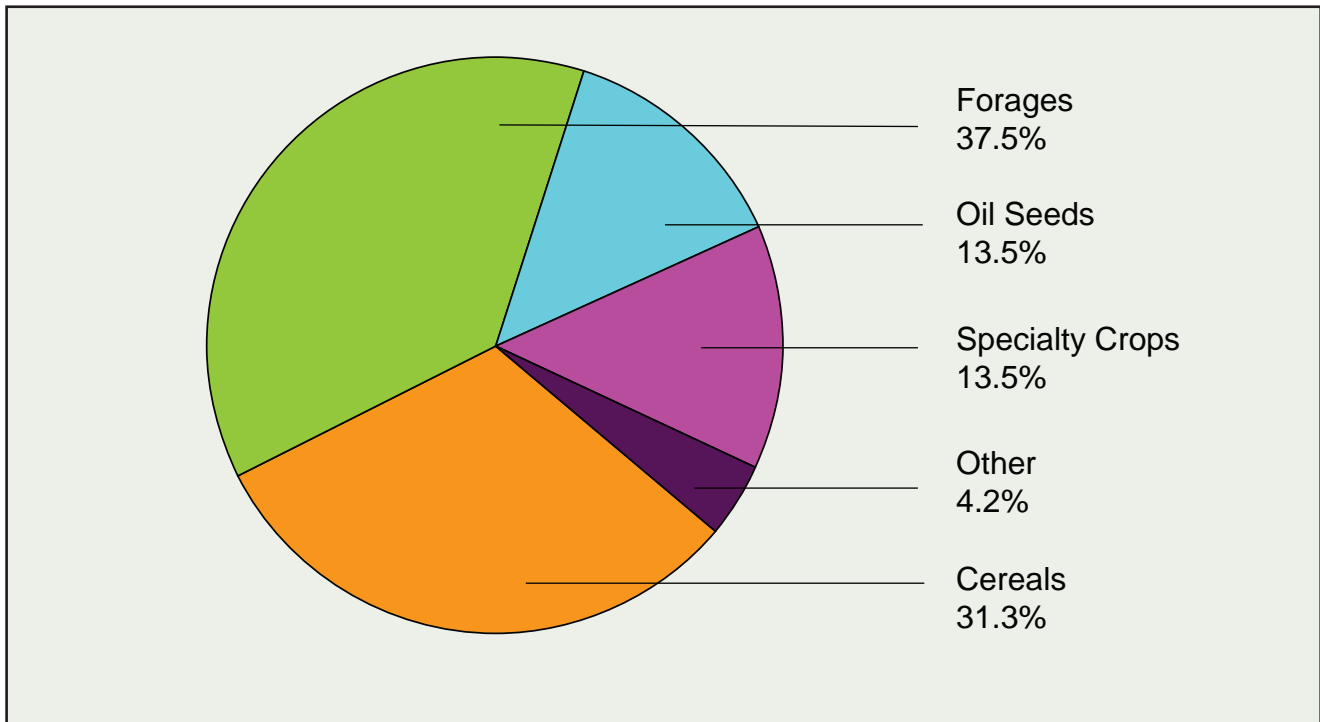


Figure 3. Crops Grown within the 13 Irrigation Districts in Southern Alberta in 2010

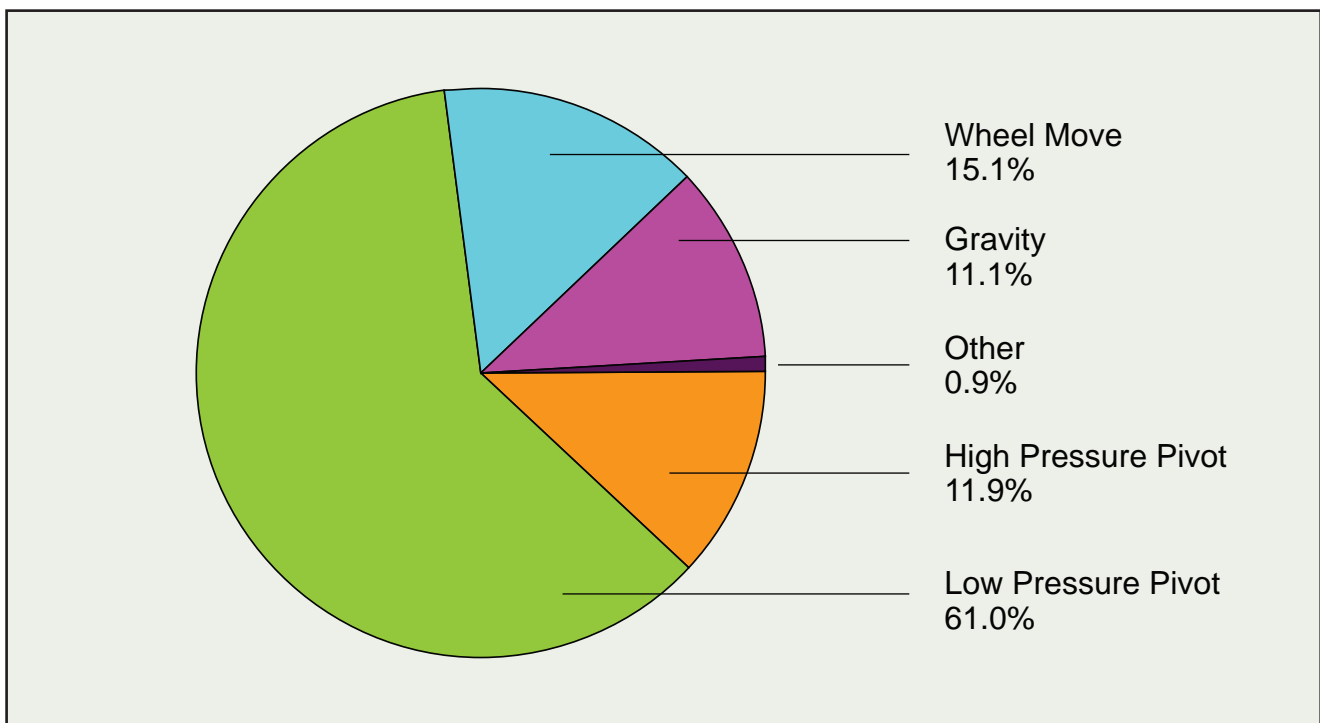
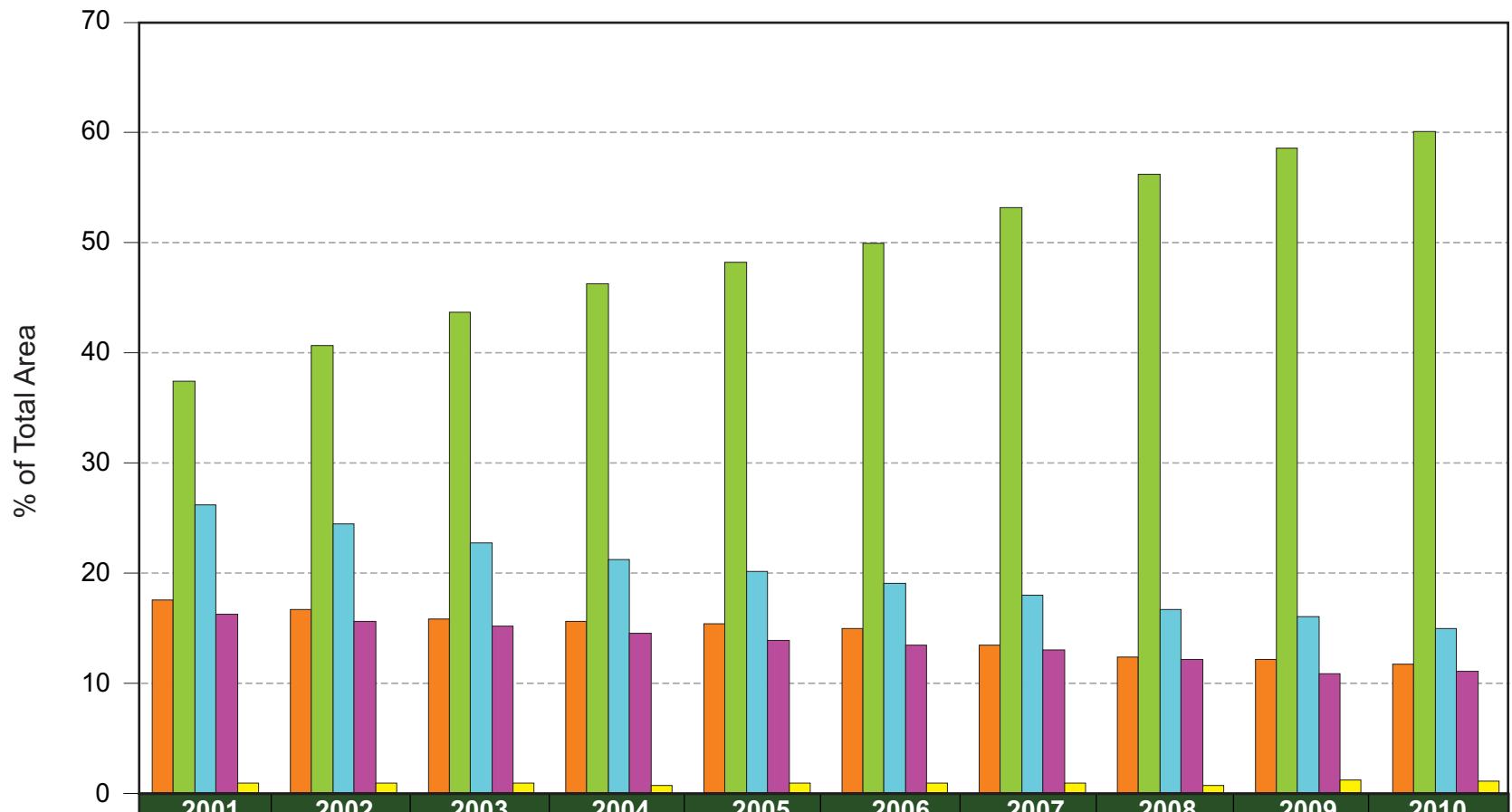


Figure 4. On-farm Irrigation Methods within the 13 Irrigation Districts in Southern Alberta in 2010

Table 5. On-farm Irrigation Method Summary within the 13 Irrigation Districts in Southern Alberta in 2010

IRRIGATION METHOD		AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	Individual Method Total	Total Acres Covered	
HIGH PRESSURE PIVOT SPRINKLER	Pivot High Pressure	374	40,129	30,222	600	8,283	2,186		237		10,184	13,224	7,870	25,079	138,388	156,907	
	Pivot High Pressure - Corner arm		6,143	3,627		4,351					1,408	1,171	399		17,099		
	Linear - High Pressure		124			873						109		314	1,420		
	percent of district -----	15.8%	21.5%	11.7%	12.5%	7.7%	11.9%	0.0%	22.0%	0.0%	3.2%	18.1%	24.2%	31.1%	11.9%		
LOW PRESSURE PIVOT SPRINKLER	Pivot Medium Pressure					696					3,027				3,723	802,049	
	Pivot Medium Pressure - Corner Arm										288				288		
	Pivot Low Pressure		113,307	136,550	240	46,433	7,268		477	26,406	247,793	34,599	8,394	30,844	652,310		
	Pivot Low Pressure - Corner Arm		19,826	9,236		60,371				1,824	40,569	10,718	515	932	143,991		
	Linear - Low Pressure					336					931	249	141	80	1,737		
percent of district -----	0.0%	61.6%	50.3%	5.0%	61.3%	39.7%	0.0%	44.4%	61.0%	81.2%	56.7%	26.5%	39.0%	61.0%			
WHEEL MOVE	Wheel Move -Two Laterals	1,157	10,589	28,547	100	21,953	5,338	417	254	11,932	38,962	15,520	1,961	11,873	148,603	198,043	
	Wheel Move - Four Laterals		6,874	4,532		26,441	140			1,688	5,953	1,378	224	2,210	49,440		
	percent of district -----	49.0%	8.1%	11.4%	2.1%	27.5%	29.9%	11.9%	23.6%	29.4%	12.5%	21.0%	6.4%	17.3%	15.1%		
GRAVITY	Gravity - Developed - No Control			46,550	135	302	3,174			1,357	378	600	373		52,869	145,882	
	Gravity - Developed - Controlled		15,153	15,591	85	1,003				1,587	1,258	1,300	557		36,534		
	Gravity - Undeveloped - Flood	474	3,804	13,861	3,633	962		3,093	107	1,055	7,630	1,256	13,427	7,124	56,426		
	Gravity - Undeveloped - Subsurface					3								50	53		
	percent of district -----	20.1%	8.8%	26.2%	80.4%	1.3%	17.3%	88.1%	10.0%	8.6%	2.6%	3.9%	42.0%	8.8%	11.1%		
OTHER	Volume Gun - Stationary		3								151	10		95	259	11,826	
	Volume Gun - Traveller		40	270		144					113	46		686	1,299		
	Solid Set (underground sprinkler)					532					254			202	988		
	Hand Move (sprinkler above ground)	356	80	574		1,005	174			447	1,305	130		819	5,091		
	Micro - Spray - Sprinkler		212			41					24	15		76	368		
	Micro - Drip - Trickle							20			7	121		201	1,252		1,400
	Other Application Use					2,310					6			104	2,420		
percent of district -----	15.1%	0.2%	0.3%	0.0%	2.3%	1.1%	0.0%	0.0%	0.0%	1.0%	0.5%	0.3%	0.9%	3.8%	0.9%		
Total System Acres		2,361	216,284	289,560	4,793	176,039	18,300	3,510	1,075	46,303	360,355	80,325	34,166	81,635		1,314,706	



