Alberta irrigation information 2023

Alberta

The purpose of this publication is to provide a statistical overview of irrigation information and data primarily relating to the irrigation districts situated in Alberta, but also includes information about irrigation across the whole province. The majority of the annual data are provided by the Alberta irrigation districts.

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Irrigation Districts Abbreviations

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
SWID – Southwest Irrigation District
TID – Taber Irrigation District
UID – United Irrigation District
WID – Western Irrigation District

Unit Conversion

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

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

Other

1 m^3 = 1000 L
1 dam^3 = 1000 m^3

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TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		BRID		EID		LNID		MID	
		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	21,468	379	17,309	25	16,848	n/a	642	20
	CPS Wheat	5,913		601		897	n/a		
	Durum Wheat	28,193	157	10,791	48	7,480	n/a	5	
	Grain Corn	9,055		7,363	4	272	n/a		
	Hard Spring Wheat	44,273	24	55,743	75	4,120	n/a	3,772	25
	Malt Barley	718		308		149	n/a		
	Miscellaneous Cereals								
	Oats	2,674	97	2,898	13	823	n/a	30	
	Rye	6,672	44	1,044		6,736	n/a		
	Soft Wheat	5,970	75	1,797	460	17,836	n/a		
	Triticale	1,479	44	7,223		772	n/a		
	Winter Wheat	2,160	136	2,280		6,567	n/a	78	
FORAGES	Alfalfa - Two cuts	108		32,842	279	7,441	n/a		
	Alfalfa - Three cuts			5,484		3,446	n/a		
	Alfalfa Hay	8,645	149	2,089		11,463	n/a	7,220	295
	Alfalfa Silage	95		182		4,030	n/a		
	Barley Silage	4,529		2,054		22,749	n/a	130	
	Barley Silage (Underseeded)	100		2,579		207	n/a		
	Brome Hay					172	n/a		
	Corn Silage	13,093	68	19,767		27,937	n/a	140	
	Custom Variety Forage / Misc.			641					
	Grass Hay	6,816	50	13,513	250	5,237	n/a	468	20
	Green Feed	438		7,092	36			142	80
	Native Pasture	80		1,456	183	138	n/a		
	Oats Silage					193	n/a		
	Sorghum/Sudan Grass	7		432					
	Tame Pasture	9,415	14	32,182	1,907	3,200	n/a	1,335	245
	Timothy Hay			5,249		7,898	n/a		
	Other Silage (Triticale, Wheat)								
OIL SEEDS	Canola	13,198	22	25,827	35	25,415	n/a	2,832	363
	Flax	1,381		2,318		937	n/a	139	
	Mustard	248		152		137	n/a		

Note: LNID - n/a or not applicable - district does not separate out irrigated and not irrigated acres.

TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		BRID		EID		LNID		MID	
		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
SPECIALTY CROPS	Alfalfa Seed	4,962		12,851	77	143	n/a		
	Canary Seed								
	Canola Seed	22,155	68	12,601	127	4,469	n/a	60	
	Carrots			423					
	Catnip								
	Chick Peas	622							
	Dill			250					
	Dry Beans	16,490	7	3,109		78	n/a		
	Dry Peas	13,294		6,416	18	804	n/a		
	Faba Beans	614	153	1,951		150	n/a		
	Fresh Corn (Sweet)	32		57					
	Fresh Peas					150	n/a		
	Grass Seed	1,404	43	150		258	n/a	260	
	Hemp	1,444		1,040		1,786	n/a		
	Lawn Turf (Turf Sod)					803	n/a		
	Lentils	163							
	Market Gardens	22		536		48	n/a		
	Mint			125					
	Nursery	13		376	51	162	n/a		
	Onions					155	n/a		
	Potatoes	15,025		6,670		3,206	n/a		
	Quinoa	139				209	n/a		
	Seed Potatoes	581		701		142	n/a		
	Soybeans			530					
	Sugar Beets	10,133		614		1,849	n/a		
	Sunflower	279	16	1,129		31	n/a		
	Yellow Peas								
OTHER	Miscellaneous	533	30	1,109		909	n/a		
	Non Crop				146	86	n/a		
	Summer Fallow	122	19	60	59	146	n/a		
TOTAL ACRES		274,754	1,594	311,914	3,793	198,681	n/a	17,252	1,048
		276,348		**315,707**		**198,681**		**18,300**	

Note: LNID - n/a or not applicable - district does not separate out irrigated and not irrigated acres.

TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		MVID		RCID		RID		SMRID	
		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	816	109			10,260		32,212	43
	CPS Wheat					290		3,724	
	Durum Wheat			555	n/a	3,166	88	47,500	
	Grain Corn							6,507	
	Hard Spring Wheat		125			4,180	130	38,020	
	Malt Barley							143	
	Miscellaneous Cereals								
	Oats		16			316		1,457	
	Rye							6,121	
	Soft Wheat					235		12,747	28
	Triticale		41			130		2,906	
	Winter Wheat					1,296		15,592	
FORAGES	Alfalfa - Two cuts					1,920		2,691	
	Alfalfa - Three cuts					5,975		10,789	
	Alfalfa Hay	523	754	231	n/a	2,661	102	17,046	34
	Alfalfa Silage							4,549	
	Barley Silage					2,206		9,146	91
	Barley Silage (Underseeded)							412	
	Brome Hay							235	
	Corn Silage					3,572		35,125	
	Custom Variety Forage / Misc.								
	Grass Hay	214	300			740		9,508	76
	Green Feed	36	58	200	n/a	113		3,411	
	Native Pasture					1,225	216	3,625	153
	Oats Silage							248	
	Sorghum / Sudan Grass							260	
	Tame Pasture	576				810	182	8,509	275
	Timothy Hay	164				1,757		11,159	
	Other Silage (Triticale, Wheat)			78	n/a			963	
OIL SEEDS	Canola					10,284	20	48,441	
	Flax						124	3,996	
	Mustard							1,453	

Note: RCID - n/a or not applicable - district does not separate out irrigated and not irrigated acres.

TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		MVID		RCID		RID		SMRID	
		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
SPECIALTY CROPS	Alfalfa Seed							753	
	Canary Seed							337	
	Canola Seed							21,159	
	Carrots							604	
	Catnip							180	
	Chick Peas							996	
	Dill							1,054	
	Dry Beans							28,004	
	Dry Peas					574		7,391	
	Faba Beans					131		1,108	
	Fresh Corn (Sweet)							2,747	
	Fresh Peas							4,070	
	Grass Seed							1,108	
	Hemp					577		3,260	
	Lawn Turf (Turf Sod)					42		615	
	Lentils					398		1,929	20
	Market Gardens					101		540	
	Mint							4,090	
	Nursery					37		550	
	Onions							1,301	
	Potatoes					187		41,569	
	Quinoa								
	Seed Potatoes					124			
	Soybeans								
	Sugar Beets							12,514	
	Sunflower							1,463	
	Yellow Peas							1,554	
OTHER	Miscellaneous					40		2,910	
	Non Crop							816	380
	Summer Fallow							550	35
TOTAL ACRES		2,330	1,403	1,064	n/a	53,348	862	481,666	1,134
		3,733		**1,064**		**54,210**		**482,800**	

Note: RCID - n/a or not applicable - district does not separate out irrigated and not irrigated acres.

TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		SWID		UID		WID	
		Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year
CEREALS	Barley	1,265	n/a	8,658	n/a	7,810	453
	CPS Wheat			1,277	n/a	2,008	37
	Durum Wheat					292	
	Grain Corn					572	
	Hard Spring Wheat	560	n/a	1,640	n/a	17,840	1,060
	Malt Barley			280	n/a	1,542	
	Miscellaneous Cereals						
	Oats	133	n/a	10	n/a	376	
	Rye					1,677	
	Soft Wheat					3,340	
	Triticale			135	n/a		
	Winter Wheat			1,301	n/a	130	
FORAGES	Alfalfa - Two cuts			2,648	n/a	10,726	339
	Alfalfa - Three cuts			2,205	n/a	134	
	Alfalfa Hay	3,106	n/a	156	n/a	2,061	100
	Alfalfa Silage			3	n/a	240	
	Barley Silage			3,116	n/a	6,203	150
	Barley Silage (Underseeded)			50	n/a	823	
	Brome Hay					158	
	Corn Silage	40	n/a			410	
	Custom Variety Forage / Misc.						
	Grass Hay			1,071	n/a	1,074	524
	Green Feed	907	n/a	342	n/a	1,483	78
	Native Pasture					1,652	1,846
	Oats Silage					533	2
	Sorghum / Sudan Grass						
	Tame Pasture	1,290	n/a	4,667	n/a	1,429	107
	Timothy Hay	65	n/a	952	n/a	1,739	
	Other Silage (Triticale, Wheat)					1,472	240
OIL SEEDS	Canola	512	n/a	5,998	n/a	13,783	778
	Flax						
	Mustard						

Note: SWID and UID - n/a or not applicable - district does not separate out irrigated and not irrigated acres.

TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		SWID		UID		WID	
		Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year	Irrigated this year	Not irrigated this year
SPECIALTY CROPS	Alfalfa Seed						
	Canary Seed						
	Canola Seed						
	Carrots					58	
	Catnip						
	Chick Peas						
	Dill						
	Dry Beans						
	Dry Peas			142	n/a	1,573	180
	Faba Beans					297	
	Fresh Corn (Sweet)						
	Fresh Peas						
	Grass Seed					150	
	Hemp						
	Lawn Turf (Turf Sod)					2,663	
	Lentils						
	Market Gardens			9	n/a	60	
	Mint						
	Nursery					936	520
	Onions						
	Potatoes			5	n/a	260	
	Quinoa						
	Seed Potatoes					562	
	Soybeans						
	Sugar Beets						
	Sunflower						
	Yellow Peas						
OTHER	Miscellaneous	263	n/a	153	n/a	103	84
	Non Crop			2	n/a	378	1,571
	Summer Fallow					30	
TOTAL ACRES		8,142	n/a	34,817	n/a	86,577	8,069
		8,142		**34,817**		**94,646**	

Note: SWID and UID - n/a or not applicable - district does not separate out irrigated and not irrigated acres.

TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		ALL DISTRICTS		TOTAL ACRES (ALL DISTRICTS)
		Irrigated this year	Not irrigated this year	
CEREALS	Barley	117,288	1,028	**118,316**
	CPS Wheat	14,710	37	**14,747**
	Durum Wheat	97,982	293	**98,275**
	Grain Corn	23,769	4	**23,773**
	Hard Spring Wheat	170,148	1,439	**171,587**
	Malt Barley	3,139		**3,139**
	Miscellaneous Cereals			
	Oats	8,716	126	**8,842**
	Rye	22,250	44	**22,294**
	Soft Wheat	41,925	563	**42,488**
	Triticale	12,645	86	**12,730**
	Winter Wheat	29,404	136	**29,540**
FORAGES	Alfalfa - Two cuts	58,376	618	**58,994**
	Alfalfa - Three cuts	28,033		**28,033**
	Alfalfa Hay	55,201	1,434	**56,636**
	Alfalfa Silage	9,098		**9,098**
	Barley Silage	50,133	241	**50,373**
	Barley Silage (Underseeded)	4,172		**4,172**
	Brome Hay	565		**565**
	Corn Silage	100,084	68	**100,152**
	Custom Variety Forage / Misc.	641		**641**
	Grass Hay	38,641	1,220	**39,862**
	Green Feed	14,164	252	**14,416**
	Native Pasture	8,176	2,398	**10,574**
	Oats Silage	974	2	**976**
	Sorghum/Sudan Grass	699		**699**
	Tame Pasture	63,413	2,729	**66,142**
	Timothy Hay	28,984		**28,984**
	Other Silage (Triticale, Wheat)	2,513	240	**2,753**
OIL SEEDS	Canola	146,290	1,218	**147,508**
	Flax	8,771	124	**8,895**
	Mustard	1,990		**1,990**

Note: LNID, RCID, SWID and UID - district does not separate out irrigated and not irrigated acres.

TABLE 1. CROPS GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE		ALL DISTRICTS		TOTAL ACRES (ALL DISTRICTS)
		Irrigated this year	Not Irrigated this year	
SPECIALTY CROPS	Alfalfa Seed	18,708	77	**18,785**
	Canary Seed	337		**337**
	Canola Seed	60,444	195	**60,638**
	Carrots	1,085		**1,085**
	Catnip	180		**180**
	Chick Peas	1,618		**1,618**
	Dill	1,304		**1,304**
	Dry Beans	47,681	7	**47,687**
	Dry Peas	30,194	198	**30,392**
	Faba Beans	4,250	153	**4,404**
	Fresh Corn (Sweet)	2,836		**2,836**
	Fresh Peas	4,220		**4,220**
	Grass Seed	3,330	43	**3,373**
	Hemp	8,106		**8,106**
	Lawn Turf (Turf Sod)	4,124		**4,124**
	Lentils	2,489	20	**2,509**
	Market Gardens	1,315		**1,315**
	Mint	4,215		**4,215**
	Nursery	2,073	571	**2,644**
	Onions	1,456		**1,456**
	Potatoes	66,922		**66,922**
	Quinoa	348		**348**
	Seed Potatoes	2,110		**2,110**
	Soybeans	530		**530**
	Sugar Beets	25,111		**25,111**
	Sunflower	2,901	16	**2,916**
	Yellow Peas	1,554		**1,554**
OTHER	Miscellaneous	6,020	114	**6,134**
	Non-Crop	1,282	2,097	**3,379**
	Summer Fallow	908	113	**1,021**
TOTAL ACRES		1,470,545	17,903	**1,488,448**
		1,488,448		

Note: LNID, RCID, SWID and UID - district does not separate out irrigated and not irrigated acres.

