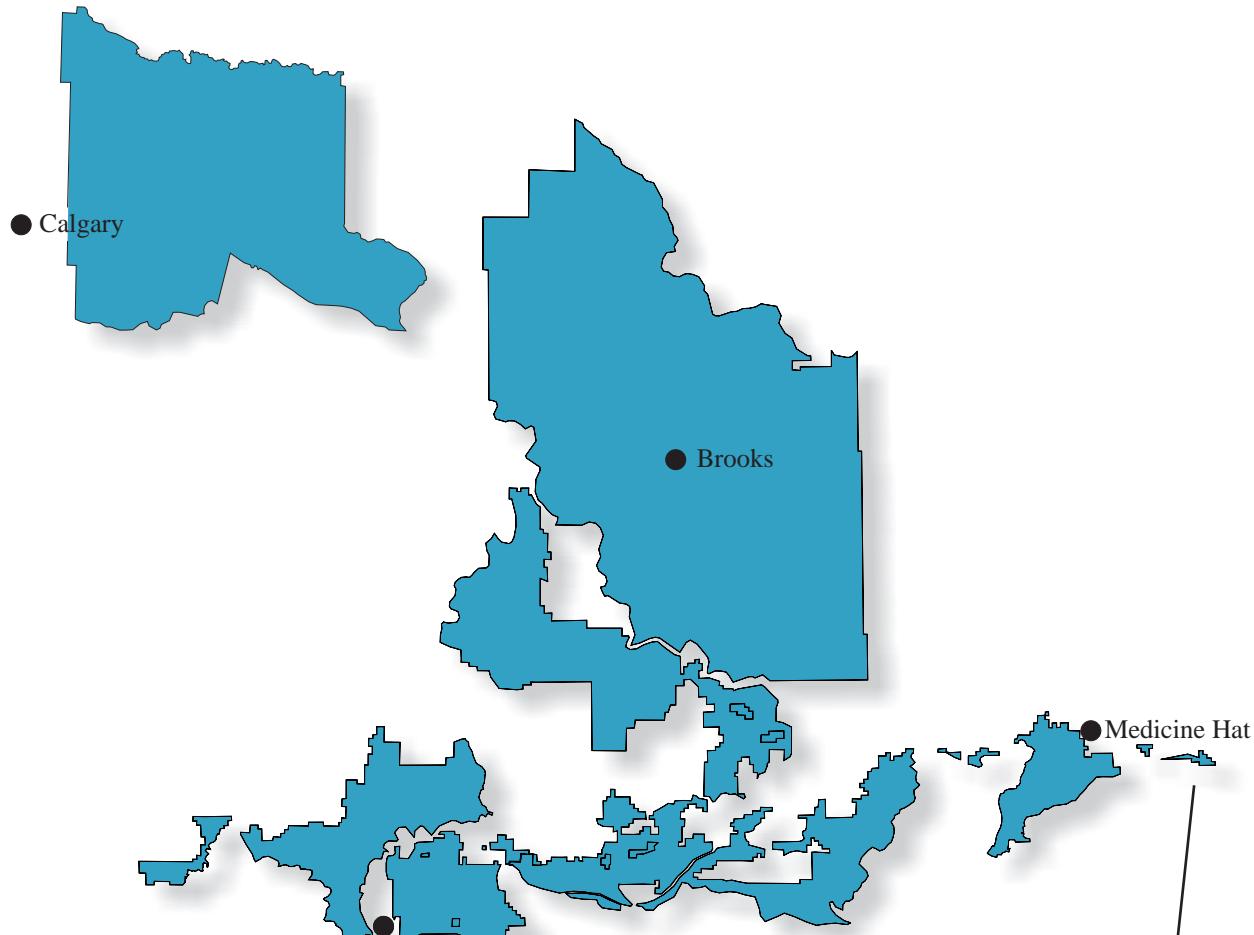


Alberta Irrigation Information 2011



ALBERTA IRRIGATION INFORMATION

FACTS AND FIGURES FOR THE YEAR 2011

BASIN WATER MANAGEMENT BRANCH
IRRIGATION AND FARM WATER DIVISION

JUNE 2012

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.

For more information, please contact:

Bob Winter, Alberta Agriculture and Rural Development
100, 5401- 1st Avenue South
Agriculture Centre
Lethbridge, Alberta T1J 4V6
Telephone (403) 382-4424
bob.winter@gov.ab.ca

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Table 1. Details of Crops Grown within the 13 Irrigation Districts in 2011

CROP TYPE	AID		BRID		EID		LID		LNID		MID		MVID		RCID		RID		SMRID		TID		UID		WID		TOTAL ACRES							
	assessed and covered by an irrigation system		assessed with no irrigation system		assessed and covered by an irrigation system		assessed with no irrigation system		assessed and covered by an irrigation system		assessed with no irrigation system		assessed and covered by an irrigation system		assessed with no irrigation system		assessed and covered by an irrigation system		assessed with no irrigation system		assessed and covered by an irrigation system		assessed with no irrigation system											
	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year								
CEREALS	Barley	1,288	332	15,537	1,292	20,100		265		19,195		1,555	1,961	349		157		7,936	2,577	18,636	2,297	1,386	9,628	344	4,143	2,944	7,387	6,881	126,189					
	CPS Wheat			8,129	412	5,322		175		6,493		1,611								130	20	28					2,116	2,352	11,579					
	Durum Wheat			4,837	28	806													320	24,089	139	792	1,641					40		42,229				
	Grain Corn			51,301	2,395	43,292		50		5,518		1,446	703						4,720	182	70,393	2,335	2,948	13,081	35	1,006	2,966	1,061	926	204,307				
	Hard Spring Wheat									149										58									257					
	Malt Barley																			812	158	13	511	23	99	7	594		5,316					
	Oats	41		316		1,783				779									55										2,221					
	Rye			84		694				1,413			30																					
	Soft Wheat	66		6,310	176	379				410										3,407	20	355	158	790	175	212	80	12,538						
FORAGES	Triticale			188		2,515				704										1,419	52	56	87					232	5,253					
	Winter Wheat			545	13	249				155									1,125	29	6,036	290	172	510					512	55	10,083			
	Alfalfa - Two cuts			3,890	232	39,372														12,492	539	461						2,188	1,319	5,798	4,890	71,181		
	Alfalfa - Three cuts			118		1,616														2,979	87									366		5,166		
	Alfalfa Hay	595	1,244	8,271	695	5,389		2,500		11,031		4,787	828	92		497		10,230	1,300	12,124	1,486	682	6,661	611	355	281	1,821	962	71,198					
	Alfalfa Silage					2,687				15,813									96	2,256	14	187	523					1,353		22,929				
	Barley Silage			2,941	719	5,912				42,968		281	63						721	150	10,335	211	746	1,127	42				62	3,479	1,740	71,497		
	Barley Silage (underseeded)					142				105										844	10									821	105	2,026		
	Brome Hay			1,430	1,006					800		135								378		100								180		4,029		
OIL SEEDS	Corn Silage			4,252		10,720				20,880									122	1,439	70	13,387	61	599	3,001					414		54,823		
	Grass Hay	722	477	23	1,304	479	10,149		1,949	134	4,029		403		2,194				60	72	4,621	1,655	889	155	125	397	203	921	558	31,518				
	Green Feed			960	522	3,518				211		130		284						815	120	58	112		95	264				232		7,321		
	Milk Vetch			35	18	17																								70				
	Millet					450																									450			
	Native Pasture					1,482	338	1,223													4,224	505	289	221	163	2,883	1,036	479	658	14,369				
	Oats Silage																			110										164		277		
	Sorghum/Sudan Grass																			359											400			
	Tame Pasture	519	72	9,676	1,168	49,208				5,426		1,207	641						80	1,522	3,483	8,439	2,262	896	2,737	2,127	1,245	982	3,382	4,157	99,228			
SPECIALTY CROPS	Timothy Hay			1,064	15	1,220				5,232										4,797	26	116	1,770		1,108				359	117	15,824			
	Triticale Silage																			746	22											767		
	Canola	135		17,317	2,515	34,580				22,574		2,278	909						116		8,684	453	54,974	918	1,119	3,330	30</td							

Table 2. Summary of Crops Grown within the 13 Irrigation Districts in 2011

CROPS	IRRIGATION DISTRICTS													TOTAL ASSESSMENT ROLL ACRES
	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	
Cereals	1,727	91,563	75,365	265	36,272	5,850	474	157	16,944	138,137	27,891	12,697	22,463	429,805
	39.3%	39.1%	25.6%	5.5%	20.6%	32.0%	13.1%	14.3%	36.6%	36.9%	33.7%	36.9%	23.5%	31.4%
Forages	2,408	40,615	131,664	4,583	106,691	8,580	3,136	637	19,083	90,824	19,475	14,304	31,073	473,073
	54.8%	17.4%	44.7%	94.5%	60.6%	46.9%	86.7%	57.9%	41.2%	24.3%	23.5%	41.6%	32.5%	34.5%
Oil Seeds	135	26,457	44,859	0	23,902	3,277	0	116	9,425	59,893	3,521	5,895	13,674	191,153
	3.1%	11.3%	15.2%	0.0%	13.6%	17.9%	0.0%	10.5%	20.4%	16.0%	4.3%	17.1%	14.3%	13.9%
Specialty Crops	118	56,291	35,517	0	6,108	377	0	0	305	80,477	27,684	1,075	5,197	213,150
	2.7%	24.1%	12.1%	0.0%	3.5%	2.1%	0.0%	0.0%	0.7%	21.5%	33.4%	3.1%	5.4%	15.6%
Other*	2	19,088	6,968	0	3,214	217	7	191	545	5,076	4,202	411	23,347	63,268
	0.0%	8.2%	2.4%	0.0%	1.8%	1.2%	0.2%	17.3%	1.2%	1.4%	5.1%	1.2%	24.4%	4.6%
TOTAL ASSESSMENT ROLL ACRES	4,390	237,014	294,373	4,848	176,187	18,300	3,617	1,101	46,302	374,408	82,773	34,382	95,754	1,370,449