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
High Pressure Pivot	223,510	214,009	206,746	204,342	201,601	198,011	176,421	164,072	160,664	156,907
Low Pressure Pivot	447,710	525,727	567,742	607,014	635,880	660,168	705,260	747,187	774,537	802,049
Wheelmove	335,740	316,689	295,310	279,183	265,897	252,831	239,140	222,247	210,606	198,043
Gravity	206,956	202,586	197,799	189,033	183,811	178,411	171,487	162,063	141,884	145,882
Other	11,678	11,773	11,006	9,347	10,600	10,579	10,380	9,870	11,935	11,826

Figure 5. Irrigation Method Summary within the 13 Irrigation Districts in Southern Alberta (2001 - 2010)

Table 6. Assessment Roll Acres within the 13 Irrigation Districts

YEAR	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	TOTAL
1970	6,673	23,783	199,729	4,523	89,360	8,506	3,719	2,068	20,847	197,540	57,484	33,353	44,006	691,591
71	6,548	24,071	200,459	4,343	89,883	8,105	3,719	2,068	20,349	199,572	59,172	33,353	43,949	695,591
72	3,131	24,196	202,225	4,305	89,379	9,042	3,719	2,068	20,269	204,051	59,833	33,353	43,899	699,470
73	3,081	26,756	205,481	4,305	98,206	9,182	3,719	2,068	20,647	216,136	61,692	33,353	43,919	728,545
74	3,081	118,741	207,245	4,421	105,958	9,077	3,717	2,068	23,257	237,244	63,823	34,034	44,219	856,885
1975	3,081	131,764	212,982	4,430	108,106	8,871	3,720	2,068	26,920	252,019	62,692	33,358	45,311	895,322
76	3,081	139,665	219,405	4,430	109,629	9,069	3,720	2,069	28,350	262,231	66,423	33,358	52,190	933,620
77	3,081	147,795	224,967	4,430	111,735	9,480	3,720	1,319	31,626	274,301	68,178	33,617	68,549	982,798
78	3,104	153,120	227,202	4,431	111,947	10,737	3,717	1,776	31,570	284,151	68,815	33,651	71,603	1,005,824
79	3,104	150,160	227,254	4,477	111,924	10,797	3,710	1,776	31,524	287,329	69,828	33,546	74,525	1,009,954
1980	3,104	164,889	229,110	4,477	112,562	10,797	3,710	1,776	33,681	293,126	70,368	33,544	76,029	1,037,173
81	3,096	174,641	230,553	4,457	113,845	10,963	3,710	1,776	35,385	299,548	70,819	33,417	79,633	1,061,843
82	3,127	179,613	239,651	4,423	114,919	11,647	3,710	1,716	39,130	301,446	71,529	33,383	81,864	1,086,158
83	2,916	181,174	244,099	4,440	116,745	12,357	3,710	1,776	39,148	313,728	72,623	33,448	81,480	1,107,644
84	3,051	183,529	244,243	4,440	117,869	13,047	3,710	1,776	41,729	319,712	72,971	33,534	82,974	1,122,585
1985	3,399	185,034	246,658	4,460	118,883	14,218	3,710	1,319	44,990	328,063	73,063	33,854	84,245	1,141,896
86	3,444	189,202	247,804	4,460	126,307	14,579	3,690	1,210	44,950	331,493	73,314	34,336	83,924	1,158,713
87	3,444	190,263	249,372	4,479	128,867	14,885	3,690	1,210	44,407	334,285	73,654	34,450	85,405	1,168,411
88	3,435	192,424	252,432	4,709	131,565	15,030	3,690	1,210	44,196	339,091	73,602	34,615	86,198	1,182,197
89	3,500	194,977	256,353	4,729	133,620	15,569	3,700	1,210	44,144	342,451	74,898	34,818	87,242	1,197,211
1990	3,500	199,980	260,523	4,742	135,632	15,099	3,728	1,210	44,044	349,849	74,568	34,769	88,480	1,216,124
91	3,527	201,070	263,889	4,762	137,719	16,665	3,728	1,210	44,305	350,108	77,740	34,687	88,112	1,227,522
92	3,519	202,499	269,462	4,800	139,688	16,391	3,734	1,210	44,279	351,393	78,177	34,868	87,949	1,237,969
93	3,519	204,466	270,008	4,780	138,095	16,775	3,737	1,210	44,229	353,039	78,412	34,772	87,453	1,240,495
94	3,519	205,983	272,024	4,780	141,517	16,785	3,727	1,210	44,219	353,466	78,629	34,438	86,725	1,247,022
1995	3,519	207,652	273,848	4,780	143,608	17,908	3,727	1,210	43,678	356,618	78,676	34,428	86,942	1,256,594
96	3,519	209,560	276,405	4,760	147,241	18,169	3,727	1,210	44,315	358,399	79,069	34,506	87,258	1,268,138
97	3,519	209,686	279,966	4,760	150,843	18,300	3,713	1,210	44,810	360,659	79,788	34,353	86,284	1,277,891
98	3,519	210,690	280,573	4,769	153,365	18,300	3,722	1,210	45,533	360,780	80,455	34,352	86,771	1,284,039
99	3,609	211,152	281,107	4,769	154,886	18,300	3,722	1,210	45,751	367,161	81,984	34,352	88,131	1,296,134
2000	3,609	210,352	281,720	4,763	157,825	18,300	3,722	1,210	45,888	369,771	82,257	34,329	87,236	1,300,982
01	3,611	209,927	281,710	4,763	163,878	18,300	3,712	1,210	46,235	370,925	82,261	34,329	87,924	1,308,785
02	3,611	214,279	282,516	4,763	163,870	18,300	3,712	1,210	46,304	371,319	82,284	34,423	96,512	1,323,103
03	3,611	214,585	282,961	4,763	164,288	18,320	3,712	1,210	46,304	372,114	82,562	34,423	96,646	1,325,499
04	3,611	216,533	283,625	4,763	175,568	18,320	3,712	1,210	46,296	372,979	82,515	34,093	96,535	1,339,760
2005	3,608	219,733	283,706	4,763	175,628	18,320	3,561	1,210	46,296	372,619	82,533	34,081	96,415	1,342,473
06	3,608	221,677	284,074	4,763	175,636	18,320	3,561	1,101	46,306	372,618	82,527	34,025	96,100	1,344,316
07	3,699	231,713	284,419	5,205	175,913	18,300	3,654	1,101	46,306	372,996	82,804	34,044	96,091	1,356,245
08	3,699	233,869	285,086	5,126	176,069	18,300	3,700	1,101	46,293	373,162	82,600	34,069	96,079	1,359,153
09	3,699	233,438	294,612	4,706	176,201	18,300	3,700	1,101	46,303	373,092	82,569	34,325	96,045	1,368,091
2010	4,389	233,925	290,429	4,793	176,282	18,300	3,700	1,101	46,302	373,018	82,728	34,370	95,628	1,364,965

Notes: – BRID increased 94,000 acres in 1974 with the amalgamation of the BRID and the Bow River Project (Federal).

– Assessment roll acres include "irrigation", "terminable" and "annual" acres. Only "irrigation" and "terminable" acres are considered in district expansion limits.

Table 7. Acres Actually Irrigated within the 13 Irrigation Districts

YEAR	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	TOTAL
12										76,200			500	76,700
13										76,200			2,600	78,800
14			7,806							76,200			8,448	92,454
1915			7,806							76,200			512	84,518
16			1,497							71,281			859	73,637
17			9,605							91,780			3,657	105,042
18			24,440							102,900			25,191	152,531
19			43,460							112,569			31,908	187,937
1920		4,240	60,762							60,893	2,000		4,083	131,978
21		9,400	88,299							75,550	10,352		33,618	217,219
22		9,509	93,375							75,558	13,122		49,752	241,316
23		11,249	42,928		6,963					72,345	3,625		3,074	140,184
24		9,720	84,200		29,991					71,700	13,051	5,264	24,297	238,223
1925		13,252	72,994		43,628					81,110	13,472	10,000	5,384	239,840
26		13,467	74,401		56,395					78,399	14,385	10,026	19,561	266,634
27		810	7,921		10,012	1,235				20,365	576	41	1,273	42,233
28		19,373	45,677		33,436	800			6,800	21,153	3,171	2,577	3,892	136,879
29		29,260	78,610		61,231	4,000			6,634	25,713	10,094	3,102	37,394	256,038
1930		31,207	89,913		70,007	5,161			7,000	67,004	19,322	5,847	41,570	337,031
31		29,803	90,724		70,408	3,400	300		9,000	68,089	19,914	12,983	47,593	352,214
32		26,379	90,651		41,842	4,000	800		10,000	68,000	18,998	11,500	8,680	280,850
33		22,440	96,019		62,416	4,000	1,168		12,000	70,000	18,854	10,500	40,812	338,209
34		22,705	101,566		54,200	4,000	1,950		13,000	70,000	18,490	10,000	31,131	327,042
1935		25,257	143,997		73,022	4,000	3,000		13,000	70,000	19,471	12,000	19,109	382,856
36		27,170	111,781		62,790	4,000	2,900		13,000	75,274	19,123	18,000	44,614	378,652
37		30,817	124,645		70,020	4,000	3,500		13,000	72,250	21,296	17,500	50,866	407,894
38		34,614	133,928		73,297	4,000	3,500		12,000	75,749	20,880	10,000	35,775	403,743
39		36,874	141,688		56,712	3,700	3,200		12,000	76,492	18,485	10,500	11,647	371,298
1940		37,906	146,211		72,492	3,700	3,000		13,000	76,639	21,391	10,500	20,134	404,973
41		35,312	156,501		63,575	3,700	3,400		14,000	76,579	15,103	11,000	20,144	399,314
42		37,946	166,453		31,102	3,700	3,400		10,000	57,575	14,108	12,000	9,194	345,478
43		35,143	168,496		67,777	3,500	3,254		12,000	75,707	20,935	12,000	7,666	406,478
44		37,266	167,094	526	75,927	3,500	3,400		12,000	75,725	21,325	13,000	20,000	429,763
1945		38,838	167,100	1,000	57,126	3,500	3,300		12,000	75,766	21,218	13,000	20,000	412,848
46		42,251	166,328	1,300	64,894	3,500	3,000		12,000	76,013	21,222	13,500	19,000	423,008
47		43,611	168,580	1,300	57,343	3,500	3,500		12,000	110,848	19,141	7,453	20,000	447,276
48		44,160	172,894	1,500	55,374	3,500	3,700		12,000	76,351	17,720	2,970	12,000	402,169
49		46,975	177,084	1,500	72,807	3,500	3,300		12,000	70,117	21,533	19,228	26,345	454,389
1950		36,508	180,000	2,500	78,721	3,500	3,300		12,000	77,674	21,864	9,758	23,100	448,925
51		24,283	183,316	941	21,979	3,500	100		12,000	83,682	8,739	1,869	1,000	341,409
52		40,416	149,289	941	35,314	3,500	3,350		12,000	86,297	21,251	6,072	700	359,130
53		40,000	114,776	980	37,409	5,000	3,392	1,100	13,000	76,624	22,503	8,894	500	324,178
54		40,000	187,612	254	58,745	7,000	3,392	2,100	16,000	102,266	27,224	10,333	1,500	456,426
1955		40,000	190,976	423	31,753	7,000	3,132	1,500	16,000	81,100	20,530	10,115	5,000	407,529
56		109,400	191,568	852	31,588	7,000	2,773	1,800	15,500	98,647	21,009	11,082	6,000	497,219
57		55,374	189,792	2,779	51,809	7,000	2,733	1,685	16,000	116,713	21,579	15,886	7,000	488,350
58		56,995	188,928	1,542	51,916	7,000	2,760	1,500	15,500	123,440	22,854	11,032	9,870	493,337
59	360	54,514	188,721	1,542	46,459	7,000	2,789	405	15,800	155,155	25,426	17,761	9,930	525,862
1960	440	71,392	189,761	1,542	71,006	5,000	2,789	200	15,200	179,477	29,448	16,536	12,000	594,791
61	1,800	80,603	189,421	1,542	73,637	6,000	2,760	200	18,300	157,300	30,747	23,095	23,000	608,405
62	2,177	83,259	190,866	4,187	73,317	7,000	2,760	200	18,500	155,500	36,029	28,465	30,000	632,260
63	2,315	87,267	192,324	4,511	63,000	7,250	2,789	200	18,500	170,000	33,902	27,012	25,000	634,070
64	2,523	86,034	193,381	4,511	70,575	7,500	2,789	200	18,000	170,000	39,015	19,376	24,000	637,904
1965	2,523	44,507	194,824	4,511	22,778	3,000	2,789	1,500	15,000	165,000	26,005	9,805	2,750	494,992
66	2,523	40,423	195,905	4,523	19,196	4,000	2,789	1,050	16,000	165,000	25,904	12,725	3,100	493,138
67	2,523	71,936	196,549	4,523	47,962	5,000	2,789	1,250	17,000	160,000	38,235	11,866	12,870	572,503
68	2,523	82,876	198,352	4,523	56,993	4,400	2,789	900	15,200	154,336	45,420	10,109	10,000	588,421
69	2,523	79,980	198,248	4,523	35,902	4,500	2,789	900	15,000	124,879	45,980	10,228	13,500	538,952
1970	2,523	77,580	199,729	4,523	49,783	5,000	2,789	1,000	15,000	134,982	50,094	15,019	15,000	573,022
71	2,424	81,018	166,219	4,343	60,207	5,500	2,789	1,100	15,000	149,444	52,185	14,417	16,000	570,646
72	2,400	82,928	175,915	4,305	58,817	5,750	2,000	675	15,000	147,884	52,470	11,061	17,000	576,205
73	2,400	98,185	183,279	4,305	80,995	5,600	3,720	800	15,000	176,120	58,826	22,233	19,000	670,463
74	2,424	108,021	188,657	4,305	90,085	6,000	3,737	700	18,000	190,017	60,981	11,710	22,000	706,637
1975	2,400	116,155	179,095	4,430	92,850	6,000	3,000	600	21,500	171,883	44,606	4,952	34,036	681,507
76	2,400	125,380	201,438	4,600	96,661	9,070	2,910	700	22,680	213,085	59,116	13,355	39,824	791,219
77	2,500	131,492	208,785	4,430	97,829	7,000	2,000	350	30,000	232,072	64,115	15,000	43,525	839,098
78	2,400	127,236	204,192	4,430	93,562	6,000	2,775	578	31,060	198,755	56,940	8,671	33,329	769,927
79	2,500	133,517	213,837	4,476	100,487	8,000	2,900	623	31,264	249,232	62,635	13,899	46,570	869,940
1980	2,500	134,493	212,524	4,476	95,979	8,000	2,900	600	19,137	251,914	63,202	12,607	43,986	852,318
81	2,500	140,300	216,200	4,476	90,552	8,650	2,783	0	19,462	259,564	66,206	15,064	28,389	854,146
82	1,200	152,144	216,620	3,000	104,533	8,500	3,154	650	25,169	268,916	67,305	10,054	41,996	903,241
83	1,200	168,461	231,125	3,000	108,141	9,000	3,154	650	28,055	288,969	68,474	12,734	46,638	969,601
84	1,200	173,334	238,000	3,000	102,301	10,200	3,154	600	34,728	300,071	69,847	12,313	46,638	995,386
1985	2,933	174,087	244,763	3,664	114,635	13,000	3,184	700	36,286	305,560	70,133	12,620	49,666	1,031,231
86	2,933	174,903	246,916	3,600	113,663	13,000	3,184	700	36,008	307,875	69,928	13,146	48,000	1,033,856
87	2,200	178,482	245,514	4,076	119,562	12,400	3,321	700	36,008	305,964	69,413	12,526	46,984	1,037,150
88	2,500	173,400	241,494	3,900	124,555	13,436	3,100	500	36,496	316,223	69,581	14,536	52,950	1,052,671
89	1,962	181,106	249,623	3,900	127,330	13,555	2,000	0	35,766	323,400	70,278	11,693	52,153	1,072,766
1990	2,446	183,147	253,261	4,500	127,439	14,000	2,500	0	36,911	338,274	73,329	11,523	49,000	1,096,330
91	2,473	182,932	246,083	4,200	130,989	15,000	2,880	650	32,847	319,745	73,169	11,548	48,300	1,070,816
92	2,519	182,543	256,342	4,200	131,305	15,240	2,880	0	36,788	324,477	74,229	15,499	43,889	1,089,911
93	0	184,463	259,778	0	67,565	0	0	0	0	262,718	66,158	0	40,007	880,689
94	1,940	187,247	259,942	4,200	133,803	11,425	3,277	734	36,291	330,949	73,949	14,255	47,335	1,105,347
1995	765	192,328												