TABLE 2. CROP TYPES GROWN WITHIN THE IRRIGATION DISTRICTS

CROP TYPE	BRID	EID	LNID	MID	MVID	RCID	RID	SMRID	SWID	UID	WID	TOTAL ACRES
CEREALS	129,532	107,982	62,499	4,571	1,107	555	20,090	166,999	1,958	13,300	37,137	545,731
	46.9%	34.2%	31.5%	25.0%	29.6%	52.2%	37.1%	34.6%	24.1%	38.2%	39.2%	36.7%
FORAGES	43,607	128,217	94,109	10,075	2,626	509	21,480	118,305	5,408	15,209	33,523	473,070
	15.8%	40.6%	47.4%	55.1%	70.4%	47.8%	39.6%	24.5%	66.4%	43.7%	35.4%	31.8%
OIL SEEDS	14,849	28,332	26,489	3,334	0	0	10,428	53,890	512	5,998	14,561	158,393
	5.4%	9.0%	13.3%	18.2%	0.0%	0.0%	19.2%	11.2%	6.3%	17.2%	15.4%	10.6%
SPECIALTY CROPS	87,655	49,802	14,442	320	0	0	2,171	138,916	0	156	7,259	300,721
	31.7%	15.8%	7.3%	1.7%	0.0%	0.0%	4.0%	28.8%	0.0%	0.4%	7.7%	20.2%
OTHER	704	1,374	1,140	0	0	0	40	4,691	263	155	2,166	10,534
	0.3%	0.4%	0.6%	0.0%	0.0%	0.0%	0.1%	1.0%	3.2%	0.4%	2.3%	0.7%
TOTAL	**276,348**	**315,707**	**198,681**	**18,300**	**3,733**	**1,064**	**54,210**	**482,800**	**8,142**	**34,817**	**94,646**	**1,488,448**

Note: Other includes miscellaneous, non-crop, summer fallow and unknown crops.

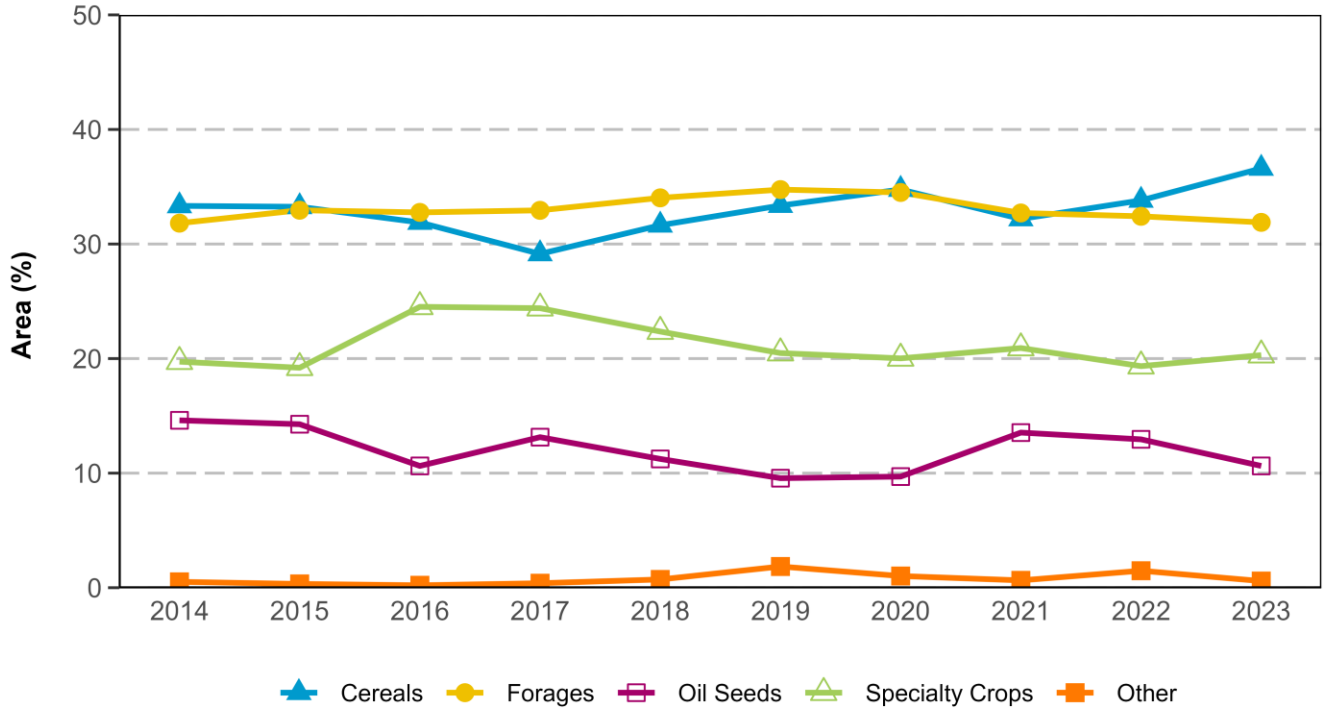


FIGURE 1. IRRIGATED CROP TYPES WITHIN THE IRRIGATION DISTRICTS IN THE LAST 10 YEARS

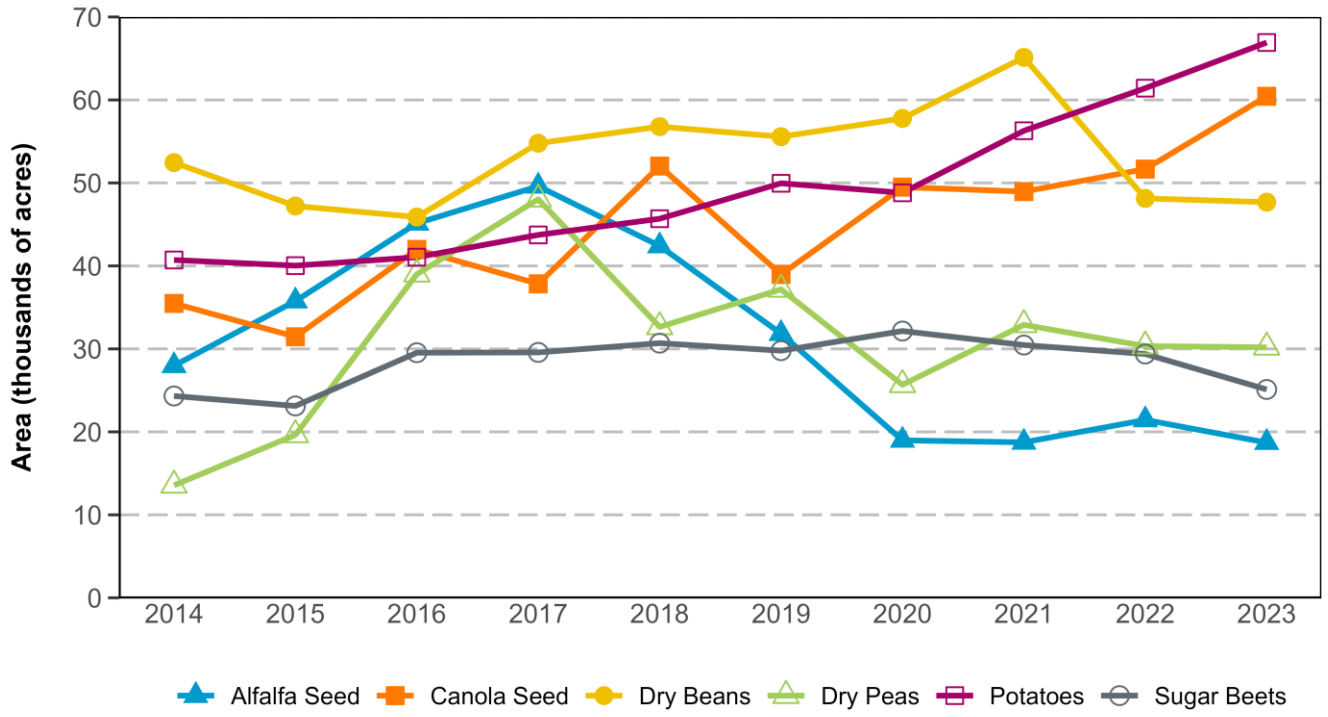


FIGURE 2. ACRES OF MAJOR IRRIGATED SPECIALTY CROPS WITHIN THE IRRIGATION DISTRICTS IN THE LAST 10 YEARS

TABLE 3. ON-FARM IRRIGATION METHOD ACRES WITHIN THE IRRIGATION DISTRICTS

	IRRIGATION METHOD	BRID	EID	LNID	MID	MVID	RCID	RID
LOW PRESSURE PIVOT	Pivot Low Pressure	165,721	214,504	77,183	8,313		849	34,339
	Pivot Low Pressure - Corner Arm	79,340	30,440	100,854	140			2,484
	Linear - Low Pressure	56	2,222	520				902
	Pivot Medium Pressure	731	4,188	226				1,814
	Pivot Medium Pressure - Corner Arm	448	386					
	Pivot LEPA / LESA / PMDI		1,582					
	Pivot LEPA / LESA - Corner Arm		2,468					
	Percent of total -----	89.1%	81.0%	90.0%	46.2%	0.0%	79.8%	72.9%
HIGH PRESSURE PIVOT	Pivot High Pressure	15,347	14,347		2,186	1,425	67	2,145
	Pivot High Pressure - Corner Arm	2,590	1,206	153				
	Linear - High Pressure		217					
	Percent of total -----	6.5%	5.0%	0.1%	11.9%	38.2%	6.3%	4.0%
WHEEL MOVE	Wheel Move - One and Two Laterals	3,211	9,456	7,887	4,537	337	118	5,942
	Wheel Move - Three and Four Laterals	679	1,789	8,309				1,027
	Percent of total -----	1.4%	3.6%	8.2%	24.8%	9.0%	11.1%	12.9%
SURFACE (GRAVITY)	Surface (Gravity) - Developed	6,676	26,159	441	2,905			1,419
	Surface (Gravity) - Undeveloped	1,206	6,080	470		1,971		3,966
	Percent of total -----	2.9%	10.2%	0.5%	15.9%	52.8%	0.0%	9.9%
OTHER	Volume Gun - Stationary							10
	Volume Gun - Traveller	25	207	150			30	
	Solid Set (Underground sprinkler)			691	25			43
	Hand Move (Sprinkler above ground)	124	456	812	174			48
	Micro - Spray - Sprinkler			41				17
	Micro - Drip - Trickle				20			30
	Subsurface - Subsurface Drip			944				
	Other Application Use	194						25
	Percent of total -----	0.1%	0.2%	1.3%	1.2%	0.0%	2.8%	0.3%
Total Acres with Irrigation System		276,348	315,707	198,681	18,300	3,733	1,064	54,211
No Irrigation System or Not Reported								
TOTAL		**276,348**	**315,707**	**198,681**	**18,300**	**3,733**	**1,064**	**54,211**

TABLE 3. ON-FARM IRRIGATION METHOD ACRES WITHIN THE IRRIGATION DISTRICTS

	IRRIGATION METHOD	SMRID	SWID	UID	WID	Individual Method Total	Total Acres
LOW PRESSURE PIVOT	Pivot Low Pressure	350,424	4,577	19,553	68,624	944,087	1,263,374
	Pivot Low Pressure - Corner Arm	76,947		954	6,988	298,147	
	Linear - Low Pressure	1,559		81	120	5,460	
	Pivot Medium Pressure	3,238	60			10,257	
	Pivot Medium Pressure - Corner Arm	500				1,334	
	Pivot LEPA / LESA / PMDI	40				1,622	
	Pivot LEPA / LESA - Corner Arm					2,468	
	Percent of total -----	89.6%	57.0%	59.1%	80.0%		84.9%
HIGH PRESSURE PIVOT	Pivot High Pressure	14,931		330	2,312	53,090	59,760
	Pivot High Pressure - Corner Arm	2,421				6,369	
	Linear - High Pressure	84				301	
	Percent of total -----	3.6%	0.0%	0.9%	2.4%		4.0%
WHEEL MOVE	Wheel Move - One and Two Laterals	19,895	2,128	1,209	6,909	61,629	80,556
	Wheel Move - Three and Four Laterals	5,186		167	1,771	18,928	
	Percent of total -----	5.2%	26.1%	4.0%	9.2%		5.4%
SURFACE (GRAVITY)	Surface (Gravity) - Developed	943		1,556	85	40,185	74,509
	Surface (Gravity) - Undeveloped	5,023	824	9,871	4,914	34,325	
	Percent of total -----	1.2%	10.1%	32.8%	5.3%		5.0%
OTHER	Volume Gun - Stationary	189			74	273	9,642
	Volume Gun - Traveller	29			473	914	
	Solid Set (Underground sprinkler)	254	429		574	2,016	
	Hand Move (Sprinkler above ground)	803	124	197	344	3,082	
	Micro - Spray - Sprinkler	49		22	51	179	
	Micro - Drip - Trickle	286		271	1,407	2,014	
	Subsurface - Subsurface Drip					944	
	Other Application Use					219	
	Percent of total -----	0.3%	6.8%	1.4%	3.1%		0.6%
Total Acres with Irrigation System		482,800	8,142	34,211	94,646	1,487,842	1,487,842
No Irrigation System or Not Reported				606		606	606
TOTAL		**482,800**	**8,142**	**34,817**	**94,646**	**1,488,448**	**1,488,448**

