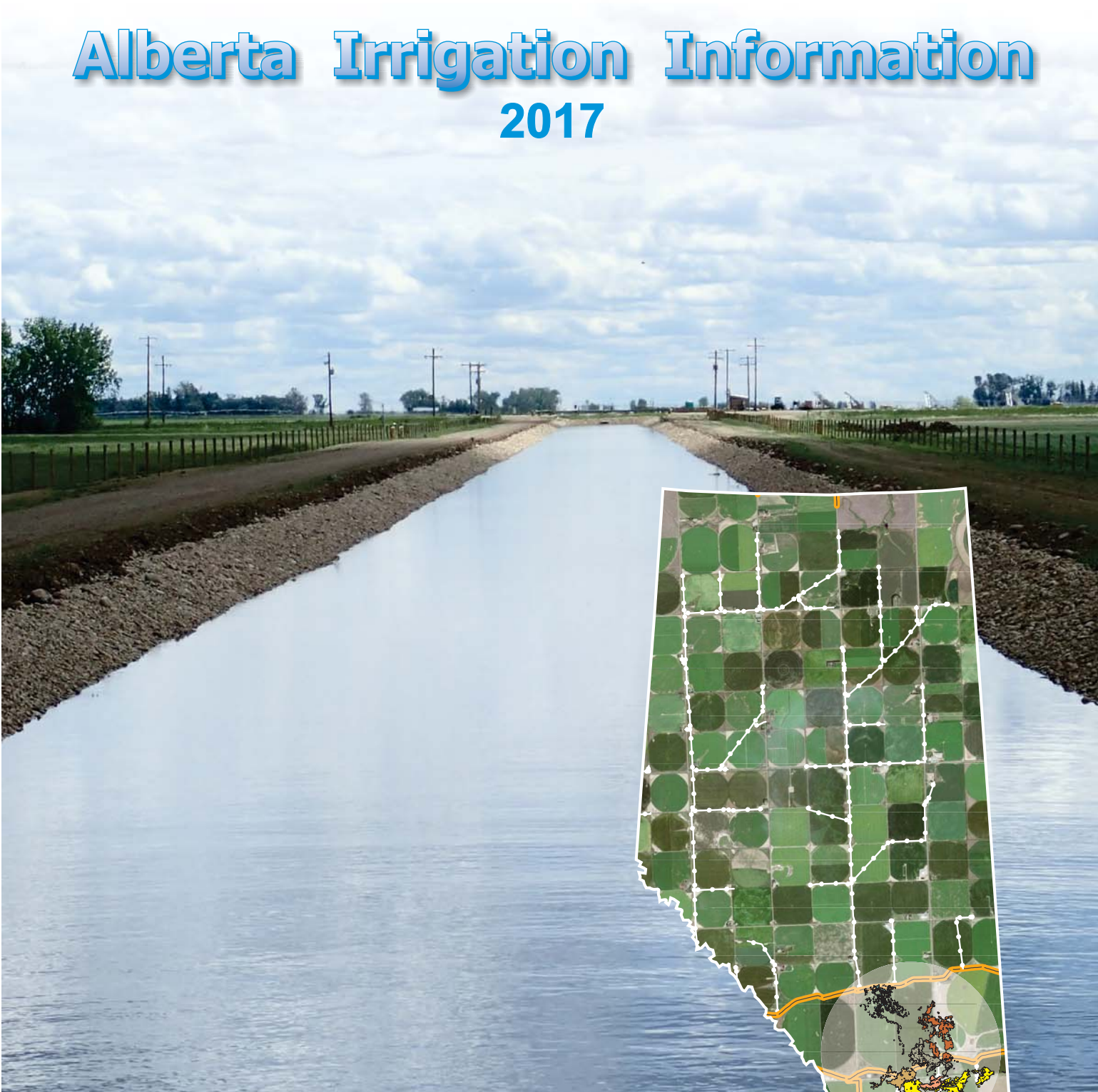


Alberta Irrigation Information 2017



AID	– Aetna Irrigation District
BRID	– Bow River Irrigation District
EID	– Eastern Irrigation District
LID	– Leavitt Irrigation District
LNID	– Lethbridge Northern Irrigation District
MID	– Magrath Irrigation District
MVID	– Mountain View Irrigation District
RID	– Raymond Irrigation District
RCID	– Ross Creek Irrigation District
SMRID	– St. Mary River Irrigation District
TID	– Taber Irrigation District
UID	– United Irrigation District
WID	– Western Irrigation District

Unit Conversion Factors

Imperial to Metric

1 acre	= 0.405 ha
1 ac-ft	= 1233.480 m ³
1 ac-ft	= 1.233 dam ³
1 inch	= 25.4 mm
1 mile	= 1.609 km
1 lbs	= 0.454 kg

Metric to Imperial

1 ha	= 2.471 acres
1 m ³	= 0.00081 ac-ft
1 dam ³	= 0.8107 ac-ft
1 mm	= 0.0394 inches
1 km	= 0.6214 miles
1 kg	= 2.205 lbs

Other

1 m ³	= 1000 L
1 dam ³	= 1000 m ³
1 dam ³	= 1 megalitre
1 km	= 1000 m

ALBERTA IRRIGATION INFORMATION

2017

BASIN WATER MANAGEMENT SECTION
IRRIGATION AND FARM WATER BRANCH

JULY 2018

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 Alberta, but also includes information about irrigation across the whole province. The majority of the annual data is provided by the irrigation districts. This report is prepared by Alberta Agriculture and Forestry.

For more information, please contact:
Andrea Gonzalez, Alberta Agriculture and Forestry
Agriculture Centre
Lethbridge, Alberta T1J 4V6
Telephone (403) 381-5117
andrea.gonzalez@gov.ab.ca

For an electronic version of this report and additional information visit:

Website: www.agric.gov.ab.ca

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Table 2. Crop Types Grown within the 13 Irrigation Districts

CROPS	IRRIGATION DISTRICTS													TOTAL ACRES
	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	
Cereals	1,466	82,151	85,563	255	36,027	6,328	311	0	12,225	121,583	26,176	10,667	24,429	407,191
	31.2%	33.5%	28.4%	5.1%	19.5%	34.7%	8.5%	0.0%	26.3%	30.7%	32.6%	31.3%	25.7%	28.8%
Forages	3,021	39,100	119,798	3,830	110,005	7,939	3,099	781	21,624	90,234	19,529	14,806	34,875	468,642
	64.2%	15.9%	39.8%	76.1%	59.6%	43.5%	84.6%	87.1%	46.5%	22.8%	24.3%	43.4%	36.7%	33.1%
Oil Seeds	107	25,000	34,024	0	30,253	3,695	0	116	9,772	55,390	2,202	7,106	15,457	183,121
	2.3%	10.2%	11.3%	0.0%	16.4%	20.3%	0.0%	12.9%	21.0%	14.0%	2.7%	20.8%	16.3%	12.9%
Specialty Crops		98,289	61,205	0	6,935	269	253	0	2,837	124,790	31,937	1,387	7,429	335,331
	0.0%	40.1%	20.3%	0.0%	3.8%	1.5%	6.9%	0.0%	6.1%	31.5%	39.7%	4.1%	7.8%	23.7%
Other*	109	685	719	945	1,345	0	0	0	42	3,995	526	123	12,761	21,249
	2.3%	0.3%	0.2%	18.8%	0.7%	0.0%	0.0%	0.0%	0.1%	1.0%	0.7%	0.4%	13.4%	1.5%
TOTAL ACRES	4,703	245,224	301,309	5,030	184,565	18,231	3,663	897	46,500	395,992	80,370	34,099	94,951	1,415,534

Note: *Other includes miscellaneous, non crop, summer fallow and unknown crops
AID and LID data is from 2016

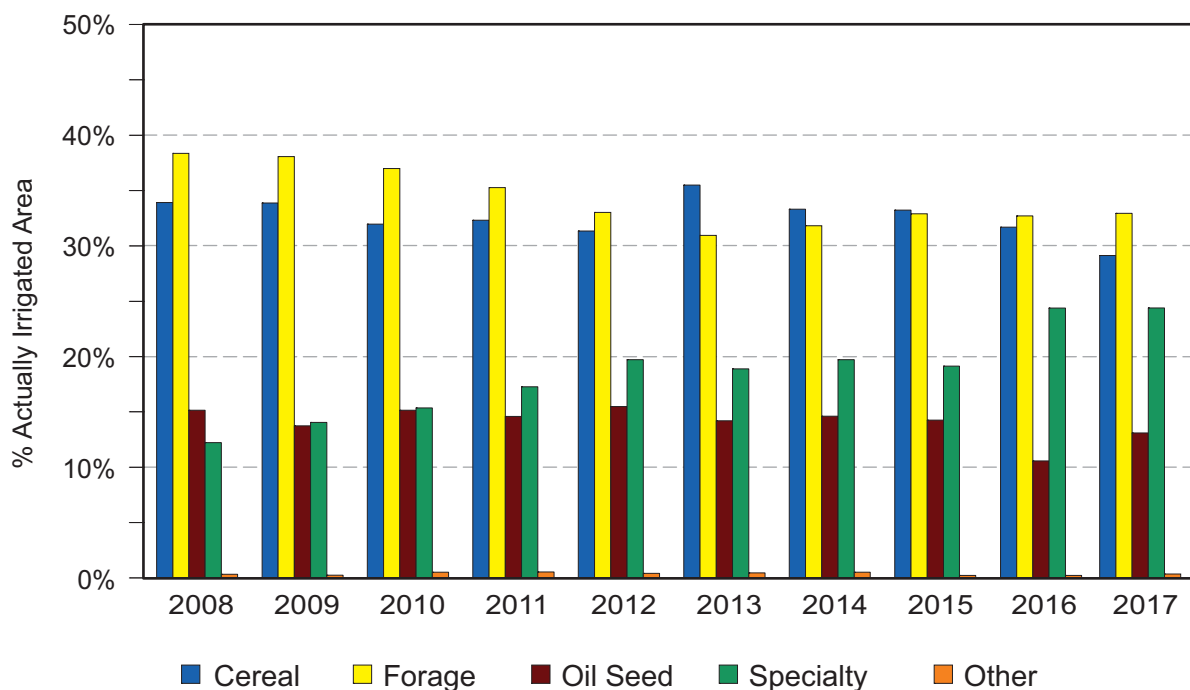


Figure 1. Irrigated Crop Types within the 13 Irrigation Districts

Note: Starting in 2011, acreage data for canola seed (canola grown for seed production) was moved from the oilseed category to the specialty crop category.

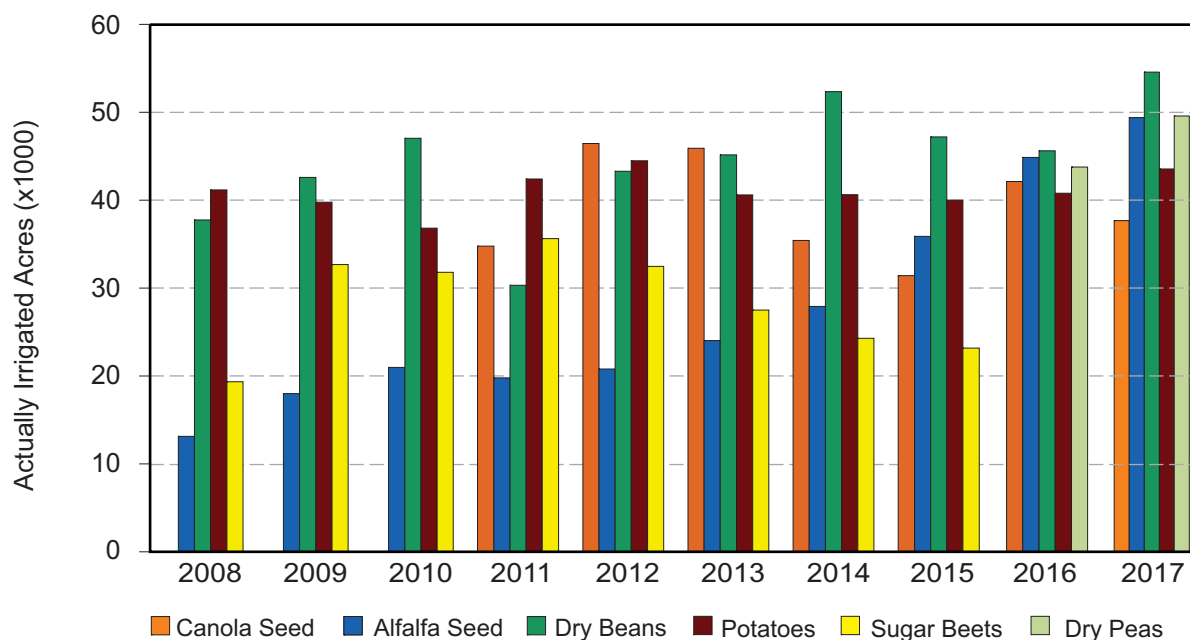


Figure 2. Acres of Five Major Irrigated Specialty Crops within the 13 Irrigation Districts

Note: Starting in 2011, acreage data for canola seed (canola grown for seed production) was moved from the oilseed category to the specialty crop category. Starting in 2016, dry peas surpassed sugar beets in the five major irrigated specialty crops in acreage.