Table 8. Irrigation Districts Annual Water Rates (\$ per assessed acre per year)

YEAR	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID
1982	\$2.50	\$6.50	\$6.50	\$5.00	\$12.00	\$6.00	\$3.00	\$3.00	\$6.25	\$12.00	\$10.75	\$3.25	\$6.30
83	\$5.00	\$9.00	\$6.75	\$8.00	\$12.50	\$6.00	\$5.20	\$3.00	\$6.50	\$12.00	\$11.00	\$3.25	\$6.50
84	\$6.00	\$10.00	\$7.00	\$8.00	\$12.50	\$6.00	\$5.20	\$3.00	\$6.50	\$12.00	\$11.00	\$3.25	\$6.75
1985	\$6.00	\$10.00	\$7.00	\$7.50	\$12.50	\$6.00	\$5.20	\$4.00	\$6.50	\$12.00	\$11.00	\$3.25	\$7.25
86	\$6.00	\$10.00	\$7.25	\$7.50	\$12.50	\$6.00	\$5.20	\$6.00	\$6.50	\$13.00	\$11.00	\$3.25	\$7.47
87	\$6.00	\$10.00	\$7.50	\$7.50*	\$12.50*	\$6.00	\$5.20	\$6.00	\$6.50	\$13.00	\$11.00	\$3.25	\$7.47
88	\$7.00*	\$10.00	\$7.50	\$8.00*	\$12.50*	\$6.00	\$5.20	\$6.00	\$6.50	\$13.00	\$12.00	\$3.25	\$7.70
89	\$7.00*	\$10.00	\$8.00	\$8.00*	\$13.50*	\$6.00	\$6.20	\$6.00	\$6.50	\$13.25	\$12.00	\$3.50	\$8.00
1990	\$8.00*	\$10.00	\$8.50	\$8.00*	\$13.50*	\$6.00	\$6.20	\$6.00	\$6.50	\$14.00	\$12.00	\$3.75	\$11.00
91	\$8.00*	\$10.00	\$8.50	\$7.00*	\$13.50*	\$6.00*	\$6.20	\$6.00	\$6.50	\$14.00	\$12.00	\$4.00	\$13.00
92	\$8.00*	\$11.00	\$8.50	\$7.00*	\$14.00*	\$6.00*	\$6.20	\$6.00	\$6.50	\$14.00	\$12.00	\$4.25	\$13.50
93	\$8.00*	\$11.00	\$8.50	\$7.00*	\$14.00*	\$6.00*	\$6.20	\$6.00	\$6.50	\$14.25	\$12.00	\$4.50	\$13.50*
94	\$8.00*	\$12.00	\$8.50	\$7.00*	\$14.00*	\$6.50*	\$6.20	\$6.00	\$7.00	\$15.25	\$12.00	\$4.50	\$14.75*
1995	\$8.00*	\$13.00	\$8.50	\$8.00*	\$14.00*	\$7.00*	\$8.00	\$8.50	\$7.00	\$16.15	\$12.00	\$4.50	\$14.75*
96	\$8.00*	\$13.00	\$8.50	\$8.00*	\$14.00*	\$7.00*	\$8.00	\$8.50	\$7.50	\$16.15	\$12.00	\$6.50	\$15.25*
97	\$8.00*	\$13.00	\$7.50	\$8.00*	\$14.00*	\$7.00*	\$8.00	\$8.50	\$7.50	\$16.15	\$12.00	\$6.75	\$15.25*
98	\$8.00*	\$13.50	\$7.50	\$8.00*	\$14.00*	\$7.50*	\$8.00	\$8.50	\$8.50	\$16.65	\$12.00	\$7.00	\$16.25*
99	\$8.00*	\$14.50	\$7.50	\$8.00*	\$14.00*	\$7.50*	\$8.00	\$8.50	\$8.50	\$17.00	\$12.00	\$7.25	\$16.25*
2000	\$8.00*	\$14.50	\$7.50	\$8.00*	\$14.00*	\$7.50*	\$8.00	\$8.50	\$8.50	\$17.50	\$12.00	\$7.50	\$16.25*
01	\$8.00*	\$14.50	\$7.50	\$8.00*	\$14.00*	\$7.50*	\$8.00	\$8.50	\$8.50	\$17.90	\$11.00	\$7.50	\$16.25*
02	\$8.00*	\$14.50	\$7.50	\$8.00*	\$14.00*	\$7.50*	\$8.00	\$6.00	\$8.50	\$16.90	\$11.00	\$7.75	\$16.25*
03	\$9.00*	\$15.00	\$0.00	\$10.00*	\$14.00*	\$8.00*	\$8.00	\$13.58	\$8.50	\$17.90	\$11.00	\$8.25	\$16.25*
04	\$9.00*	\$14.50	\$0.00	\$11.00*	\$14.00*	\$8.00*	\$8.00	\$13.58	\$9.50	\$17.90	\$11.00	\$8.25	\$16.25*
2005	\$9.00*	\$14.50	\$0.00	\$11.00*	\$14.00*	\$8.50*	\$10.00	\$13.58	\$9.50	\$17.90	\$11.00	\$8.25	\$16.25*
06	\$9.00*	\$14.50*	\$0.00	\$11.00*	\$14.00*	\$8.50*	\$10.00	\$15.00	\$9.50*	\$18.50	\$11.00	\$8.25	\$16.25*
07	\$9.00*	\$14.50*	\$0.00	\$11.00*	\$14.00*	\$9.00*	\$10.00	\$18.00	\$9.50*	\$18.75*	\$8.00	\$8.25	\$16.25*
08	\$10.00*	\$14.50*	\$0.00	\$11.50*	\$14.00*	\$9.00*	\$12.00	\$21.00	\$9.50*	\$18.75*	\$8.00	\$8.50	\$16.25*
09	\$10.00*	\$15.00*	\$0.00	\$11.50*	\$14.00*	\$9.00*	\$12.00	\$22.50	\$9.50*	\$19.00*	\$8.00*	\$8.50	\$16.25*
2010	\$10.00*	\$15.00*	\$0.00	\$11.50*	\$14.00*	\$9.50*	\$12.00	\$21.50	\$9.50*	\$20.00*	\$8.00*	\$8.50	\$16.25*

Note: * The districts levy additional surcharges. The 2010 rates were:

- AID – \$12.00 per acre for pipeline delivery in township 2
– \$13.00 per acre for pipeline delivery in township 3
- BRID – \$0.60 per acre inch for volumes used on flood parcels over the annual allocation
- LID – \$3.00 per acre for pipeline delivery
- LNID – \$0.25 per psi for pressure pipeline
– \$5.00 per acre inch for volumes over the annual allocation

- MID – \$1.00 per 10 psi for pressure pipeline
- RID – charges vary for pipeline delivery
– \$100 per acre inch for volumes over the annual allocation
- SMRID – \$100 per acre inch for volumes over the annual allocation
- TID – \$50 per acre inch for volumes over the annual allocation
- WID – \$0.31 per psi per acre