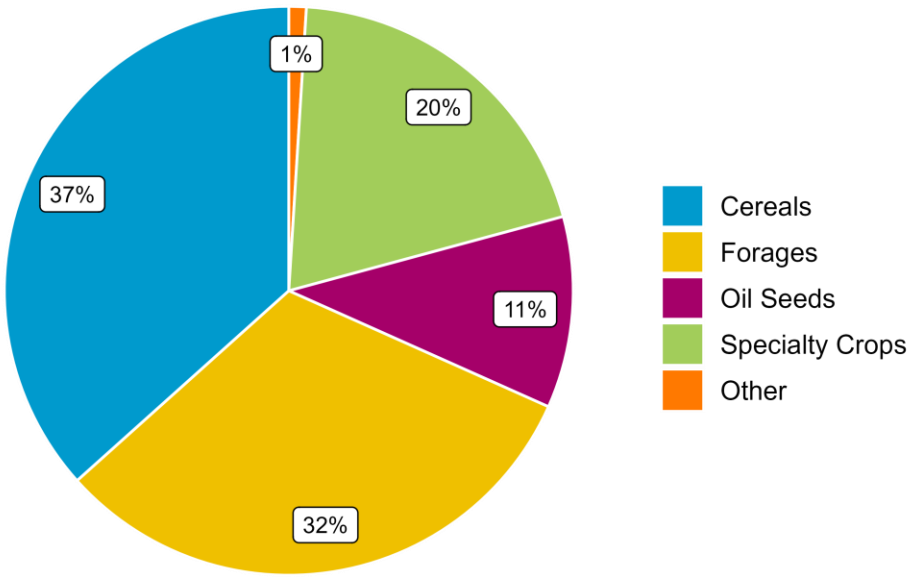


FIGURE 3. CROP TYPES WITHIN THE IRRIGATION DISTRICTS (% OF AREA)

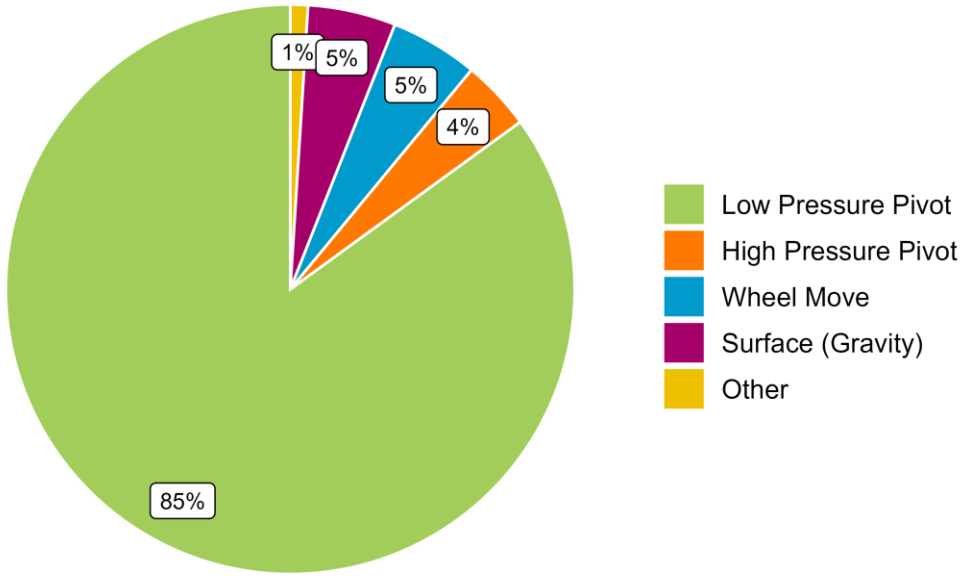
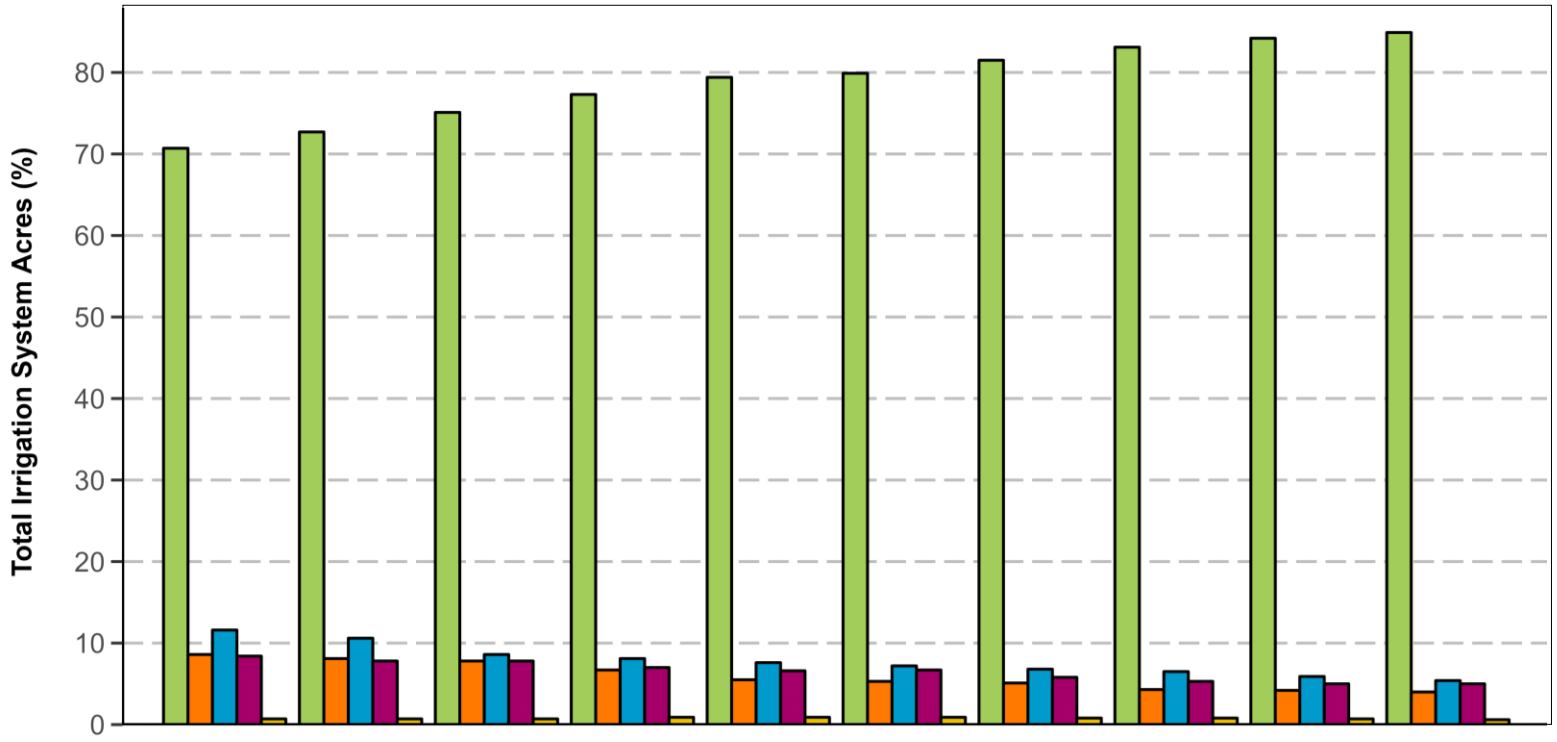


FIGURE 4. ON-FARM IRRIGATION METHODS WITHIN THE IRRIGATION DISTRICTS (% OF AREA)



	ACRES	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Low Pressure Pivot		957,117	991,859	1,038,024	1,072,113	1,115,693	1,139,291	1,173,944	1,215,434	1,231,687	1,263,374
High Pressure Pivot		116,436	110,733	107,761	93,052	77,393	76,115	72,868	63,494	61,046	59,760
Wheel move		157,056	145,124	118,962	112,091	107,193	102,824	98,668	94,429	86,400	80,556
Surface (Gravity)		114,122	106,764	107,129	97,421	92,329	95,258	84,162	78,102	73,713	74,509
Other		8,941	9,698	9,731	12,807	13,067	12,399	11,806	11,302	10,520	9,642

FIGURE 5. ON-FARM IRRIGATION METHODS WITHIN THE IRRIGATION DISTRICTS IN THE LAST 10 YEARS

TABLE 4. ACRES ON THE ASSESSMENT ROLL WITHIN THE IRRIGATION DISTRICTS IN THE LAST 30 YEARS

YEAR	BRID	EID	LNID	MID	MVID	RCID	RID	SMRID *		SWID **		UID	WID	TOTAL
								SMRID	TID	AID	LID			
1994	205,983	272,024	141,517	16,785	3,727	1,210	44,219	353,466	3,519	4,780	78,629	34,438	86,725	1,247,022
1995	207,652	273,848	143,608	17,908	3,727	1,210	43,678	356,618	3,519	4,780	78,676	34,428	86,942	1,256,594
1996	209,560	276,405	147,241	18,169	3,727	1,210	44,315	358,399	3,519	4,760	79,069	34,506	87,258	1,268,138
1997	209,686	279,966	150,843	18,300	3,713	1,210	44,810	360,659	3,519	4,760	79,788	34,353	86,284	1,277,891
1998	210,690	280,573	153,365	18,300	3,722	1,210	45,533	360,780	3,519	4,769	80,455	34,352	86,771	1,284,039
1999	211,152	281,107	154,886	18,300	3,722	1,210	45,751	367,161	3,609	4,769	81,984	34,352	88,131	1,296,134
2000	210,352	281,720	157,825	18,300	3,722	1,210	45,888	369,771	3,609	4,763	82,257	34,329	87,236	1,300,982
2001	209,927	281,710	163,878	18,300	3,712	1,210	46,235	370,925	3,611	4,763	82,261	34,329	87,924	1,308,785
2002	214,279	282,516	163,870	18,300	3,712	1,210	46,304	371,319	3,611	4,763	82,284	34,423	96,512	1,323,103
2003	214,585	282,961	164,288	18,320	3,712	1,210	46,304	372,114	3,611	4,763	82,562	34,423	96,646	1,325,499
2004	216,533	283,625	175,568	18,320	3,712	1,210	46,296	372,979	3,611	4,763	82,515	34,093	96,535	1,339,760
2005	219,733	283,706	175,628	18,320	3,561	1,210	46,296	372,619	3,608	4,763	82,533	34,081	96,415	1,342,473
2006	221,677	284,074	175,636	18,320	3,561	1,101	46,306	372,618	3,608	4,763	82,527	34,025	96,100	1,344,316
2007	231,713	284,419	175,913	18,300	3,654	1,101	46,306	372,996	3,699	5,205	82,804	34,044	96,091	1,356,245
2008	233,869	285,086	176,069	18,300	3,700	1,101	46,293	373,162	3,699	5,126	82,600	34,069	96,079	1,359,153
2009	233,438	294,612	176,201	18,300	3,700	1,101	46,303	373,092	3,699	4,706	82,569	34,325	96,045	1,368,091
2010	233,925	290,429	176,282	18,300	3,700	1,101	46,302	373,018	4,389	4,793	82,728	34,370	95,628	1,364,965
2011	234,014	294,373	176,187	18,300	3,617	1,101	46,302	374,408	4,390	4,848	82,773	34,382	95,754	1,370,449
2012	234,327	294,620	177,593	18,300	3,616	1,101	46,402	373,835	4,376	4,840	82,750	34,382	95,788	1,371,930
2013	241,604	296,619	179,014	18,300	3,698	1,101	46,500	380,371	4,376	4,853	82,822	34,393	95,776	1,389,427
2014	254,909	297,884	179,719	18,300	3,698	1,101	46,500	388,039	4,511	4,876	83,263	34,395	95,641	1,412,836
2015	258,114	298,763	180,007	18,300	3,711	1,101	46,500	390,497	4,607	4,898	83,584	34,391	95,516	1,419,989
2016	259,792	299,762	182,716	18,300	3,733	1,101	46,500	393,034	4,705	5,031	84,045	34,383	95,475	1,428,577
2017	260,008	301,428	184,831	18,300	3,647	1,091	46,500	395,991	4,705	5,031	84,431	34,386	95,320	1,435,669
2018	260,659	303,652	187,984	18,300	3,647	1,091	46,500	402,014	4,714	5,266	85,620	34,310	95,964	1,449,721
2019	270,823	305,477	191,546	18,300	3,647	1,091	48,095	408,147	4,699	5,360	88,385	34,654	96,082	1,476,306
2020	279,441	307,588	195,063	18,300	3,647	1,091	48,095	410,772	4,698	5,365	90,347	34,797	96,996	1,496,200
2021	286,707	309,828	198,158	18,300	3,733	1,091	49,623	412,406	4,707	5,600	90,388	34,817	96,832	1,512,190
2022	289,954	312,078	199,596	18,300	3,741	1,079	51,242	504,487		5,065	5,701	34,817	100,541	1,526,601
2023	292,277	315,707	199,460	18,300	3,733	1,188	54,210	506,389		10,810		34,817	99,132	1,536,023

Note: * SMRID and TID amalgamated in August 2022. ** AID and LID amalgamated in April 2023.
Assessment roll acres include "irrigation", "terminable" and "annual" acres. Only "irrigation" and "terminable" acres are considered in district expansion limits. In 2023, irrigation districts reported 14,013 annual acres.