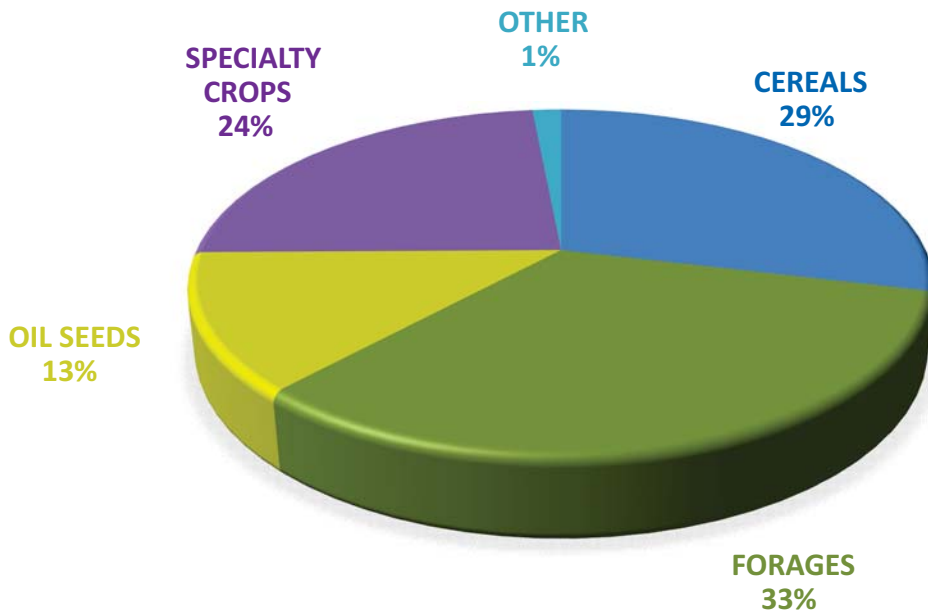


Figure 3. Crop Types within the 13 Irrigation Districts in 2017 (% of area)

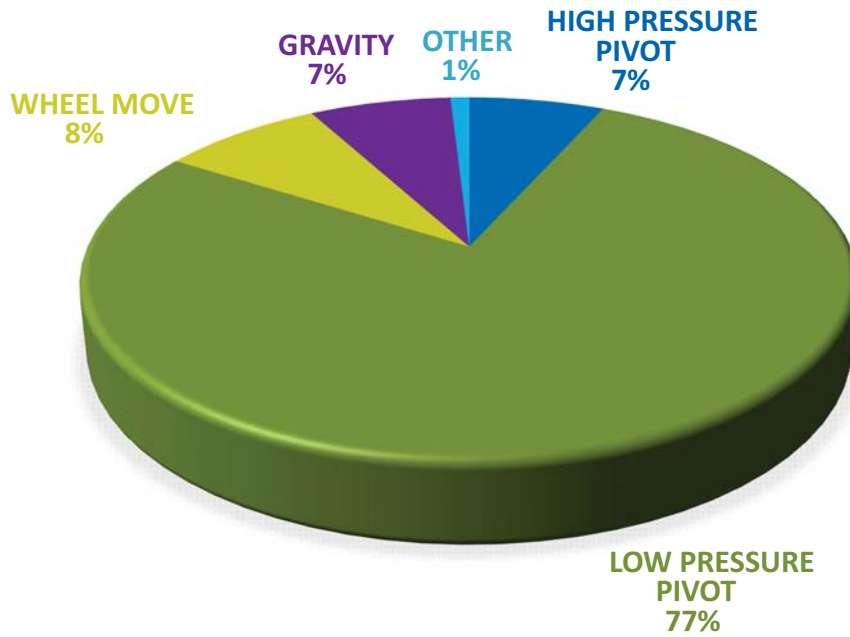
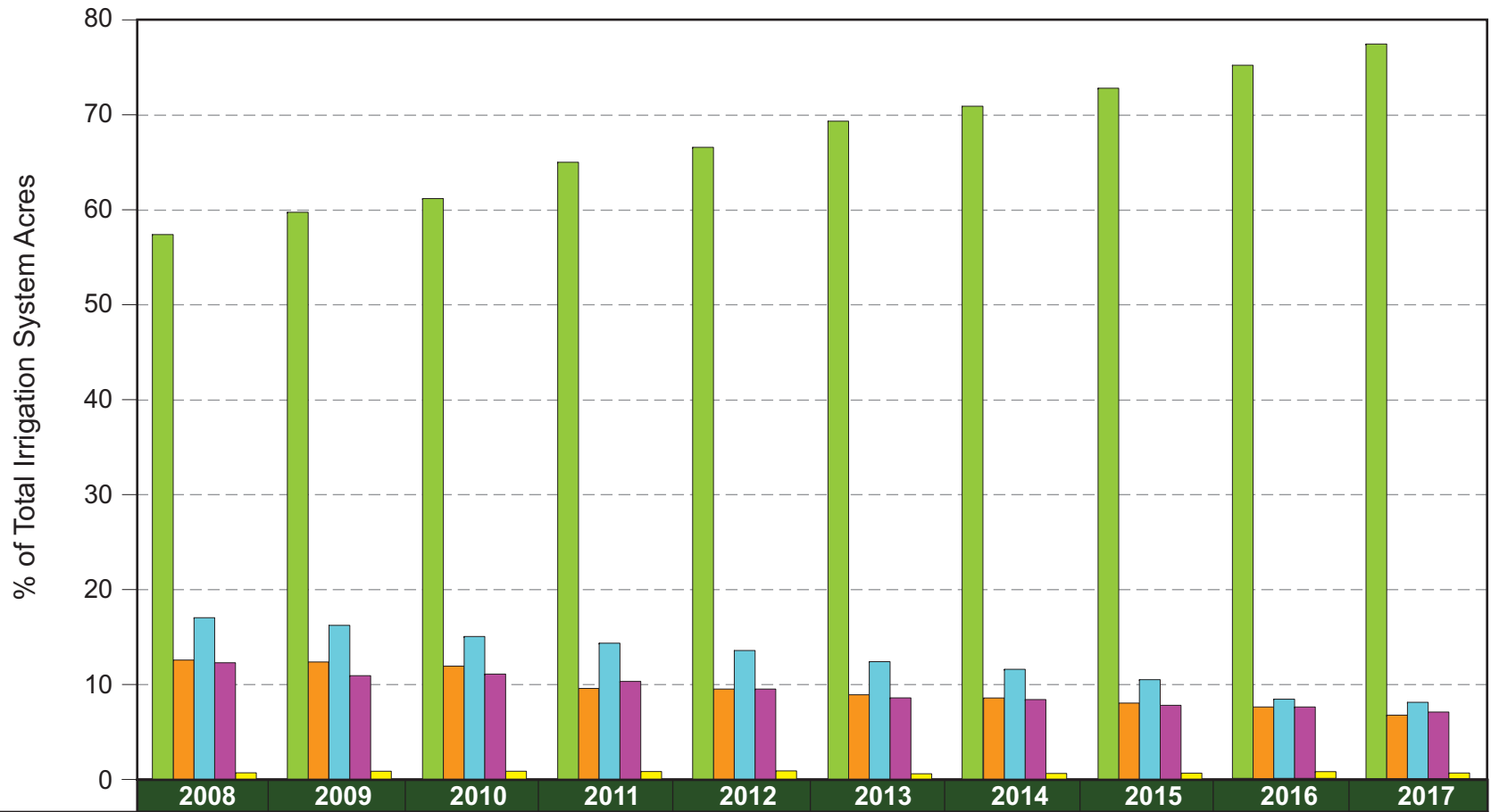


Figure 4. On-farm Irrigation Methods within the 13 Irrigation Districts in 2017 (% of area)

Table 3. On-farm Irrigation Method Acres within the 13 Irrigation Districts

IRRIGATION METHOD		AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	Individual Method Total	Total Acres Covered	
LOW PRESSURE PIVOT	Pivot Medium Pressure		1,769	4,274		212		253		824	3,436				10,768	1,072,113	
	Pivot Medium Pressure - Corner Arm		296	252		308					500				1,356		
	Pivot Low Pressure	1,099	151,186	185,422	411	60,386	8,343		604	29,192	279,030	42,214	16,910	49,726	824,522.2		
	Pivot Low Pressure - Corner Arm		54,301	16,254		86,907	140			2,336	48,130	18,227	1,191	3,788	231,274		
	Linear - Low Pressure			1,441		276				407	1,362	220	80	406	4,192		
	percent of total -----	23.4%	84.6%	68.9%	8.2%	80.2%	46.5%	6.9%	66.8%	72.2%	87.3%	75.5%	53.3%	64.7%	77.3%		
HIGH PRESSURE PIVOT	Pivot High Pressure		18,645	25,140	761	6,722	2,186		67	805	10,054	8,438	1,221	7,960	81,999	93,053	
	Pivot High Pressure - Corner arm		2,186	2,827		2,844					1,336	793		305	10,290		
	Linear - High Pressure			217								84		462	763		
	percent of total -----	0.0%	8.5%	9.4%	15.1%	5.2%	12.0%	0.0%	7.4%	1.8%	3.0%	11.6%	3.6%	10.5%	6.7%		
WHEEL MOVE	Wheel Move - One-Two Laterals	1,822	3,982	12,849	1,323	10,909	4,537	468	226	6,827	25,444	7,845	1,672	8,311	86,213	112,090	
	Wheel Move - Three-Four Laterals		2,237	3,911	198	12,033				1,058	3,210	546	103	2,582	25,878		
	percent of total -----	38.7%	2.5%	5.6%	30.2%	12.4%	24.9%	12.7%	25.0%	17.4%	7.5%	10.4%	5.2%	13.1%	8.1%		
GRAVITY	Gravity - Developed		8,923	38,292		755	2,805			2,048	974	729	1,410	115	56,051	97,422	
	Gravity - Undeveloped	277	1,504	9,650	1,747	653		2,949	7	1,524	5,508	1,052	11,316	5,184	41,371		
	percent of total -----	5.9%	4.3%	15.9%	34.7%	0.8%	15.4%	80.4%	0.8%	7.9%	1.7%	2.2%	37.3%	6.4%	7.0%		
OTHER	Volume Gun - Stationary										130	30		74	234	12,807	
	Volume Gun - Traveller		25	306		150					55	22		500	1,058		
	Solid Set (underground sprinkler)	140		8		691	25			95	254			914	2,127		
	Hand Move (sprinkler above ground)	1,366	88	466	591	1,085	174			179	987	80	181	935	6,132		
	Micro - Spray - Sprinkler					135					51	39	15	15	76		331
	Micro - Drip - Trickle							20			7	228	75	2	2,018		2,350
	Other Application Use		74			501									575		
percent of total -----	32.0%	0.1%	0.3%	11.7%	1.4%	1.1%	0.0%	0.0%	0.7%	0.4%	0.3%	0.6%	5.4%	0.9%			
Total Acres Covered		4,704	245,217	301,309	5,030	184,566	18,230	3,669	904	45,351	380,678	80,370	34,102	83,355	1,387,484	1,387,484	

