

1920.

VICTORIA.

STATE RIVERS AND WATER SUPPLY COMMISSION.

FIFTEENTH
ANNUAL REPORT.
—
1919-20.

PRESENTED TO BOTH HOUSES OF PARLIAMENT PURSUANT TO THE PROVISIONS OF
THE WATER ACTS.

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STATE RIVERS AND WATER SUPPLY COMMISSION.

ANNUAL REPORT, 1919-20.

In compliance with the provisions of the Water Acts, the State Rivers and Water Supply Commission submits the following Report and Statement for the Financial Year 1919-20, and Estimates for the ensuing year.

WORKS UNDER CONTROL OF COMMISSION.

The following statement gives a brief description, summary of cost, and other particulars relative to the undermentioned works controlled by the Commission.

A.—FREE HEADWORKS.

DESCRIPTION OF WORKS.	Capital Debit at 30th June, 1920. Exclusive of cost of Loan Flotation.
1. Broken River Works :—Casey's Weir and offtake, with about 59 chains of channel to the Broken Creek; Gowangardie Weir with offtake sluice	£ 14,853
2. Goulburn River Works :—Weir on the Goulburn River, about 9 miles above Murchison; channel therefrom, about 23½ miles, to Waranga Reservoir; and that Reservoir (but exclusive of the work of its enlargement)	736,904
3. Kerang North-West Lakes Works :—Weir on the Loddon River at its confluence with the Pyramid Creek; regulating weirs at the effluence from the Loddon of the Sheepwash and Washpen Creeks; channel from the Washpen Creek regulator to Reedy Lake, Middle Lake, Third Lake, Lake Charm, Race-course Lake, Cullen's Lake, Kangaroo Lake, and Lake Tutchewop, and to the Little Murray River, with water storage works at these lakes	13,150
4. Kow Swamp Works :—Intake from the Murray River with regulator, at the effluence of the Gunbower Creek; channel thence to the Kow Swamp Reservoir; and that Reservoir; channel along the northern side of the reservoir; channel from the outlet of the reservoir, about 23½ miles, to the left bank of the Loddon River	187,366
5. Lake Lonsdale Reservoir :—Reservoir at Lake Lonsdale, on the Little Wimmera River, near Ledcourt	49,054
6. Loddon River Works :—Laanecoorie Weir, on the Loddon; Bridgewater Weir, on the Loddon; Kinypanial Weir, on the Loddon	167,636
7. Long Lake Pumping Works :—Inlet to Lake Baker, from the Little Murray River; water storage works at Lake Baker and Long Lake, with channel connecting these lakes; pumping plant at Long Lake, with rising main thence about 7 miles to allotment 10M, parish of Kooem; system of main distributary channels, about 85 miles in length	27,346
8. Lower Wimmera Compensation Works :—Drung Drung Weir, on the Wimmera, near allotment 29, parish of Longerenong; Dimboola Weir, on the Wimmera, near Dimboola township; Antwerp Weir, on the Wimmera, at Antwerp Station home-stead; Jeparit Weir, on the Wimmera, near Jeparit township	8,558
Total	1,204,867

B.—WATERWORKS DISTRICTS.

Distributary Works within Districts under the control of the Commission.

Name of District (Including Urban Districts).	Total Capital Expenditure.	Capital Written Off by Acts 1625 and 1651.	Redemption Paid to Treasury.	Capital Debit at 30th June, 1920.
	£	£	£	£
1. Birchip	258,252	700	2,221	255,331
2. Sea Lake				
3. Tyrrell				
4. Wycheproof				
5. Carwarp	13,218	..	..	13,218
6. Coliban	1,264,742	..	..	1,264,742
7. Karkaroc	98,571	..	2,493	96,081
8. Kerang North-west Lakes (Free Headworks excluded)	2,000	..	..	2,000
9. Long Lake (Free Head- works excluded)	55,010	..	571	54,439
10. Naval Base and Mornington Peninsula	179,583	..	..	179,583
11. Ouyen	7,752	..	..	7,752
12. Tyntynder	64,006	..	..	64,006
13. Walpeup East	4,181	..	..	4,181
14. Walpeup West	10,324	..	..	10,324
15. Werribee	10,101	..	..	10,101
16. Western Wimmera	252,861	132,835	15,118	104,878
17. Wimmera United	194,795	36,392	12,076	116,327
18. Wonthaggi	63,042	..	1,241	58,798
19. Yelta	3,700	..	..	3,700
Wimmera Main Channels	177,958	..	..	177,958
Wimmera Storages—	177,958	..	..	177,958
Fyans Lake				
Taylor's Lake				
Lake Whitton				
	38,103	..	..	38,103
	73,003	..	..	73,003
	9,443	..	..	9,443
	2,780,651	169,927	36,753	2,573,971
Carried forward				3,778,838

WORKS UNDER CONTROL OF COMMISSION—*continued.*Capital Debit
at 30th June,
1920.
Exclusive
of Cost of Loan
Flotation.