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

*Other includes unknown or not reported crops

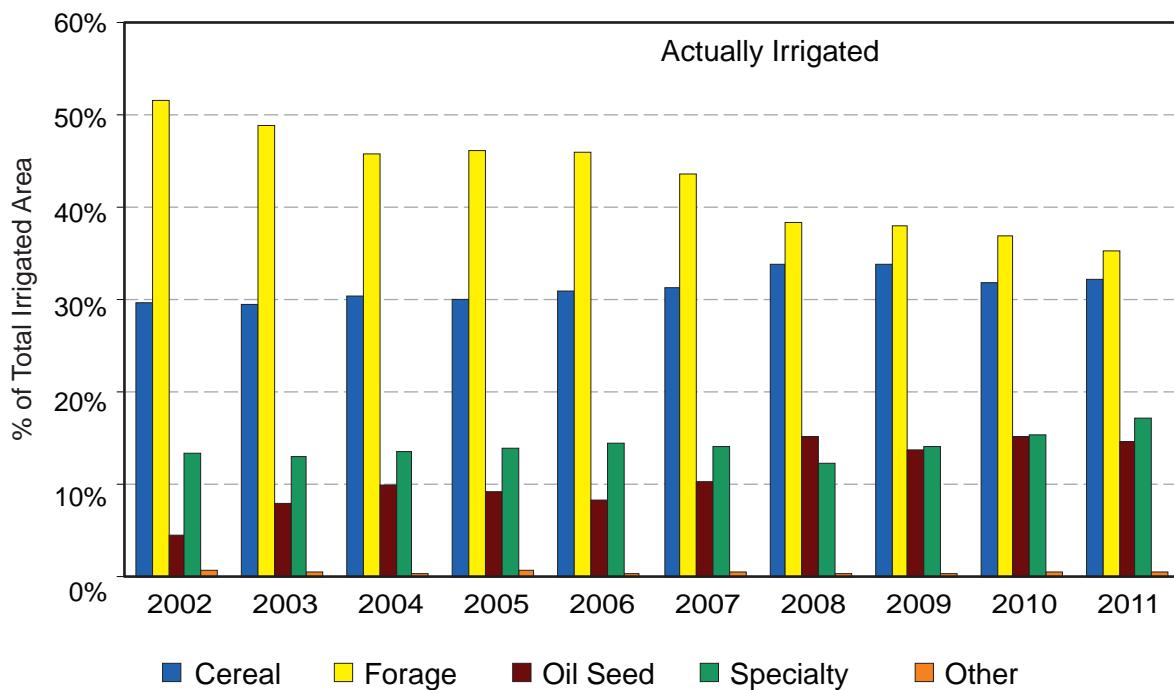


Figure 1. Irrigated Crops within the 13 Irrigation Districts in Southern Alberta (2002 - 2011)

Note: Starting in 2011, acreage data for canola seed (canola grown for seed production) was collected. It is included in the specialty crop category.

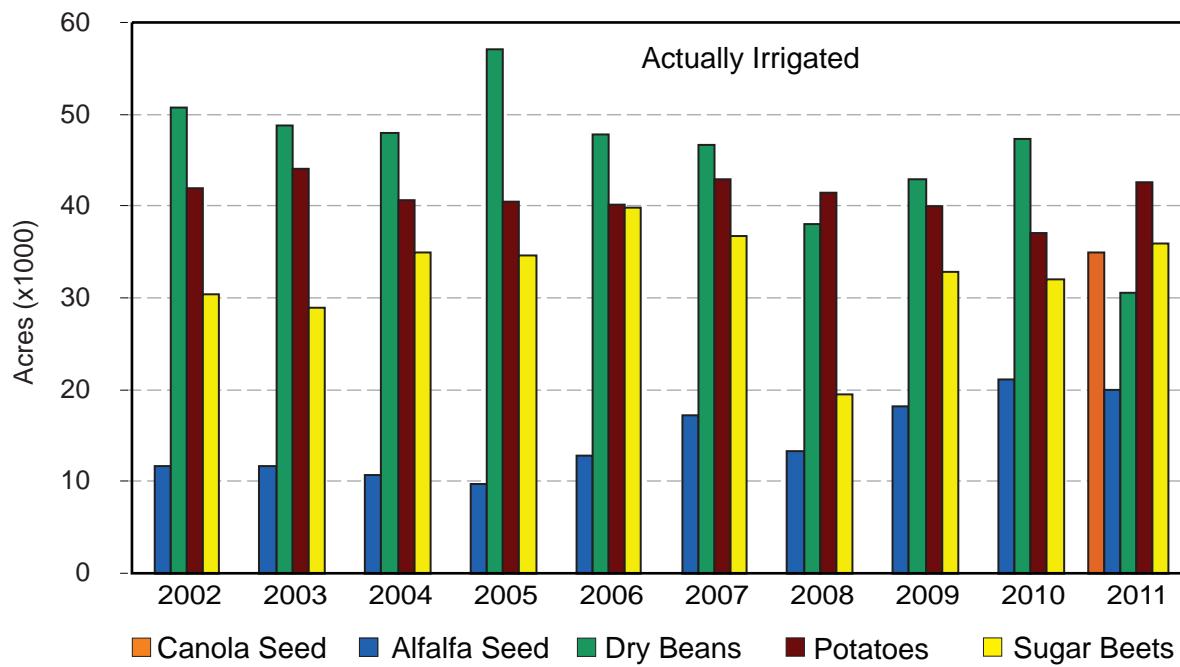


Figure 2. Acres of Five Major Irrigated Specialty Crops – Canola Seed, Alfalfa Seed, Dry Beans, Potatoes and Sugar Beets within the 13 Irrigation Districts in Southern Alberta (2002 - 2011)

Note: Starting in 2011, acreage data for canola seed (canola grown for seed production) was collected. It is included in the specialty crop category.

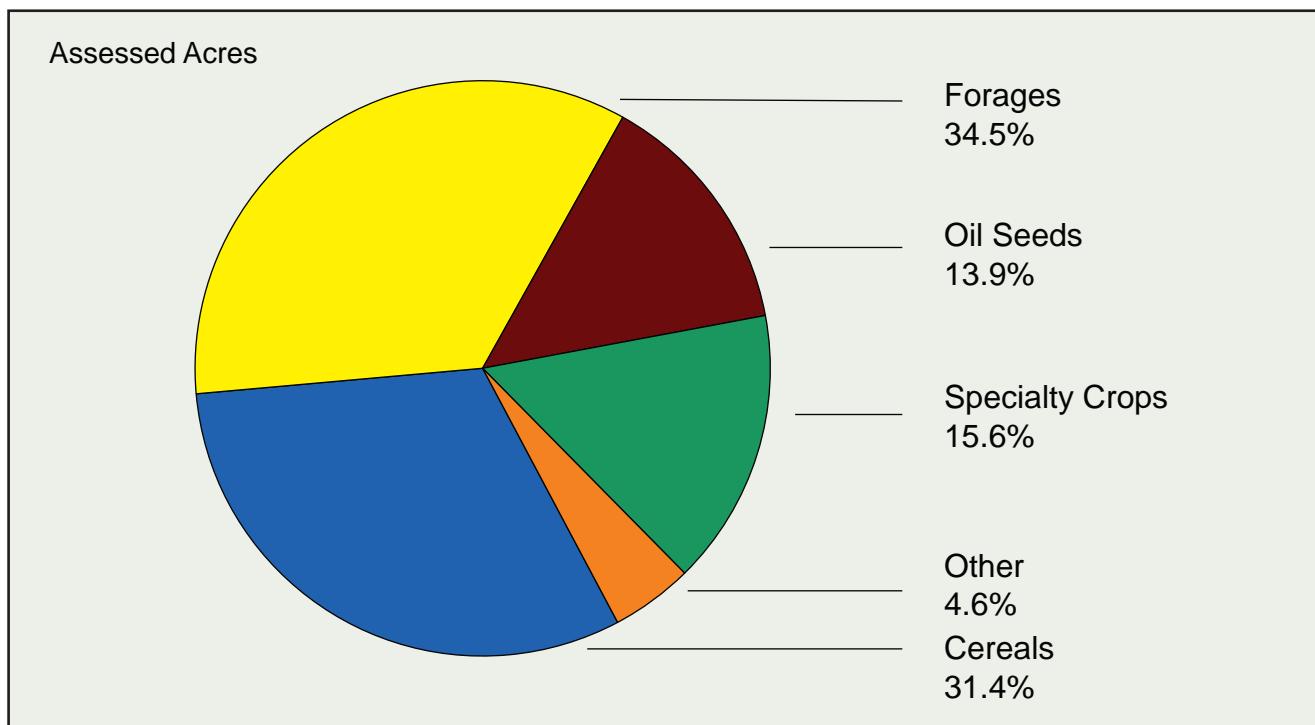


Figure 3. Crops Grown within the 13 Irrigation Districts in Southern Alberta in 2011

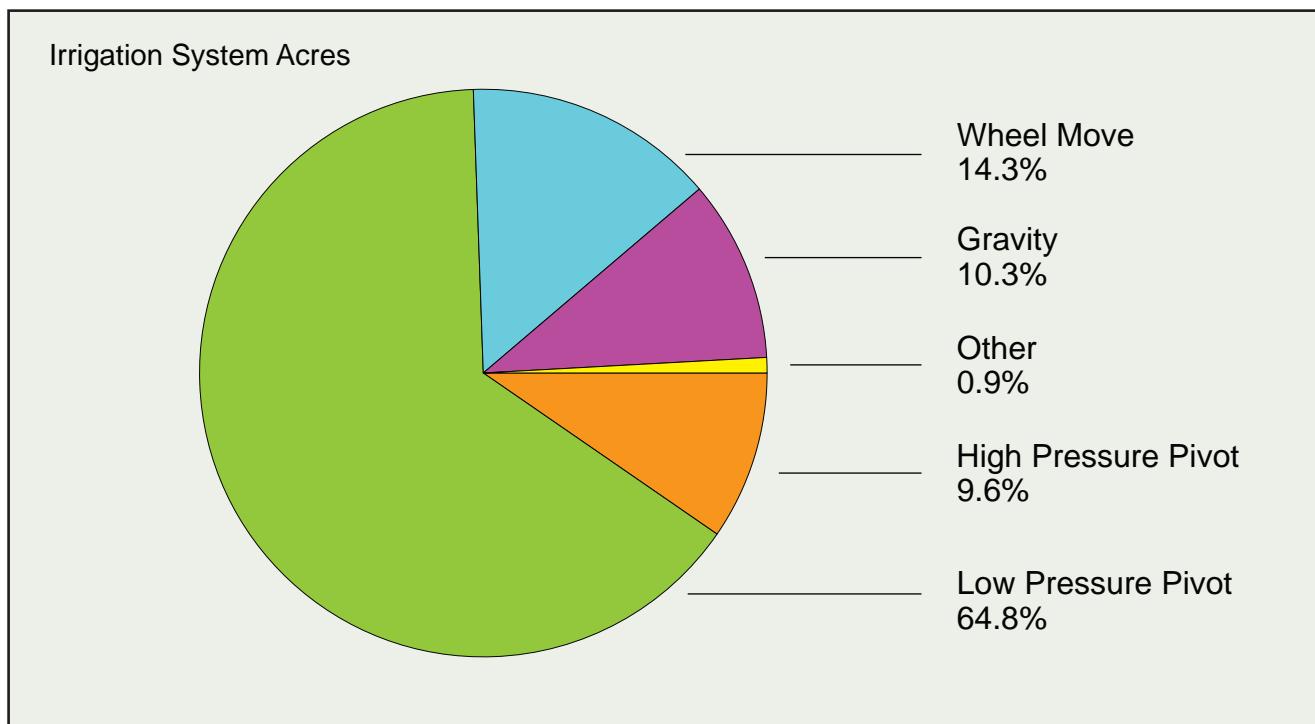


Figure 4. On-farm Irrigation Methods within the 13 Irrigation Districts in Southern Alberta in 2011