Note: -Information for RCID is for 2014 irrigation season
 -Information for AID and LID is for 2016 irrigation season



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Low Pressure Pivot	747,187	773,538	802,173	856,707	879,651	923,391	957,117	991,859	1,038,024	1,072,113
High Pressure Pivot	164,072	160,665	156,784	126,864	126,430	119,449	116,436	110,733	107,761	93,052
Wheelmove	222,247	210,606	198,043	189,410	179,837	165,561	157,056	145,124	118,962	112,091
Gravity	162,063	141,885	145,879	136,709	126,217	118,307	114,122	106,764	107,129	97,421
Other	9,870	11,935	11,826	11,626	12,444	8,785	8,941	9,698	9,731	12,807

Figure 5. On-farm Irrigation Methods within the 13 Irrigation Districts

Table 4. Acres on the Assessment Roll within the 13 Irrigation Districts

YEAR	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID	TOTAL
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
12	4,376	234,327	294,620	4,840	177,593	18,300	3,616	1,101	46,402	373,835	82,750	34,382	95,788	1,371,930
13	4,376	241,604	296,619	4,853	179,014	18,300	3,698	1,101	46,500	380,371	82,822	34,393	95,776	1,389,427
14	4,511	254,909	297,884	4,876	179,719	18,300	3,698	1,101	46,500	388,039	83,263	34,395	95,641	1,412,836
2015	4,607	258,114	298,763	4,898	180,007	18,300	3,711	1,101	46,500	390,497	83,584	34,391	95,516	1,419,989
16	4,705	259,792	299,762	5,031	182,716	18,300	3,733	1,101	46,500	393,034	84,045	34,383	95,475	1,428,577
17	4,705	260,008	301,428	5,031	184,831	18,300	3,647	1,091	46,500	395,991	84,431	34,386	95,320	1,435,669

Notes: Assessment roll acres include "irrigation", "terminable" and "annual" acres. Only "irrigation" and "terminable" acres are considered in district expansion limits. In 2017, irrigation districts reported 7,182 annual acres.

Table 6. Irrigation Districts Irrigation Rates (\$ per irrigation acre per year)

YEAR	AID	BRID	EID	LID	LNID	MID	MVID	RCID	RID	SMRID	TID	UID	WID
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
12	\$11.00	\$16.00*	\$0.00*	\$11.50*	\$14.00*	\$11.00*	\$12.00	\$20.50	\$10.00*	\$20.00*	\$8.00*	\$9.00	\$16.25*
13	\$11.00	\$16.00*	\$0.00*	\$11.50*	\$14.00*	\$11.00*	\$12.00	\$20.50	\$10.00*	\$20.00*	\$8.00*	\$11.00	\$18.00*
14	\$12.00	\$16.00*	\$0.00*	\$12.00*	\$16.00*	\$11.00*	\$12.00	\$23.00	\$10.00*	\$20.00*	\$8.00*	\$11.00	\$18.00*
2015	\$12.00	\$16.00*	\$0.00*	\$12.00*	\$16.00*	\$11.00*	\$12.00	\$25.00	\$10.00*	\$20.00*	\$10.00*	\$11.00	\$18.00*
16	\$12.00*	\$16.00*	\$0.00*	\$12.00*	\$16.00*	\$11.00*	\$12.00	\$25.00	\$12.00*	\$20.00*	\$14.00*	\$11.00	\$18.00*
17	\$13.00*	\$16.00*	\$0.00*	\$12.00*	\$16.00*	\$11.00*	\$12.00	\$25.00	\$12.00*	\$22.00*	\$16.00*	\$11.50	\$18.00*

Note: * The districts levy the following additional surcharges.

- | | | | |
|------|--|-------|---|
| AID | – charges vary for pipeline delivery | MID | – \$4.00 per acre for pipeline delivery; \$1.00 per 10 psi |
| BRID | – \$0.70 per acre inch for volumes used on flood parcels over the annual water allocation (sprinkler parcels may not use more than the allocation) | RID | – charges vary for pipeline and pressure delivery; \$100 per acre inch for volumes over the annual allocation |
| EID | – \$6.00 per acre if served from H Cowoki, 03 East Branch, Springhill, or Rolling Hills Reservoir pressure systems | SMRID | – \$100 per acre inch for volumes over the annual allocation |
| LID | – \$3.00 per acre for pressure pipeline | TID | – \$70 per acre inch for volumes over the annual allocation |
| LNID | – \$0.30 per psi for pressure pipeline; \$5.00 per acre inch for volumes over the annual allocation | WID | – \$0.31 per psi; \$0.50 per acre for automated screen cleaning |

Some districts have centralized pump stations delivering pressurized water to individual farm turnouts. In these cases, the irrigators served by that pump station are charged for the energy used and often an additional maintenance charge.

Table 7. Gross Annual Diversions, Expansion Limits, and Licence Allocations for 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 Belly, Waterton, St. Mary Rivers	diversion from Belly, Waterton, St. Mary Rivers	diversion from Belly, Waterton, St. Mary Rivers	diversion from Belly, Waterton, St. Mary Rivers	diversion from Belly, Waterton Rivers	diversion from Bow River	diversion from Bow River	diversion from Bow River
EXPANSION LIMITS (acres)	7,500	6,000	227,000	18,300	4,240	1,210	46,500	412,000	92,200	34,400	260,000	311,000	95,000	1,515,350
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	490,000	761,000	190,500	2,869,160
YEAR	VOLUME OF WATER DIVERTED (acre-feet)													
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	85,829	21,054	238,000	409,400	85,000	1,459,022
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
12	2,761	3,973	176,683	20,720	2,558	0**	35,200	340,800	88,309	19,039	260,000	343,200	103,862	1,397,105
13	3,446	4,101	139,035	17,210	2,297	2,319	39,723	314,600	77,371	18,598	240,000	383,400	99,473	1,341,573
14	3,113	5,928	120,097	13,552	1,801	700	31,448	297,600	71,847	16,565	222,191	371,000	113,666	1,269,535
2015	3,306	4,540	197,000	21,459	2,420	700	50,711	453,300	100,481	25,839	331,900	471,900	136,600	1,800,156
16	3,848	4,564	206,730	20,325	2,233	367	39,704	402,600	84,313	21,864	328,085	371,100	109,865	1,595,598
17	4,710	5,697	274,400	24,221	2,838	800	54,062	536,900	123,923	31,350	422,000	521,200	131,000	2,133,101
Percent of Licence (2017)	52.3%	47.5%	82.0%	71.2%	35.5%	26.7%	66.7%	74.4%	78.4%	47.3%	86.1%	68.5%	68.8%	74.3%
Average Volume (1976-2017)	3,790	6,073	169,895	14,898	3,053	1,009	33,890	384,925	92,692	20,384	303,123	514,150	123,546	1,668,661

- Notes: – Data is obtained from Water Survey of Canada (WSC), Alberta Environment and Irrigation Districts' annual reports.
- RCID has a second supply from Ross Creek, but data has not been consistently recorded at that location.
- Diversion data is 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, TID, UID, AID, LID, MVID and Blood Tribe Agricultural Project (BTAP) in 2001.
- UID licence amended in 2004, re-allocating 1300 acre-feet of diversion authority to the Southeast Alberta Water Cooperative.
- **RCID 2012 had zero diversion since the diversion structure was under construction; 562 ac-ft was delivered for irrigation from Cavan Lake.

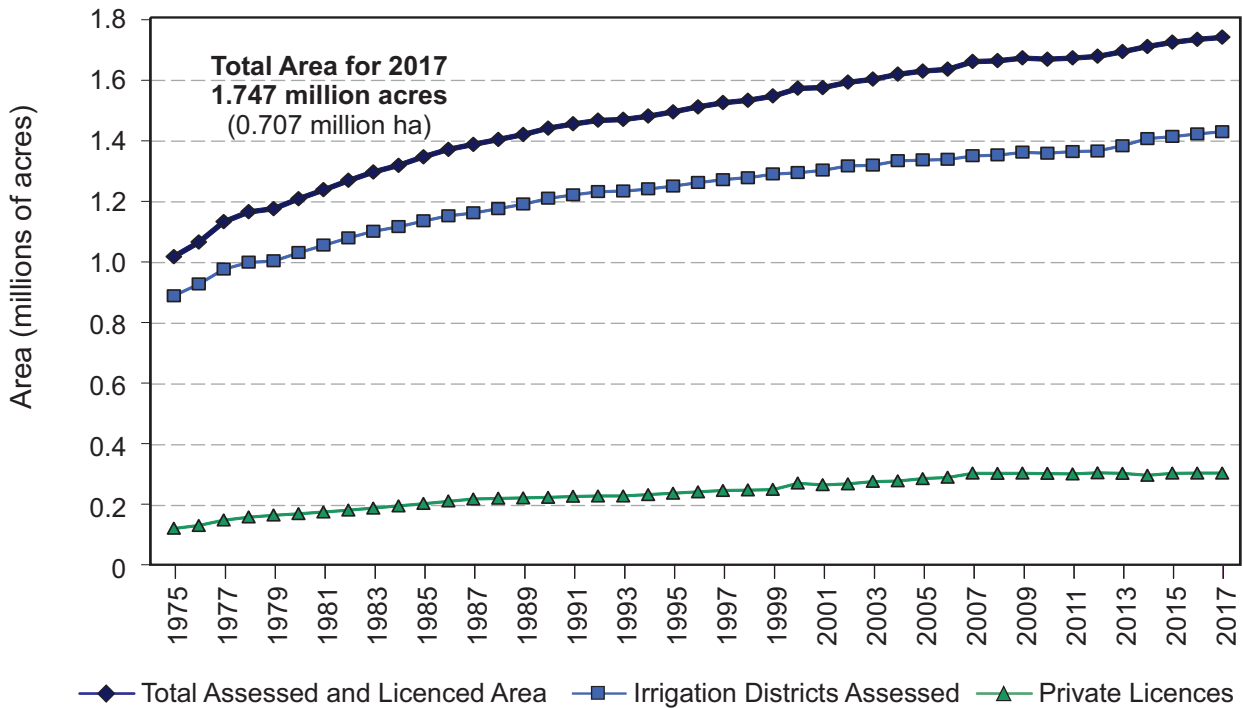


Figure 6. Growth in Irrigation Area

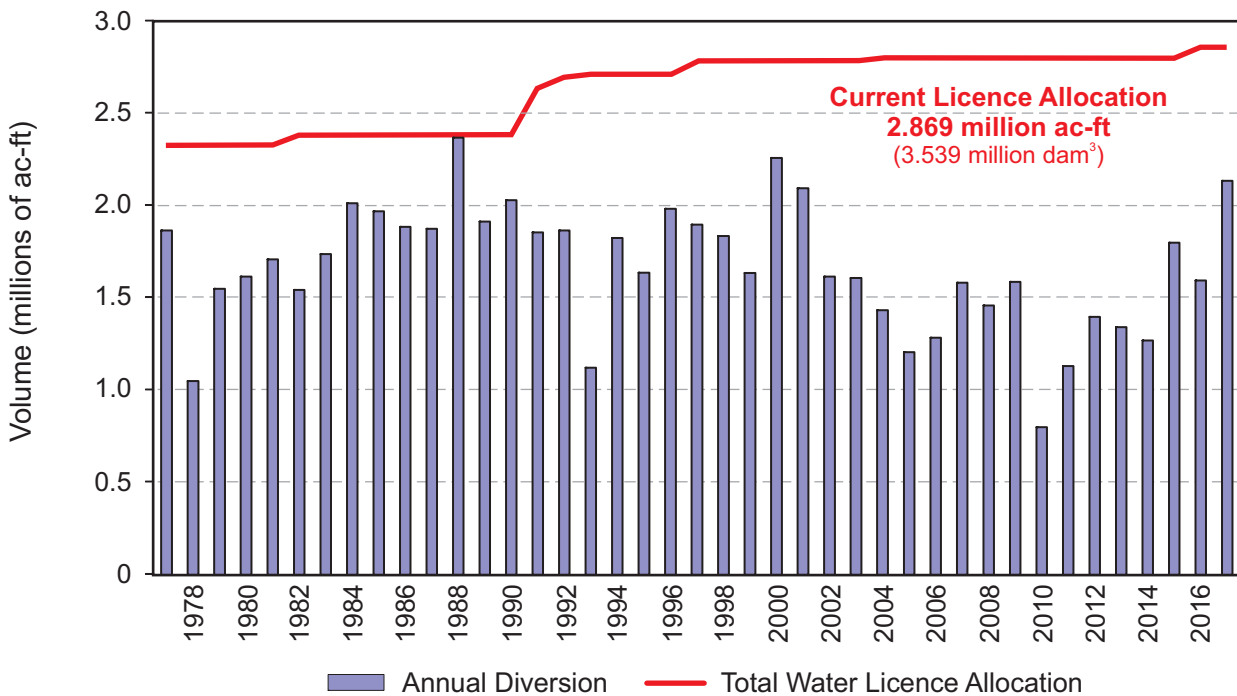


Figure 7. Irrigation Districts Gross Annual Diversion and Licence Allocation

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 other licence holders through a conveyance agreement with the licence holder.