Brought forward

£
3,778,838

C.—IRRIGATION AND WATER SUPPLY DISTRICTS.

Distributary Works within Districts under the control of the Commission.

Name of District (Including Urban Divisions).	Total Capital Expenditure.	Capital Written Off by Acts 1825 and 1851.	Redemption Paid to Treasury.	Capital Debit at 30th June, 1920.
	£	£	£	£
1. Bacchus Marsh	63,413	8,906	493	54,014
2. Boort	56,850	35,259	1,094	20,497
3. Campaspe	63,566	52,685	305	10,576
4. Coluna	137,499	49,197	604	87,698
5. Deakin	93,688	34,748	2,144	56,796
6. Dingee	13,096	..	..	13,096
7. Dry Lake	1,704	686	299	719
8. Gannawarra	84,217	33,179	180	50,858
9. Kerang	83,629	35,338	2,134	46,157
10. Koondrook	112,595	30,872	1,525	80,198
11. Merbein	120,509	..	..	120,509
12. Nyah	39,016	..	..	39,016
13. Rochester	121,284	..	..	121,284
14. Rodney	378,108	149,949	8,890	219,269
15. Shepparton	69,064	..	146	68,918
16. Stanhope	29,591	..	..	29,591
17. Swan Hill	70,350	19,799	371	50,180
18. Tongala	63,322	..	..	63,322
19. Tragowel Plains	189,795	124,534	527	64,734
20. Werribee	46,041	..	..	46,041
Totals	1,837,337	575,152	18,712	1,243,473

1,243,473

D.—IRRIGATION AND WATER SUPPLY DISTRICTS AND FLOOD PROTECTION DISTRICTS.

WORKS IN COURSE OF CONSTRUCTION.

Cost Apportioned and to be Apportioned to Districts benefited.

Name of Work.	Capital Debit at 30th June, 1920.	Tentative Debts to Districts, 1919-20.			
	£	£			
Goulburn Main Channels (Free Headworks excluded)—		Rodney	120,000		
1. East Goulburn	133,041	Tragowel Plains	100,000		
2. Waranga Reservoir to Campaspe ..	252,124	Rochester	74,000		
3. West of Campaspe	194,968	Tongala	58,000		
		Shepparton	57,000		
		Deakin	24,000		
		Dingee	15,000		
		Stanhope	15,000		
	580,133		463,000		
					580,133
Goulburn Storages—					
4. Sugarloaf Reservoir	411,735				
5. Waranga Reservoir Enlargement	254,909				
	666,644				666,644
Bacchus Marsh and Werribee Schemes—		Werribee	8,000		
6. Ballan Tunnel	17,145	Bacchus Marsh	72,704		
7. Pykes Creek Reservoir	63,559	Werribee	46,000		
8. Melton Reservoir	77,302				
	158,006				158,006
Maffra Scheme—					
9. Glenmaggie Reservoir	17,397				17,397
Flood Protection Districts—					
10. Koo-wee-rup and Cardinia	82,546				
11. Goulburn Levees	29,819				
	112,365				112,365

Carried forward 6,556,856

WORKS UNDER CONTROL OF COMMISSION— <i>continued.</i>				Capital Debit at 30th June, 1920. Exclusive of Cost of Loan Flotation.
Brought forward				£ 6,556,856
E.—WATERWORKS TRUSTS DISTRICTS.				
DISTRICTS HELD IN TRUST BY THE COMMISSION.				
Name of Trust.	Total Advances by State.	Capital Written Off by Acts 1625 and 1651.	Redemption Paid to Treasury.	Capital Debit at 30th June, 1920.
	£	£	£	£
1. Avoca Water Trust—				
Rural District	8,709	2,494	1,529	4,686
Urban District (Quambatook)	3,786	..	294	3,492
2. Carrum Waterworks Trust	26,805	7,732	2,286	16,787
3. Loddon United Waterworks Trust—				
Rural District	22,534	1,717	3,827	16,990
Urban District (Mitiamo)	2,850	..	14	2,836
	64,684	11,943	7,950	44,791
Grand Total				£ 6,556,856

LANDS SUPPLIED WITH WATER WITHIN THE STATE.

The area of country lands within the State artificially supplied with water for domestic and ordinary use and for watering stock is, approximately, 20,887 square miles, equal to about 13,368,000 acres.