Table 3. On-farm Irrigation Method Summary within the 13 Irrigation Districts in Southern Alberta in 2011

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		22,365	28,809	839	8,287	2,186		237		9,871	12,229	4,367	24,564	113,753		
	Pivot High Pressure - Corner arm		1,574	3,246		4,351					1,408	1,016			11,595		
	Linear - High Pressure			217		875					109			314	1,515	126,864	
	percent of district -----	0.0%	11.1%	11.0%	17.8%	7.7%	11.9%	0.0%	22.0%	0.0%	3.1%	16.7%	12.8%	30.2%	9.6%		
LOW PRESSURE PIVOT SPRINKLER	Pivot Medium Pressure		2,697	3,985		641					3,026				10,349		
	Pivot Medium Pressure - Corner Arm		280	248							288				816		
	Pivot Low Pressure	1,227	131,149	142,779	241	46,344	7,268		477	27,206	251,242	37,917	12,116	31,589	689,556		
	Pivot Low Pressure - Corner Arm		24,565	9,266		60,564					1,824	42,423	12,305	792	1,316	153,055	
	Linear - Low Pressure			1,256		336					931	249	80	80	2,932		
	percent of district -----	31.0%	73.3%	53.6%	5.1%	61.5%	39.7%	0.0%	44.4%	62.7%	82.5%	63.0%	38.2%	40.0%	64.8%		
WHEEL MOVE	Wheel Move -Two Laterals	1,942	9,341	22,721	1,314	21,805	5,338	507	254	11,532	36,904	12,661	2,023	11,699	138,040		
	Wheel Move - Four Laterals		5,900	8,601	358	26,195	140				1,688	5,098	853	224	2,312	51,369	
	percent of district -----	49.1%	7.0%	10.7%	35.5%	27.3%	29.9%	13.9%	23.6%	28.6%	11.6%	16.9%	6.6%	17.0%	14.3%		
GRAVITY	Gravity - Developed - No Control	11	14,774	57,954		1,245	3,174			2,944	1,526	1,450	1,148		84,226		
	Gravity - Undeveloped - Flood	208	3,614	13,747	1,535	884		3,143	107	1,055	6,557	1,105	13,125	7,403	52,485		
	percent of district -----	5.5%	8.5%	24.4%	32.6%	1.2%	17.3%	86.1%	10.0%	8.6%	2.2%	3.2%	41.9%	9.0%	10.3%		
OTHER	Volume Gun - Stationary										151	10		65	226		
	Volume Gun - Traveller		40	285		144					49	46		686	1,250		
	Solid Set (underground sprinkler)	47		8		532					254			202	1,044		
	Hand Move (sprinkler above ground)	522	75	576	426	952	174			47	1,267	113	149	729	5,021		
	Micro - Spray - Sprinkler					41					39	15	15	116	226		
	Micro - Drip - Trickle						20				6	121		1,282	1,429		
	Other Application Use					2,365					6			64	2,435		
	percent of district -----	14.4%	0.1%	0.3%	9.0%	2.3%	1.1%	0.0%	0.0%	0.1%	0.5%	0.2%	0.5%	3.8%	0.9%		
	Total System Acres	3,957	216,374	293,689	4,713	175,561	18,300	3,650	1,075	46,302	361,162	80,078	34,041	82,421		1,321,322	

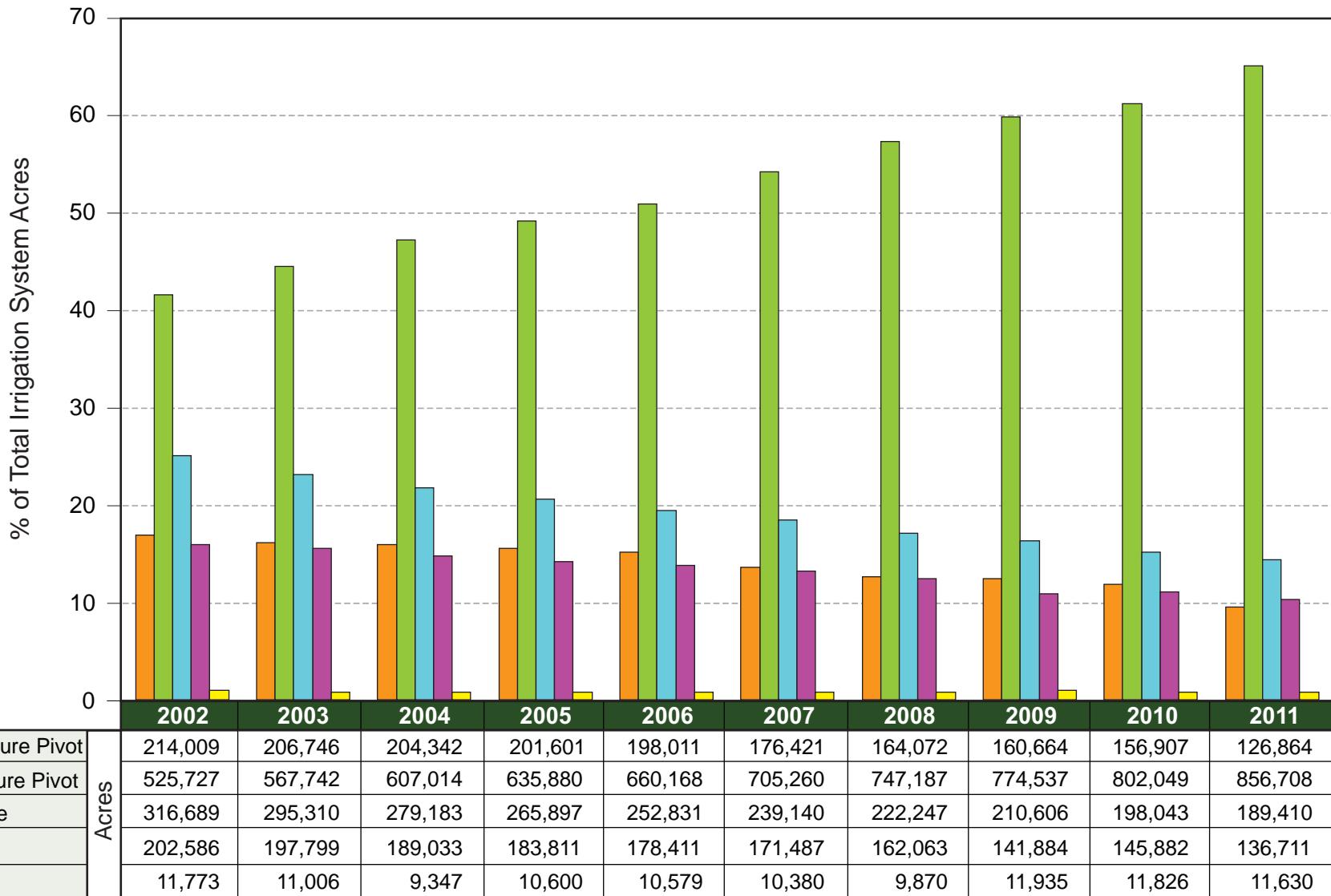


Figure 5. Irrigation Method Summary within the 13 Irrigation Districts in Southern Alberta (2002 - 2011)

Table 4. 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
11	4,390	234,014	294,373	4,848	176,187	18,300	3,617	1,101	46,302	374,408	82,773	34,382	95,754	1,370,449

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 5. Acres Actually Irrigated within the 13 Irrigation Districts

YEAR	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	TOTAL		
1915	12									76,200			500	76,700		
	13									76,200			2,600	78,800		
	14			7,806						76,200			8,448	92,454		
				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		
1930	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		
1940	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	
	30		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	
1950	34		22,705	101,566	54,200	4,000	1,950			13,000	70,000	18,490	10,000	31,131	327,042	
	35		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	
1960	39		36,874	141,688	56,712	3,700	3,200			12,000	76,492	18,485	10,500	11,647	371,298	
	40		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	
	45		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	
1970	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	
	50		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	
	55		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	
1980	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
	60		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
1990	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
	65		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
1975	70		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
	75		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	769,928
	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
2000	80		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,							

Table 6. 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*
11	\$10.00*	\$15.00*	\$0.00*	\$11.50*	\$14.00*	\$9.50*	\$12.00	\$20.50	\$9.50*	\$20.00*	\$8.00*	\$8.50	\$16.25*

Note: * Some districts levy additional surcharges. The 2011 rates were:

- AID – \$12.00 per acre for pipeline delivery in township 2
 – \$13.00 per acre for pipeline delivery in township 3
- BRID – \$.60 per acre inch for volumes used on flood parcels over the annual water allocation
- EID – \$3.50 per acre if served from H Cowoki, 03 East Branch, or Springhill pressure systems
- LID – \$3.00 per acre for pipeline delivery
- LNID – \$.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 and pressure 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 – \$.31 per psi per acre; \$.50 per acre for automated screen cleaning

Some districts have centralized pump stations delivering pressurized water to individual farm turnouts.