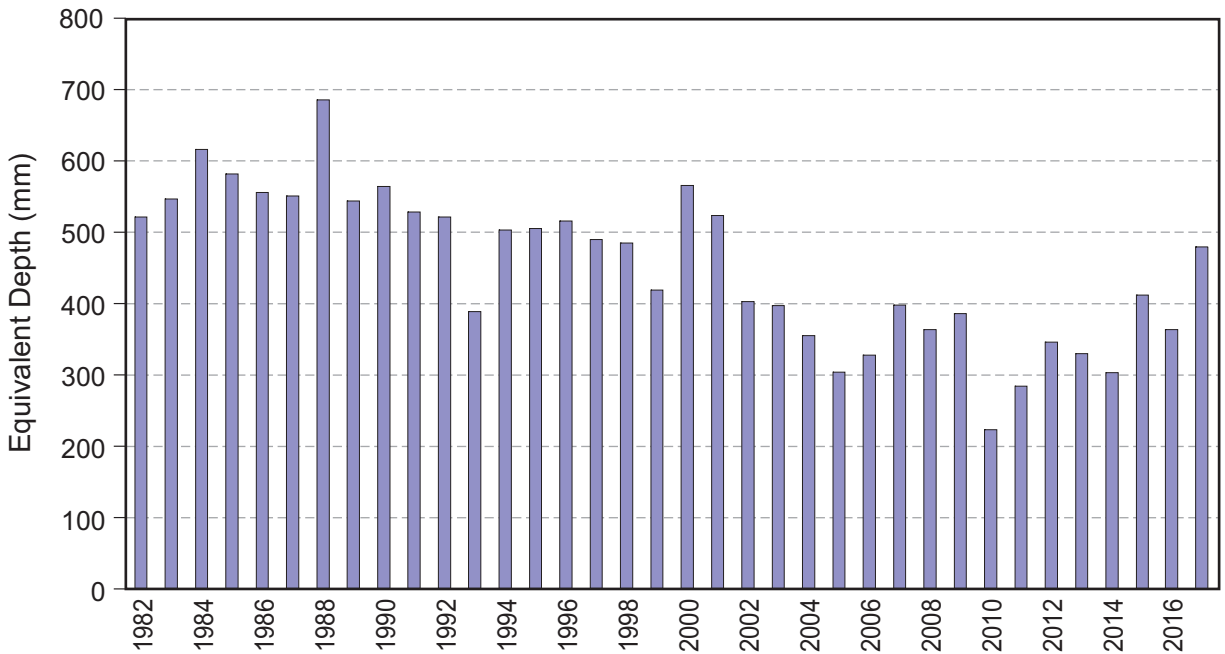


Figure 8. Irrigation Districts Gross Diversion Equivalent Depth

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 used for net gains in reservoir storage, water diverted for other uses such as domestic, municipal, other agricultural, industrial, recreational and habitat enhancement purposes.

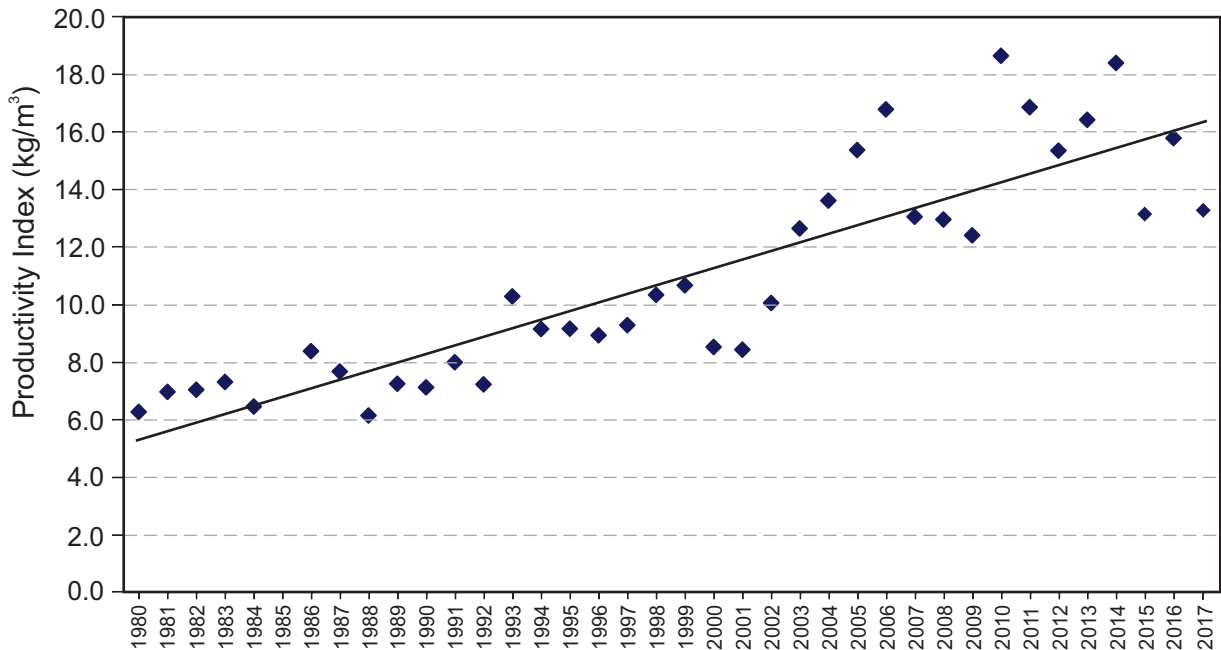
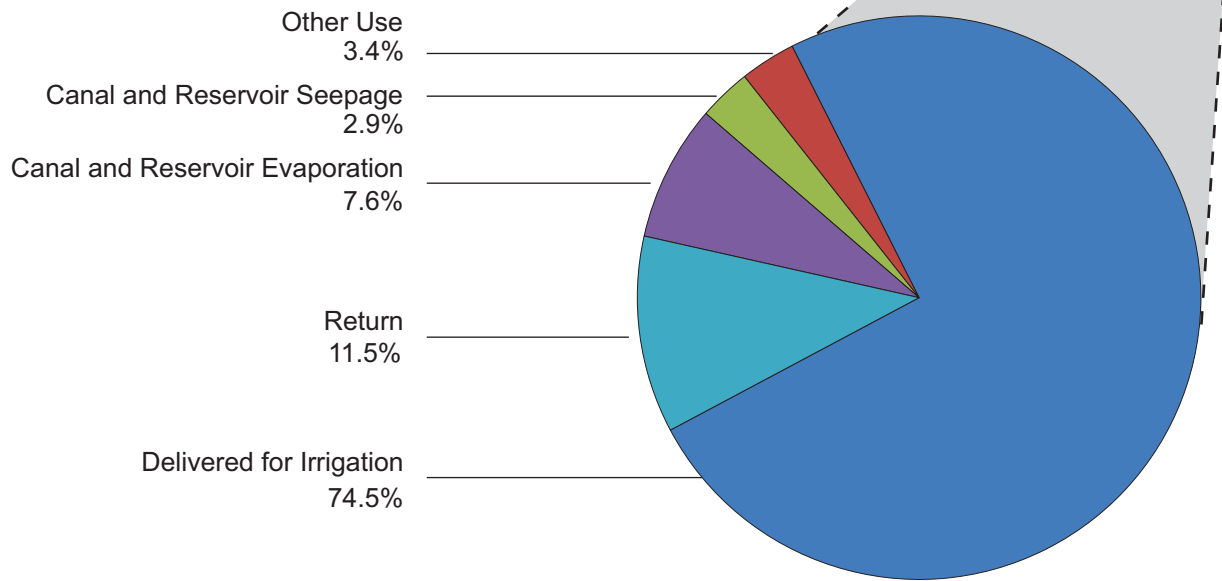


Figure 9. Irrigation Districts Water Use Productivity

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 estimated by the Potato Growers of Alberta) are tallied and then divided by the respective reported 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	1,058,900	1,074,200	2,133,100
Net District Storage Change	48,800	(22,100)	26,700
TOTAL DISTRICT USE	1,107,700	1,052,100	2,159,800
Delivered for Irrigation	841,600	767,300	1,608,900
Delivered for Other Use	32,600	40,600	73,200
Canal & Reservoir Seepage	35,500	27,700	63,200
Canal & Reservoir Evaporation	77,700	87,400	165,100
Return	120,300	129,100	249,400
TOTAL DISTRICT OPERATIONS	1,107,700	1,052,100	2,159,800



Note: Irrigation district reported values were used to estimate the water balance. Where district reporting was incomplete, Alberta Agriculture and Forestry calculated estimates.

Glossary

Gross Diversion - Volume of water diverted from a lake, reservoir or the river system by irrigation districts.

Net District Storage Change - Net volume of water removed from internal irrigation district reservoirs for use. A negative number within brackets, indicates a net increase in reservoir storage volume over the irrigation season.

Total District Use - Total volume of water used from diversion and storage.

Delivered for Irrigation - Net volume of water supplied for irrigation purposes.

Delivered for Other Use - Volume of water supplied for other uses including municipal domestic, other agricultural, industrial, and environmental uses.

Canal & Reservoir Seepage - Water lost from reservoirs and through delivery system from seepage.