TABLE 5. ACRES ACTUALLY IRRIGATED WITHIN THE IRRIGATION DISTRICTS IN THE LAST 30 YEARS

YEAR	BRID	EID	LNID	MID	MVID	RCID	RID	SMRID *		SWID **		UID	WID	TOTAL
								SMRID	TID	AID	LID			
1994	187,247	259,942	133,803	11,425	3,277	734	36,291	330,949	73,949	1,940	4,200	14,255	47,335	1,105,347
1995	192,328	263,576	100,589	3,250	3,300	643	16,473	289,173	72,108	765	1,000	5,035	39,130	987,370
1996	196,055	271,075	143,147	14,341	3,355	734	39,662	339,098	74,766	2,145	4,277	14,135	68,710	1,171,500
1997	197,904	274,880	145,061	13,479	3,600	794	39,484	342,234	76,083	2,476	4,600	19,205	62,448	1,182,248
1998	198,197	274,942	122,379	11,189	3,228	1,055	32,259	342,758	76,872	1,930	4,600	17,276	67,643	1,154,328
1999	198,060	277,723	145,782	14,723	3,510	1,210	38,966	355,988	79,166	1,870	4,735	17,407	51,032	1,190,172
2000	199,873	278,956	154,300	15,427	3,510	0	42,062	352,372	79,206	2,361	4,763	19,741	64,414	1,216,985
2001	201,859	279,354	160,657	17,520	3,510	0	39,326	339,666	76,653	3,155	4,763	21,708	71,158	1,219,329
2002	202,807	281,070	162,624	14,717	3,510	1,149	37,221	342,053	76,245	2,422	4,763	20,364	75,635	1,224,580
2003	202,974	280,624	162,779	15,579	3,510	1,194	42,210	351,257	76,884	2,386	4,763	22,660	67,540	1,234,360
2004	203,007	283,625	175,406	14,489	3,510	800	38,461	353,085	76,277	2,386	4,763	21,735	54,666	1,232,210
2005	192,899	282,267	175,206	13,044	3,510	800	36,611	346,596	77,522	2,361	4,763	20,780	56,186	1,212,544
2006	198,111	280,753	175,184	13,232	3,510	0	41,156	335,269	76,765	2,361	4,763	22,771	43,136	1,197,011
2007	201,286	284,419	174,673	14,676	3,509	600	42,573	345,935	77,068	2,361	4,763	22,021	40,716	1,214,600
2008	206,283	280,691	175,886	13,420	3,509	0	38,617	352,564	77,132	2,361	4,763	21,735	48,126	1,225,087
2009	211,577	285,191	174,487	14,866	3,500	800	40,174	352,104	77,571	2,361	4,706	23,383	64,196	1,254,915
2010	182,483	235,371	174,518	5,688	500	374	17,481	340,078	72,989	150	0	17,333	48,700	1,095,665
2011	202,478	294,569	175,683	12,774	500	770	37,163	346,079	75,048	2,961	4,714	21,003	42,270	1,216,012
2012	208,217	294,748	177,593	14,175	535	878	39,560	338,439	76,775	2,797	4,625	22,655	52,483	1,233,480
2013	217,417	295,923	178,697	14,386	608	770	39,839	338,588	76,002	3,285	1,736	22,708	49,791	1,239,750
2014	224,952	297,015	179,296	14,305	1,801	897	37,511	362,254	75,838	1,611	1,736	21,044	60,587	1,278,847
2015	228,480	297,930	179,625	16,182	1,746	897	43,378	370,590	77,123	1,611	1,736	34,391	67,800	1,321,489
2016	226,492	299,336	182,160	16,387	1,746	897	43,743	374,554	77,801	2,467	3,863	22,757	65,735	1,317,938
2017	242,150	301,309	184,565	16,423	2,089	897	45,183	377,047	77,996	2,467	3,863	34,099	68,131	1,356,219
2018	239,295	303,673	187,269	16,120	2,517	897	46,968	381,529	78,797	2,468	3,863	34,310	75,473	1,373,179
2019	251,750	304,773	190,758	16,879	2,600	897	45,530	388,136	81,608	2,468	3,863	34,618	83,703	1,407,583
2020	239,431	297,830	193,936	16,879	3,664	897	45,989	390,165	83,720	2,468	3,863	34,619	67,719	1,381,180
2021	262,163	304,603	196,994	17,036	3,547	897	45,059	390,856	84,895	2,468	3,864	23,768	84,384	1,420,534
2022	257,664	305,360	198,635	16,656	2,194	0	47,589	477,030		2,468	3,864	34,817	90,129	1,436,406
2023	274,754	311,914	198,681	17,252	2,330	1,064	53,348	481,666		8,142		34,817	86,577	1,470,545

Note: * SMRID and TID amalgamated in August 2022. ** AID and LID amalgamated in April 2023.
Not all districts separate out irrigated and not irrigated acres.

TABLE 6. PRIVATE WATER LICENCES FOR IRRIGATION

There are 2,610 individual irrigation projects, not including the 11 irrigation districts, irrigating approximately 299,971acres in Alberta. These projects vary in size from 1 acre to several thousand acres of agricultural and horticultural production (crops, greenhouses, gardening, market gardens sod and tree farms). Water licensing is regulated by Alberta Environment and Protected Areas.

RIVER BASIN	TOTAL ACRES	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	**1,306**	**34**	**3**	**0**	**37**
BEAVER RIVER	**219**	**6**	**0**	**0**	**6**
MILK RIVER	**18,840**	**81**	**48**	**14**	**143**
NORTH SASKATCHEWAN RIVER	**27,568**	**277**	**45**	**17**	**339**
PEACE RIVER	**4,612**	**53**	**10**	**3**	**66**
SOUTH SASKATCHEWAN RIVER	**247,426**	**1,395**	**471**	**153**	**2,019**
Sub-Basin					
- Bow River	18,865	105	38	13	156
- Little Bow River	34,391	98	72	33	203
- Oldman River (Lower)	15,475	21	24	15	60
- Oldman River (Upper)	7,446	55	20	4	79
- Red Deer River	36,879	367	88	18	473
- South Saskatchewan River	46,315	495	85	24	604
- Waterton / Belly / St. Mary Rivers	51,372	110	66	21	197
- Willow Creek	36,683	144	78	25	247
TOTAL	**299,971**	**1,846**	**577**	**187**	**2,610**

Note: Oldman River (lower) reach is defined as downstream of the Belly River confluence
Oldman River (upper) reach is defined as upstream of the Belly River confluence
Licence information as of January 2024 obtained from Alberta Environment and Protected Areas

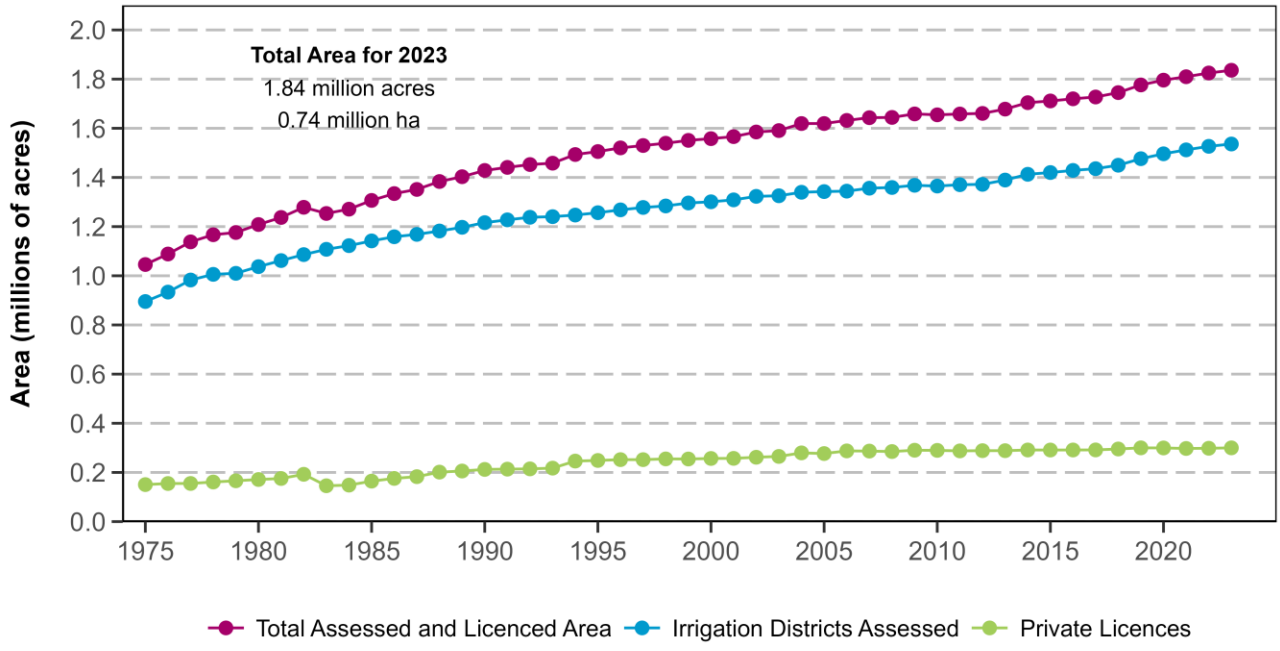


FIGURE 6. GROWTH IN IRRIGATION AREA

Note: Figure includes private water licences for crops, greenhouses, gardening, market gardens, sod, and tree farms.

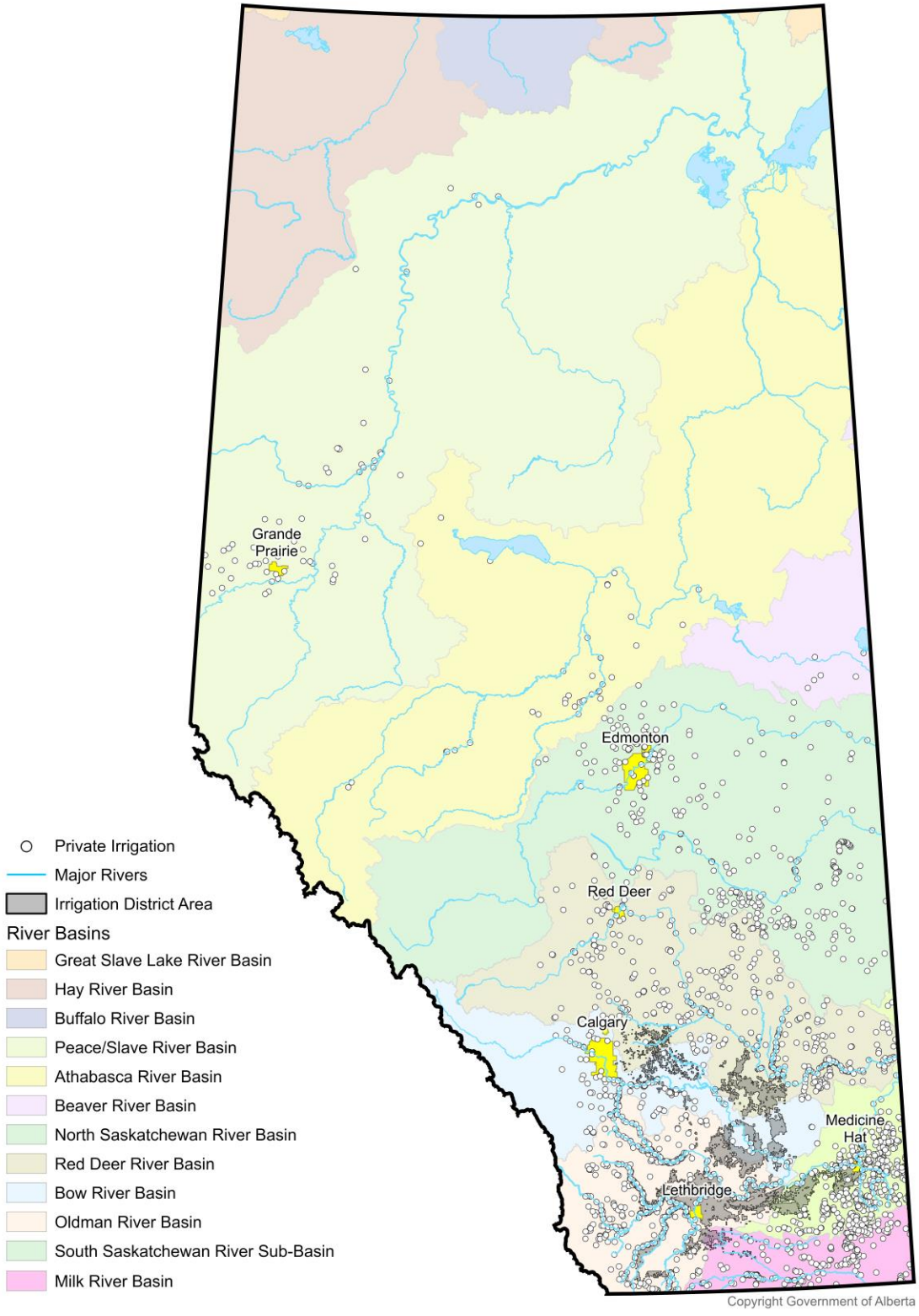


FIGURE 7. LOCATION OF PRIVATE IRRIGATION WATER LICENCE DIVERSIONS IN ALBERTA'S RIVER BASINS

TABLE 7. IRRIGATION RATES IN IRRIGATION DISTRICTS IN THE LAST 30 YEARS

($ per irrigation acre)