Table 9. Gross Annual Diversions To Alberta Irrigation Districts

DISTRICT	OLDMAN RIVER BASIN										BOW RIVER BASIN			TOTALS
	AID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	BRID	EID	WID	
WATER SOURCE	diversion from Belly River	diversion from Belly River	diversion from Oldman River	diversion from Belly, Waterton, St. Mary Rivers	diversion from Belly River	diversion from Gros Ventre Ck. & Ross Ck.	diversion from SMRID main canal	diversion from Belly, Waterton, St. Mary Rivers	diversion from SMRID main canal	diversion from Belly, Waterton Rivers	diversion from Bow River	diversion from Bow River	diversion from Bow River	
EXPANSION LIMITS (acres)	5,000	4,770	227,000	18,300	4,240	1,210	46,500	372,000	82,200	34,400	232,000	311,000	95,000	1,433,620
WATER LICENCE ALLOCATION (acre-feet)	9,000	12,000	334,450	34,000	8,000	3,000	81,000	722,000	158,000	66,210	450,000	762,000	158,400	2,798,060
YEAR	VOLUME OF WATER DIVERTED (acre-feet)													
76			154,844	9,295		1,981	36,414	339,188	86,330	14,998	321,000	565,100	153,222	1,682,372
77			169,436	18,439		2	48,317	423,509	122,209	31,050	344,000	572,100	137,008	1,866,070
78			85,934	4,378		2,489	12,848	202,066	35,303	10,620	207,000	387,100	102,959	1,050,697
79			138,630	13,059		5,561	24,521	303,097	94,736	23,517	266,000	542,846	138,630	1,550,597
1980			134,576	10,710		0	19,944	340,254	94,858	17,754	314,000	548,686	136,198	1,616,980
81			132,955	8,869		264	22,162	379,075	108,427	12,242	359,000	577,969	108,630	1,709,593
82			142,683	13,068		3,551	27,697	332,337	91,998	19,133	303,000	481,258	129,712	1,544,437
83			150,790	14,363		1,354	14,955	361,537	97,674	24,078	347,000	580,299	146,737	1,738,787
84			177,543	18,857		67	17,544	492,674	101,643	25,093	361,000	657,640	162,140	2,014,201
1985	5,020	8,500	184,029	18,533	4,250	3,827	27,302	425,500	95,751	24,193	358,722	655,188	158,897	1,969,712
86	4,074	6,858	182,159	14,114	3,212	1,832	22,045	406,536	101,597	20,106	311,000	680,592	131,333	1,885,458
87	4,392	5,644	181,934	14,649	3,180	1,321	40,559	426,434	98,621	19,958	309,000	639,928	129,712	1,875,332
88	6,910	9,398	222,936	22,918	6,066	256	60,531	563,621	121,668	30,462	423,000	730,274	171,868	2,369,908
89	4,613	3,517	198,789	12,338	2,750	122	30,728	504,255	78,396	18,372	333,000	605,148	122,416	1,914,444
1990	3,754	5,328	191,899	13,555	3,290	298	32,000	467,244	98,572	16,133	380,907	689,178	128,091	2,030,249
91	3,556	4,468	184,737	12,712	2,662	1,775	30,702	391,634	94,956	17,003	334,792	629,872	147,547	1,856,416
92	2,170	11,216	136,925	15,695	4,118	0	36,210	441,745	101,122	18,628	336,878	625,650	135,387	1,865,744
93	2,126	1,824	61,753	4,848	988	3,300	13,574	218,375	59,278	8,107	210,340	423,551	114,309	1,122,373
94	4,110	4,319	179,663	13,895	3,325	758	28,328	415,162	103,028	16,827	364,126	559,476	132,104	1,825,121
1995	1,802	1,548	110,114	4,248	861	208	19,953	390,285	79,818	7,710	302,305	602,098	116,254	1,637,204
96	4,035	4,892	206,206	12,506	2,660	1,085	45,527	498,483	127,436	19,832	328,182	615,478	117,065	1,983,387
97	6,051	5,193	188,378	12,564	1,529	1,760	38,043	455,300	115,582	20,364	343,380	593,782	116,740	1,898,666
98	4,874	5,331	157,758	9,671	2,323	1,726	33,834	405,000	116,300	14,895	303,565	638,500	142,367	1,836,144
99	3,485	11,415	196,906	25,178	2,499	1,700	42,960	411,532	105,208	20,900	298,524	426,788	88,410	1,635,505
2000	6,000	11,240	263,413	35,375	6,700	0	58,202	451,700	140,046	37,200	417,897	675,238	156,400	2,259,411
01*	3,952	7,593	308,236	21,173	6,814	0	40,207	325,700	94,770	27,526	413,780	685,000	160,000	2,094,751
02	2,938	9,835	112,143	10,788	3,033	N/A	23,552	466,700	53,324	21,283	333,541	430,000	149,577	1,616,714
03	4,598	7,964	201,812	20,711	5,889	N/A	49,723	330,600	86,500	32,500	279,798	459,700	128,700	1,608,495
04	3,440	5,425	166,276	12,391	2,660	N/A	28,224	367,500	64,399	21,600	230,817	417,370	114,000	1,434,102
2005	4,000	6,243	134,088	8,859	2,067	1,190	27,046	316,200	72,487	13,717	182,819	318,000	120,400	1,207,116
06	3,681	5,341	165,752	14,114	3,987	0	37,049	334,100	82,448	20,390	210,741	335,210	72,000	1,284,813
07	3,235	6,330	235,330	18,238	3,600	N/A	47,322	394,700	100,907	31,801	256,518	417,830	68,000	1,583,811
08	3,584	6,389	178,750	12,659	2,609	200	34,348	381,200	84,421	21,054	238,000	409,400	85,000	1,457,614
09	2,651	5,378	179,945	14,885	2,138	200	45,705	370,100	97,532	17,506	295,557	435,650	120,829	1,588,076
2010	1,938	2,383	74,910	5,351	1,013	116	21,900	201,700	53,135	7,264	156,116	210,500	65,850	802,176
Percent of Licence (2010)	21.5%	19.9%	22.4%	15.7%	12.7%	3.9%	27.0%	27.9%	33.6%	11.0%	34.7%	27.6%	41.6%	28.7%
**Average Volume	3,884	6,291	168,349	14,086	3,239	1,056	32,571	386,716	93,157	20,109	307,866	537,783	125,957	1,701,063

Notes: – Data are obtained from Alberta Environment for AID, LID, MVID, RCID, and UID, and Irrigation Districts for BRID, EID, LNID, MID, RID, SMRID, TID, and WID.
 – RCID has a second supply from Ross Creek, but data has not been consistently recorded at that location.
 – Diversion data represent the gross diversion into and through the works of the districts and include volumes used directly for irrigation purposes, reservoir filling and the water supplied or licensed to municipal, domestic, other agricultural, industrial and environmental uses.
 – *Water rationing in effect for MID, RID, SMRID, and TID in 2001.
 – ** Average Volume 1976 - 2010

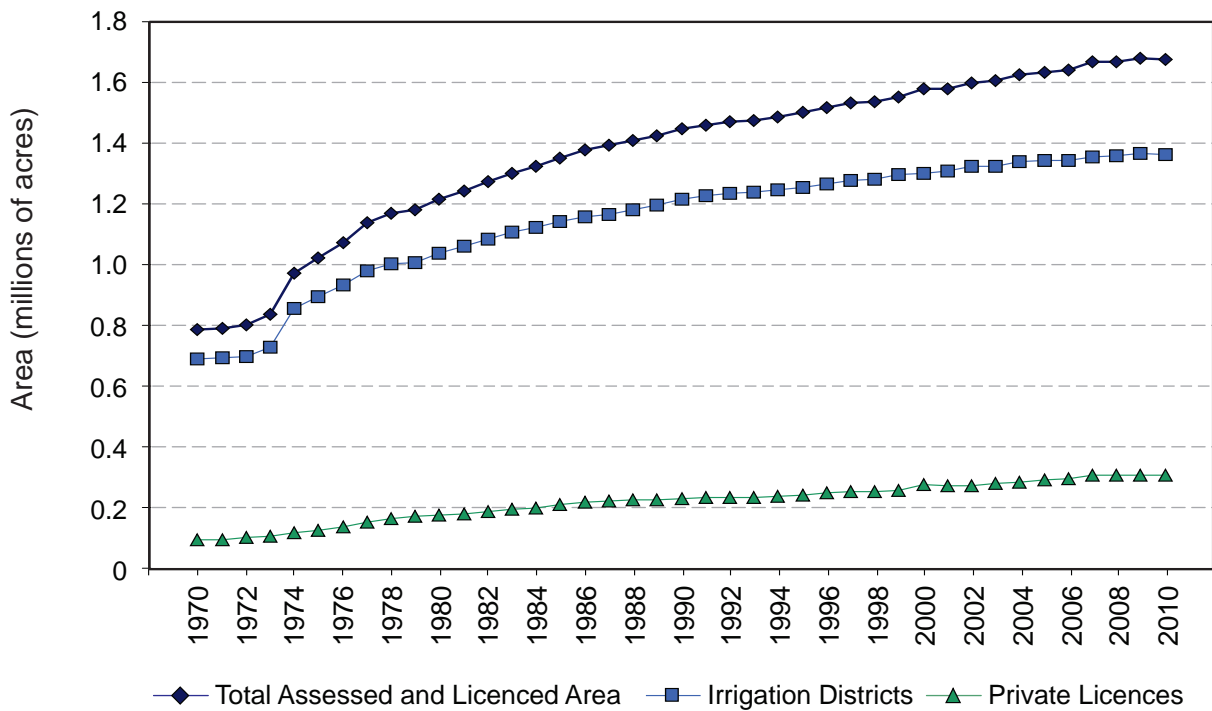


Figure 6. Growth in Irrigation in Alberta (1970 - 2010)

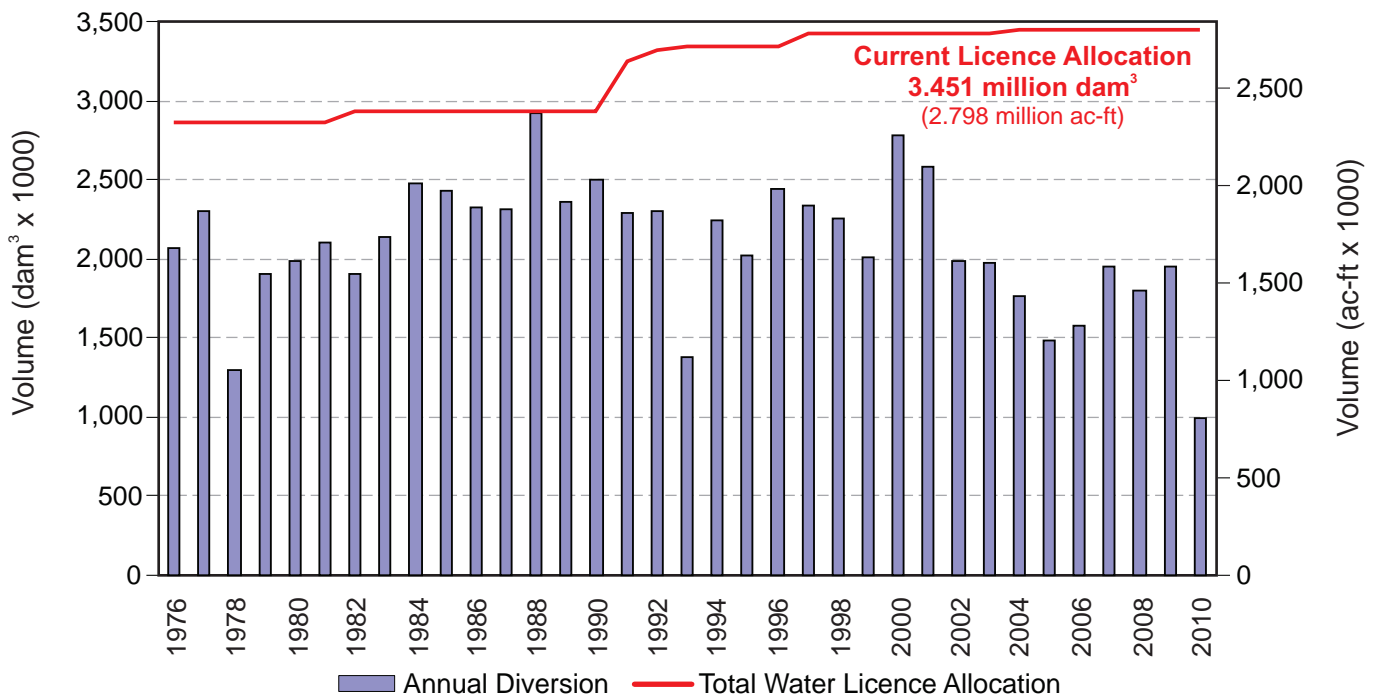


Figure 7. Gross Annual Diversions (1976 - 2010)

Note: Diversion data represent the gross diversion into and through the works of the districts and include volumes used directly for irrigation purposes, reservoir filling and the water supplied or licensed to municipal, domestic, other agricultural, industrial and environmental uses.

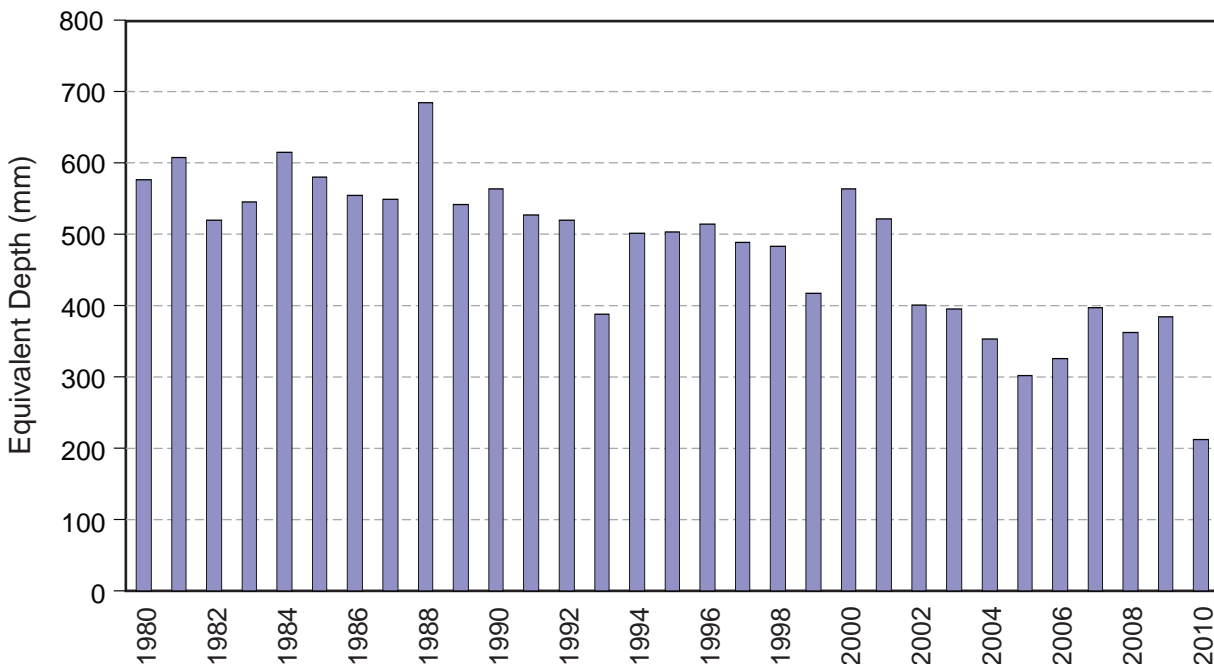


Figure 8. Gross Diversion Equivalent Depth (1980 - 2010)

Note: Irrigation district equivalent depth is the annual gross diversion of water (into the works of all 13 irrigation districts), divided by the area actually irrigated. However, this “depth” also includes water which may have accounted as net gains in reservoir storage, water diverted for other uses such as domestic, municipal, other agricultural, industrial, recreational and habitat enhancement purposes.