Canal & Reservoir Evaporation - Water lost from evaporation from the surface of irrigation district canals and 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. Type of Conveyance Infrastructure within the 13 Irrigation Districts

Irrigation District	REHABILITATED										UN-REHABILITATED		Total Conveyance Works (km)
	Pipelines - Closed		Pipelines - Open		Membrane-Lined Canals		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	24.4	61.6%	0.2	0.6%	4.5	11.4%	0.0	0.0%	1.0	2.5%	9.4	23.9%	40
BRID	563.2	56.3%	6.2	0.6%	128.5	12.9%	6.4	0.6%	177.9	17.8%	117.4	11.7%	1000
EID	1199.0	62.2%	31.6	1.6%	254.5	13.2%	0.0	0.0%	197.3	10.2%	246.6	12.8%	1,929
LID	29.5	53.9%	0.3	0.5%	2.0	3.6%	0.0	0.0%	11.7	21.4%	11.2	20.4%	55
LNID	522.1	68.6%	10.2	1.3%	55.2	7.2%	20.6	2.7%	64.6	8.5%	88.8	11.7%	761
MID	59.8	59.0%	1.5	1.5%	1.2	1.2%	0.3	0.3%	33.7	33.3%	4.9	4.8%	101
MVID	17.0	41.0%	1.8	4.4%	0.0	0.0%	0.0	0.0%	16.9	40.8%	5.7	13.8%	41
RCID	12.2	83.2%	0.0	0.0%	0.0	0.0%	0.0	0.0%	2.5	16.8%	0.0	0.0%	15
RID	147.2	61.6%	4.0	1.7%	0.0	0.0%	0.0	0.0%	69.0	28.9%	18.6	7.8%	239
SMRID	951.3	52.6%	22.0	1.2%	65.7	3.6%	58.3	3.2%	461.9	25.5%	250.7	13.9%	1,810
TID	196.1	56.6%	10.9	3.2%	56.5	16.3%	6.5	1.9%	57.2	16.5%	19.4	5.6%	347
UID	97.8	42.3%	24.1	10.4%	13.9	6.0%	0.2	0.1%	42.6	18.4%	52.6	22.7%	231
WID	242.8	23.4%	33.6	3.2%	94.0	9.1%	5.2	0.5%	162.7	15.7%	498.0	48.1%	1,036
Total	4,062	53.4%	146	1.9%	676	8.9%	97	1.3%	1,299	17.1%	1,323	17.4%	7,604
Headworks Owned by Alberta Environment and Parks												339	
Total Length of Conveyance System in Southern Alberta (km)												7,943	

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

- the Irrigation Rehabilitation Program (IRP).
- Alberta Environment and Parks.
- district funded infrastructure projects.

Table 10. Irrigation District Infrastructure Length and Replacement Cost

IRRIGATION DISTRICTS	CONVEYANCE WORKS		DRAINAGE WORKS		MAJOR STRUCTURES		TOTAL of ALL WORKS	
	length (km)	replacement cost (\$'000)	length (km)	replacement cost (\$'000)	number of units	replacement cost (\$'000)	length (km)	replacement cost (\$'000)
AID	40	\$11,157	19	\$314	0	\$0	59	\$11,471
BRID	1000	\$366,508	757	\$15,416	22	\$97,753	1,757	\$479,677
EID	1,929	\$719,917	1,949	\$34,631	61	\$349,421	3,878	\$1,103,969
LID	55	\$12,773	5	\$160	0	\$0	60	\$12,933
LNID	761	\$265,156	247	\$7,491	2	\$2,880	1008	\$275,527
MID	101	\$26,930	163	\$5,666	0	\$0	264	\$32,596
MVID	42	\$14,440	1	\$59	0	\$0	43	\$14,499
RCID	15	\$2,848	20	\$987	1	\$135	35	\$3,970
RID	239	\$60,118	218	\$10,840	0	\$0	457	\$70,958
SMRID	1,810	\$669,878	412	\$11,351	48	\$335,617	2,222	\$1,016,846
TID	347	\$131,545	78	\$4,545	12	\$14,168	425	\$150,258
UID	231	\$75,674	58	\$1,133	11	\$16,206	289	\$93,013
WID	1,036	\$356,146	927	\$24,598	13	\$18,180	1,963	\$398,924
Total	7,604	\$2,713,089	4,853	\$117,191	170	\$834,361	12,460	\$3,664,641

NOTE: Total of All Works length values include the summation of conveyance and drainage works.
Replacement cost is based on construction and material costs that were updated in 2012.

Table 11. Irrigation District Water Licence Allocations

Irrigation District	Other Purposes* (ac-ft)	Total Licensed Volume (ac-ft)
AID	700	9,000
BRID	2,380	490,000
EID	5,000	761,000
LID	1,000	12,000
LNID	39,068	334,450
MID	740	34,000
MVID	340	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	190,500
Total	78,228	2,869,160

Note: The other purposes volumes may be used for purposes other than irrigation, as set out in the districts water licences. Other purpose uses of water volumes licensed 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. Irrigation District Infrastructure Value Condition Assessments

Works Category	Good	Fair	Poor	TOTAL
Conveyance	\$1,930,898,464	\$686,264,077	\$95,926,202	\$2,713,088,743
Drainage	\$30,002,646	\$65,222,999	\$21,965,281	\$117,190,926
Major Structures	\$535,333,457	\$291,815,624	\$7,211,834	\$834,360,915
Total	\$2,496,234,567	\$1,043,302,700	\$125,103,317	\$3,664,640,584
Proportion	68.1%	28.5%	3.4%	100%

Note: Condition assessments ratings are determined based on criteria in the Irrigation Works Condition Evaluation Guidelines. The last valuation was completed in 2012.

Table 13. Irrigation District Reservoirs

Location	Reservoir	Approximate Date of Impoundment	Irrigation Live Storage (dam ³)	Irrigation Live Storage (acre-feet)
Bow River Irrigation District	Badger	1985	57,120	46,300
	'D' Reservoir	2005	350	280
	'H' Reservoir	1953	2,790	2,260
	Lost Lake	1973/1987*	5,060	4,100
	'PFRID' Reservoir	2005	570	480
	Scope	1953	12,930	10,480
	Total storage		78,820	63,900
Eastern Irrigation District	Bantry # 1	1968	1,090	880
	Bantry # 2	1967	4,150	3,360
	Cowoki Lake	1937	8,370	6,780
	Crawling Valley	1984	94,300	76,450
	'J' Reservoir	1949/1966*	1,460	1,180
	Kitsim	1980	19,470	15,790
	Lake Newell	1914	315,300	255,610
	One Tree	1935	5,660	4,590
	Rock Lake	1956	3,990	3,240
	Rolling Hills	1940/2003*	40,640	32,950
	Snake Lake	1997	18,620	15,100
Tilley "B"	1972	21,070	17,080	
	Total storage		534,120	433,010
Lethbridge Northern Irrigation District	Park Lake	1928	1,440	1,170
	Picture Butte	1936	1,490	1,210
	Vandenburg	1992	120	90
	Total storage		3,050	2,470
Raymond Irrigation District	Corner Lake	1925	500	400
	Craddock	1925	620	500
	Factory Lake	1925	370	300
	Total storage		1,490	1,200
St. Mary River Irrigation District	Bullshead	1954	130	100
	Chin	1954	207,370	168,120
	Cross Coulee	1954	2,090	1,700
	Forty Mile	1987	100,430	81,420
	Murray	1954	30,630	24,830
	North East	1954	2,820	2,290
	Raymond	1954	1,810	1,470
	Sauder	1953/1982*	45,240	36,680
	Seven Persons	1953	900	730
	Sherburne	1952	12,190	9,880
	Stafford	1954/1982*	21,790	17,670
Yellow Lake	1952	18,130	14,700	
	Total storage		443,530	359,590
Taber Irrigation District	Fincastle	1952	3,770	3,060
	Horsefly	1950	6,370	5,170
	Taber Lake	1955	6,410	5,190
	Total storage		16,550	13,420
United Irrigation District	Cochrane Lake	1923	3,130	2,540
Western Irrigation District	Chestermere	1944	5,090	4,130
	Langdon	1979/2014*	15,750	12,770
	Total storage		20,840	16,900
Grand Total			1,101,530	893,010

Note: all reservoirs are off-stream storage sites

* denotes year of reservoir enlargement

Table 14. Provincially Owned and Operated Reservoirs Used by Irrigation

Source Supply for:	Reservoir	Approximate Date of Impoundment	Live storage (dam ³)	Live storage (acre-feet)
Bow River Irrigation District	Little Bow	1920	43,260	35,070
	McGregor	1914	351,060	284,600
	Travers *	1954	104,640	84,830
	Total Storage		498,960	454,500
Lethbridge Northern Irrigation District	Keho	1920	95,640	77,530
	Oldman River *	1991	490,180	397,390
	Total Storage		560,200	454,150
Ross Creek Irrigation District	Cavan	1950	4,630	3,750
MVID, LID, AID	Payne	1942	8,690	7,040
St. Mary Project (SMRID, MID, TID, RID)	Jensen	1948	19,000	15,400
	Milk River Ridge	1957	127,300	103,200
	St. Mary *	1951	369,310	299,400
	Waterton *	1965	111,200	90,150
	Total Storage		626,810	508,150
Other	Chain Lakes *	1966	14,680	11,900
	Twin Valley Dam *	2003	60,700	49,210
	Pine Coulee	1998	51,000	41,350
	Women's Coulee	1949	360	290
	Total Storage		126,740	102,750
Grand Total			1,826,030	1,480,340

Note: * denotes on-stream storage reservoir

Table 15. Hydroelectric Plants Associated with Irrigation Infrastructure

Location	Commission Date	Owner	Capacity (megawatts)
Oldman Reservoir	2003	ATCO Power	32
Waterton Reservoir	1992	TransAlta	3
Belly River Chute	1991	TransAlta	3
St. Mary Reservoir	1992	TransAlta	2
Taylor Coulee Chute (Jensen Reservoir)	2000	TransAlta	13
Raymond Reservoir	1994	Irrican Power	21
Chin Chute (Chin Reservoir)	1994	Irrican Power	15
SMRID - Main Canal Drops #4, #5 and #6	2004	Irrican Power	7
Total			96

Table 16. Private Water Licences for Irrigation

There are 2,908 individual irrigation projects, outside of the 13 irrigation districts, irrigating approximately 311,258 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 Forestry and the licencing is regulated by Alberta Environment and Parks.

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	18,875	99	43	14	156
NORTH SASKATCHEWAN RIVER	27,089	312	56	15	382
PEACE RIVER	3,791	65	9	1	75
SOUTH SASKATCHEWAN RIVER					
- Bow River	25,697	149	59	18	226
- Little Bow River	33,592	125	73	26	224
- Oldman River (Lower)	17,752	30	28	14	72
- Oldman River (Upper)	7,478	60	20	4	84
- Red Deer River	46,277	419	94	18	531
- South Saskatchewan River	46,857	528	81	23	632
- Waterton / Belly / St. Mary Rivers	50,266	137	71	17	225
- Willow Creek	32,724	158	79	17	254
South Saskatchewan River Total	260,643	1,606	505	137	2,248
Total	312,383	2,124	619	167	2,910

Notes: – Oldman (upper) reach is defined as upstream of the Belly River confluence
– Oldman (lower) 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 and Parks
– licence authorization as of January 2017



Figure 10. Location of Private Irrigation

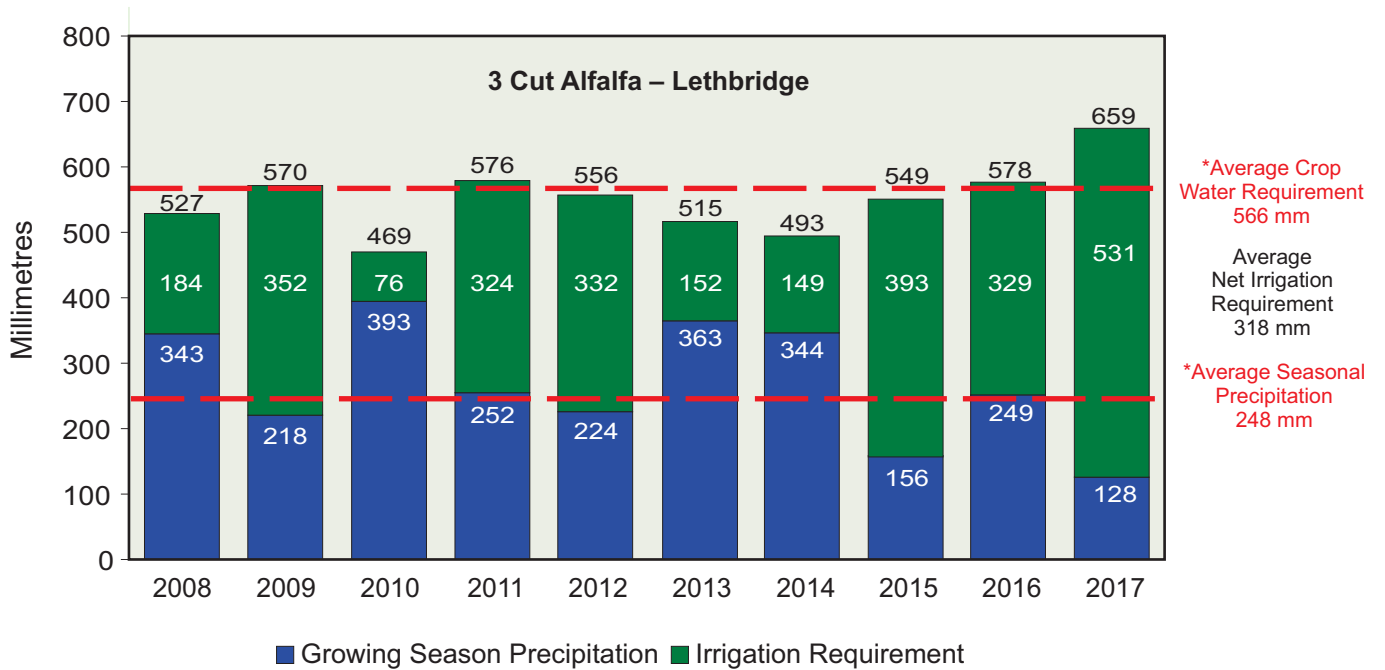


Figure 11. Lethbridge Optimum Crop Water and Net Irrigation Requirements

Note: Three cut alfalfa is used as an indicator crop because of its high water demand. 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 2016. Seasonal precipitation from May 1 to September 30.