YEAR	BRID	EID	LNID	MID	MVID	RCID	RID	SMRID *		SWID **		UID	WID
								SMRID	TID	AID	LID		
1994	$12.00	$8.50	$14.00	$6.50	$6.20	$6.00	$7.00	$15.25	$8.00	$7.00	$12.00	$4.50	$14.75
1995	$13.00	$8.50	$14.00	$7.00	$8.00	$8.50	$7.00	$16.15	$8.00	$8.00	$12.00	$4.50	$14.75
1996	$13.00	$8.50	$14.00	$7.00	$8.00	$8.50	$7.50	$16.15	$8.00	$8.00	$12.00	$6.50	$15.25
1997	$13.00	$7.50	$14.00	$7.00	$8.00	$8.50	$7.50	$16.15	$8.00	$8.00	$12.00	$6.75	$15.25
1998	$13.50	$7.50	$14.00	$7.50	$8.00	$8.50	$8.50	$16.65	$8.00	$8.00	$12.00	$7.00	$16.25
1999	$14.50	$7.50	$14.00	$7.50	$8.00	$8.50	$8.50	$17.00	$8.00	$8.00	$12.00	$7.25	$16.25
2000	$14.50	$7.50	$14.00	$7.50	$8.00	$8.50	$8.50	$17.50	$8.00	$8.00	$12.00	$7.50	$16.25
2001	$14.50	$7.50	$14.00	$7.50	$8.00	$8.50	$8.50	$17.90	$8.00	$8.00	$11.00	$7.50	$16.25
2002	$14.50	$7.50	$14.00	$7.50	$8.00	$6.00	$8.50	$16.90	$8.00	$8.00	$11.00	$7.75	$16.25
2003	$15.00	$0.00	$14.00	$8.00	$8.00	$13.58	$8.50	$17.90	$9.00	$10.00	$11.00	$8.25	$16.25
2004	$14.50	$0.00	$14.00	$8.00	$8.00	$13.58	$9.50	$17.90	$9.00	$11.00	$11.00	$8.25	$16.25
2005	$14.50	$0.00	$14.00	$8.50	$10.00	$13.58	$9.50	$17.90	$9.00	$11.00	$11.00	$8.25	$16.25
2006	$14.50	$0.00	$14.00	$8.50	$10.00	$15.00	$9.50	$18.50	$9.00	$11.00	$11.00	$8.25	$16.25
2007	$14.50	$0.00	$14.00	$9.00	$10.00	$18.00	$9.50	$18.75	$9.00	$11.00	$8.00	$8.25	$16.25
2008	$14.50	$0.00	$14.00	$9.00	$12.00	$21.00	$9.50	$18.75	$10.00	$11.50	$8.00	$8.50	$16.25
2009	$15.00	$0.00	$14.00	$9.00	$12.00	$22.50	$9.50	$19.00	$10.00	$11.50	$8.00	$8.50	$16.25
2010	$15.00	$0.00	$14.00	$9.50	$12.00	$21.50	$9.50	$20.00	$10.00	$11.50	$8.00	$8.50	$16.25
2011	$15.00	$0.00	$14.00	$9.50	$12.00	$20.50	$9.50	$20.00	$10.00	$11.50	$8.00	$8.50	$16.25
2012	$16.00	$0.00	$14.00	$11.00	$12.00	$20.50	$10.00	$20.00	$11.00	$11.50	$8.00	$9.00	$16.25
2013	$16.00	$0.00	$14.00	$11.00	$12.00	$20.50	$10.00	$20.00	$11.00	$11.50	$8.00	$11.00	$18.00
2014	$16.00	$0.00	$16.00	$11.00	$12.00	$23.00	$10.00	$20.00	$12.00	$12.00	$8.00	$11.00	$18.00
2015	$16.00	$0.00	$16.00	$11.00	$12.00	$25.00	$10.00	$20.00	$12.00	$12.00	$10.00	$11.00	$18.00
2016	$16.00	$0.00	$16.00	$11.00	$12.00	$25.00	$12.00	$20.00	$12.00	$12.00	$14.00	$11.00	$18.00
2017	$16.00	$0.00	$16.00	$11.00	$12.00	$25.00	$12.00	$22.00	$13.00	$12.00	$16.00	$11.50	$18.00
2018	$16.00	$0.00	$16.00	$12.50	$12.00	$25.00	$13.00	$22.00	$13.00	$12.50	$18.00	$12.00	$18.32
2019	$16.00	$0.00	$17.00	$14.00	$12.00	$25.00	$16.00	$22.00	$13.00	$13.00	$20.00	$12.50	$18.32
2020	$16.00	$0.00	$17.50	$14.00	$12.00	$25.00	$16.00	$23.00	$13.00	$13.00	$21.00	$12.88	$18.40
2021	$16.00	$0.00	$18.00	$14.00	$12.00	$25.00	$18.00	$23.00	$14.00	$14.00	$23.50	$13.27	$18.40
2022	$17.50	$0.00	$18.50	$16.00	$12.00	$25.00	$18.00	$23.00		$14.00	$14.25	$13.67	$19.00
2023	$17.50	$5.00	$19.00	$19.00	$12.00	$28.00	$18.00	$25.00		$16.00		$14.08	$22.80

Note: * SMRID and TID amalgamated in August 2022. ** AID and LID amalgamated in April 2023.
Some districts levy additional charges for use in excess of allocation, and for pipeline and pressure delivery.

TABLE 8. ENERGY TYPES USED IN THE IRRIGATION DISTRICTS' IRRIGATED AREAS

ENERGY TYPE	BRID	EID	LNID	MID	RCID	RID	SMRID	UID	WID	TOTAL ACRES
ELECTRICITY	219,858	185,346	73,201	1,499		31,861	330,557	17,590	38,826	898,738
	79.6%	58.7%	36.8%	8.2%		58.8%	68.5%	50.5%	41.0%	60.9%
NATURAL GAS	25,347	60,563	52,226	10,731		13,696	129,493	773	24,093	316,924
	9.2%	19.2%	26.3%	58.6%		25.3%	26.8%	2.2%	25.5%	21.5%
DIESEL	5,680	12,065	887			181	3,693	666	9,860	33,032
	2.1%	3.8%	0.4%			0.3%	0.8%	1.9%	10.4%	2.2%
SURFACE (GRAVITY)	8,143	41,370	2,174	3,119		6,510	6,810	4,908	7,040	80,075
	2.9%	13.1%	1.1%	17.0%		12.0%	1.4%	14.1%	7.4%	5.4%
GRAVITY PRESSURE PIPELINE	4,848	5,858	41,090	2,921	1,064	37	10,610	10,041	6,844	83,312
	1.8%	1.9%	20.7%	16.0%	100.0%	0.1%	2.2%	28.8%	7.2%	5.6%
PUMP PRESSURE PIPELINE	715	6,314	18,414						345	25,789
	0.3%	2.0%	9.3%						0.4%	1.7%
OTHER *	1,099	2,680	1,102	30		220	1,144	85	4,927	11,286
	0.4%	0.8%	0.6%	0.2%		0.4%	0.2%	0.2%	5.2%	0.8%
UNKNOWN	10,657	1,511	9,586			1,706	493	754	2,711	27,419
	3.9%	0.5%	4.8%			3.1%	0.1%	2.2%	2.9%	1.9%
TOTAL	**276,348**	**315,707**	**198,681**	**18,300**	**1,064**	**54,211**	**482,800**	**34,817**	**94,646**	**1,476,575**

Note: * Other includes solar, gasoline, propane, or butane.
MVID and SWID did not report any data.

TABLE 9. EXPANSION LIMITS AND WATER LICENCE ALLOCATIONS FOR IRRIGATION DISTRICTS

BASIN	IRRIGATION DISTRICT	EXPANSION LIMIT (acres)	WATER SOURCE	OTHER PURPOSES* (ac-ft)	TOTAL LICENSED VOLUME (ac-ft)
BOW RIVER SUB-BASIN	BRID	295,000	Bow River	2,380	490,000
	EID	345,000	Bow River	5,000	761,000
	WID	110,000	Bow River	3,500	190,500
OLDMAN RIVER SUB-BASIN	LNID	227,000	Oldman River	39,068	334,450
	MID	18,300	Belly, Waterton, and St. Mary Rivers	740	34,000
	MVID	4,240	Belly River	340	8,000
	RID	58,500	Belly, Waterton, and St. Mary Rivers	4,500	81,000
	SMRID	584,200	Belly, Waterton, and St. Mary Rivers	20,000	880,000
	SWID	13,500	Belly River	1,700	21,000
	UID	37,840	Belly and Waterton Rivers	1,000	65,988
SOUTH SASKATCHEWAN RIVER SUB-BASIN	RCID	1,210	Gros Ventre Creek	n/a	3,000
TOTAL		**1,694,790**		**78,228**	**2,868,938**

Note: * Water volumes allocated to other purposes are included in the total licensed volumes.
Other purposes volumes may be used for purposes other than irrigation, as set out in the relevant 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, management of wildlife, habitat enhancement and recreation

TABLE 10. GROSS ANNUAL DIVERSIONS FOR IRRIGATION DISTRICTS IN THE LAST 30 YEARS

YEAR	BOW RIVER SUB-BASIN			OLDMAN RIVER SUB-BASIN									SOUTH SASK RIVER SUB-BASIN	TOTAL (ac-ft)
	BRID	EID	WID	LNID	MID	MVID	RID	SMRID *		SWID **		UID	RCID	
								SMRID	TID	AID	LID			
1994	364,126	559,476	132,104	179,663	13,895	3,325	28,328	415,162	103,028	4,110	4,319	16,827	758	1,825,121
1995	302,305	602,098	116,254	110,114	4,248	861	19,953	385,290	79,818	1,802	1,548	7,710	208	1,632,209
1996	328,182	615,478	117,065	206,206	12,506	2,660	45,527	518,164	127,436	4,035	4,892	19,832	1,085	2,003,068
1997	343,380	593,782	116,740	188,378	12,564	1,529	38,043	455,300	115,582	6,051	5,193	20,364	1,760	1,898,666
1998	303,565	638,500	142,367	157,758	9,671	2,323	33,834	406,100	116,300	4,874	5,331	14,895	1,726	1,837,244
1999	298,524	426,788	88,410	196,906	25,178	2,499	42,960	411,532	105,208	3,485	11,415	20,900	1,700	1,635,505
2000	417,897	675,238	156,400	263,413	35,375	6,700	58,202	451,700	140,046	6,000	11,240	37,200	0	2,259,411
2001	413,780	685,000	160,000	308,236	21,173	6,814	40,207	325,700	94,770	3,952	7,593	27,526	0	2,094,751
2002	333,541	430,000	149,577	112,143	10,788	3,033	23,552	466,700	53,324	2,938	9,835	21,283	N/A	1,616,714
2003	279,798	459,700	128,700	201,812	20,711	5,889	49,723	330,600	86,500	4,598	7,964	32,500	N/A	1,608,495
2004	230,817	417,370	114,000	166,276	12,391	2,660	28,224	367,500	64,399	3,440	5,425	21,600	N/A	1,434,102
2005	182,819	318,000	120,400	134,088	8,859	2,067	27,046	316,200	72,487	4,000	6,243	13,717	1,190	1,207,116
2006	210,741	335,210	72,000	165,752	14,114	3,987	37,049	334,100	82,448	3,681	5,341	20,390	0	1,284,813
2007	256,518	417,830	68,000	235,330	18,238	3,600	47,322	394,700	100,907	3,235	6,330	31,801	N/A	1,583,811
2008	238,000	409,400	85,000	178,750	12,659	2,609	34,348	381,200	85,829	3,584	6,389	21,054	200	1,459,022
2009	295,557	435,650	120,829	179,945	14,885	2,138	45,705	370,100	97,532	2,651	5,378	17,506	200	1,588,076
2010	156,116	210,500	65,850	71,950	5,351	1,013	21,903	196,700	53,135	1,938	2,383	7,264	116	794,219
2011	151,700	310,100	85,985	132,388	15,233	2,393	32,534	245,800	84,909	2,902	8,028	19,073	530	1,091,575
2012	260,000	343,200	103,862	176,683	20,720	2,558	35,200	330,800	88,309	2,761	3,973	19,039	562	1,387,105
2013	240,000	383,400	99,473	139,035	17,210	2,297	39,723	316,100	77,371	3,446	4,101	18,598	2,319	1,343,073
2014	222,191	371,000	113,666	120,097	13,552	1,801	31,448	289,200	71,874	3,113	5,928	16,565	700	1,261,135
2015	331,900	471,900	136,600	197,000	21,459	2,420	50,711	447,000	100,481	3,306	4,540	25,839	700	1,793,856
2016	328,085	371,100	109,865	206,730	20,325	2,233	39,704	412,100	84,313	3,848	4,564	21,864	367	1,605,098
2017	422,000	521,200	131,000	274,400	24,221	2,838	54,062	488,100	123,923	4,710	5,697	31,350	800	2,084,301
2018	290,400	495,500	136,000	223,918	26,529	2,475	53,799	494,000	105,352	3,648	9,363	30,680	1,569	1,873,233
2019	389,000	508,900	120,687	207,086	18,917	2,433	47,518	461,700	102,900	5,091	3,953	22,053	750	1,890,988
2020	284,400	384,500	96,360	167,486	25,685	1,932	39,819	399,000	94,784	4,337	7,232	25,821	2,237	1,533,593
2021	424,000	537,700	145,500	272,129	27,195	4,151	53,528	517,600	127,484	4,913	7,802	29,135	872	2,152,009
2022	383,092	480,400	114,645	255,403	21,278	3,283	51,103	662,100		6,851	7,463	26,892	0	2,012,512
2023	461,000	548,100	149,035	275,531	29,302	3,147	52,429	504,000		12,825		35,021	N/A ***	2,070,390
Percent of Licence (2023)	**94.1%**	**72.0%**	**78.2%**	**82.4%**	**86.2%**	**39.3%**	**64.7%**	**57.3%**		**61.1%**		**53.1%**	**N/A**	**72.2%**

Note: * SMRID and TID amalgamated in August 2022. ** AID and LID amalgamated in April 2023. ***RCID diversion not available for 2023 but RCID usage, seepage, and evaporative losses are estimated at 1650 ac-ft. Data obtained from Water Survey of Canada, Alberta Environment and Protected Areas, and irrigation districts' annual reports.
Diversion volumes can include other allocations for users other than irrigation districts (i.e., municipal, domestic, other agricultural, industrial, water management, and environmental uses).