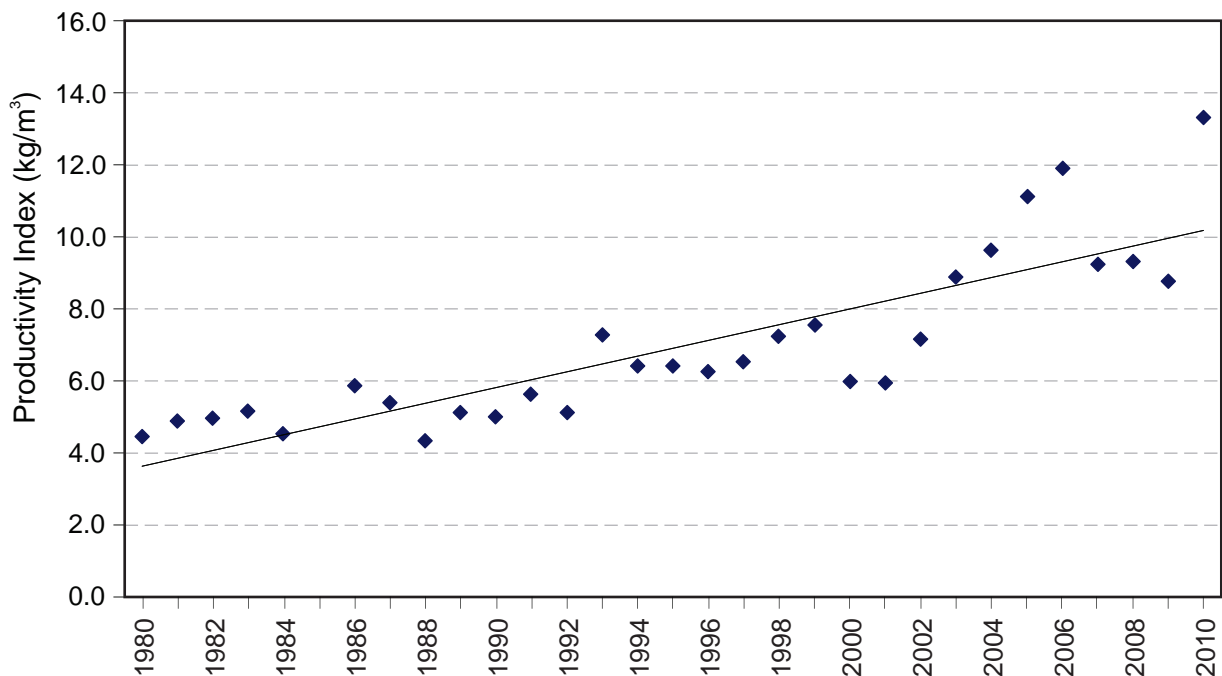


Figure 9. Irrigation District Water Use Productivity (1980 - 2010)

Note: Commodity yield per unit area divided by the volume of irrigation water diverted per unit area provides a measure of productive output per unit of irrigation water used. The historical yields of sugar beets (as recorded by the Alberta Sugar Beet Growers), the historical yields of potatoes (as compiled by the Potato Growers of Alberta) and the historical yields of soft white spring wheat (as provided by the Alberta Soft Wheat Growers) are tallied and then divided by the respective annual gross water diversions to the 13 irrigation districts to derive a ‘Productivity Index’.

Table 10. Conveyance Infrastructure by Type of Works within the 13 Irrigation Districts in 2010

Irrigation District	REHABILITATED										UN-REHABILITATED		Total Conveyance Works (km)
	Membrane-Lined Canals		Pipelines - Closed		Pipelines - Open		Concrete - Lined		Earth Canals		Un-Rehabilitated Canals		
	Length (km)	% of District Works	Length (km)	% of District Works	Length (km)	% of District Works	Length (km)	% of District Works	Length (km)	% of District Works	Length (km)	% of District Works	
AID	4.5	12.1%	22.1	59.4%	0.2	0.5%	0.0	0.0%	1.0	2.7%	9.4	25.3%	37
BRID	174.2	17.4%	407.6	40.6%	12.7	1.3%	18.6	1.9%	208.1	20.7%	182.4	18.2%	1,004
EID	332.7	17.3%	975.4	50.7%	40.5	2.1%	0.0	0.0%	207.3	10.8%	366.2	19.1%	1,922
LID	2.0	3.7%	28.7	53.7%	0.3	0.6%	0.0	0.0%	11.7	21.9%	10.7	20.0%	53
LNID	56.8	7.6%	391.0	52.5%	12.6	1.7%	48.6	6.5%	68.1	9.2%	167.1	22.5%	744
MID	1.2	1.2%	59.2	58.9%	1.5	1.5%	0.3	0.3%	31.5	31.3%	6.8	6.8%	101
MVID	0.0	0.0%	15.0	37.8%	1.8	4.5%	0.0	0.0%	17.0	42.8%	5.9	14.9%	40
RCID	1.3	4.9%	12.2	46.4%	1.3	4.9%	0.0	0.0%	6.9	26.2%	4.6	17.5%	26
RID	0.0	0.0%	121.6	51.9%	6.7	2.9%	0.0	0.0%	81.0	34.6%	24.8	10.6%	234
SMRID	68.8	3.8%	846.6	46.7%	19.1	1.1%	83.4	4.6%	450.9	24.9%	343.2	18.9%	1,812
TID	57.5	17.2%	163.9	49.1%	13.4	4.0%	7.5	2.2%	67.9	20.4%	23.4	7.0%	334
UID	15.8	6.7%	74.5	31.5%	28.8	12.2%	0.3	0.1%	57.2	24.2%	59.8	25.3%	236
WID	32.7	3.1%	145.2	13.7%	36.1	3.4%	5.3	0.5%	168.2	15.9%	670.4	63.4%	1,058
Total	748	9.8%	3,263	42.9%	175	2.3%	164	2.2%	1,377	18.1%	1,875	24.7%	7,601
Headworks Owned by Alberta Environment (AENV)												339	
Total Length of Conveyance System in Southern Alberta (km)												7,940	

NOTE: Rehabilitated infrastructure includes those works re-constructed through:

- the Irrigation Rehabilitation Program (IRP) 1969 - 2010
- Alberta Environment's headworks improvement program
- individual district operations & maintenance program

Totals only include irrigation conveyance works, ie. does not include domestic water supply

Table 11. Irrigation District Infrastructure by Length and Replacement Cost in 2010

IRRIGATION DISTRICTS	CONVEYANCE WORKS		MAJOR STRUCTURES		DRAINAGE WORKS CONSTRUCTED		DRAINAGE WORKS NATURAL		TOTAL of ALL WORKS	
	length (km)	replacement cost	number of units	replacement cost	length (km)	replacement cost	length (km)	replacement cost	length km / structures	replacement cost
AID	37	\$11,118,000	0	\$0	0	\$0	19	\$305,000	56 / 0	\$11,423,000
BRID	1,004	\$368,599,000	22	\$97,753,000	195	\$9,111,000	462	\$5,209,000	1,661 / 22	\$480,672,000
EID	1,922	\$655,594,000	61	\$349,421,000	190	\$8,622,000	1,698	\$15,490,000	3,810 / 61	\$1,029,127,000
LID	53	\$12,801,000	0	\$0	1	\$54,000	3	\$30,000	57 / 0	\$12,885,000
LNID	744	\$250,114,000	2	\$2,880,000	19	\$891,000	229	\$2,803,000	992 / 2	\$256,688,000
MID	101	\$28,797,000	0	\$0	12	\$601,000	149	\$2,119,000	262 / 0	\$31,517,000
MVID	40	\$14,807,000	0	\$0	1	\$33,000	0	\$0	41 / 0	\$14,840,000
RCID	26	\$3,973,000	1	\$135,000	3	\$105,000	5	\$20,000	34 / 1	\$4,233,000
RID	234	\$58,048,000	0	\$0	19	\$971,000	184	\$3,482,000	437 / 0	\$62,501,000
SMRID	1,812	\$612,092,000	48	\$335,617,000	48	\$3,284,000	346	\$4,984,000	2,206 / 48	\$955,977,000
TID	334	\$119,683,000	12	\$14,168,000	58	\$4,302,000	18	\$194,000	410 / 12	\$138,347,000
UID	236	\$75,714,000	11	\$16,206,000	4	\$312,000	56	\$667,000	296 / 11	\$92,899,000
WID	1,058	\$324,922,000	13	\$18,180,000	10	\$768,000	870	\$15,747,000	1,938 / 13	\$359,617,000
DISTRICT TOTALS	7,601	\$2,536,262,000	170	\$834,360,000	560	\$29,054,000	4,039	\$51,050,000	12,200 / 170	\$3,450,726,000

NOTE: – Constructed drainage works include both open channels and pipelines.
 – Natural drains are those channels that exist as natural watercourses and provide a means to drain unused tailwater away from irrigated works.
 – Total of All Works length values include the summation of conveyance and drainage works only.

Table 12. Summary of Irrigation District Water Licence Allocations

Irrigation District	Other Purposes* (ac-ft)	Total Licenced Volume (ac-ft)
AID	700	9,000
BRID	2,380	450,000
EID	5,000	762,000
LID	1,000	12,000
LNID	39,068	334,450
MID	740	34,000
MVID	n/a	8,000
RCID	n/a	3,000
RID	4,500	81,000
SMRID	12,000	722,000
TID	8,000	158,000
UID	1,000	66,210
WID	3,500	158,400
Total	77,888	2,798,060

Note: Other purpose uses of water volumes licenced to irrigation districts include non-irrigation uses such as municipal, rural water supply, agricultural, commercial, industrial, rural residential, management of fish/wildlife, habitat enhancement and recreation.

* Water volumes allocated to other purposes are included in the total licensed volumes.

Table 13. Summary of Condition Assessments (All Works by Replacement Cost)

Works Category	Good	Fair	Poor	TOTAL
Conveyance	\$1,604,344,000	\$808,263,000	\$123,655,000	\$2,536,262,000
Drainage	\$15,777,000	\$49,870,000	\$14,458,000	\$80,105,000
Major Structures	\$526,841,000	\$300,308,000	\$7,212,000	\$834,361,000
TOTAL	\$2,146,962,000	\$1,158,441,000	\$145,325,000	\$3,450,728,000
Proportion	62.2%	33.6%	4.2%	100%

Note: Condition assessments ratings are determined based on criteria in the Irrigation Works Condition Evaluation Guidelines. Construction and material costs are updated approximately every five years. The last valuation was completed in 2006.