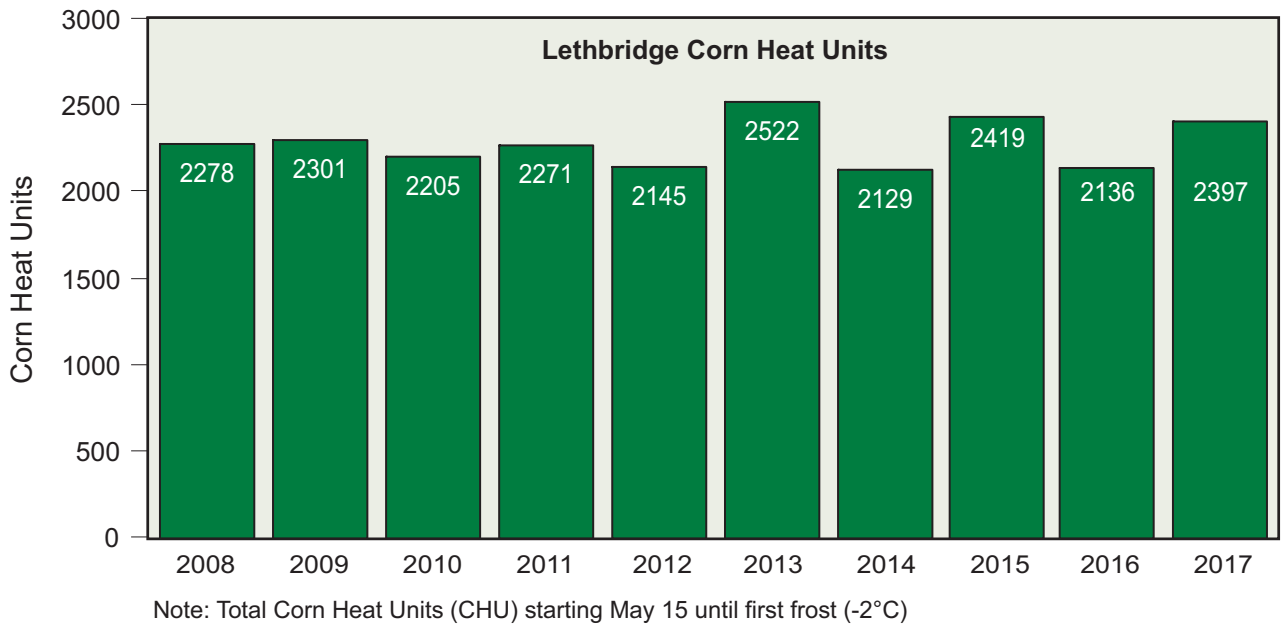


Figure 12. Lethbridge Corn Heat Units

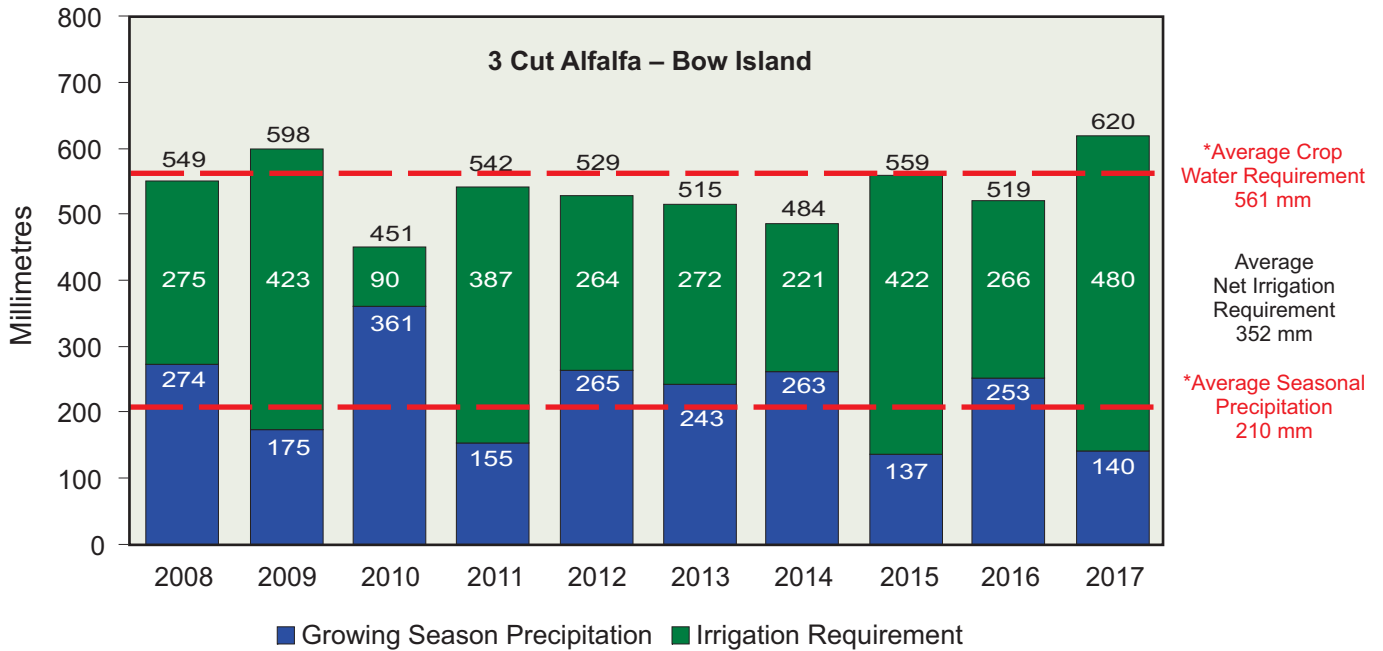
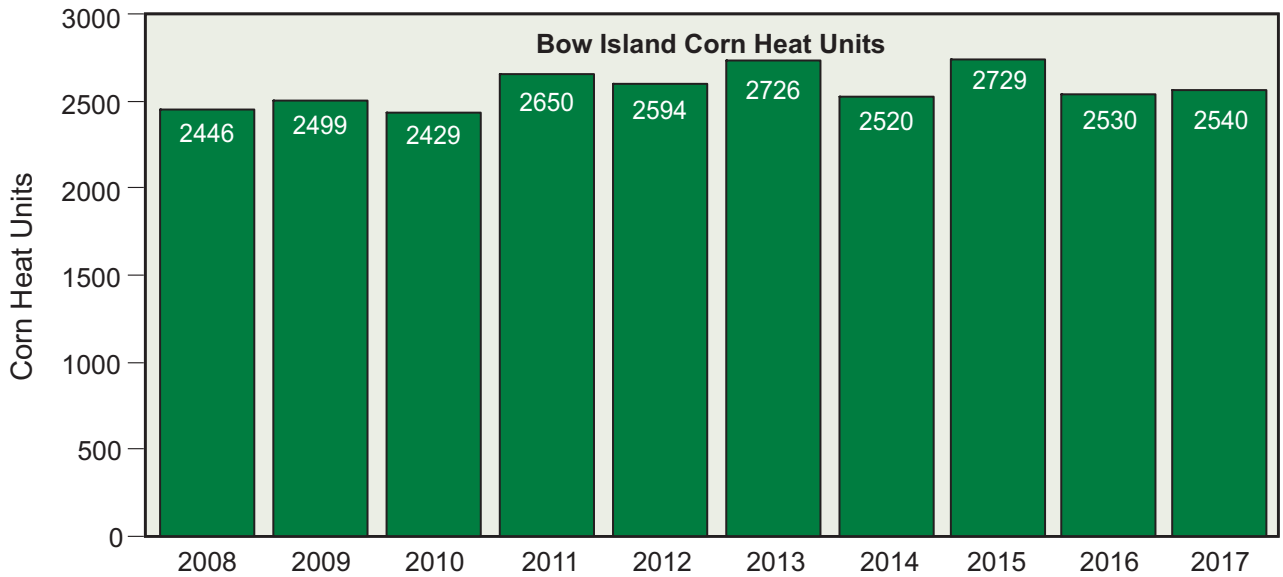


Figure 13. Bow Island Optimum Crop Water and Net Irrigation Requirements

Note: Three cut alfalfa is used as an indicator crop because of its high water demand. 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 2016. Seasonal precipitation from May 1 to September 30.



Note: Total Corn Heat Units (CHU) starting May 15 until first frost (-2°C)

Figure 14. Bow Island Corn Heat Units

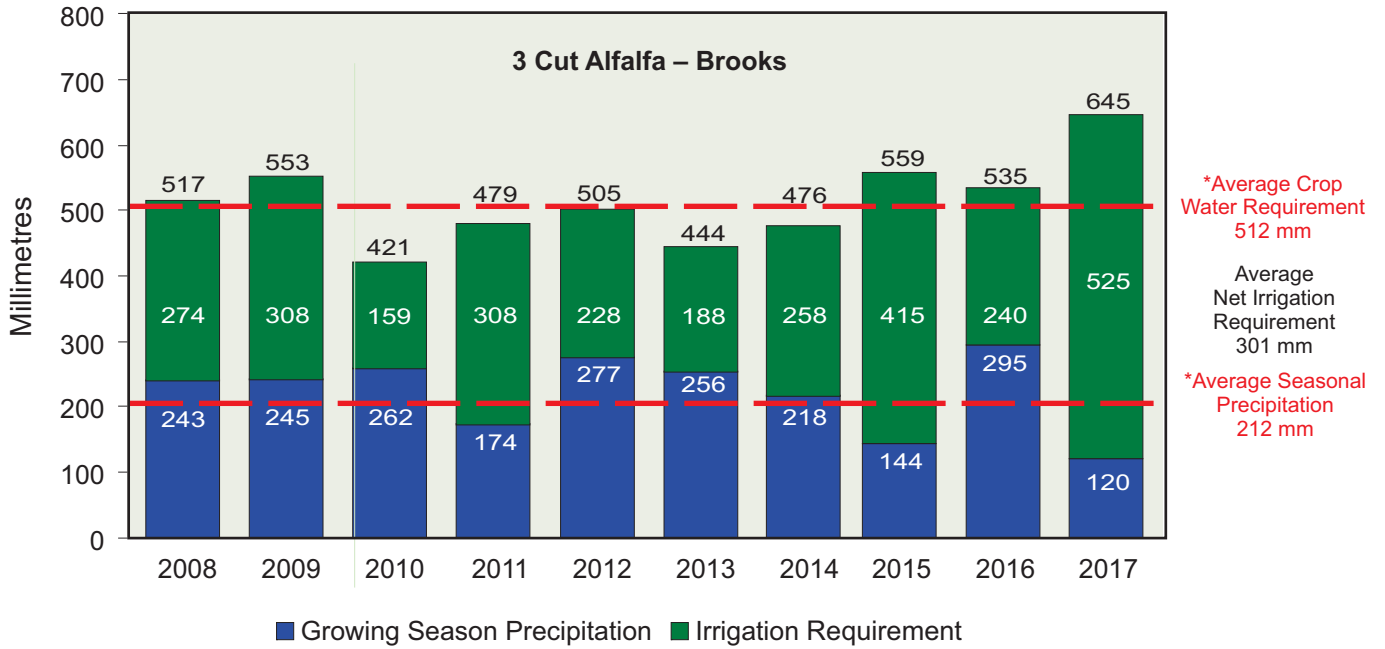


Figure 15. Brooks Optimum Crop Water and Net Irrigation Requirements

Note: Three cut alfalfa is used as an indicator crop because of its high water demand. 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 2016. Seasonal precipitation from May 1 to September 30.