The area under irrigated culture, for all kinds of crop, was 371,248 acres, being an increase of 89,089 acres over the area irrigated in the previous year. This constitutes a new record, and is 120,581 acres above the average of the last four years. The area irrigated last year includes some 18,000 acres watered under yearly permits granting authority to divert water from streams throughout the State. The number of separate towns supplied, exclusive of the city of Melbourne and its suburbs, is as shown in the following statement :—

Controlling Authorities.	Number of Towns Supplied.	Estimated Population Served.
Commission	42	72,100
Waterworks Trusts	100	151,300
Local Governing Bodies	18	73,500
Totals	160	296,900

LANDS UNDER IRRIGATED CULTURE.

The two Statements herewith show the extent of Areas Irrigated for last year in detail, and for the last five years totalled for purposes of comparison.

STATEMENT OF THE EXTENT OF IRRIGATION AND OF AREAS OF DIFFERENT KINDS OF CROPS WATERED—YEAR 1919-20.

Name of District.	Area Irrigated (Acres).							Total.
	Cereals.	Lucerne grown for Pasture and Hay.	Sorghum and other Annual Fodder Crops.	Pastures.	Vineyards, Orchards, and Gardens.	Fallow.	Miscellaneous.	
<i>Supplied from Goulburn State Works.</i>								
Shepparton	1,367	5,665	568	1,446	7,523	98	325	16,992
Rodney	15,386	21,629	3,806	22,270	7,971	2,410	338	73,810
Deakin	4,241	968	570	2,185	14	644	50	8,672
Stanhope	1,362	1,846	549	572	237	1,047	15	5,628
Tongala	2,005	5,514	432	2,044	1,158	991	124	12,268
Rochester	4,038	13,735	1,991	3,818	1,548	903	52	26,085
Dingee	506	713	..	526	19	17	..	1,781
Tragowel Plains	11,677	689	6,724	15,935	18	..	..	35,043
Totals	40,582	50,759	14,640	48,796	18,488	6,110	904	180,279
<i>Supplied from Kow Swamp State Works.</i>								
Kerang	6,962	229	3,090	16,164	37	8	20	26,510
Dry Lake	150	..	70	300	6	..	..	526
Lands supplied direct (outside Districts)	2,798	1,953	649	3,019	22	..	..	8,441
Totals	9,910	2,182	3,809	19,483	65	8	20	35,477
<i>Supplied from Loddon State Works.</i>								
Boort	4,142	119	1,705	5,284	22	..	..	11,272
Tragowel Plains .. .. .	..	..	..	..	..	..	..	..
Totals	4,142	119	1,705	5,284	22	..	..	11,272
<i>Supplied from other State Works.</i>								
Bacchus Marsh .. .. .	..	2,255	148	394	67	134	..	2,998
Campaspe	443	242	22	340	12	..	..	1,059
Cohuna	1,972	5,877	2,332	9,917	116	132	82	20,428
Gannawarra	3,145	1,350	4,016	10,341	17	131	470	19,470
Koondrook	3,579	1,130	2,574	12,881	706	18	47	20,935
Merbein .. .. .	..	180	..	..	6,534	..	468	7,182
Nyah	290	..	..	..	1,690	..	..	1,980
Swan Hill	5,919	2,567	1,261	2,306	675	556	3	13,287
Werribee	250	3,524	61	50	114	..	..	3,999
Western Wimmera	180	10	64	40	1,150	..	..	1,444
Totals	15,778	17,135	10,478	36,269	11,081	971	1,070	92,782
<i>Supplied from other sources.</i>								
Kerang North-West Lakes	3,048	538	1,400	4,159	7	..	..	9,152
First Mildura .. .. .	..	144	199	..	10,360	1,175	615	12,493
Coliban	370	393	380	844	3,562	238	159	5,946
Kerang—Outside Districts (Private Diversions)	2,980	94	344	2,428	1	..	..	5,847
Other Private Diversions throughout the State .. .. .	..	..	..	..	..	..	18,000	18,000
Grand Totals, 1919-20	76,810	71,364	32,955	117,263	43,566	8,502	20,768	371,248
Grand Totals, 1918-19	44,765	64,131	19,083	88,986	38,260	5,575	21,359	282,159

COMPARATIVE STATEMENT OF THE EXTENT OF IRRIGATION, 1915-16 to 1919-20.

	Area under Irrigation (Acres).				
	1915-16.	1916-17.	1917-18.	1918-19.	1919-20.
Goulburn State Works	134,011	119,139	75,614	123,242	180,279
Kow Swamp State Works	21,857	20,303	11,063	23,591	35,477
Loddon State Works	17,051	15,205	5,682	18,973	11,272
Other State Works	72,307	65,845	48,159	73,476	92,782
Kerang North-West Lakes	5,916	3,269	759	5,069	9,152
First Mildura Trust Works	12,064	12,246	12,246	12,246	12,493
Coliban State Works	3,676	3,862	4,097	4,828	5,946
Private Works in Kerang District	4,125	836	176	2,934	5,847
Other Private Works throughout the State	17,000	17,000	17,000	17,800	18,000
Totals	288,007	257,705	174,796	282,159	371,248

VALUATIONS, RATES, AND COMPULSORY IRRIGATION CHARGES.