Table 7. 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.	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	6,000	227,000	18,300	4,240	1,210	46,500	412,000	92,200	34,400	232,000	311,000	95,000	1,484,850
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	71,950	5,351	1,013	116	21,900	201,700	53,135	7,264	156,116	210,500	65,850	799,219
11	2,902	8,028	132,388	15,233	2,393	530	32,534	286,000	84,909	19,073	151,700	310,100	85,985	1,131,775
Percent of Licence (2011)	32.2%	66.9%	39.6%	44.8%	29.9%	17.7%	40.2%	39.6%	53.7%	28.8%	33.7%	40.7%	54.3%	40.4%
**Average Volume	3,848	6,356	167,268	14,118	3,208	1,041	32,570	383,918	92,927	20,080	303,528	531,458	124,847	1,685,167

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 - 2011

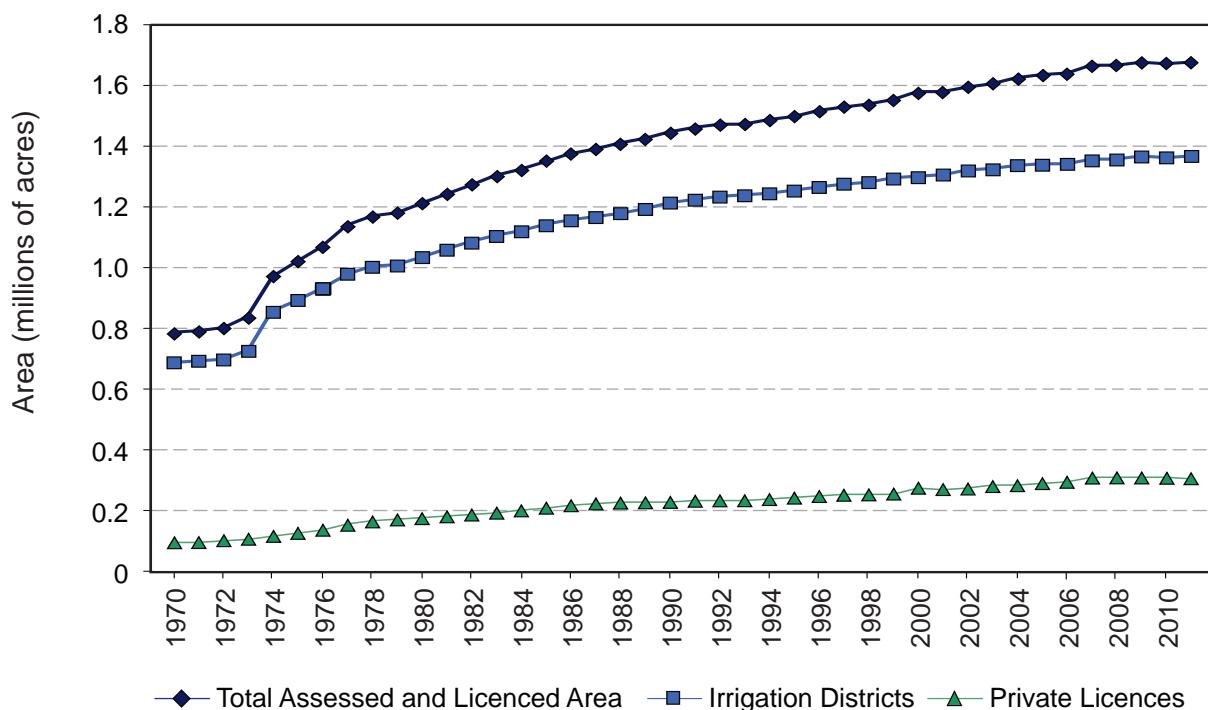


Figure 6. Growth in Irrigation in Alberta (1970 - 2011)

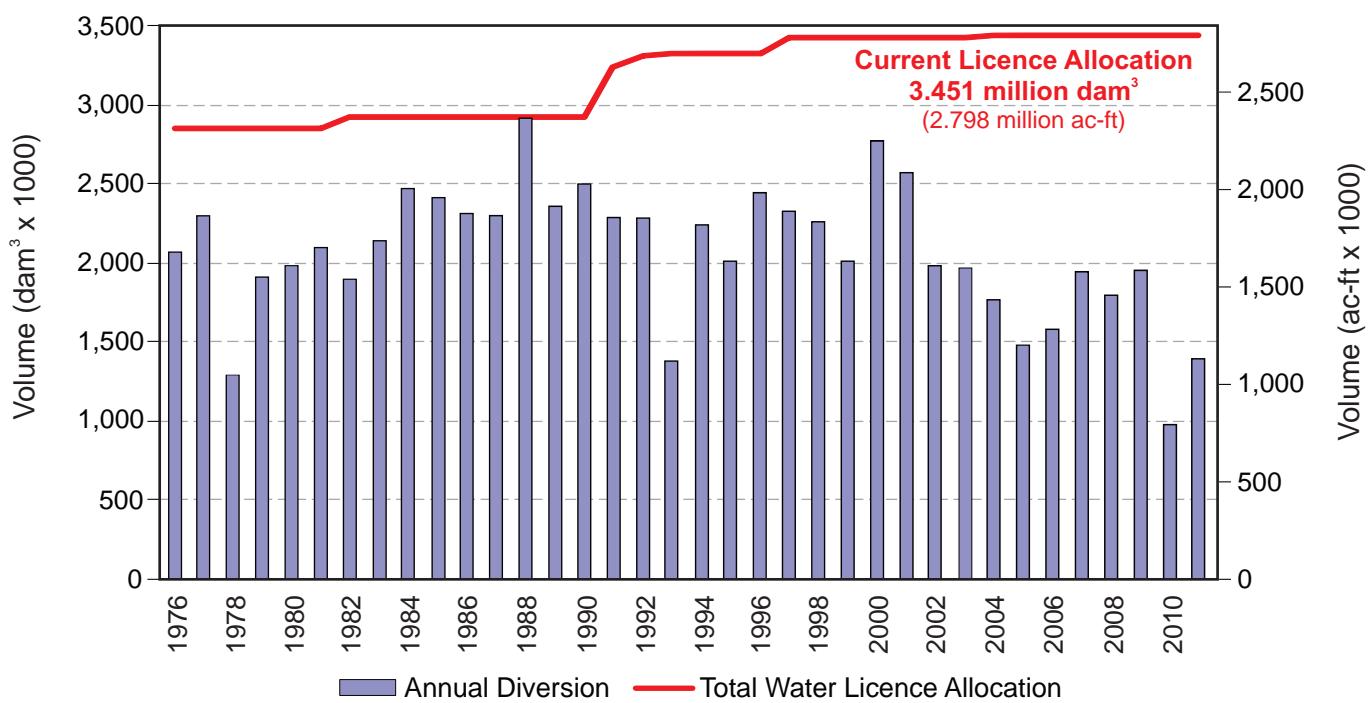


Figure 7. Irrigation Districts Gross Annual Diversions (1976 - 2011)

Note: Diversion data represent the gross diversion into and through the works of the irrigation districts and include volumes used directly for irrigation purposes, reservoir filling and the water supplied or licensed to municipal, domestic, other agricultural, industrial, environmental uses and water delivered to private license holders through a conveyance agreement with the private licence holder.

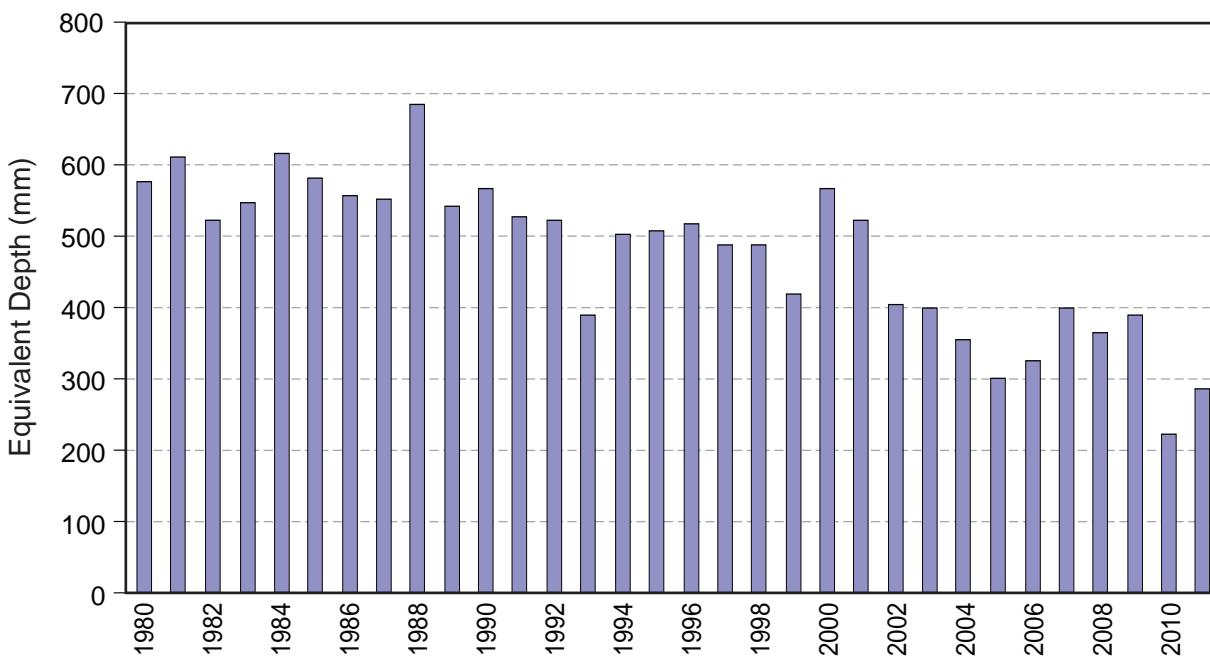


Figure 8. Irrigation Districts Gross Diversion Equivalent Depth (1980 - 2011)

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.