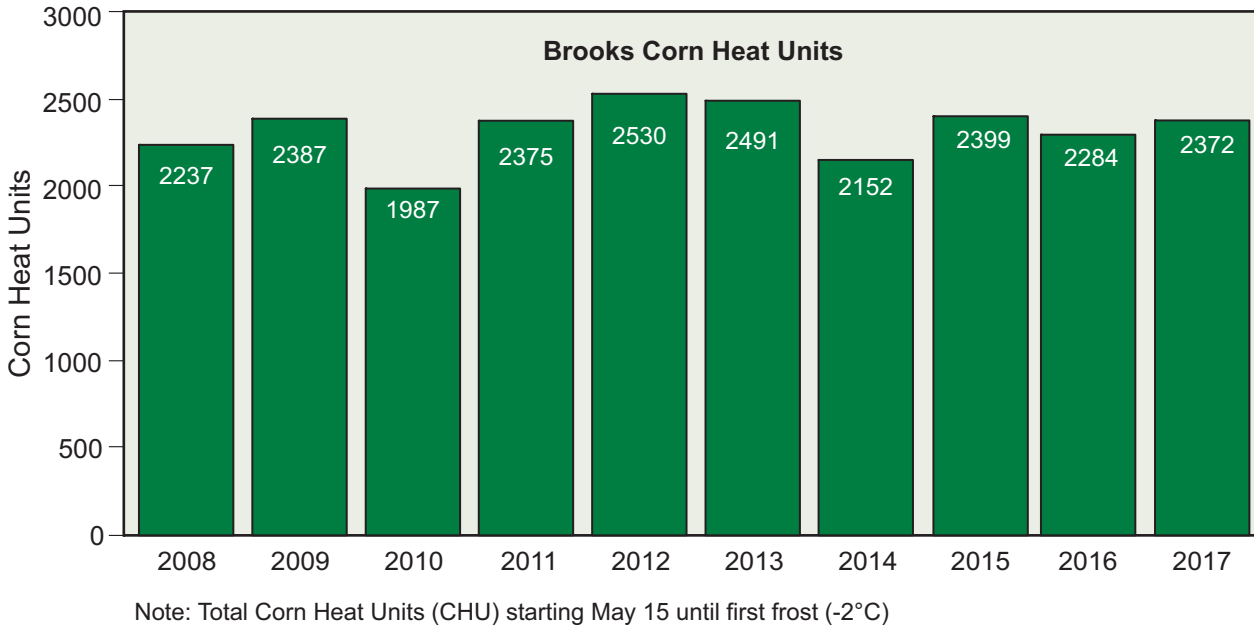


Figure 16. Brooks Corn Heat Units

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

AREA	MAXIMUM RAINFALL (mm)	MINIMUM RAINFALL (mm)	NORMAL RAINFALL* (mm)	2017 RAINFALL (mm)	2017 % OF NORMAL
Lethbridge	534 (1978)	71 (2001)	277	183	66%
Bow Island	439 (1993)	112 (2001)	255	215	84%
Brooks	484 (2005)	87 (2001)	240	162	68%

Note: * Normal rainfall: 1970 - 2017 average

Table 18. Historical Corn Heat Units in Southern Alberta (May 15 to First -2° C Frost)

AREA	MAXIMUM CHU (2008-2017)	MINIMUM CHU (2008-2017)	LAST TEN YEAR AVERAGE*	2017 CHU	2017 % OF LAST TEN YEAR AVERAGE
Lethbridge	2522 (2013)	2129 (2014)	2280	2397	105%
Bow Island	2729 (2015)	2429 (2010)	2566	2540	99%
Brooks	2530 (2012)	1987 (2010)	2321	2372	102%

Note: * Last ten year average 2008 - 2017

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

AREA	AVERAGE LAST FROST	AVERAGE FIRST FROST	AVERAGE FROST FREE DAYS*	2017 LAST FROST	2017 FIRST FROST	2017 FROST FREE DAYS	2017 % OF AVERAGE
Lethbridge	May 11	Sept 20	132	May 8	Sept 23	138	104%
Bow Island	May 11	Sept 21	134	Apr 29	Sept 15	139	104%
Brooks	May 14	Sept 19	127	Apr 29	Sept 15	139	109%

Note: * Average frost free days 1998 - 2017

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

AREA	AVERAGE LAST FROST	AVERAGE FIRST FROST	AVERAGE FROST FREE DAYS*	2017 LAST FROST	2017 FIRST FROST	2017 FROST FREE DAYS	2017 % OF AVERAGE
Lethbridge	May 3	Sept 27	147	Apr 22	Sept 24	137	106%
Bow Island	May 2	Oct 1	153	Apr 17	Sept 24	178	105%
Brooks	May 9	Sept 23	137	Apr 29	Sept 20	128	105%

Note: Average frost free days 1998 - 2017

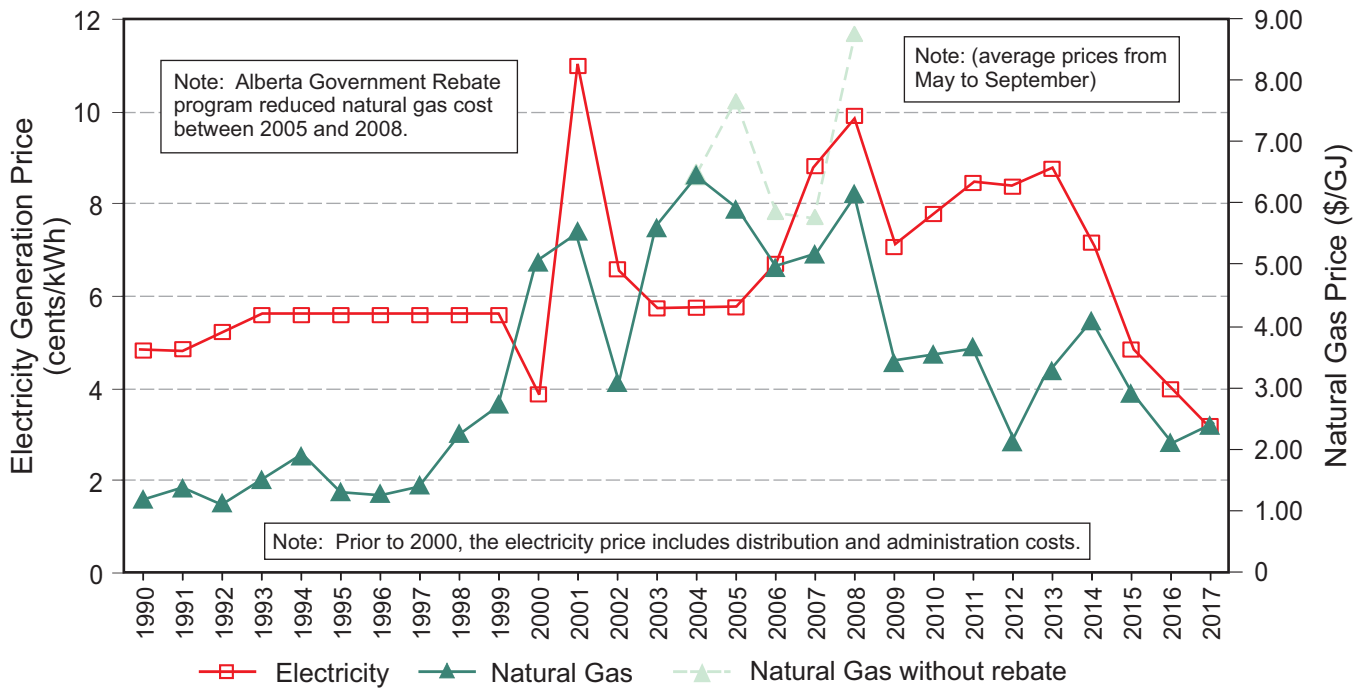
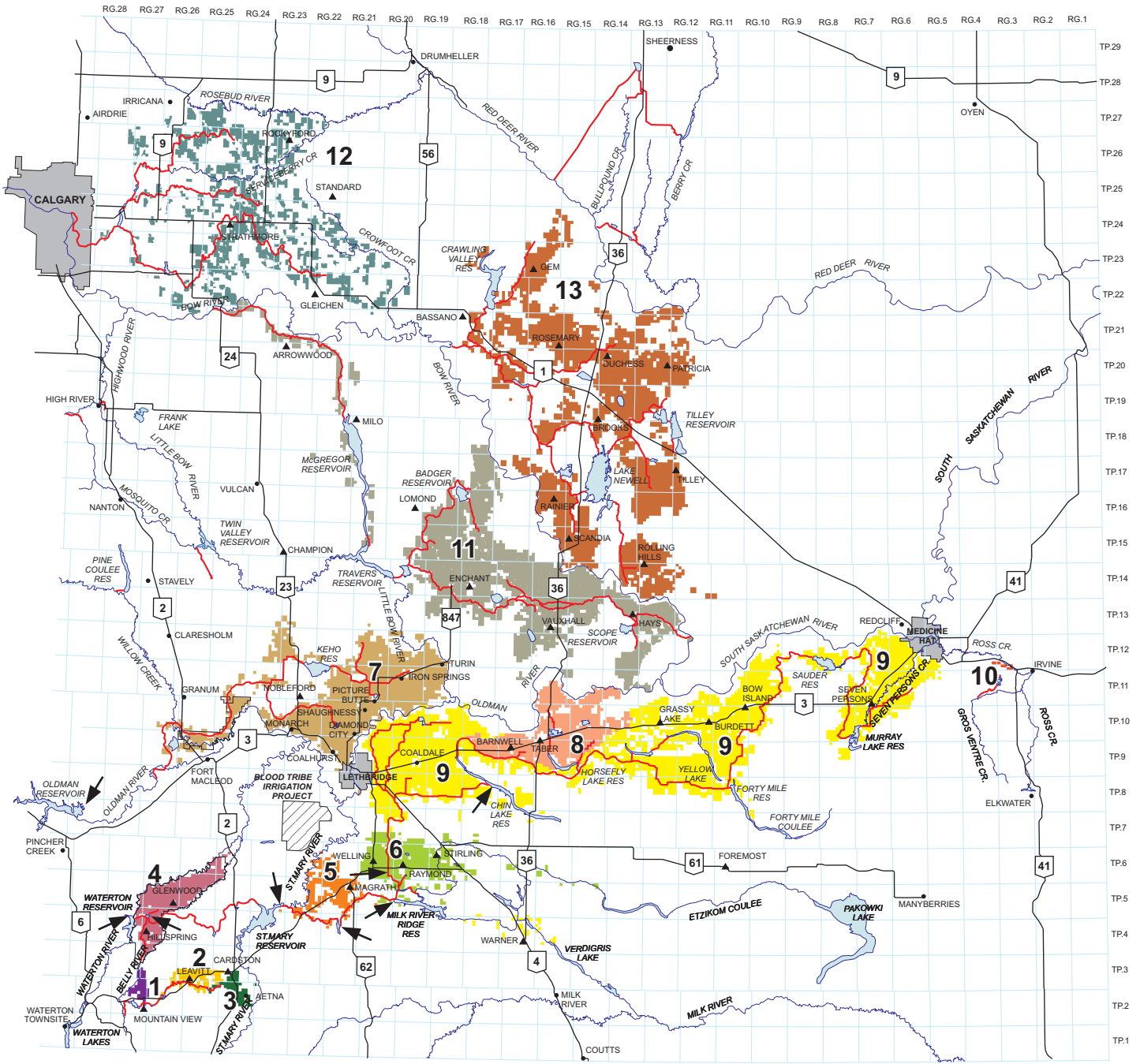