Table 14. Irrigation District Reservoirs

Location	Reservoir	Approximate Date of Impoundment	Live Storage (dam ³)	Live Storage (acre-feet)
Bow River Irrigation District	Badger	1985	53,650	43,494
	'D' Reservoir	2005	395	320
	'H' Reservoir	1953	2,220	1,800
	Lost Lake	1973/1987*	5,050	4,094
	'PFRID' Reservoir	2005	586	475
	Scope	1953	19,740	16,003
	Total storage	-	81,641	66,186
Eastern Irrigation District	Bantry # 1	1968	617	500
	Bantry # 2	1967	5,550	4,500
	Cowoki Lake	1937	19,735	16,000
	Crawling Valley	1984	130,500	105,797
	'J' Reservoir	1949/1966*	615	500
	Kitsim	1980	26,520	21,500
	Lake Newell	1914	320,215	259,600
	One Tree	1935	2,345	1,901
	Rock Lake	1956	9,250	7,500
	Rolling Hills	1940/2003*	46,000	37,292
	Snake Lake	1997	18,230	14,779
	Tilley "A"	1972	33,300	26,996
	Tilley "B"	1973/1979*	38,235	30,997
Total storage	-	651,112	527,862	
Lethbridge Northern Irrigation District	Park Lake	1928	740	600
	Picture Butte	1936	1,600	1,297
	Vandenburg	1992	114	93
	Total storage	-	2,454	1,990
Raymond Irrigation District	Corner Lake	1925	495	400
	Craddock	1925	615	500
	Factory Lake	1925	370	300
	Total storage	-	1,480	1,200
St. Mary River Irrigation District	Bullshead	1954	125	101
	Chin	1954	190,330	154,300
	Cross Coulee	1954	2,590	2,100
	Forty Mile	1987	86,345	70,000
	Murray	1954	30,590	24,800
	North East	1954	2,095	1,698
	Raymond	1954	1,600	1,297
	Sauder	1953/1982*	37,745	30,600
	Seven Persons	1953	1,355	1,099
	Sherburne	1952	10,625	8,614
	Stafford	1954/1982*	23,315	18,900
	Yellow Lake	1952	18,130	14,690
Total storage	-	404,845	328,199	
Taber Irrigation District	Fincastle	1952	3,085	2,501
	Horsefly	1950	9,250	7,499
	Taber Lake	1955	6,415	5,200
	Total storage	-	18,750	15,200
United Irrigation District	Cochrane Lake	1923	3,100	2,513
Western Irrigation District	Chestermere	1944	5,180	4,200
	Langdon	1979	7,895	6,400
	Total storage	-	13,075	10,600
Grand Total	-	-	1,176,457	953,751

Note: – all reservoirs are off-stream storage sites

* denotes year of reservoir enlargement

Table 15. Provincially Owned and Operated Reservoirs

Source Supply for:	Reservoir	Approximate Date of Impoundment	Live storage (dam ³)	Live storage (acre-feet)
Bow River Irrigation District	Little Bow	1920	21,078	17,088
	McGregor	1914	351,059	284,604
	Travers *	1954	104,638	84,830
	Total Storage	-	476,775	386,522
Lethbridge Northern Irrigation District	Keho	1920	95,635	77,531
	Oldman River *	1991	490,180	397,390
	Total Storage	-	585,815	474,921
Ross Creek Irrigation District	Cavan	1950	4,625	3,750
Mountain View, Leavitt, Aetna	Payne	1942	8,690	7,045
St. Mary Project (SMRID, MID, TID, RID)	Jensen *	1948	19,000	15,403
	Milk River Ridge	1957	127,297	103,200
	St Mary *	1951	369,310	299,400
	Waterton *	1965	111,196	90,147
	Total Storage	-	626,803	508,150
Other Multi-purpose	Chain Lakes *	1966	14,679	11,900
	Twin Valley Dam *	2003	62,700	50,831
	Pine Coulee	1998	51,000	41,346
	Women's Coulee	1949	362	293
	Total Storage	-	128,741	104,370
Grand Total	-	-	1,831,449	1,484,759

Note: – * denotes on-stream storage reservoir

Table 16. Hydroelectric Plants Associated with Water Distribution Works

Location	Owner	Capacity (megawatts)
Oldman Reservoir	ATCO Electric	32
Waterton Reservoir	TransAlta	3
Belly River Chute	TransAlta	3
St. Mary Reservoir	TransAlta	2
Taylor Coulee Chute (Jensen Reservoir)	TransAlta	13
Raymond Reservoir	Irrican	21
Chin Chute (Chin Reservoir)	Irrican	13
SMRID - Main Canal Drops #4, #5 and #6	Irrican	7
Total		94

Table 17. Private Water Licences for Irrigation in Alberta

There are 2,924 individual irrigation projects, outside of the 13 irrigation districts, irrigating approximately 309,778 acres in Alberta. These projects vary in size from 1 acre to over several thousand acres of agricultural or horticultural production. Each of these projects is licensed to an individual, a group of producers or to private or public lands (ie. golf courses or parks). The agricultural feasibility of these projects is reviewed by Alberta Agriculture and Rural Development and the licencing is regulated by Alberta Environment.

RIVER BASIN	Total Acres Irrigated	No. of Licences 1 to 100 ac.	No. of Licences 101 to 300 ac.	No. of Licences over 300 ac.	Total No. of Licences
ATHABASCA RIVER	2,415	44	6	1	51
MILK RIVER	18,777	97	43	14	154
NORTH SASKATCHEWAN RIVER	27,908	328	57	15	400
PEACE RIVER	3,466	71	9	0	80
SOUTH SASKATCHEWAN RIVER					
- Bow River	27,750	153	61	19	233
- Little Bow River	30,200	125	68	24	217
- Lower Oldman River	15,993	22	25	11	58
- Red Deer River	45,999	425	90	19	534
- South Saskatchewan River	47,690	533	79	25	637
- Upper Oldman River	7,616	65	22	3	90
- Waterton / Belly / St. Mary Rivers	52,121	137	70	19	226
- Willow Creek	29,843	153	75	16	244
South Saskatchewan River Total	257,212	1,613	490	136	2,239
2010	309,778	2,153	605	166	2,924
2009	310,821	2,158	607	165	2,930
2008	310,272	2,161	602	166	2,929
2007	310,733	2,157	601	166	2,924
2006	296,964	2,150	579	159	2,888
2005	293,055	2,138	572	154	2,864
2004	285,276	2,113	575	152	2,840
2003	283,254	2,108	571	149	2,828
2002	275,599	2,100	567	141	2,808
2001	272,353	2,085	558	143	2,786
2000	277,826	2,076	555	140	2,771
1999	257,258	1,863	509	137	2,509
1998	255,192	1,884	501	138	2,523
1997	253,868	1,893	486	129	2,508

Notes: – upper Oldman reach is defined as upstream of the Belly River confluence
– lower Oldman reach is defined as downstream of the Belly River confluence
– 25,000 acres from the Waterton / Belly / St. Mary Rivers category is for the Blood Tribe Agricultural Project
– does not include irrigation licences issued to irrigation districts in southern Alberta
– data are obtained from Alberta Environment
– licence authorization as of January 2010

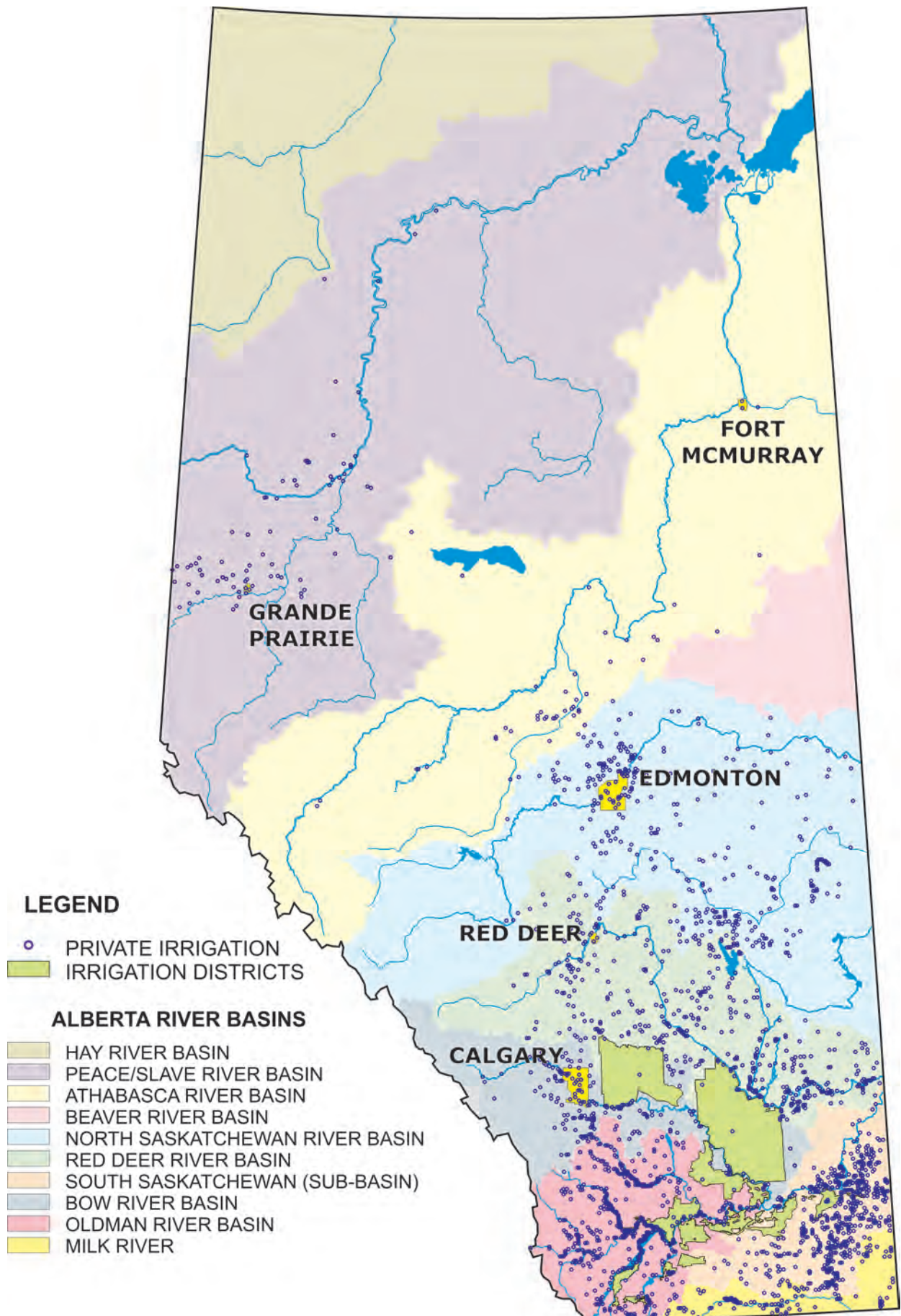


Figure 10. Private Irrigation in Alberta

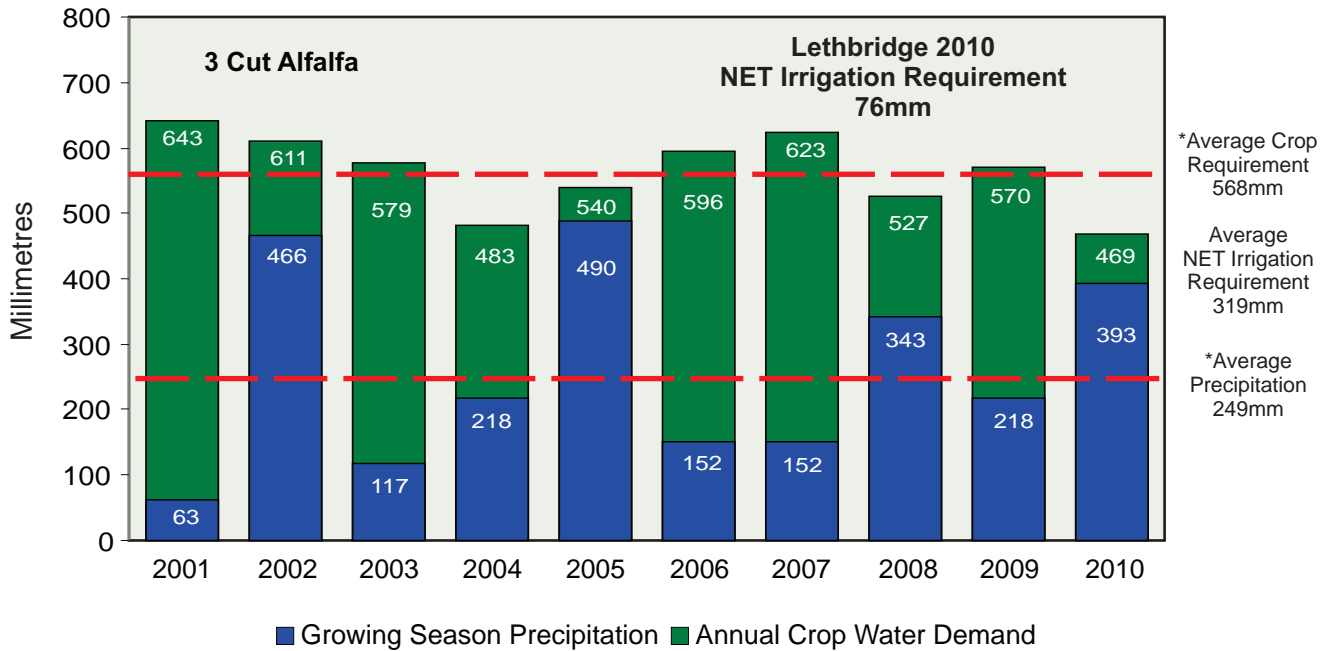


Figure 11. Lethbridge Optimum Crop Water and Net Irrigation Requirements (2001 - 2010)

Note: The high water use, 3 cut alfalfa is used in these examples because this crop's annual growing season closely coincides with the annual irrigation season.

The difference between the total crop water requirement and total precipitation is the NET irrigation requirement.

*The average crop requirement and average precipitation are from the period 1997 to 2010. Seasonal precipitation from May 1 to September 30.