The statements which follow set forth the whole of the districts supplied by the Commission with water for domestic and ordinary use and for watering cattle or other stock, together with the annual value of the lands and tenements in such districts, and the rates and compulsory irrigation charges made. An estimate of the number of persons dwelling in such districts is also appended.

During the year a rate was for the first time made by this Commission in the Urban District of Dandenong, which was formerly a Waterworks Trust District, but on the 1st January, 1920, was placed under the jurisdiction and control of the Commission as a part of the Mornington Peninsula Water Scheme.

In twenty-three districts the lands were, for the purpose of making and levying rates, arranged in divisions (not more than three in number) in accordance with the relative benefits derived by such lands from the works. As heretofore in the urban portion of the Coliban system, a minimum and a progressive rate have been made, and the Carrum Waterworks Trust District has, as in past years, been arranged in five rating divisions in accordance with the relative benefits derived by such lands from the works.

Under the powers conferred by Section 5 of the *Water Act* 1916, a minimum rate on the basis of £8 per 640 acres was fixed by the Commission on the first division lands of the Birchip, Karkaroc, Long Lake, Sea Lake, Tyntynder, Tyrrell, Western Wimmera, Wimmera United, and Wycheproof Waterworks Districts; while in the Walpeup West Waterworks District the minimum was fixed at £2 per 640 acres.

In fifteen districts the Commission made and levied compulsory irrigation charges, details of which are set out hereunder.

A.—VALUATIONS AND RATES.

Districts Supplied with Water for Domestic and Ordinary Use and for Watering Cattle or other Stock.	Annual Value of Lands and Tenements.	Rate in the £1 made during year ended 30th June, 1920.	Period of Rate.	Estimated Number of Persons dwelling in District.
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IRRIGATION AND WATER SUPPLY DISTRICTS.

	Valuation by Commission.	£		Period of Rate.	Estimated Number of Persons dwelling in District.
		£	s. d.		
1. BACCHUS MARSH	11,347	..	.. 1 0	1st July, 1919, to 30th June, 1920	730
2. BOORT	15,483	1st Division ..	2 0	" " "	750
		2nd Division ..	1 0	" " "	
3. CAMPASPE	9,921	1st Division ..	1 8	" " "	518
		2nd Division ..	0 10	" " "	
		3rd Division ..	0 5	" " "	
4. COHUNA	16,734	1st Division ..	2 0	" " "	1,025
		2nd Division ..	1 0	" " "	
5. DEAKIN	61,921	1st Division ..	1 6	" " "	2,500
		2nd Division ..	0 9	" " "	
		3rd Division ..	0 4½	" " "	
6. DINGEE	2,825	..	.. 1 0	" " "	215
7. DRY LAKE	250	(No rate made)	.. ..	" " "	11
8. GANNAWARRA	11,204	1st Division ..	2 0	1st July, 1919, to 30th June, 1920	554
		2nd Division ..	1 0	" " "	
9. KERANG	17,628	1st Division ..	2 6	" " "	756
		2nd Division ..	1 3	" " "	
		3rd Division ..	0 7½	" " "	
10. KOONDRUCK	11,896	1st Division ..	2 0	" " "	643
		2nd Division ..	1 0	" " "	
11. MERBEIN	6,005	..	.. 1 0	" " "	1,900
12. NYAH	1,833	..	.. 1 0	" " "	770
13. ROCHESTER	43,397	1st Division ..	1 0	" " "	2,821
		2nd Division ..	0 6	" " "	
		3rd Division ..	0 3	" " "	
14. RODNEY	146,241	1st Division ..	1 0	" " "	5,600
		2nd Division ..	0 6	" " "	
		3rd Division ..	0 3	" " "	
15. SHEPPARTON	16,711	..	.. 1 0	" " "	1,622
16. STANHOPE	6,381	..	.. 1 0	" " "	320
17. SWAN HILL	8,469	..	.. 2 0	" " "	728
18. TONGALA	13,879	..	.. 1 0	" " "	1,450
19. TRAGOWEL PLAINS	32,780	1st Division ..	1 0	" " "	1,050
		2nd Division ..	0 6	" " "	
20. WERRIBEE	7,037	..	.. 1 0	" " "	450

A.—VALUATIONS AND RATES—continued.