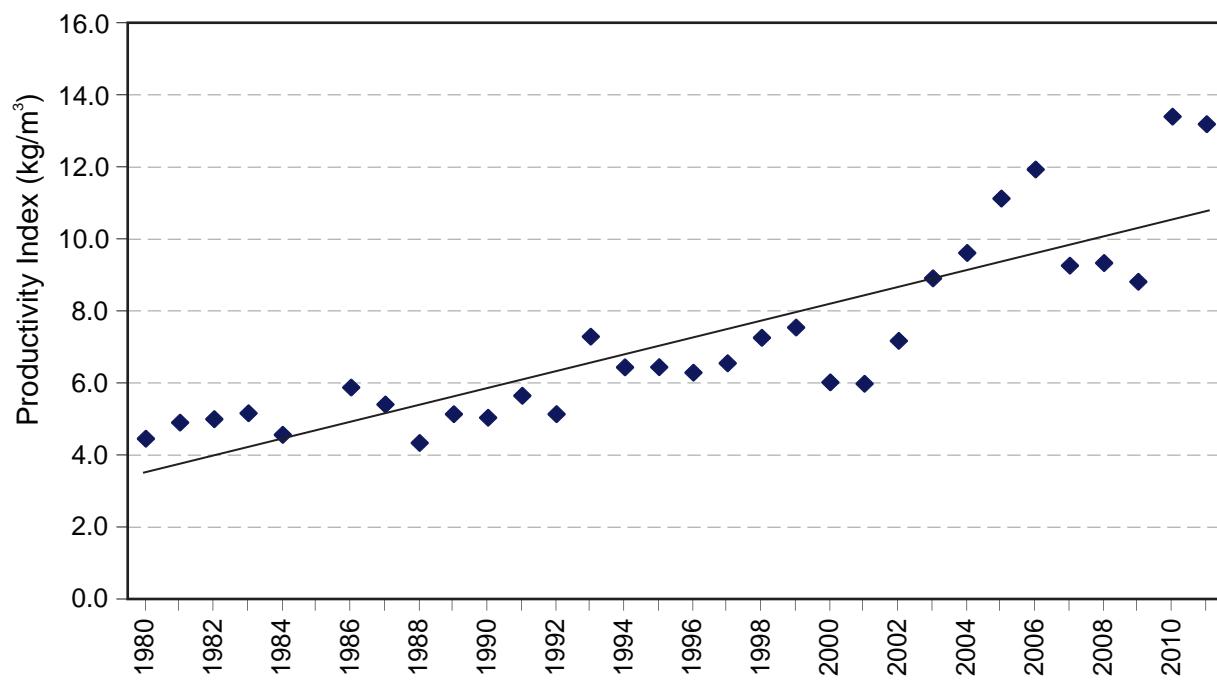
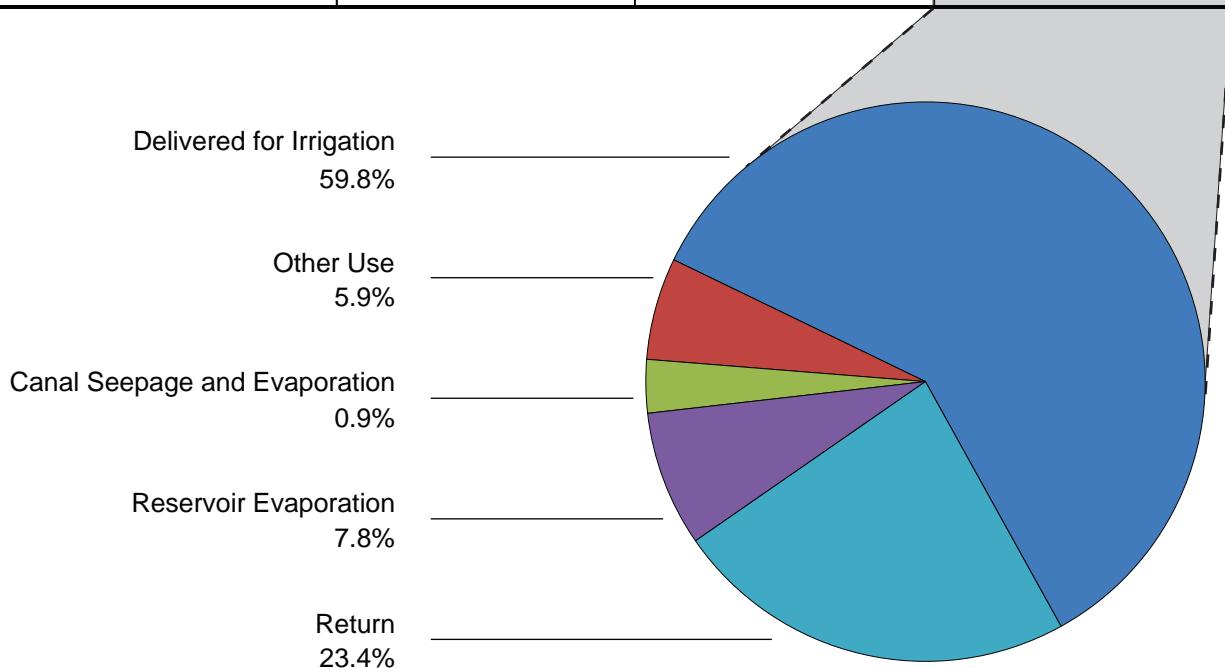


Figure 9. Irrigation Districts Water Use Productivity (1980 - 2011)

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 reported 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 8. Irrigation Districts Water Balance

Water Balance Category	OLDMAN RIVER BASIN	BOW RIVER BASIN	IRRIGATION DISTRICTS
Gross Diversion	583,990	610,751	1,194,741
Storage	(40,200)	(17,365)	(57,565)
TOTAL DISTRICT USE	624,190	628,116	1,252,306
Delivered for Irrigation	401,467	347,011	748,478
Other Use	22,286	51,623	73,909
Canal Seepage & Evaporation	18,724	19,868	38,592
Reservoir Evaporation	36,526	61,514	98,040
Return	145,187	148,100	293,287
TOTAL DISTRICT OPERATIONS	624,190	628,116	1,252,306



Note: 1. Irrigation district reported values were used
 2. Where district reporting was incomplete, Alberta Agriculture calculated an estimate
 3. All volumes are in acre-feet

Glossary

- Gross Diversion** - Volume of water diverted from a lake or the river system by irrigation districts
- Storage** - Volume of water removed from irrigation district reservoirs for use
- Total District Use** - Total volume of water from diversion and storage used
- Delivered for Irrigation** - Volume of water supplied for irrigation purposes
- Other Use** - Volume of water supplied for other uses including municipal and industrial
- Canal Seepage & Evaporation** - Water lost through delivery system from seepage and surface evaporation
- Reservoir Evaporation** - Water lost from evaporation from the surface of irrigation district reservoirs
- Return** - Volume of water returned to the river system
- Total District Operations** - Total volume of water used for irrigation districts operations comprised of water delivered for irrigation, other use, seepage and evaporation, and water returned

Table 9. Conveyance Infrastructure by Type of Works within the 13 Irrigation Districts in 2011

Irrigation District	REHABILITATED								UN-REHABILITATED			Total Conveyance Works (km)	
	Membrane-Lined Canals		Pipelines - Closed		Pipelines - Open		Concrete - Lined Canals		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	166.6	16.6%	438.1	43.6%	12.8	1.3%	16.6	1.7%	205.8	20.5%	165.5	16.5%	1,005
EID	341.3	17.8%	1004.8	52.3%	38.4	2.0%	0.0	0.0%	185.7	9.7%	350.2	18.2%	1,920
LID	2.0	3.7%	28.7	53.6%	0.3	0.6%	0.0	0.0%	11.7	21.9%	10.8	20.2%	54
LNID	56.8	7.6%	413.0	55.5%	12.6	1.7%	45.2	6.1%	68.1	9.1%	148.7	20.0%	744
MID	1.2	1.2%	59.2	58.9%	1.5	1.5%	0.3	0.3%	33.5	33.3%	4.8	4.8%	101
MVID	0.0	0.0%	15.1	37.9%	1.8	4.5%	0.0	0.0%	17.0	42.7%	5.9	14.8%	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%	126.7	55.0%	7.0	3.0%	0.0	0.0%	80.2	34.8%	16.3	7.1%	230
SMRID	68.8	3.8%	875.9	48.0%	19.0	1.0%	74.7	4.1%	454.6	24.9%	330.3	18.1%	1,823
TID	58.1	17.2%	168.7	50.0%	13.4	4.0%	6.9	2.0%	67.9	20.1%	22.6	6.7%	338
UID	15.8	6.7%	74.5	31.5%	28.7	12.1%	0.3	0.1%	60.0	25.3%	57.5	24.3%	237
WID	32.7	3.1%	153.5	14.4%	41.3	3.9%	5.3	0.5%	171.7	16.1%	660.1	62.0%	1,065
Total	749	9.8%	3,393	44.5%	178	2.3%	149	2.0%	1,364	17.9%	1,787	23.4%	7,620
												Headworks Owned by Alberta Environment	339
												Total Length of Conveyance System in Southern Alberta (km)	7,959

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

- the Irrigation Rehabilitation Program (IRP) 1969 - 2011
- 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 10. Irrigation District Infrastructure by Length and Replacement Cost in 2011

IRRIGATION DISTRICTS	CONVEYANCE WORKS		MAJOR STRUCTURES		DRAINAGE WORKS CONSTRUCTED 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	\$11,424,000
BRID	1,005	\$367,061,000	22	\$97,753,000	236	\$10,773,000	447	\$5,094,000	1,668 / 22	\$480,681,000
EID	1,920	\$658,394,000	61	\$349,421,000	205	\$9,471,000	1,686	\$15,405,000	3,811 / 61	\$1,032,691,000
LID	54	\$12,801,000	0	\$0	1	\$54,000	3	\$30,000	58 / 0	\$12,885,000
LNID	744	\$250,940,000	2	\$2,880,000	20	\$899,000	229	\$2,803,000	993 / 2	\$257,522,000
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	230	\$57,199,000	0	\$0	20	\$1,012,000	188	\$3,516,000	438 / 0	\$61,727,000
SMRID	1,823	\$612,777,000	48	\$335,617,000	49	\$3,325,000	345	\$4,977,000	2,217 / 48	\$956,696,000
TID	338	\$122,449,000	12	\$14,168,000	45	\$3,801,000	18	\$191,000	401 / 12	\$140,609,000
UID	237	\$76,500,000	11	\$16,206,000	4	\$308,000	54	\$649,000	295 / 11	\$93,664,000
WID	1,065	\$328,236,000	13	\$18,180,000	11	\$927,000	868	\$15,735,000	1,944 / 13	\$363,078,000
DISTRICT TOTALS	7,620	\$2,545,051,000	170	\$834,360,000	607	\$31,309,000	4,011	\$50,845,000	12,238 / 170	\$3,461,565,000

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 11. Summary of Irrigation District Water Licence Allocations

Irrigation District	Other Purposes* (ac-ft)	Total Licensed 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 12. Summary of Condition Assessments (All Works by Replacement Cost)

Works Category	Good	Fair	Poor	TOTAL
Conveyance	\$1,647,466,000	\$778,749,000	\$118,837,000	\$2,545,051,000
Drainage	\$10,684,000	\$48,040,000	\$14,458,000	\$73,182,000
Major Structures	\$535,333,000	\$291,816,000	\$7,212,000	\$834,361,000
TOTAL	\$2,193,483,000	\$1,118,604,000	\$140,506,000	\$3,452,594,000
Proportion	63.5%	32.4%	4.1%	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 13. Irrigation District Reservoirs

Location	Reservoir	Approximate Date of Impoundment	Live Storage (dam³)	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
	Fincastle	1952	3,085	2,501
Taber Irrigation District	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 14. 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 15. 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 16. Private Water Licences for Irrigation in Alberta

There are 2,904 individual irrigation projects, outside of the 13 irrigation districts, irrigating approximately 308,435 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	1,985	43	6	0	49
MILK RIVER	18,801	97	43	14	154
NORTH SASKATCHEWAN RIVER	27,391	317	56	15	388
PEACE RIVER	3,364	67	9	0	76
SOUTH SASKATCHEWAN RIVER					
- Bow River	27,298	151	59	19	229
- Little Bow River	30,087	127	68	24	219
- Lower Oldman River	16,426	22	24	13	59
- Red Deer River	45,796	422	89	19	530
- South Saskatchewan River	47,609	533	79	25	637
- Upper Oldman River	7,550	64	22	3	89
- Waterton / Belly / St. Mary Rivers	52,019	136	70	19	225
- Willow Creek	30,109	156	77	16	249
South Saskatchewan River Total	256,894	1,611	488	138	2,237
2011	308,435	2,135	602	167	2,904
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 2011