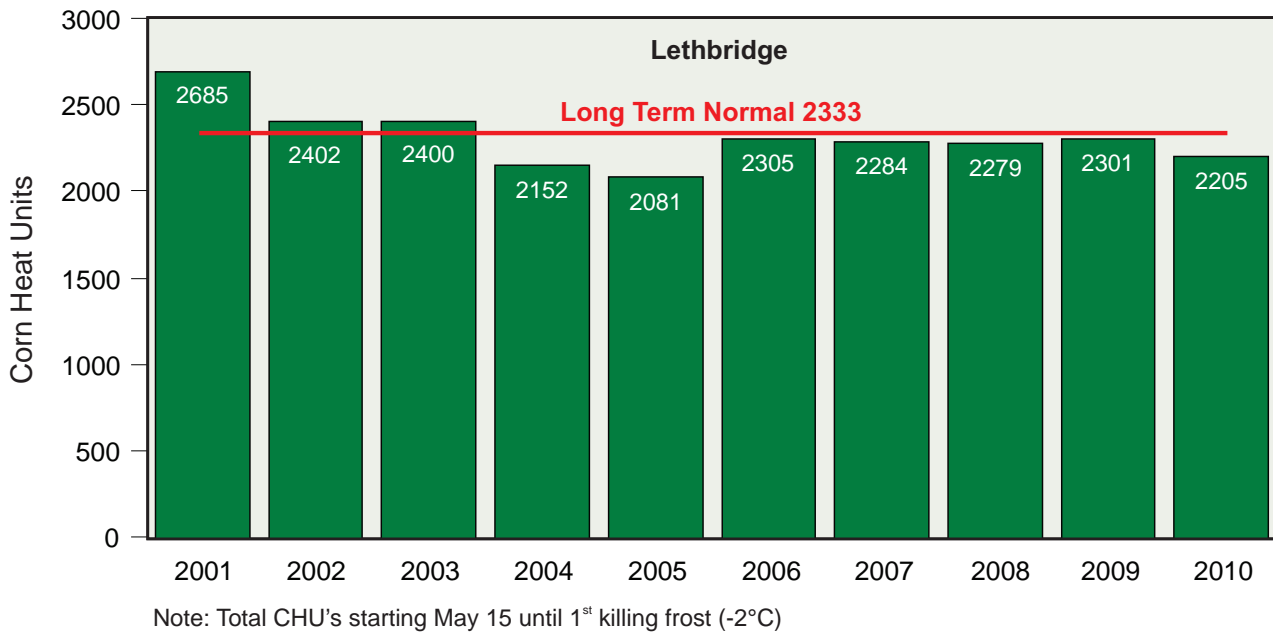


Figure 12. Lethbridge Corn Heat Units (2001 - 2010)

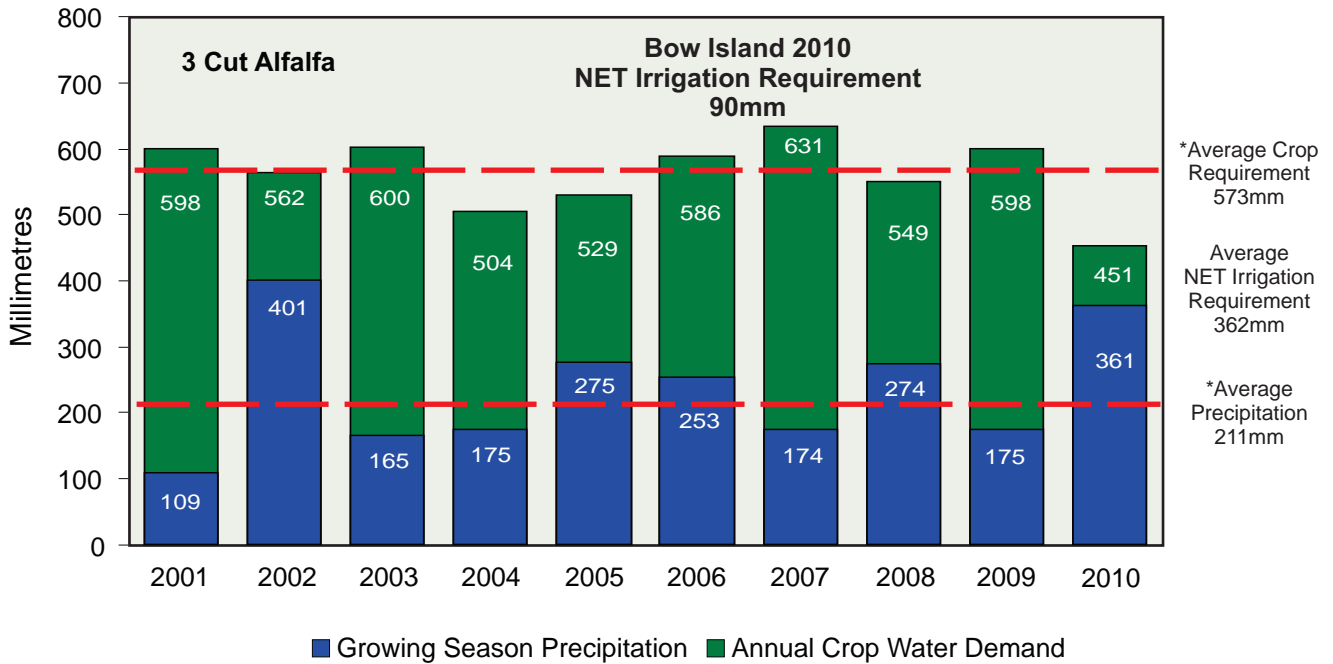


Figure 13. Bow Island Optimum Crop Water and Net Irrigation Requirements (2001 - 2010)

Note: The high water use, 3 cut alfalfa is used in these examples because this crop's annual growing season closely coincides with the annual irrigation season.

The difference between the total crop water requirement and total precipitation is the NET irrigation requirement.

*The average crop requirement and average precipitation are from the period 1997 to 2010. Seasonal precipitation from May 1 to September 30.

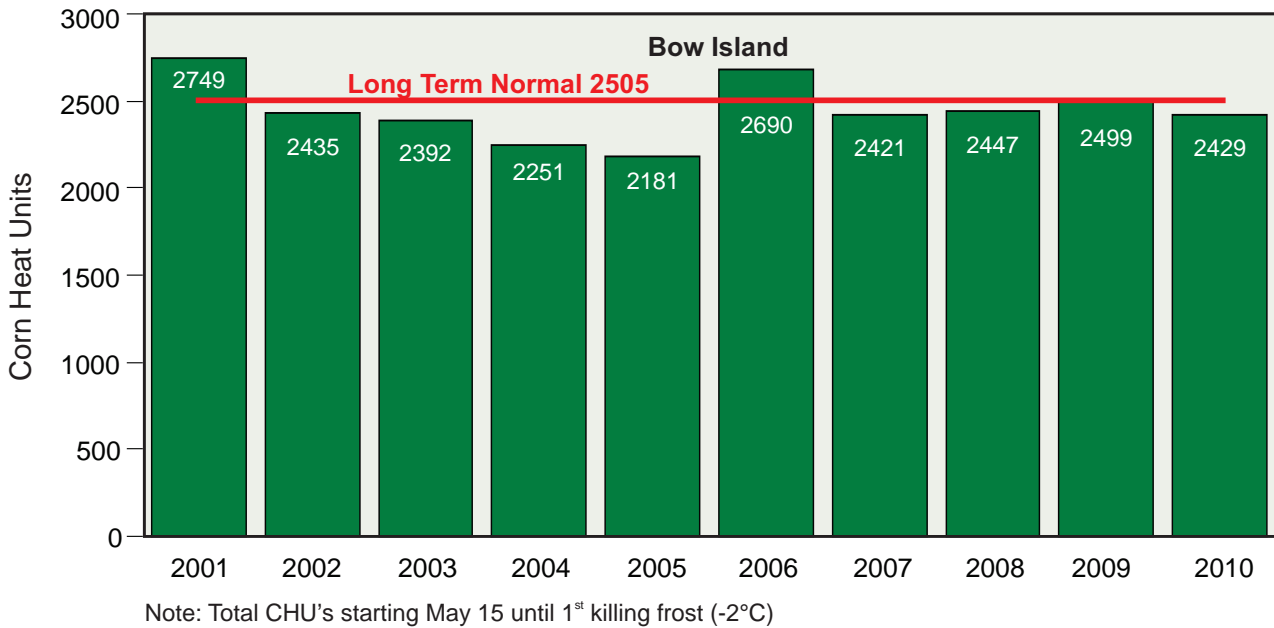


Figure 14. Bow Island Corn Heat Units (2001 - 2010)

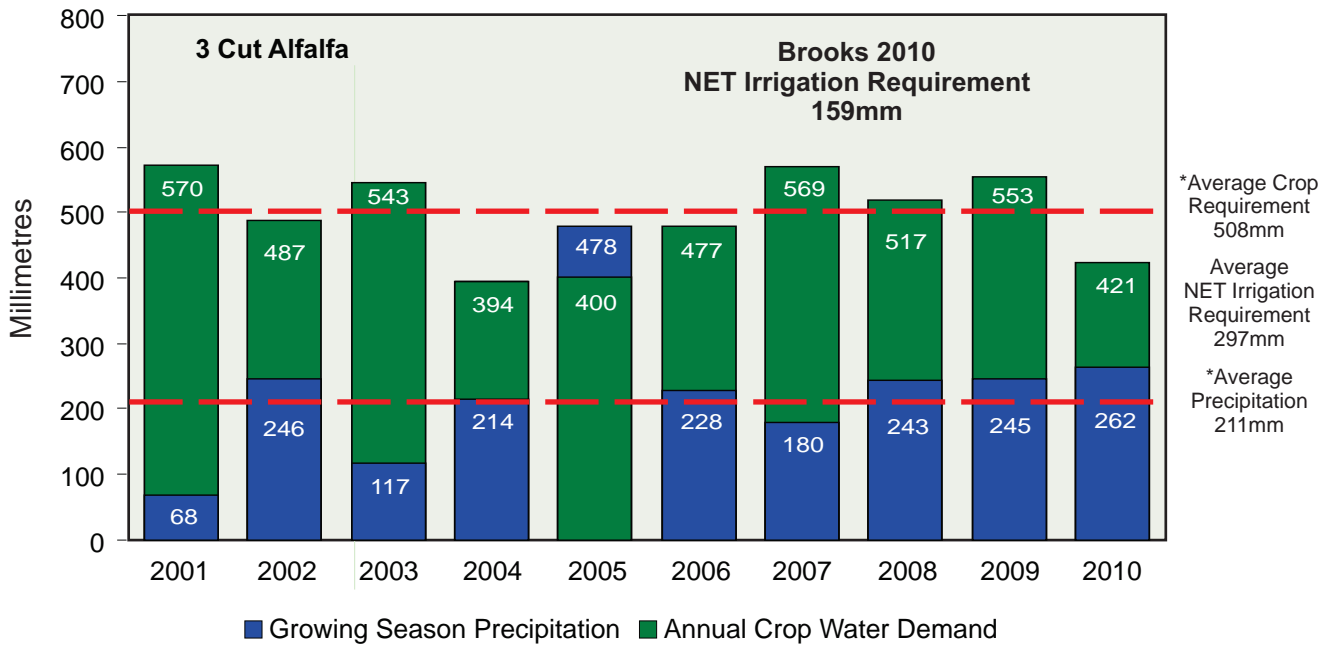


Figure 15. Brooks Optimum Crop Water and Net Irrigation Requirements (2001 - 2010)

Note: The high water use, 3 cut alfalfa is used in these examples because this crop's annual growing season closely coincides with the annual irrigation season.

The difference between the total crop water requirement and total precipitation is the NET irrigation requirement.

*The average crop requirement and average precipitation are from the period 1997 to 2010. Seasonal precipitation from May 1 to September 30.