Districts Supplied with Water for Domestic and Ordinary Use and for Watering Cattle or other Stock.	Annual Value of Lands and Tenements.	Rate in the £1 made during year ended 30th June, 1920.	Period of Rate.	Estimated Number of Persons dwelling in District.
WATERWORKS DISTRICTS.				
	Valuation by Commission.	<i>s. d.</i>		
21. AXE CREEK	£ 1,442	.. .. 2 0	1st July, 1919, to 30th June, 1920	220
22. BIRCHIP	31,477	1st Division .. 2 2	" " "	2,400
		2nd Division .. 1 1	" " "	
		3rd Division .. 0 6½	" " "	
23. CARWARP	7,569	1st Division .. 3 6	" " "	500
		2nd Division .. 1 9	" " "	
		3rd Division .. 0 10½	" " "	
24. HARCOURT	6,215	.. .. 1 6	" " "	570
25. KARKAROOC	86,370	1st Division .. 1 10	" " "	3,370
		2nd Division .. 0 11	" " "	
		3rd Division .. 0 5½	" " "	
26. KERANG NORTH-WEST LAKES	6,902	.. .. 0 6	" " "	405
27. LONG LAKE	50,223	1st Division .. 2 6	" " "	1,840
		2nd Division .. 1 3	" " "	
		3rd Division .. 0 7½	" " "	
28. SEA LAKE	47,708	1st Division .. 2 4	" " "	2,100
		2nd Division .. 1 2	" " "	
		3rd Division .. 0 7	" " "	
29. TYNTYNDER	30,396	1st Division .. 3 0	" " "	1,500
		2nd Division .. 1 6	" " "	
		3rd Division .. 0 9	" " "	
30. TYRRELL	37,026	1st Division .. 3 0	" " "	2,600
		2nd Division .. 1 6	" " "	
		3rd Division .. 0 9	" " "	
31. WALPEUP EAST	29,231	1st Division .. 0 5	" " "	1,650
		2nd Division .. 0 2½	" " "	
32. WALPEUP WEST	59,200	1st Division .. 0 6	" " "	3,400
		2nd Division .. 0 3	" " "	
33. WERRIBEE	5,721	.. .. 2 0	" " "	100
34. WESTERN WIMMERA	247,477	1st Division .. 1 2	" " "	10,500
		2nd Division .. 0 7	" " "	
		3rd Division .. 0 3½	" " "	
35. WIMMERA UNITED	267,816	1st Division .. 1 2	" " "	8,600
		2nd Division .. 0 7	" " "	
		3rd Division .. 0 3½	" " "	
36. WYCHEPROOF	51,086	1st Division .. 2 2	" " "	2,140
		2nd Division .. 1 1	" " "	
		3rd Division .. 0 6½	" " "	
37. YELTA	2,130	.. .. 3 0	" " "	45
URBAN DIVISIONS AND DISTRICTS.				
	Municipal Valuation.	<i>s. d.</i>		
38. BACCHUS MARSH	£ 8,074	.. .. 1 6	1st July, 1919, to 30th June, 1920	1,670
39. BERRIWILLOCK	501	.. .. 4 0	" " "	130
40. BEULAH	2,579	.. .. 2 9	" " "	550
41. BIRCHIP	5,089	.. .. 2 0	" " "	900
42. COHUNA	2,943	.. .. 2 3	" " "	696
43. COROP	365	.. .. 2 0	" " "	90
44. DANDENONG	2,148	.. .. 0 9	1st Jan., 1920, to 30th June, 1920	3,500
45. DIMBOOLA	6,368	.. .. 1 9	1st July, 1919, to 30th June, 1920	1,000
46. HOPETOUN	2,389	.. .. 2 9	" " "	450
47. JEPARIT	3,337	.. .. 2 3	" " "	550
48. JUNG JUNG	524	.. .. 3 0	" " "	130
49. KANEIRA	543	.. .. 4 0	" " "	135
50. KOONDROOK	2,303	.. .. 3 0	" " "	409
51. LAKE BOGA	1,503	.. .. 3 0	" " "	265
52. LASCELLES	607	.. .. 3 6	" " "	120
53. MINYIP	3,181	.. .. 3 0	" " "	600
54. NATIMUK	2,530	.. .. 1 6	" " "	420
55. NYAH	254	.. .. 2 6	" " "	120
56. OUYEN	4,815	.. .. 2 9	" " "	500
57. RAINBOW	4,902	.. .. 2 3	" " "	800
58. RUPANYUP	2,191	.. .. 3 0	" " "	400
59. SEA LAKE	2,627	.. .. 3 0	" " "	550
60. ULTIMA	1,945	.. .. 3 0	" " "	280
61. WATCHEM	1,224	.. .. 3 6	" " "	170
62. WERRIBEE	6,606	.. .. 2 0	" " "	1,720
63. WONTHAGGI	23,717	.. .. 1 6	" " "	7,000
64. WOOMELANG	1,715	.. .. 3 0	" " "	410
65. WYCHEPROOF	3,445	.. .. 2 6	" " "	700