Figure 17. Historical Energy Prices for Irrigation Systems

Table 21. Energy Type Used in the Irrigation Districts’ Irrigated Areas

Energy Type	BRID	EID	LNID	MID	RCID	RID	SMRID	TID	UID	WID	Energy Type
Electricity	76.1%	53.5%	40.0%	8.2%	0	53.8%	65.0%	63.3%	37.4%	36.1%	57.4%
	184,823	161,119	73,887	1,499	0	24,390	247,447	50,907	12,746	30,100	
Natural Gas	10.8%	22.3%	29.6%	59.0%	0	33.6%	29.7%	32.1%	1.6%	29.0%	24.6%
	26,336	67,091	54,596	10,761	0	15,249	113,171	25,765	540	24,184	
Diesel	2.8%	3.3%	0.5%	0.0%	0	0.4%	0.7%	0.9%	0.4%	10.1%	2.2%
	6,787	10,091	912	0	0	204	2,598	712	132	8,431	
Gravity	4.2%	15.8%	1.4%	16.6%	0	7.4%	1.5%	2.8%	9.3%	6.5%	6.1%
	10,243	47,726	2,577	3,019	0	3,375	5,747	2,290	3,160	5,428	
Gravity Pressure Pipeline	3.7%	2.0%	18.0%	16.0%	100.0%	0.9%	2.8%	0.5%	13.2%	8.4%	5.5%
	8,985	5,935	33,311	2,921	1,075	391	10,535	400	4,508	7,041	
Pump Pressure Pipeline	0.4%	2.2%	8.9%	0.0%	0	0.0%	0.0%	0.0%	0.0%	0.3%	1.8%
	868	6,634	16,508	0	0	0	0	0	0	225	
Other*	0.5%	0.9%	0.5%	0.2%	0	1.5%	0.3%	0.3%	0.1%	6.5%	0.9%
	1,232	2,713	837	30	0	667	1,019	210	37	5,440	
Unknown	1.5%	0.0%	1.1%	0.0%	0	2.4%	0.0%	0.1%	38.1%	3.0%	1.6%
	3,716	0	1,939	0	0	1,079	162	86	12,979	2,507	
Total Acres	242,990	301,309	184,566	18,230	1,705	45,353	380,679	80,370	34,102	83,355	1,372,028

Notes: – * other includes gasoline, propane or butane
 – AID, LID, and MVID did not report any data
 – RID data is for the year 2014



- 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

- Hydroelectric plants associated with water distribution works
- Main canals

There are 13 irrigation districts in Alberta providing water to 1,435,669 assessed acres of land. The infrastructure that provides water to the irrigation districts is comprised of approximately 7,943 kilometres of conveyance system, of which 339 kilometres are owned and operated by Alberta Environment and Parks*.

* based on 2017 data

Figure 18. Alberta's Irrigation Districts

Glossary

Acres Actually irrigated: A parcel of assessed land that includes an irrigation system and received water during the current year, as reported by the irrigation districts.

Acres covered by an irrigation system: A parcel of land recorded on the assessment roll of an irrigation district as having irrigation acres and has some type of irrigation system.

Irrigated this year: A parcel of land that received irrigation water in the current year.

Not irrigated this year: A parcel of land that did not receive irrigation water in the current year.

Acres with no irrigation system: A parcel of land recorded on the assessment roll of an irrigation district as having irrigation acres without any type of system.

Assessment roll: List of all parcels in a district that have irrigation acres, and acres subject to terminable or annual agreements. To learn more about assessment rolls, please refer to *Alberta's Irrigation Districts Act*.

Canal Evaporation: Water lost through the delivery system by vaporizing from the water surface of an open channel.

Canal Seepage: Water lost through the delivery system through the sides and bottom of an open channel.

Constructed Drain: A man-made open channel or pipeline that provides a means to move unused water away from irrigation works.

Corn Heat Unit: A numerical measure of the growth response of a corn plant to daily minimum and maximum temperatures. Zero corn heat units are calculated when daily minimum temperatures are below 4.4°C and daily maximum temperatures are below 10°C. They are calculated on a daily basis and accumulated annually starting on May 15 and continuing until the first killing frost of -2°C.

Crop Water Requirement: The amount of water a crop needs to transpire in response to meteorological conditions.

Crop Type: Plants that are grown in the irrigation districts are grouped into five categories: cereals, forages, oil seeds, specialty crops, and other.

Cereals: Annual grasses grown for their grain. Crops reported include barley, Canada Prairie Spring (CPS) wheat, durum wheat, grain corn, hard red spring wheat, malt barley, oats, rye, soft wheat, triticale, and winter wheat.

Forages: Plants that are consumed by livestock. Crops reported include alfalfa (two & three cut, hay, and silage), barley silage, brome hay, corn silage, grass hay, green feed, milk vetch, native pasture, oats silage, sorghum/sudan grass, tame pasture, timothy hay, and triticale silage.

Oil Seeds: Plants that are grown for the oil contained in the seeds. Crops reported include canola, flax, mustard and safflower.

Specialty Crops: Include fruits and vegetables, horticulture, seed production, pulse crops, and nursery crops. Crops reported include alfalfa seed, canola seed, carrots, catnip, chick peas, dill, dry beans, dry peas, faba beans, fresh sweet corn, fresh peas, grass seed, hemp, lawn turf, lentils, market gardens, mint, nursery, onions, potatoes, pumpkins, seed potatoes, small fruit, soy beans, sugar beets, sunflower and yellow peas.

Other: Other reported include miscellaneous, non-crop, summer fallow, and unknown.

Delivered for Irrigation: Any water delivered by an irrigation district for irrigation purposes.

Delivered for Other Use: Any water delivered by an irrigation district for a use other than irrigation; this includes municipal, domestic, other agricultural, industrial, and environmental uses.

Expansion Limit: The maximum number of irrigation acres plus acres subject to a terminable agreement in an irrigation district; the total irrigated area of an irrigation district cannot exceed this limit as per the *Irrigation Districts Act*.

Frost Free Period (0°C): Continuous number of days where the minimum daily temperature does not drop below 0°C.

Frost Free Period (-2°C): Continuous number of days where the minimum daily temperature does not drop below -2°C.

Gross Annual Diversion: All water diverted into the works of an irrigation district from a water source. It includes water used directly for irrigation purposes, reservoir filling, and the water supplied or licenced to municipal, domestic, other agricultural, industrial, and environmental uses, as well as losses through seepage and evaporation.

Irrigation District: A corporation that operates under the authority of the *Alberta Irrigation Districts Act* whose primary purpose is to convey and deliver water through irrigation works, divert and use quantities of water within the terms of its licence, and to construct, operate and maintain irrigation works. An irrigation district is the geographical area consisting of the parcels of land included in the district.

Irrigation District Irrigation Rate: The annual amount charged by an irrigation district per irrigation acre of land for irrigation water delivery. Some districts levy additional surcharges for services including pipeline and/or pressurized delivery, using more water than allocated, and automated screen cleaning.

Irrigation District Works: Any structure, device, or artificial body of water or watercourse used or to be used by a district.

Membrane-lined canal: An open channel that has been lined with a membrane material to prevent water seepage.

Concrete-lined canal: An open channel that has been constructed with concrete to prevent water seepage.

Earth canal: An open channel that has been constructed with a natural low porosity material that reduces water seepage.

Closed pipeline: A buried conduit that is closed at the outlet.

Open pipeline: A buried conduit that is open at the outlet.

Irrigation method: On-farm technique and system used to apply irrigation water to an irrigated field. Irrigation systems are grouped into five categories: high pressure pivot sprinkler, low pressure pivot sprinkler, wheel move sprinkler, gravity, and other.

High pressure pivot sprinkler includes:

Pivot high pressure: Centre pivot irrigation system with high pressure (greater than 50 pounds per square inch (psi) impact sprinklers.

Pivot high pressure – corner arm: Centre pivot irrigation system with high pressure (greater than 50 psi) impact sprinklers with the addition of a secondary pivotal arm connected to the end of the centre pivot boom.

Linear – high pressure: Linear move irrigation pivot system with high pressure (greater than 50 psi) impact sprinklers that irrigate a rectangular field.

Low pressure pivot sprinkler includes:

Pivot medium pressure: Centre pivot irrigation system with medium pressure (between 30 and 50 psi) impact sprinklers.

Pivot medium pressure – corner arm: Centre pivot irrigation system with medium pressure (between 30 and 50 psi) impact sprinkler nozzles with the addition of a secondary pivotal arm connected to the end of the centre pivot boom.

Pivot low pressure: Centre pivot irrigation system with low pressure (less than 30 psi) spray nozzles.

Pivot low pressure – corner arm: Centre pivot irrigation system with low pressure (less than 30 psi) spray nozzles with the addition of a secondary pivotal arm connected to the end of the centre pivot boom.

Linear – low pressure: Linear move pivot irrigation system with low pressure (less than 30 psi) spray nozzles that irrigates a rectangular field.

Wheel move includes:

Wheel move – two laterals: Two wheel mounted pipelines with sprinklers along their length per parcel of land.

Wheel move – four laterals: Four wheel mounted pipelines with sprinklers along their length per parcel of land.

Gravity includes:

Gravity – developed: surface irrigation system with some land modification (leveling plus construction of border strips, furrows, basin), where the soil surface is used to distribute and infiltrate the applied water.

Gravity undeveloped: surface irrigation system without any land modification (leveling) or application control (furrows, border strips, dykes).

Other includes:

Volume gun – stationary: Large volume sprinkler stationed at a single point.

Volume gun – traveller: Large volume sprinkler mounted on wheels.

Solid set: Sprinklers mounted on risers connected to a buried pipe.

Hand move: Sprinklers mounted on risers connected to a surface pipe that can be moved.

Micro – spray – sprinkler: Spray emitter connected to a drip irrigation system.

Micro – drip – trickle: Drip emitter connected to a drip irrigation system.

Other application use: Water used for purposes other than irrigation.

Natural Drain: An open channel that exists as a natural watercourse that provides a means to move unused water away from irrigation works.

Net District Storage Change: Net volume of water removed from internal irrigation district reservoirs for use. Irrigation districts own and operate reservoirs to store irrigation water for release when there is insufficient diversion capacity to meet the demand for water. They are also used for normal district operations to stabilize flows and capture unused water for further use.

Net Irrigation Requirement: The amount of water supplied by irrigation to meet the crop water requirement.

Percent of Licence: The percentage of the irrigation district's water licence volume that was diverted in a year.

Replacement Cost: The cost in today's dollars to restore a piece of irrigation district infrastructure.

Reservoir Evaporation: Water lost from the surface of a reservoir by vaporization.

Reservoir Seepage: Water lost from a reservoir through seepage.

Return: Water returned by an irrigation district to the river system.

Water Licence (Irrigation): Includes irrigation district and private licences.

Irrigation District Water Licence: An authorization which permits the irrigation district to divert a certain volume of water, at a specific rate, from a watercourse into district owned conveyance and storage systems.

Private Irrigation Water Licence: An authorization which permits a private irrigator to divert a certain volume of water, at a specific rate, from a watercourse to a private irrigation development project.

Water Licence Allocation (Irrigation District): The total volume of water that an irrigation district is licenced to divert annually.