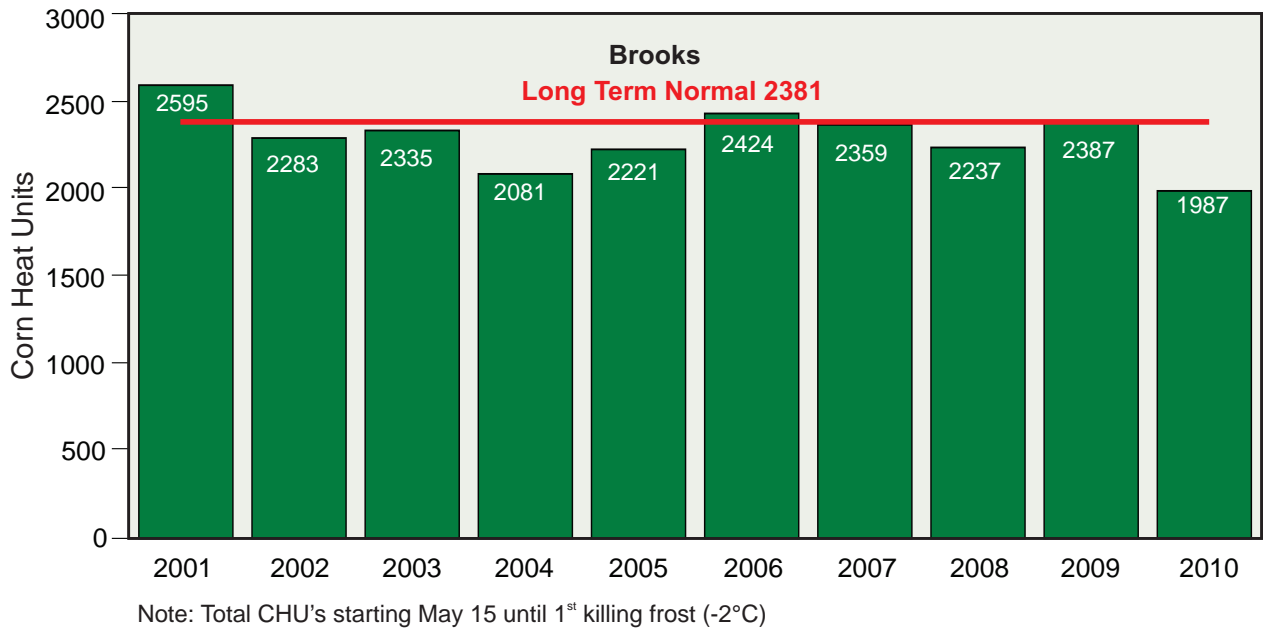


Figure 16. Brooks Corn Heat Units (2001 - 2010)

Table 18. Historical Rainfall in Southern Alberta (April 15 to October 15)

AREA	MAXIMUM RAINFALL (mm)	MINIMUM RAINFALL (mm)	NORMAL RAINFALL* (mm)	2010 RAINFALL (mm)	2010 % OF NORMAL
Lethbridge	534 (1978)	71 (2001)	275	464	169%
Bow Island	439 (1993)	112 (2001)	256	378	148%
Brooks	484 (2005)	87 (2001)	241	289	120%

* Note: Normal rainfall 1970 - 2010

Table 19. Historical Corn Heat Units in Southern Alberta (May 15 to 1st Killing Frost)

AREA	MAXIMUM CHU (2001-2010)	MINIMUM CHU (2001-2010)	LONG TERM NORMAL	LAST TEN YEAR AVERAGE	2010 CHU	2010 % OF NORMAL
Lethbridge	2685 (2001)	2081 (2005)	2333	2318	2205	95%
Bow Island	2749 (2001)	2181 (2005)	2505	2448	2429	97%
Brooks	2595 (2001)	1987 (2010)	2381	2295	1987	83%

Table 20. Frost Free Period (0° C) in Southern Alberta

AREA	AVERAGE LAST FROST	AVERAGE FIRST FROST	AVERAGE FROST FREE DAYS*	2010 LAST FROST	2010 FIRST FROST	2010 FROST FREE DAYS	2010 % OF NORMAL
Lethbridge	May 18	Sept 19	124	May 24	Sept 22	117	94%
Bow Island	May 12	Sept 23	134	May 13	Sept 23	128	96%
Brooks	May 20	Sept 13	116	June 1	Sept 7	98	84%

* Note: Average frost free days 1971 - 2000

Table 21. Frost Free Period (-2° C) in Southern Alberta

AREA	AVERAGE LAST FROST	AVERAGE FIRST FROST	AVERAGE FROST FREE DAYS*	2010 LAST FROST	2010 FIRST FROST	2010 FROST FREE DAYS	2010 % OF NORMAL
Lethbridge	May 2	Sept 29	150	May 11	Oct 15	157	105%
Bow Island	Apr 30	Oct 1	154	April 26	Oct 16	173	112%
Brooks	May 5	Sept 28	146	May 10	Sept 18	131	90%

* Note: Average frost free days 1971 - 2000

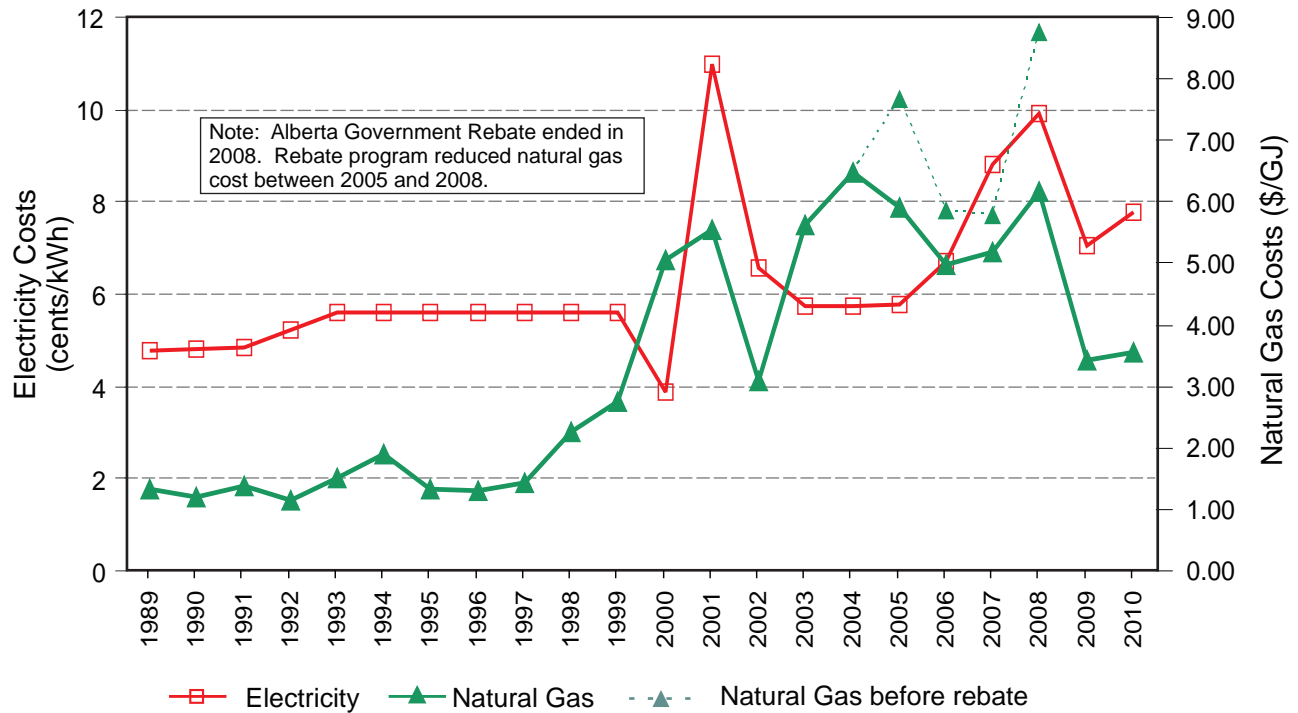
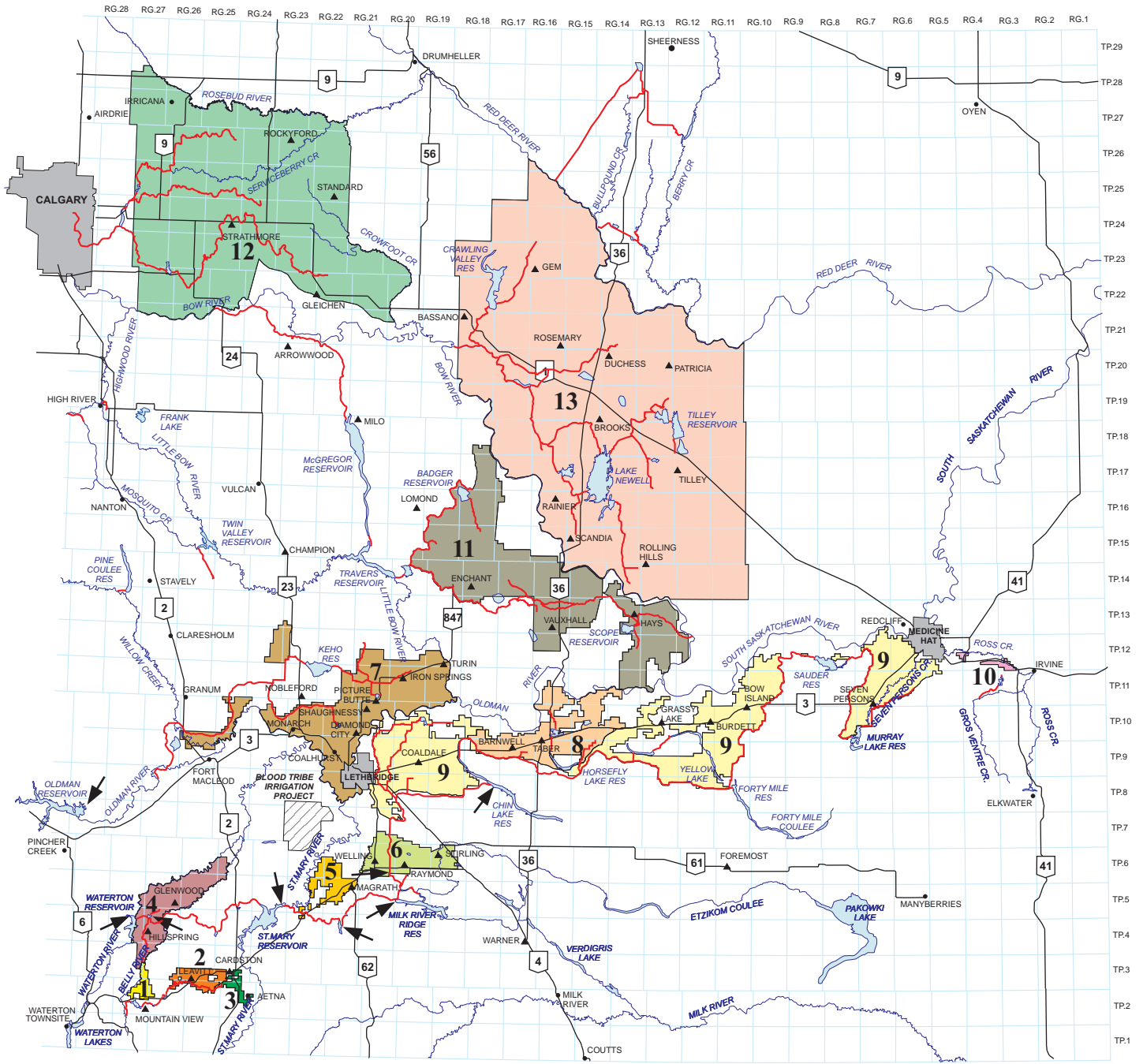


Figure 17. Historical Irrigation Energy Costs

Table 22. Energy Type Used in the Irrigation Districts (acres irrigated by energy type)

Energy Type	BRID	EID	LNID	MID	RID	SMRID	TID	UID	WID	Average Energy Type
Electricity	69.4%	37.7%	45.8%	9.0%	32.1%	55.1%	57.1%	31.0%	31.8%	48.9%
Natural Gas	14.9%	25.8%	38.7%	57.1%	49.3%	39.0%	37.3%	3.3%	32.3%	31.2%
Diesel	5.1%	5.3%	0.7%	0.0%	1.0%	0.9%	1.0%	0.2%	9.4%	3.1%
Gravity	8.1%	25.0%	1.6%	17.2%	7.2%	2.1%	3.6%	42.0%	9.7%	10.1%
Gravity Pressure Pipeline	1.9%	2.2%	9.0%	16.5%	0.0%	2.5%	0.9%	7.3%	8.7%	3.7%
Pump Pressure Pipeline	0.2%	1.7%	0.4%	0.0%	0.0%	0.0%	0.0%	1.7%	0.2%	0.5%
Other*	0.4%	1.3%	0.8%	0.2%	1.9%	0.4%	0.2%	0.1%	8.0%	1.1%
Unknown	0.1%	1.1%	3.1%	0.0%	8.5%	0.0%	0.0%	0.0%	0.0%	1.4%
Total Acres	216,284	289,560	176,039	18,300	46,303	360,355	80,325	34,166	81,635	1,302,968

Notes: – * other includes gasoline, propane or butane
 – AID, LID, MVID and RCID did not report any data



- 1 Mountain View Irrigation District
- 2 Leavitt Irrigation District
- 3 Aetna Irrigation District
- 4 United Irrigation District
- 5 Magrath Irrigation District
- 6 Raymond Irrigation District
- 7 Lethbridge Northern Irrigation District
- 8 Taber Irrigation District
- 9 St.Mary River Irrigation District
- 10 Ross Creek Irrigation District
- 11 Bow River Irrigation District
- 12 Western Irrigation District
- 13 Eastern Irrigation District

- ▲ Communities receiving irrigation water
- Communities not receiving irrigation water
- ↙ Hydroelectric plants associated with water distribution works
- Main canals

There are 13 irrigation districts in southern Alberta providing water to 1,364,965 assessed acres of farmland. The infrastructure within these irrigation districts is comprised of approximately 7,940 kilometers of conveyance system, of which 339 kilometers are owned and operated by Alberta Environment.

Figure 18. Alberta's Irrigation Districts