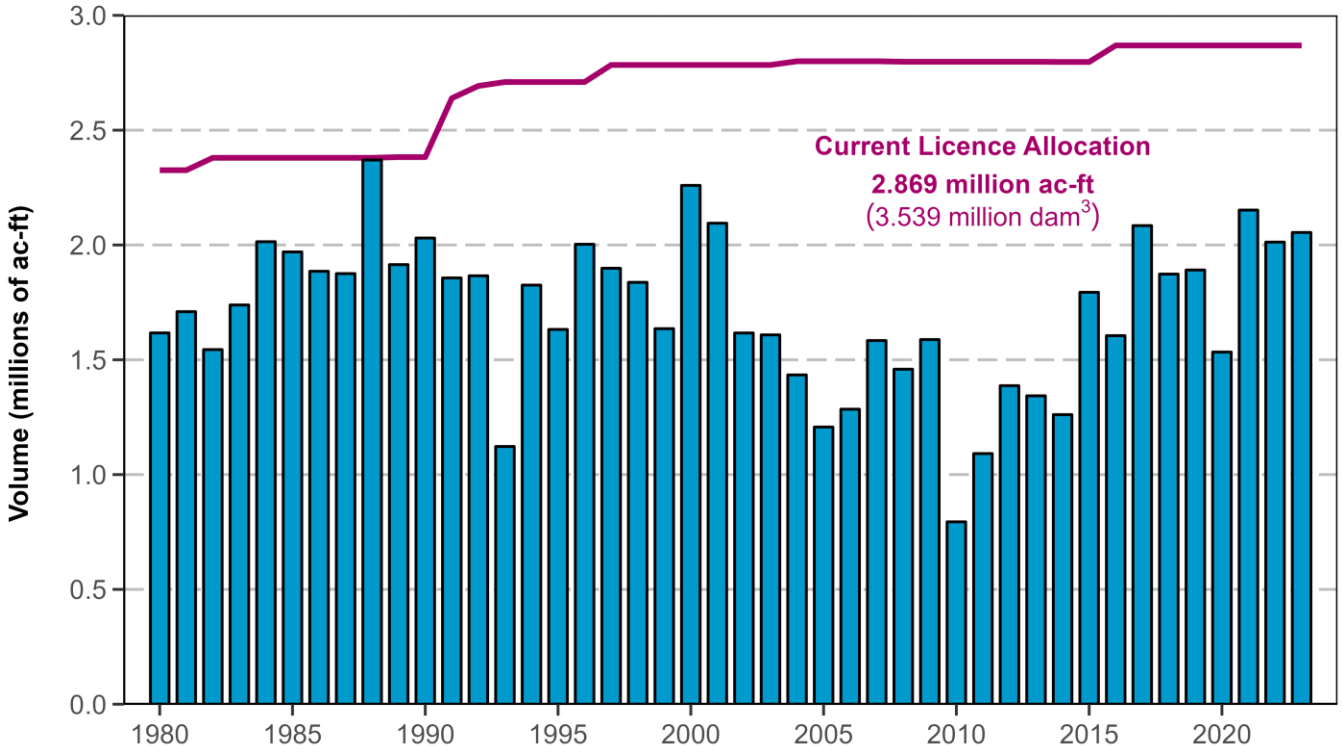


FIGURE 8. IRRIGATION DISTRICTS ANNUAL GROSS DIVERSIONS AND LICENCE ALLOCATIONS SINCE 1980

Note: Diversion data, shown in blue, 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 conveyance agreements.

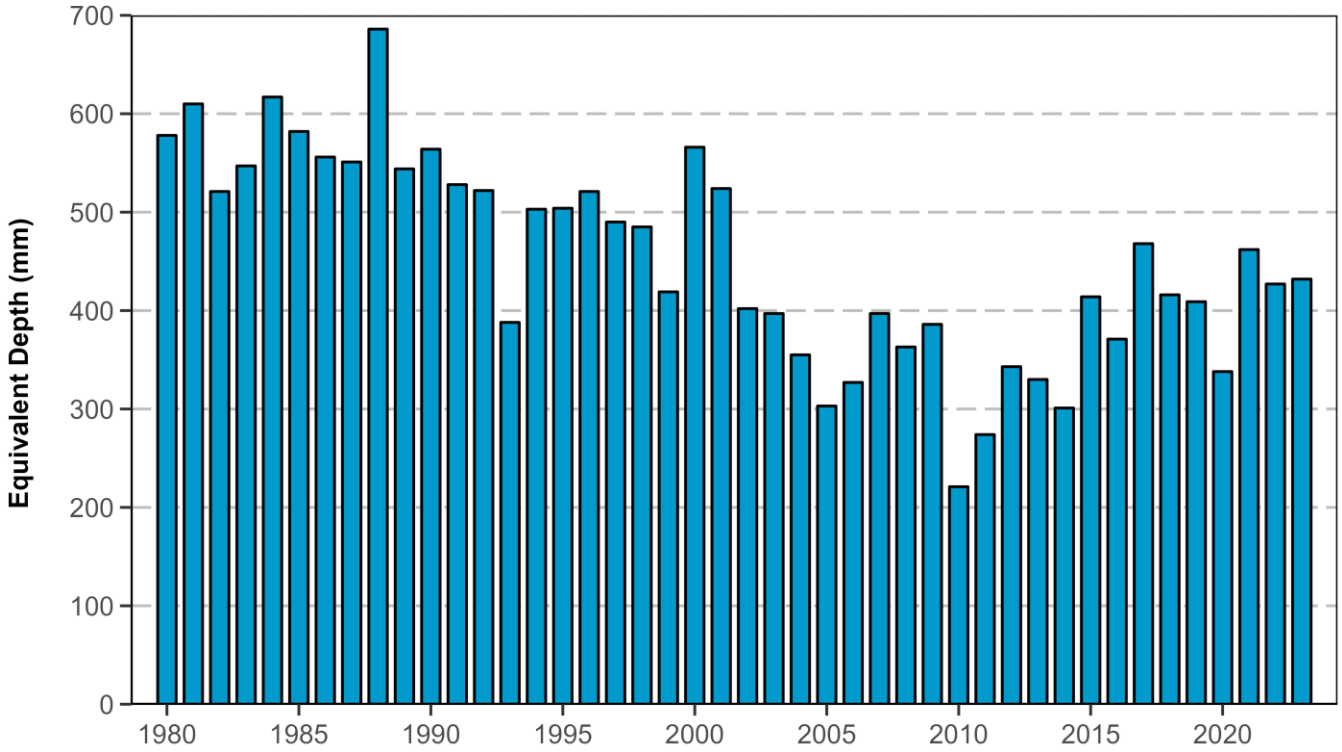
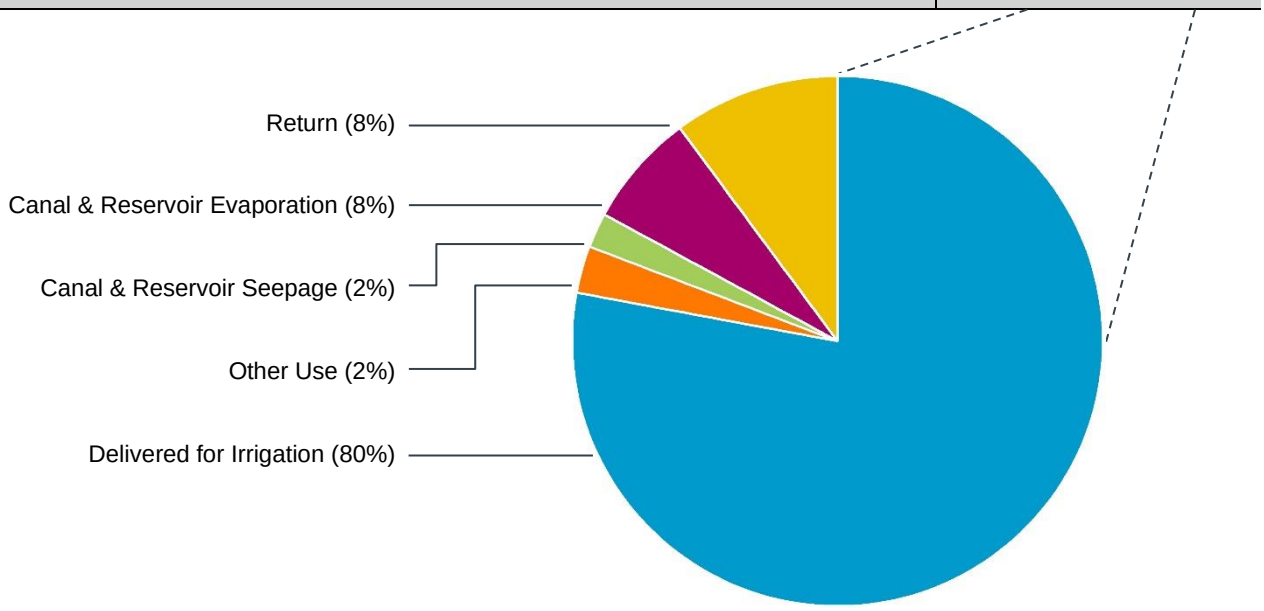


FIGURE 9. IRRIGATION DISTRICTS ANNUAL GROSS DIVERSION EQUIVALENT DEPTH SINCE 1980

Note: Irrigation district equivalent depth is the annual gross diversion of water (into the works of all irrigation districts), divided by the area actually irrigated. However, this “depth” also includes water used for net gains in reservoir storage, and water diverted for other uses and other licences.

TABLE 11. IRRIGATION DISTRICTS WATER BALANCE

WATER BALANCE CATEGORY	BOW RIVER BASIN DISTRICTS (ac-ft)	OLDMAN RIVER BASIN DISTRICTS (ac-ft)	TOTAL IRRIGATION DISTRICTS (ac-ft)
Gross Diversion	1,158,100	912,300	2,070,400
Net District Storage Change	37,300	127,400	164,700
TOTAL SUPPLY	**1,195,400**	**1,039,700**	**2,235,100**
Delivered for Irrigation	917,800	860,100	1,777,900
Delivered for Other Use	25,100	29,100	54,200
Canal & Reservoir Seepage	28,300	21,100	49,400
Canal & Reservoir Evaporation	112,600	54,900	167,500
Return	111,600	74,500	186,100
TOTAL USE	**1,195,400**	**1,039,700**	**2,235,100**



Note: Irrigation district reported values were used to estimate the water balance. Where district reporting was incomplete, Alberta Agriculture and Irrigation calculated estimates. Canal and reservoir seepage and evaporation estimates were used from 2020.

Gross Diversion - Volume of water diverted from 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 indicates a net increase in reservoir storage volume over the irrigation season.
Total Supply - Total volume of water including diversion and change in 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 within irrigation district licences and other licences.
Canal & Reservoir Seepage - Water lost from seepage from reservoirs and canals.
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 Use - Total volume of water used comprised of water delivered for irrigation, other use within district licences, seepage and evaporation, water returned, and other licences.

TABLE 12. TYPES OF CONVEYANCE INFRASTRUCTURE WITHIN THE IRRIGATION DISTRICTS

IRRIGATION DISTRICT	PIPELINES				CANALS								TOTAL CONVEYANCE WORKS (km)
	CLOSED		OPEN		MEMBRANE LINED		CONCRETE LINED		EARTH		UNREHABILITATED EARTH		
	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	
BRID	656.4	63.1%	8.7	0.8%	110.3	10.6%	0.1	0.0%	167.3	16.1%	96.8	9.3%	1,040
EID	1,344.9	68.5%	20.4	1.0%	192.5	9.8%	-	0.0%	185.1	9.4%	221.5	11.3%	1,964
LNID	654.8	80.8%	6.6	0.8%	45.9	5.7%	1.4	0.2%	62.6	7.7%	39.5	4.9%	811
MID	65.6	61.2%	1.8	1.7%	1.7	1.5%	0.3	0.3%	33.3	31.0%	4.5	4.2%	107
MVID	19.0	44.5%	1.8	4.2%	-	0.0%	-	0.0%	17.0	39.6%	5.0	11.7%	43
RCID	12.2	83.1%	-	0.0%	-	0.0%	-	0.0%	2.5	16.9%	-	0.0%	15
RID	186.9	68.4%	2.5	0.9%	-	0.0%	-	0.0%	65.5	23.9%	18.5	6.8%	273
SMRID	1,255.9	57.7%	36.1	1.7%	118.4	5.4%	38.9	1.8%	503.9	23.2%	221.8	10.2%	2,175
SWID	62.9	69.4%	0.2	0.3%	4.8	5.3%	-	0.0%	3.0	3.3%	19.7	21.7%	91
UID	113.3	49.3%	22.3	9.7%	13.9	6.0%	0.2	0.1%	37.4	16.3%	42.8	18.6%	230
WID	267.0	26.0%	33.8	3.3%	109.2	10.6%	4.6	0.5%	171.2	16.6%	442.7	43.0%	1,028
TOTAL	**4,639**	**59.7%**	**134**	**1.7%**	**597**	**7.7%**	**45**	**0.6%**	**1,249**	**16.1%**	**1,113**	**14.3%**	**7,777**
												Headworks Owned by Government of Alberta	339
												Total Length of Irrigation Conveyance System (km)	8,116

Note: Conveyance infrastructure rehabilitation programs include:
- Irrigation infrastructure modernization investment
- Irrigation Rehabilitation Program
- District-funded infrastructure projects
- Government of Alberta

TABLE 13. IRRIGATION DISTRICT INFRASTRUCTURE LENGTH AND REPLACEMENT COST

IRRIGATION DISTRICT	CONVEYANCE WORKS		DRAINAGE WORKS		MAJOR STRUCTURES		TOTAL OF ALL WORKS	
	Length (km)	Replacement Cost ($'000)	Length (km)	Replacement Cost ($'000)	Number	Replacement Cost ($'000)	Length (km)	Replacement Cost ($'000)
BRID	1,040	$462,582	902	$25,624	22	$123,169	1,942	$611,375
EID	1,964	$924,371	1,956	$58,013	61	$440,271	3,920	$1,422,655
LNID	811	$347,263	259	$12,641	2	$3,629	1,070	$363,533
MID	107	$35,197	163	$7,154	0	$0	270	$42,351
MVID	43	$18,343	1	$94	0	$0	44	$18,437
RCID	15	$3,592	20	$1,237	1	$170	35	$4,999
RID	273	$87,892	219	$13,661	0	$0	492	$101,553
SMRID	2,175	$1,019,509	496	$20,198	60	$440,730	2,671	$1,480,437
SWID	91	$25,833	24	$598	0	$0	114	$26,431
UID	230	$93,775	60	$2,137	11	$20,420	290	$116,332
WID	1,028	$453,244	955	$33,643	13	$22,907	1,983	$509,794
TOTAL	**7,777**	**$3,471,600**	**5,055**	**$175,001**	**170**	**$1,051,295**	**12,831**	**$4,697,896**

Note: "Total of All Works" replacement cost values include the sum of conveyance works, drainage works and major structures. Replacement cost is based on construction and material costs that were updated (based on inflation factor) in 2022.