A.—VALUATIONS AND RATES—*continued.*

Districts Supplied with Water for Domestic and Ordinary Use and for Watering Cattle or other Stock.	Annual Value of Lands and Tenements.	Rate in the £1 made during year ended 30th June, 1920.	Period of Rate.	Estimated Number of Persons dwelling in District.
COLIBAN SYSTEM.				
66. COLIBAN	Municipal Valuation. £ 297,832	<i>s. d.</i> On Valuations up to £300 .. 1 6 (Minimum 20s.) From £301 up to £700 .. 1 3 From £701 on 1 0 Vacant lands .. 1 6	1st July, 1919, to 30th June, 1920	61,000
WATERWORKS TRUSTS.				
67. AVOCA	£ 29,402	<i>s. d.</i> 0 4½	1st January, 1920, to 31st December, 1920	1,300
68. CARRUM	26,819	1st Division .. 4 0 2nd Division .. 2 0 3rd Division .. 1 6 4th Division .. 1 0 5th Division .. 0 4	" " " "	1,300
69. MITIAMO (URBAN) ..	658	.. .. 4 0	" " "	150
70. QUAMBATOOK (URBAN)	2,178 Valuation by Commission. £	.. .. 3 0	" " "	300
71. LODDON UNITED ..	106,034	1st Division .. 0 8 2nd Division .. 0 4 3rd Division .. 0 2	" " "	2,750

B.—COMPULSORY IRRIGATION CHARGES.

Irrigation and Water Supply District.	Area of District in Acres.	Area at present Irrigable in Acres.	Water Rights apportioned (including extra Rights) in Acre-feet.	Compulsory Charge per Acre-foot of Water Right.	Period of Charge.
1. BACCHUS MARSH ..	6,617	3,287	3,284	20s.	1st October, 1919, to 30th April, 1920
2. COHUNA	34,851	22,309	22,393	5s.	1st September, 1919, to 30th April, 1920
3. DINGEE	5,348	4,636	4,636	6s.	1st September, 1919, to 30th April, 1920
4. GANNAWARRA ..	43,940	17,003	17,003	5s.	1st September, 1919, to 30th April, 1920
5. KOONDROOK ..	52,772	13,910	13,910	5s.	1st September, 1919, to 30th April, 1920
6. MERBEIN	6,943	6,401	15,933	17s. Min. 42/6 per acre.	1st August, 1919, to 30th April, 1920
7. NYAH	2,863	2,263	5,619	14s. Min. 35s. per acre.	1st August, 1919, to 30th April, 1920
8. ROCHESTER ..	129,766	32,109	32,109	5s.	1st September, 1919, to 30th April, 1920
9. RODNEY	265,924	182,768	48,894	5s.	1st September, 1919, to 30th April, 1920
10. SHEPPARTON ..	18,854	16,988	16,988	5s.	1st September, 1919, to 30th April, 1920
11. STANHOPE ..	10,643	8,701	4,346	5s.	1st September, 1919, to 30th April, 1920
12. SWAN HILL ..	18,073	13,224	13,224	5s.	1st September, 1919, to 30th April, 1920
13. TONGALA	25,476	17,814	17,814	5s.	1st September, 1919, to 30th April, 1920
14. TRAGOWEL PLAINS	180,635	124,067	24,805	6s.	1st September, 1919, to 30th April, 1920
15. WERRIBEE	7,909	6,168	6,168	10s.	1st October, 1919, to 30th April, 1920

CONTRACTS.

STATEMENT OF CONTRACTS ENTERED INTO DURING THE YEAR ENDED
30TH JUNE, 1920.