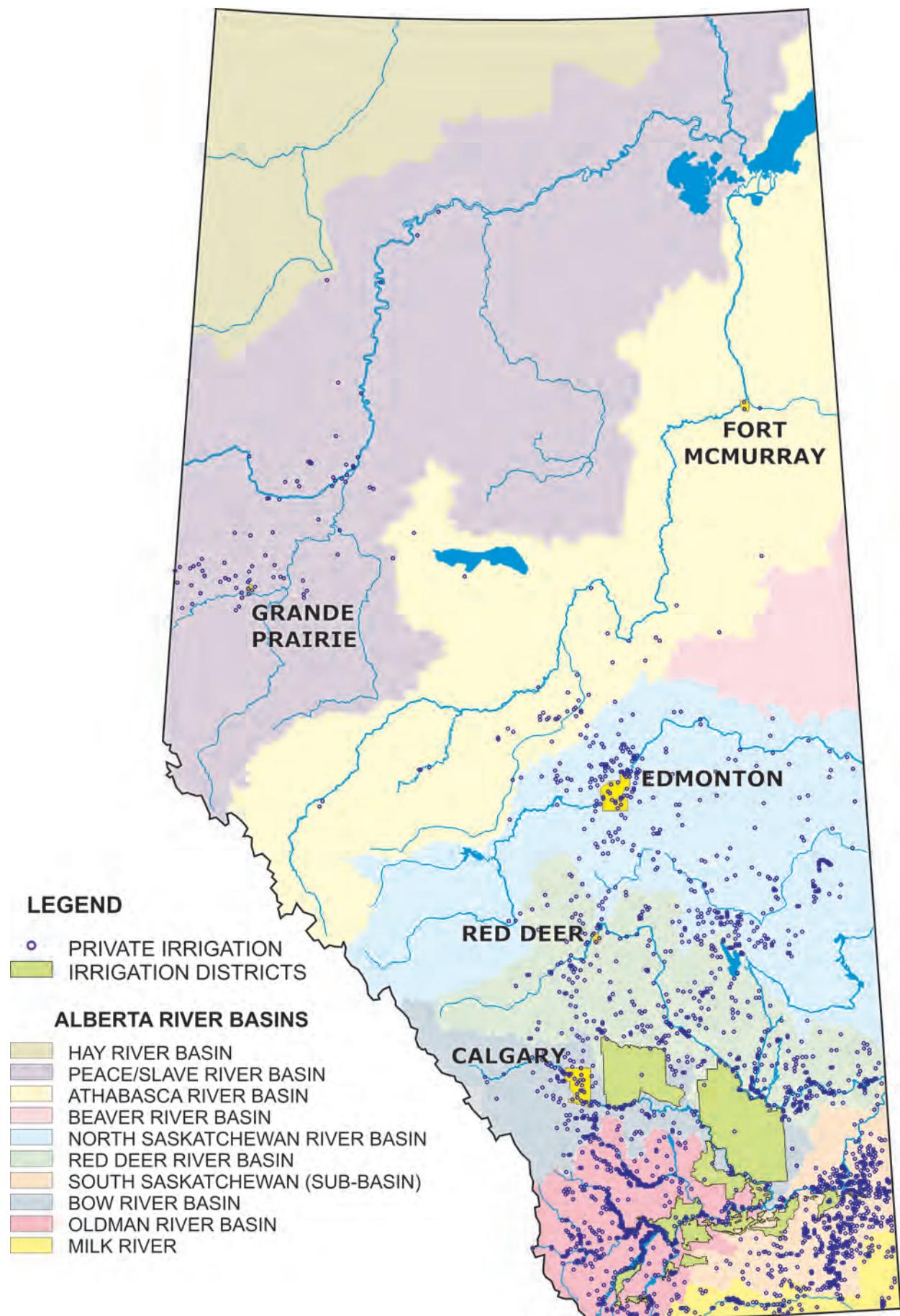


Figure 10. Private Irrigation in Alberta

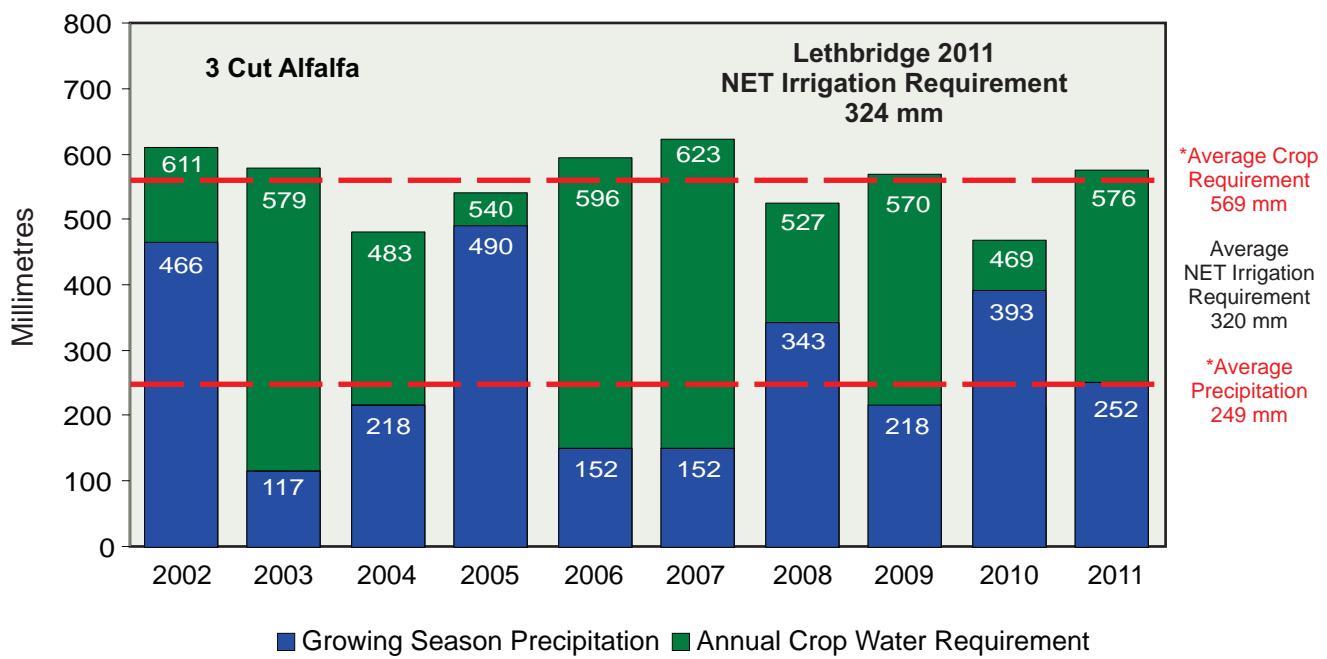


Figure 11. Lethbridge Optimum Crop Water and Net Irrigation Requirements (2002 - 2011)

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 2011.
Seasonal precipitation from May 1 to September 30.

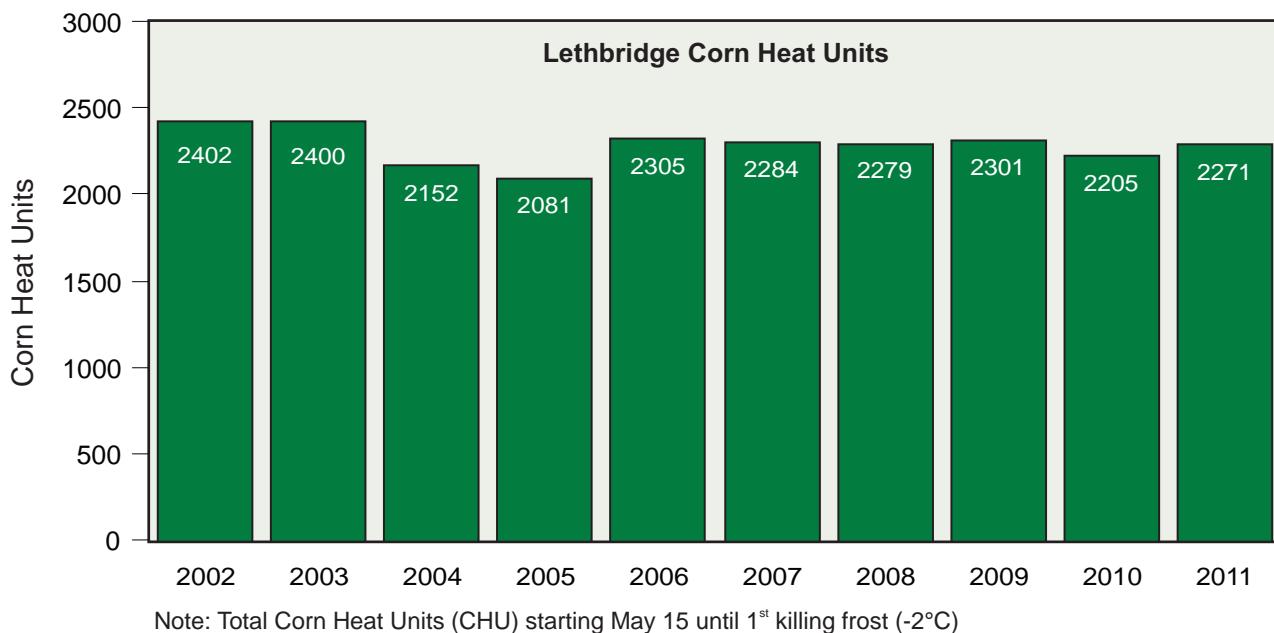


Figure 12. Lethbridge Corn Heat Units (2002 - 2011)