TABLE 14. IRRIGATION DISTRICT RESERVOIRS

LOCATION	RESERVOIR	APPROXIMATE DATE OF IMPOUNDMENT	IRRIGATION LIVE STORAGE (dam^3)	IRRIGATION LIVE STORAGE (acre-feet)
BRID	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
EID	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
LNID	Park Lake	1928	1,440	1,170
	Picture Butte	1936	1,490	1,210
	TOTAL STORAGE		2,930	2,380
RID	Corner Lake	1925	500	400
	Craddock	1925	620	500
	Factory Lake	1925	370	300
	TOTAL STORAGE		1,490	1,200
SMRID	Bullshead	1954	130	100
	Chin	1954	190,350	154,320
	Cross Coulee	1954	2,090	1,700
	Fincastle	1952	3,770	3,060
	Forty Mile	1987	86,350	70,000
	Horsefly	1950	6,370	5,170
	Murray	1954	30,830	24,990
	North East	1954	2,820	2,290
	Raymond	1954	1,810	1,470
	Sauder	1953/1982*	37,800	30,640
	Seven Persons	1953	900	730
	Sherburne	1952	12,190	9,880
	Stafford	1954/1982*	21,500	17,430
	Taber Lake	1955	6,410	5,190
	Yellow Lake	1952	6,170	5,000
	TOTAL STORAGE		409,490	331,970
UID	Cochrane Lake	1923	3,130	2,540
WID	Chestermere	1944	5,090	4,130
	Langdon	1979/2014*	15,750	12,770
	TOTAL STORAGE		20,840	16,900
GRAND TOTAL			**1,050,820**	**851,880**

Note: All reservoirs are off-stream storage sites.
* Denotes year of reservoir enlargement

TABLE 15. PROVINCIALLY OWNED AND OPERATED RESERVOIRS USED FOR IRRIGATION

SOURCE SUPPLY FOR:	RESERVOIR	APPROXIMATE DATE OF IMPOUNDMENT	IRRIGATION LIVE STORAGE (dam^3)	IRRIGATION LIVE STORAGE (acre-feet)
BRID	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
LNID	Keho	1920	95,640	77,540
	Oldman River	1991	490,180	397,390
	TOTAL STORAGE		585,820	474,930
RCID	Cavan Lake	1950	4,630	3,750
MVID, SWID	Payne	1942	8,690	7,040
MID, RID, SMRID	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			**1,851,650**	**1,501,120**

TABLE 16. HYDROELECTRIC PLANTS ASSOCIATED WITH IRRIGATION INFRASTRUCTURE

LOCATION	COMMISSION DATE	OWNER	CAPACITY (megawatts)
Oldman Reservoir	2003	ATCO and Piikani Nation	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	21
Chin Chute (Chin Reservoir)	1994	Irrican	15
SMRID - Main Canal Drops #4, #5 and #6	2004	Irrican	7
TOTAL			**96**

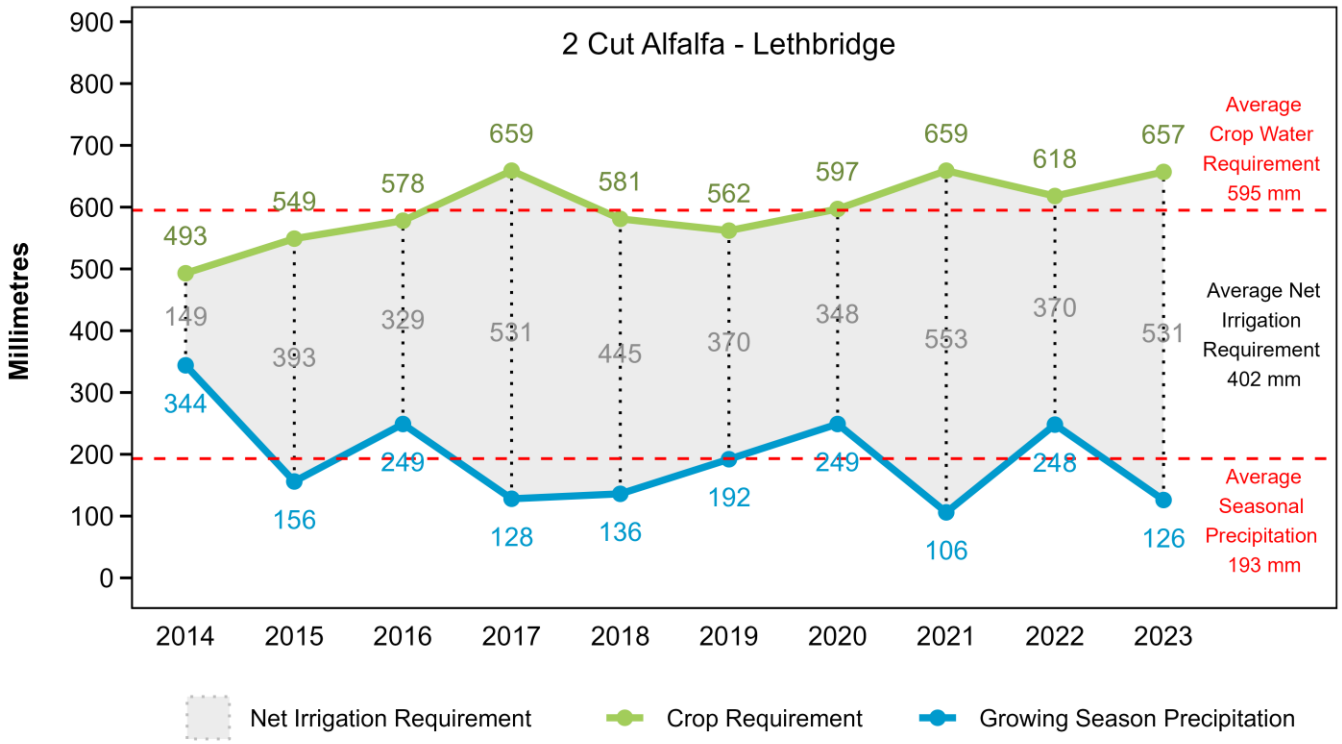


FIGURE 10. LETHBRIDGE OPTIMUM CROP WATER AND NET IRRIGATION REQUIREMENTS IN THE LAST 10 YEARS

Note: Two 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.