No.	Name of Contractor.	Work or Supply.	Amount. (Loan and Vote).
			£ s. d.
1670	F. Russell	Firewood, Merbein	455 17 4
1671	J. Billing	Firewood, Merbein	128 14 6
1672	J. J. O'Halloran	Firewood, Merbein	108 6 8
1673	G. Webb	Firewood, Merbein	253 13 0
1674	H. E. Ward	Firewood, Merbein	433 6 8
1675	C. Andriske and G. Wakefield	Firewood, Merbein	1,136 14 0
1676	W. Russell	Firewood, Merbein	436 17 10
1677	C. J. Petty	Firewood, Merbein	742 18 0
1678	A. J. Lawson	Firewood, Merbein	450 0 0
1679	W. E. Smythe	Firewood, Merbein	425 0 0
1680	J. M. Harman	Firewood, Koondrook	166 1 6
1681	E. W. Greenway, sen.	Firewood, Koondrook	293 14 0
1682	E. Greenway, jun.	Firewood, Koondrook	73 13 4
1683	H. G. Crombe	Firewood, Koondrook	71 17 6
1684	A. J. Bell	Firewood, Nyah	153 0 0
1685	Cowley's Eureka Ironworks Co.	Boiler and Superheater, Merbein	1,583 10 0
1686	Hawke and Co.	Boiler and Superheater, Merbein	2,924 0 0
1687	E. E. S. Hipwell	Firewood, Cohuna	150 0 0
1688	Wm. Monro	Firewood, Cohuna	265 12 6
1689	J. L. Monro	Firewood, Cohuna	240 17 3
1690	Joseph Cairns	Firewood, Cohuna	203 2 6
1691	Thomas Bubb	Firewood, Cohuna	276 18 6
1692	A. J. Monro	Firewood, Cohuna	356 14 0
1693	Thomas Church	Firewood, Cohuna	212 10 0
1694	Charles C. McInnes	Firewood, Cohuna	154 9 6
1695	Australian Wood Pipe Co.	Pipe Main, Frankston to Mordialloc	17,296 0 8
1696	Thompson & Co.	Centrifugal Pump and Steam Engine, Merbein	8,038 16 0
1697	P. M. Mannix	Firewood, Nyah	300 6 0
1698	Hume Bros. Cement Iron Co.	Cement Pipes, Merbein	800 11 5
1699	James O'Grady	Steel Chimney Stack and Flues, Merbein	335 10 0
1700	Hume Bros. Cement Iron Co.	Concrete Pipes, Dimboola	358 6 3
1701	W. W. Moore and Sons	Bailiffs' Quarters, Stanhope and Tongala	960 0 0
1702	Australian Portland Cement Co.	30,000 casks Cement	21,375 0 0
1703	Commonwealth Portland Cement Co.	10,000 casks Cement	7,208 6 8
1704	J. H. Horwood and Co.	Boring for Water, Tyalla, Boinka, and Underbool	1,400 0 0
1705	Corry Bros.	Sawn Redgum Timber, Torrumbarry Weir	352 1 0
1706	John McKay	Sawn Redgum Timber, Torrumbarry Weir	712 10 0
1707	W. Masters	Firewood, Cohuna	175 7 0
1708	R. Heritage	Firewood, Cohuna	175 0 0
1709	F. W. Bell	Firewood, Cohuna	150 18 0
1710	John Mannix	Firewood, Cohuna	700 0 0
1711	C. J. Nicholas	Firewood, Nyah	165 2 0
1712	A. J. Bell	Firewood, Nyah	191 5 0
1713	Robert Harris	Firewood, Nyah	162 10 0
1714	Mephan Ferguson Pty. Ltd.	Steel Pipes, Merbein	1,650 1 0
1715	Australian Wood Pipe Co.	Oregon Wood Pipes, Frankston	1,754 12 9
1716	Australian Wood Pipe Co.	Oregon Wood Pipes, Mornington	615 5 1
1717	Hume Bros. Cement Iron Co.	Cement Pipes, Mornington	1,995 11 0
1718	Hume Bros. Cement Iron Co.	Cement Pipes, Mornington	2,372 2 0
1719	C. J. Petty	Firewood, Merbein	713 7 0
1720	G. Webb	Firewood, Merbein	378 6 0
1721	J. Billing	Firewood, Merbein	195 0 0
1722	G. Wakefield	Firewood, Merbein	417 6 0
1723	W. E. Smythe	Firewood, Merbein	383 10 0
1724	M. O'Halloran	Firewood, Merbein	357 10 0
1725	J. Terry	Firewood, Koondrook	198 15 0
1726	H. E. Fasham	Firewood, Koondrook	107 5 0
1727	H. G. Crombie	Firewood, Koondrook	168 6 2
1728	T. Mannix	Firewood, Cohuna	385 17 6
1729	T. Church	Firewood, Cohuna	205 17 0
1730	R. E. Cockayne	Firewood, Cohuna	230 12 6
1731	J. M. Harman	Firewood, Koondrook	189 7 6
1732	Gibson Battle Pty. Ltd.	Cableway Materials, Torrumbarry Weir	2,500 0 0
1733	A. J. Munro	Firewood, Cohuna	343 15 6
1734	P. Mannix, jun.	Firewood, Nyah	378 0 0
1735	T. S. Jones	Firewood, Koondrook	172 18 4
1736	Austral Otis Engineering Co.	Steam Loco. Cranes, Hume Reservoir	12,000 0 0
1737	Thompson & Co.	Boiler and Superheater, Nyah	2,299 10 0
1738	E. Bennetts & A. Sargent	Fencing Storage Site, North Melbourne	45 3 0
1739	F. W. Bush, trading as A. Bush	Oaten Hay (about 450 tons)	2,731 15 0
		Carried forward	105,344 11 11

STATEMENT OF CONTRACTS, ETC.--continued.