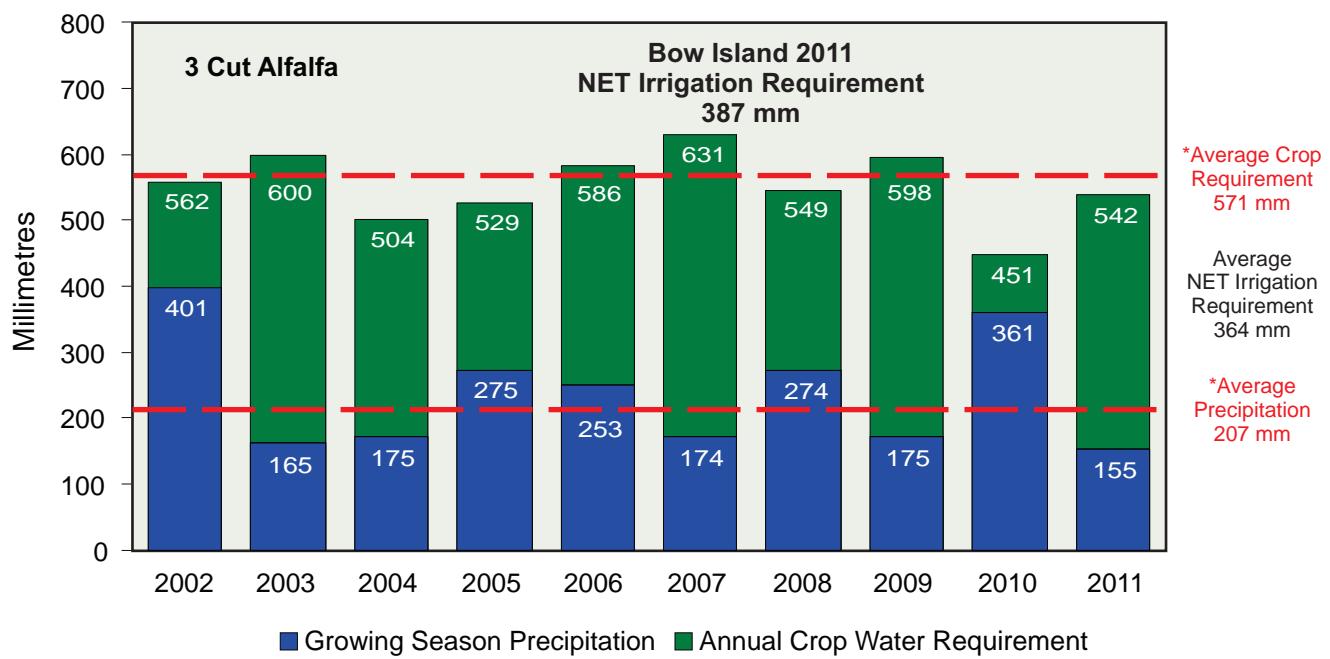


Figure 13. Bow Island Optimum Crop Water and Net Irrigation Requirements (2002 - 2011)

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 2011.

Seasonal precipitation from May 1 to September 30.

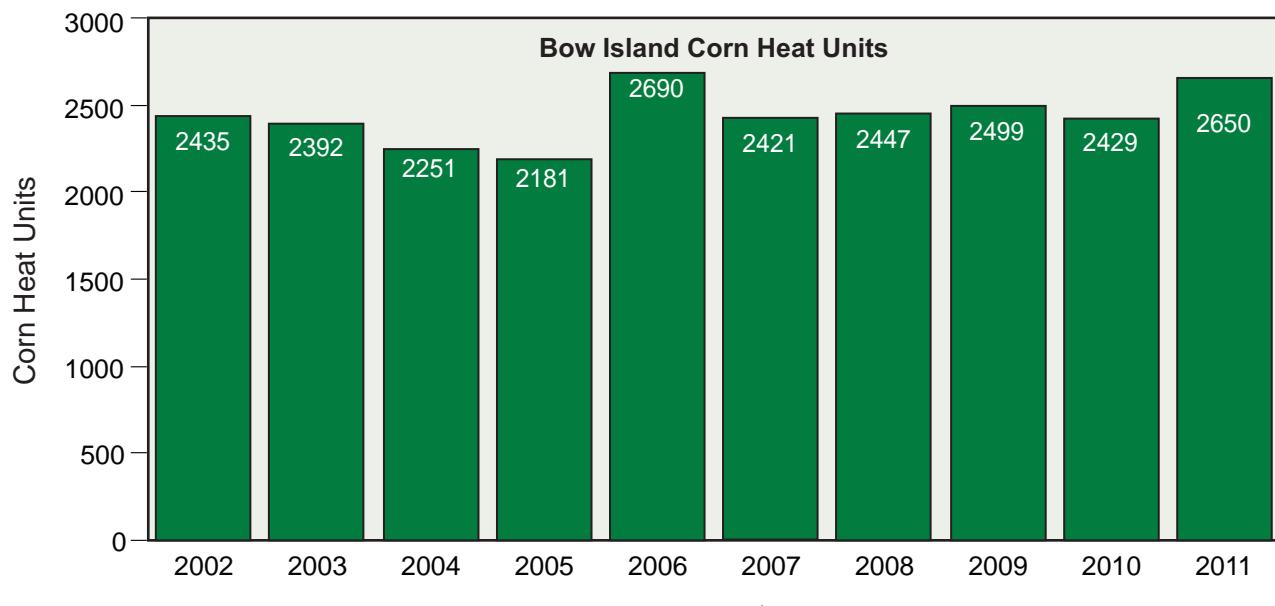


Figure 14. Bow Island Corn Heat Units (2002 - 2011)

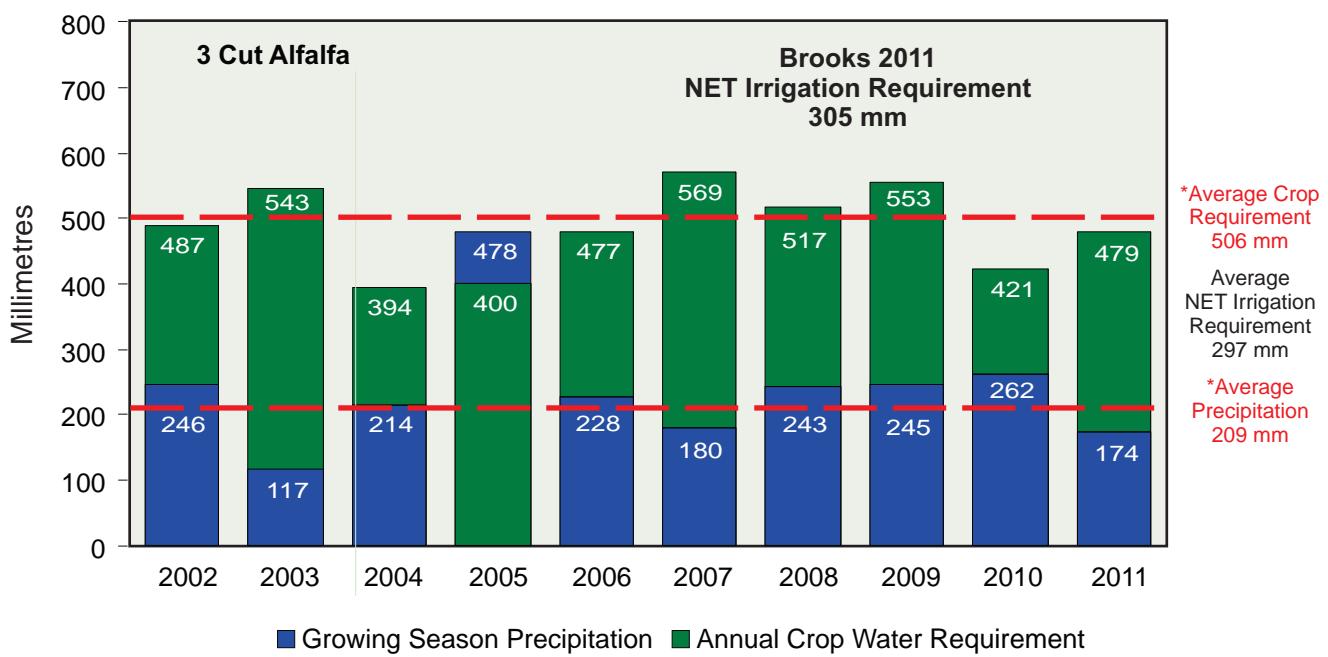


Figure 15. Brooks Optimum Crop Water and Net Irrigation Requirements (2002 - 2011)

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 2011.
Seasonal precipitation from May 1 to September 30.

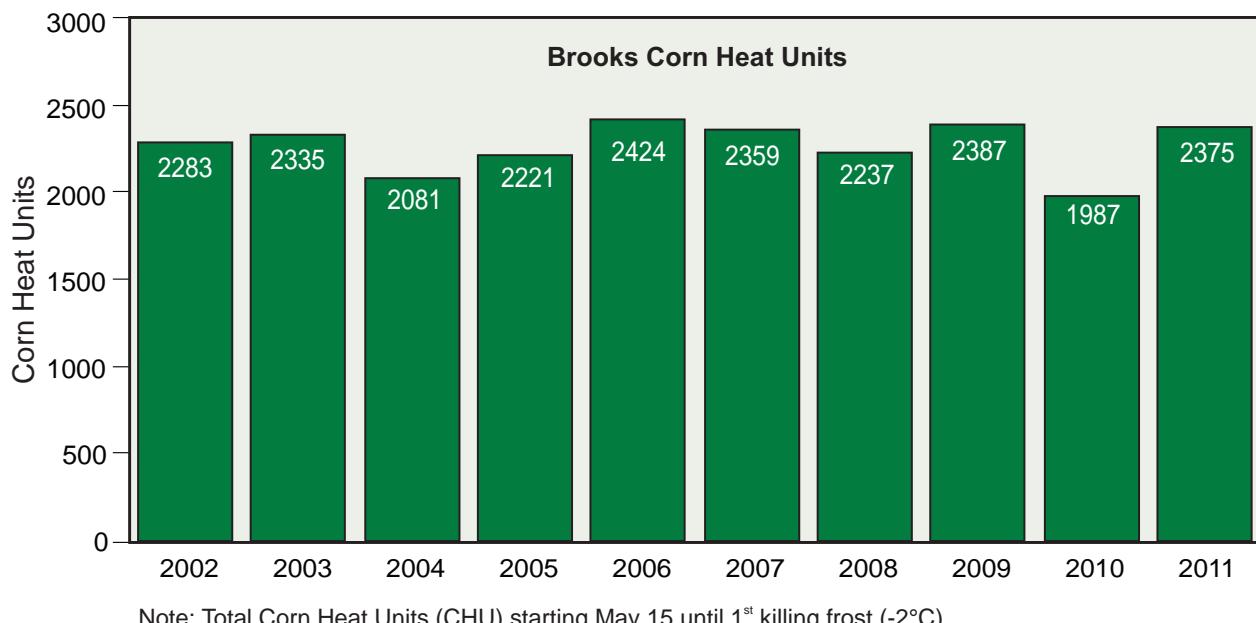


Figure 16. Brooks Corn Heat Units (2002 - 2011)

Table 17. Historical Rainfall in Southern Alberta (April 15 to October 15)

AREA	MAXIMUM RAINFALL (mm)	MINIMUM RAINFALL (mm)	NORMAL RAINFALL* (mm)	2011 RAINFALL (mm)	2011 % OF NORMAL
Lethbridge	534 (1978)	71 (2001)	275	338	123%
Bow Island	439 (1993)	112 (2001)	256	190	74%
Brooks	484 (2005)	87 (2001)	241	193	80%

Note: * Normal rainfall 1970 - 2011

Table 18. Historical Corn Heat Units in Southern Alberta (May 15 to 1st Killing Frost)