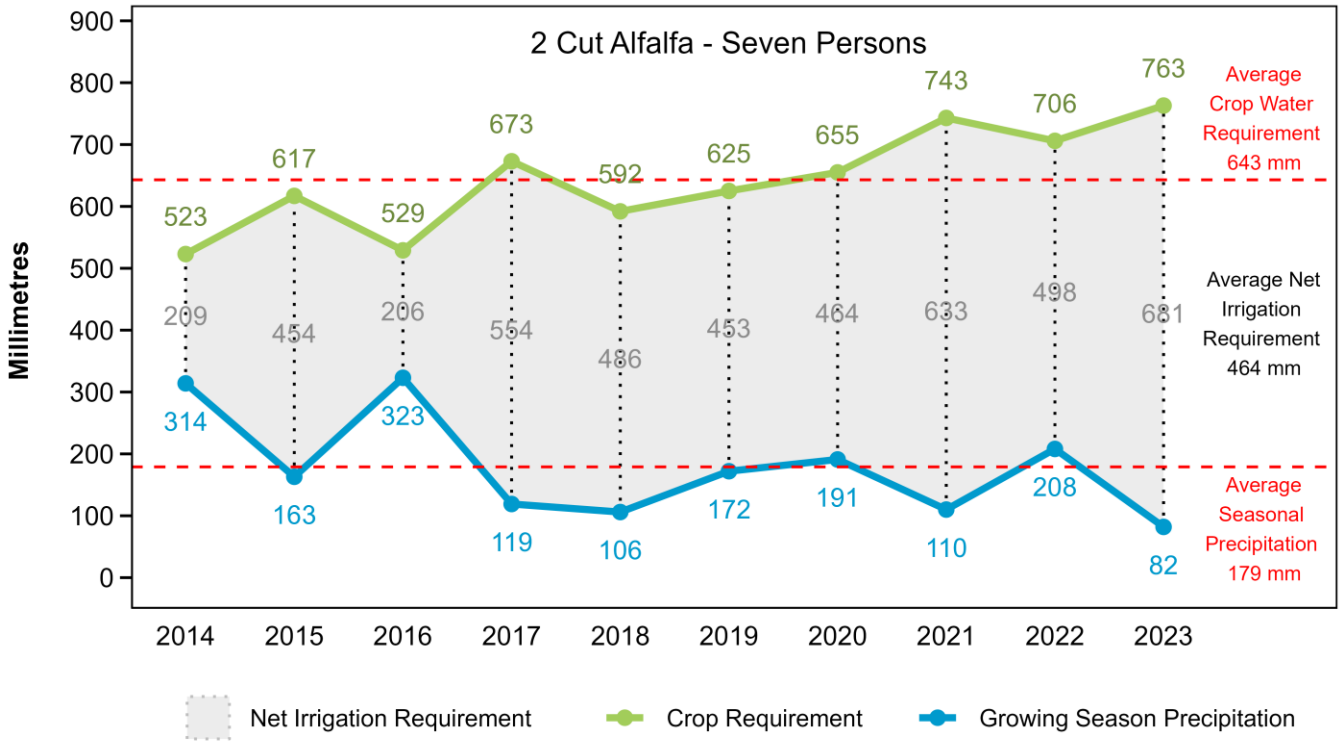


FIGURE 11. SEVEN PERSONS OPTIMUM CROP WATER AND NET IRRIGATION REQUIREMENTS IN THE LAST 10 YEARS

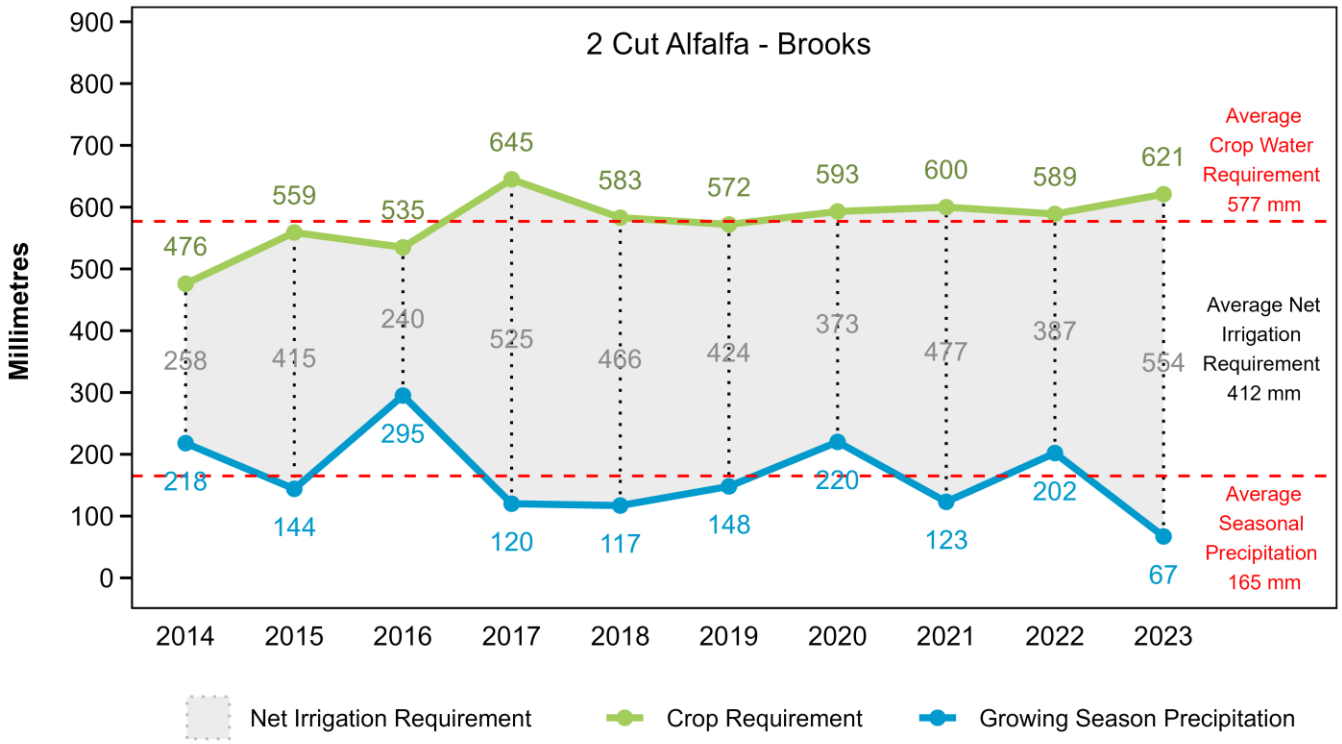


FIGURE 12. BROOKS OPTIMUM CROP WATER AND NET IRRIGATION REQUIREMENTS IN THE LAST 10 YEARS

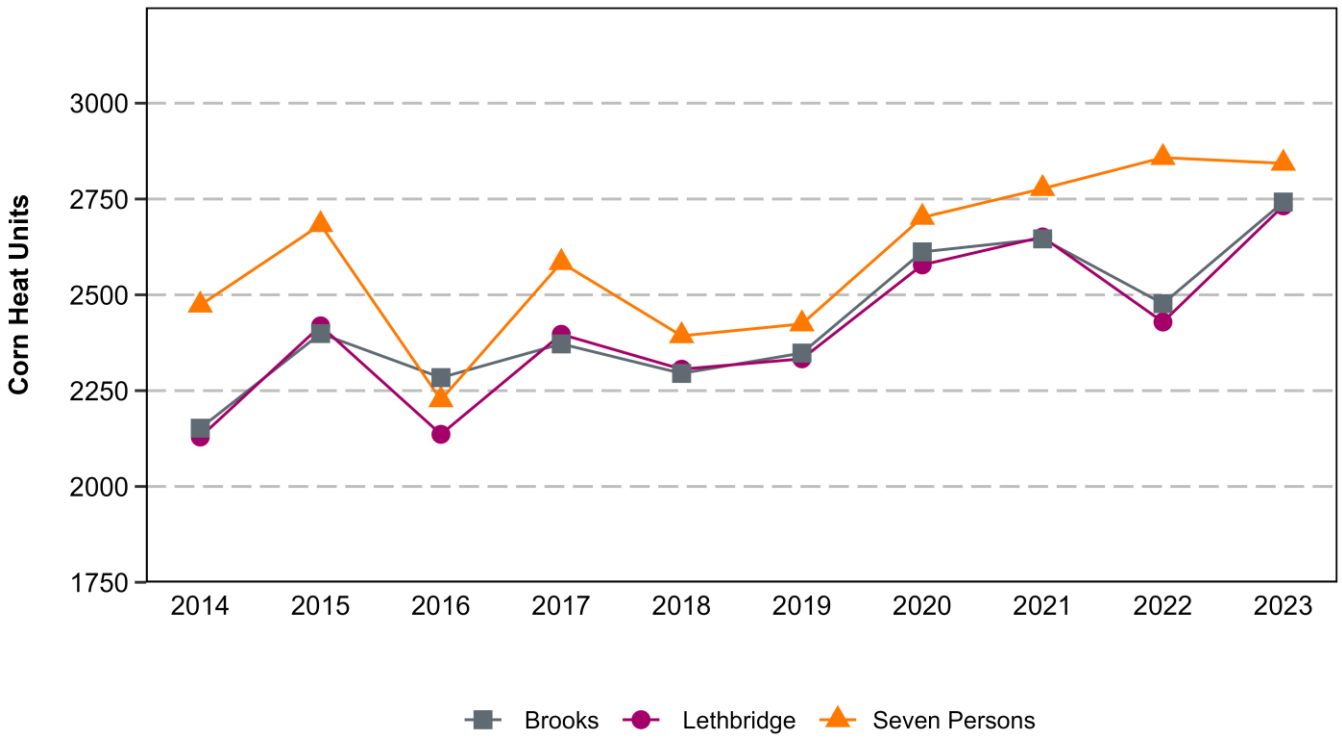


FIGURE 13. LETHBRIDGE, SEVEN PERSONS AND BROOKS CORN HEAT UNITS IN THE LAST 10 YEARS

TABLE 17. HISTORICAL RAINFALL

(April 15 — October 15)

SITE	MAXIMUM RAINFALL (mm) (1994 – 2023)	MINIMUM RAINFALL (mm) (1994 – 2023)	AVERAGE RAINFALL (mm) (1994 – 2023)	2023 RAINFALL (mm)	2023 % OF AVERAGE
Lethbridge	504 (2002)	71 (2001)	264	**141**	**53%**
Seven Persons	418 (2002)	66 (2001)	233	**99**	**42%**
Brooks	484 (2005)	82 (2023)	217	**82**	**38%**

TABLE 18. HISTORICAL CORN HEAT UNITS (CHU)

(May 15 to first -2 ºC frost)

SITE	MAXIMUM CHU (2014 – 2023)	MINIMUM CHU (2014 – 2023)	AVERAGE CHU (2014 – 2023)	2023 CORH HEAT UNITS	2023 % OF AVERAGE
Lethbridge	2732 (2023)	2129 (2014)	2411	**2732**	**113%**
Seven Persons	2858 (2022)	2226 (2016)	2596	**2843**	**109%**
Brooks	2742 (2023)	2152 (2014)	2433	**2742**	**113%**

TABLE 19. FROST FREE PERIOD (> 0°C)

SITE	AVERAGE LAST FROST (1998 – 2023)	AVERAGE FIRST FROST (1998 – 2023)	AVERAGE FROST FREE DAYS (1998 – 2023)	2023 LAST FROST	2023 FIRST FROST	2023 FROST FREE DAYS	2023 % OF AVERAGE
Lethbridge	May 09	Sep 23	137	Apr 28	Oct 06	161	117%
Seven Persons	May 11	Sep 25	136	Apr 26	Oct 05	162	119%
Brooks	May 14	Sep 21	130	Apr 28	Sep 25	150	115%

TABLE 20. FROST FREE PERIOD (> -2°C)

SITE	AVERAGE LAST FROST (1998 – 2023)	AVERAGE FIRST FROST (1998 – 2023)	AVERAGE FROST FREE DAYS (1998 – 2023)	2023 LAST FROST	2023 FIRST FROST	2023 FROST FREE DAYS	2023 % OF AVERAGE
Lethbridge	May 01	Sep 30	152	Apr 23	Oct 23	183	120%
Seven Persons	May 04	Sep 30	149	Apr 23	Oct 06	166	111%
Brooks	May 08	Sep 26	141	Apr 23	Oct 05	165	117%

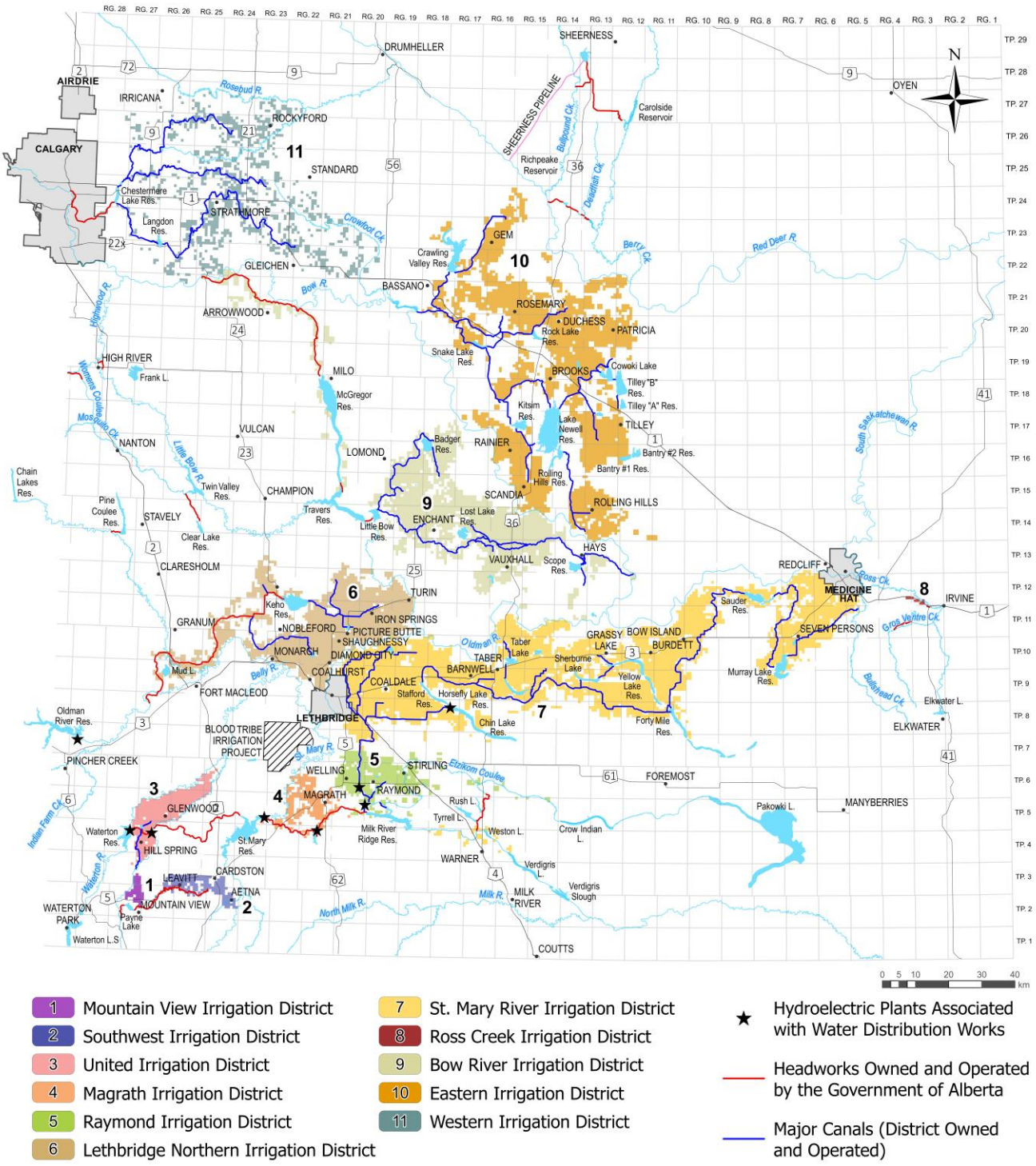


FIGURE 14. IRRIGATION DISTRICTS IN ALBERTA

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 evaporation 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.

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 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, and timothy hay.
- **Oil Seeds:** Plants that are grown for the oil contained in the seeds. Crops reported include canola, flax, and mustard.
- **Specialty Crops:** Include fruits and vegetables, horticulture, seed production, pulse crops, and nursery crops. Crops reported include alfalfa seed, canary seed, canola seed, carrots, catnip, chick peas, dill, dry beans, dry peas, faba beans, fresh corn (sweet), fresh peas, grass seed, hemp, lawn turf (turf sod), lentils, market gardens, mint, nursery, onions, potatoes, quinoa, seed potatoes, soybeans, 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.

Drainage Works: A natural or man-made, open channel or pipeline that provides a means to move unused water away from irrigation works.

Expansion Limit: The maximum allowable number of irrigation acres plus acres subject to a terminable agreement in an irrigation district, as per the Irrigation Districts Act. (reason: Annual acres can result in the total irrigated area exceeding the expansion limit).

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 licensed 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.

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

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

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.

Unrehabilitated earth canal: Includes those earth canals that have not been re-constructed through past and current investments, including: Irrigation infrastructure modernization investment, Irrigation Rehabilitation Program (IRP), District-funded infrastructure projects and/or Government of Alberta.

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, surface, and other.

Low pressure pivot sprinkler includes:

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 medium pressure (less than 30 psi) impact spray nozzles with the addition of a secondary pivotal arm connected to the end of the centre pivot boom.

Linear – low pressure: Linear move irrigation pivot system with high pressure (less than 30 psi) impact sprinklers that irrigate a rectangular field.

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 LEPA / LESA / PMDI:

LEPA: Low Energy Precision Application Sprinklers include bubbler plate or drag socks that are mounted 1 to 1.5 feet above the soil surface or are in direct contact with the soil surface using drag socks. They have 3.5 to 5 feet spacing between the drop tubes.

LESA: Low Elevation Spray Application Sprinklers are mounted 1 to 3.5 feet above the soil surface. They have 5 feet spacing between the drop tubes.

PMDI (MDI): Precision Mobile Drip Irrigation (Mobile Drip Irrigation) tubing is pulled behind a pivot mounted manifold and the drip tubing is in direct contact with the soil or crop canopy.

Pivot LEPA / LESA – corner arm: Low Energy Precision Application Sprinklers, or Low Elevation Spray Application Sprinklers with the addition of a secondary pivotal arm connected to the end of the center pivot boom.

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.

Wheel move includes:

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

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

Surface (Gravity) includes:

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

Surface (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 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.

Subsurface – subsurface drip: Low-pressure irrigation system that uses buried drip tubes or drip tape.

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

Live storage: Portion of the volume of water stored in a reservoir that is available for use for flood control, power production, irrigation, or other downstream releases. In contrast, dead storage refers to the portion of water in a reservoir that cannot be drained or released from the reservoir under normal operations. Irrigation live storage refers to the portion of the live storage available specifically for irrigation.

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 replace 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 infrastructure to a 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 the licence holder 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 licensed to annually divert.