AREA	MAXIMUM CHU (2002-2011)	MINIMUM CHU (2002-2011)	LAST TEN YEAR AVERAGE*	2011 CHU	2011 % OF LAST TEN YEAR AVERAGE
Lethbridge	2402 (2002)	2081 (2005)	2268	2271	100%
Bow Island	2690 (2006)	2181 (2005)	2439	2650	109%
Brooks	2424 (2006)	1987 (2010)	2269	2375	105%

Note: * Last ten year average 2002 - 2011

Table 19. Frost Free Period (0° C) in Southern Alberta

AREA	AVERAGE LAST FROST	AVERAGE FIRST FROST	AVERAGE FROST FREE DAYS*	2011 LAST FROST	2011 FIRST FROST	2011 FROST FREE DAYS	2011 % OF NORMAL
Lethbridge	May 18	Sept 19	124	May 18	Sept 29	134	108%
Bow Island	May 12	Sept 23	134	May 10	Sept 20	133	99%
Brooks	May 20	Sept 13	116	May 18	Sept 18	123	106%

Note: * Average frost free days 1971 - 2000

Table 20. Frost Free Period (-2° C) in Southern Alberta

AREA	AVERAGE LAST FROST	AVERAGE FIRST FROST	AVERAGE FROST FREE DAYS*	2011 LAST FROST	2011 FIRST FROST	2011 FROST FREE DAYS	2011 % OF NORMAL
Lethbridge	May 2	Sept 29	150	May 2	Sept 29	162	108%
Bow Island	Apr 30	Oct 1	154	April 30	Oct 1	167	108%
Brooks	May 5	Sept 28	146	May 5	Sept 28	152	104%

Note: Average frost free days 1971 - 2000

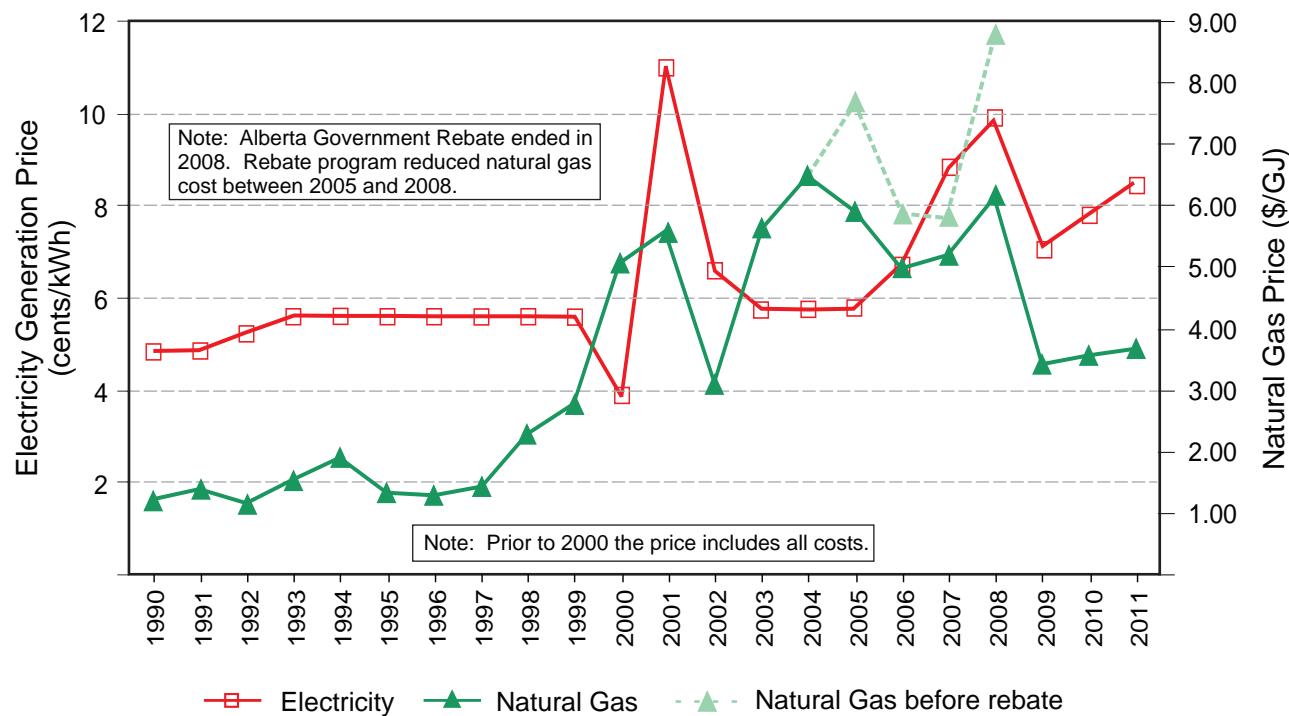
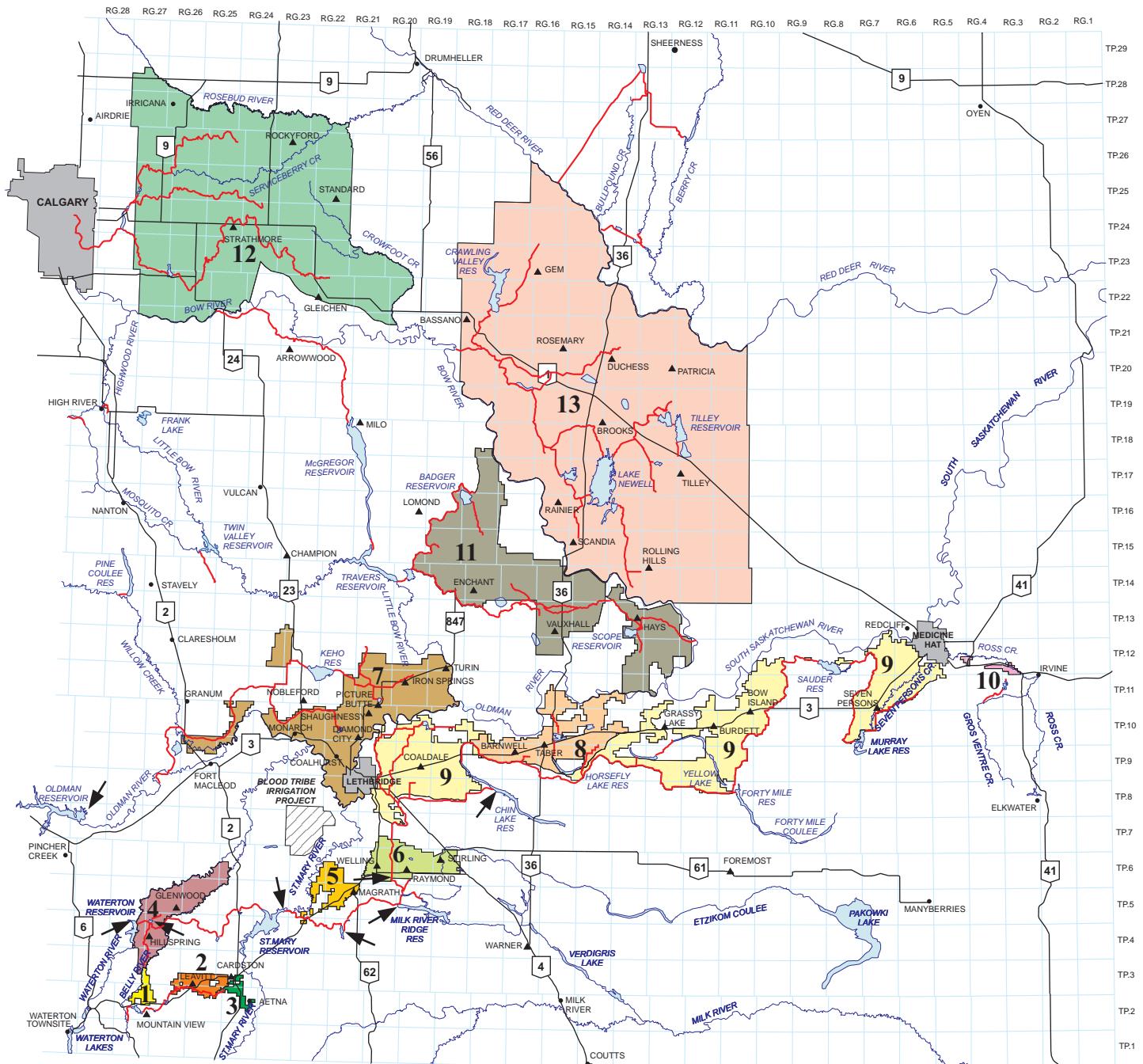


Figure 17. Historical Irrigation Energy Prices (average prices from May to September)

Table 21. Energy Type Used in the Irrigation Districts (acres irrigated by energy type)

Energy Type	BRID	EID	LNID	MID	SMRID	TID	UID	WID	Average Energy Type
Electricity	71.1% 153,909	40.4% 118,723	47.0% 80,971	9.0% 1,646	57.3% 206,811	58.8% 46,814	31.6% 10,751	31.7% 26,016	51.3%
Natural Gas	13.2% 28,533	24.9% 73,185	39.4% 67,871	57.1% 10,454	37.3% 134,585	36.4% 29,127	3.2% 1,096	32.6% 26,774	29.5%
Diesel	3.5% 7,590	5.2% 15,219	0.8% 1,401	0.0% 0	0.9% 3,115	0.8% 638	0.2% 54	9.3% 7,657	2.8%
Gravity	7.3% 15,799	24.1% 70,730	1.5% 2,648	17.2% 3,149	1.9% 6,723	3.3% 2,680	39.8% 13,534	9.7% 8,008	9.8%
Gravity Pressure Pipeline	3.9% 8,487	2.2% 6,445	9.1% 15,713	16.5% 3,021	2.4% 8,595	0.8% 634	7.6% 2,596	8.5% 6,968	4.2%
Pump Pressure Pipeline	0.4% 913	1.6% 4,783	0.1% 258	0.0% 0	0.0% 0	0.0% 0	1.7% 586	0.2% 125	0.5%
Other*	0.5% 1,018	1.1% 3,186	0.7% 1,194	0.2% 30	0.4% 1,332	0.2% 170	0.1% 23	8.0% 6,601	1.1%
Unknown	0.1% 128	0.5% 1,418	1.3% 2,270	0.0% 0	0.0% 0	0.0% 15	15.9% 5,404	0.0% 0	0.7%
Total Acres	216,375	293,689	172,326	18,300	361,161	80,078	34,044	82,149	1,258,122

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



- ▲ 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 1,370,449 assessed acres of farmland. The infrastructure within these irrigation districts is comprised of approximately 7,959 kilometres of conveyance system, of which 339 kilometres are owned and operated by Alberta Environment.

Figure 18. Alberta's Irrigation Districts