No.	Name of Contractor.	Work or Supply.	Amount (Loan and Vote).
		Brought forward	£ s. d. 105,344 11 11
1740	Welch Perrin & Co.	Pump Runners and Shafts, Nyah	350 0 0
1741	F. McGinnisken and J. Pickering	Firewood, Merbein	312 10 0
1742	Thompson and Co.	Steel Shafting and Sluice Gates, Sugarloaf Reservoir	3,950 12 8
1744	Hartley, W.	Firewood, Cohuna	462 10 0
1745	Thomas Bubb	Firewood, Cohuna	706 5 0
1746	W. Masters	Firewood, Cohuna	287 10 0
1747	H. Swinnerton	Firewood, Cohuna	200 0 0
1748	Thomas Church	Firewood, Cohuna	281 5 0
1749	A. J. Morris	Firewood, Cohuna	750 0 0
1750	A. McInnes	Firewood, Cohuna	366 13 4
1751	R. E. Cockayne	Firewood, Cohuna	181 5 0
1752	W. J. Connelly	Firewood, Cohuna	650 0 0
1753	T. Mannix	Firewood, Cohuna	350 0 0
1754	Wm. Monro	Firewood, Cohuna	362 10 0
1755	Charles Bowman	Firewood, Cohuna	175 0 0
1756	R. Heritage	Firewood, Cohuna	200 0 0
1759	J. Spellacy	Firewood, Merbein	487 10 0
1764	Wm. Russell	Firewood, Merbein	520 0 0
1765	G. Wakelield	Firewood, Merbein	1,397 10 0
1766	J. H. Hunt	Firewood, Merbein	942 10 0
1767	J. J. O'Halloran	Firewood, Merbein	975 0 0
1768	W. O'Halloran	Firewood, Merbein	975 0 0
1769	A. Robinson	Firewood, Merbein	487 10 0
1770	J. Billing	Firewood, Merbein	487 10 0
1772	E. J. Carroll	Twin Storage Tanks, Lascelles	988 4 0
			122,191 6 11

PIECE-WORK AND DIRECT LABOUR.

The construction of the larger works is still being mainly carried out by "Piece-work" and "Direct Labour." The principal payments were on the following works:--

Works.	Amount.
Sugarloaf Reservoir	£54,476
Waranga Reservoir	48,969
Goulburn Main and Distributory Channels	8,635
Wimmera-Mallee System	46,469
Mallee Tanks, Clearing Roads, (Mallee)	9,554
Naval Base and Mornington Peninsula	22,216
Koo-wee-rup and Cardinia	20,756
Merbein and Redcliffs Irrigation Areas	18,161
Nyah, Rodney, Shepparton, Swan Hill, and Cohuna Districts	23,636
Bacchus Marsh and Werribee Districts	7,724
Coliban District	5,713
Maffra District (Glenmaggie Reservoir)	8,427
River Murray Storages	24,253
Other Works	7,027
Total	£306,016

WORKS CARRIED ON OR COMPLETED DURING THE YEAR ENDED 30TH JUNE, 1920.

COLIBAN DISTRICT.

The works undertaken to enlarge the capacity of the Main Bendigo Branch have been sufficiently advanced to permit of a considerably increased supply being made available to meet the rapidly growing requirements for irrigation during the summer months. Enlargements of some of the principal distributary channels in the Bendigo district have also been carried out with a view to improved delivery at times of stress. Works to further improve the supply to the whole system have been commenced at Taradale, whereby through substituting a single line of reinforced concrete pipe for the two lines of 3-ft. diameter pipe, each 3,000 feet long, with a dip of 100 feet, now conveying the flow beneath Back Creek, double the present capacity will be secured.

At Castlemaine, improvements of reticulation have been effected by connecting the pipes supplying the high levels to the main from the Green Gully Reservoir. At Maldon, hydraulic rams have been installed for improvement of supply to the Upper Reservoir with satisfactory results.

Investigations of several proposals for extension of works and the provision of subsidiary storage on branch channels are in hand.

IRRIGATION AND WATER SUPPLY DISTRICTS.

RODNEY DISTRICT.

In order to make provision for the steadily growing demand for water in the portion of the district of which Ardmona is the centre, a commencement has been made with enlargement of the Wilson Channel, the main source of supply.

Owing to exceptional dryness of the season, watering extended over a period of about ten months, and the need for increased supplies of stored water at times became evident. This need will now be met by the coming into operation of portion of the Sugarloaf Reservoir, and the enlargement of Waranga Reservoir. Throughout the district such works as minor channel extensions, new culverts, and additional measuring outlets have been constructed as required. Much of this work has been necessitated by the settlement of returned soldiers.

SHEPPARTON DISTRICT.

All the main works of the drainage scheme have been completed, and several subsidiary drains have been connected with them. New irrigation channels have been constructed for the supply of an area of about 2,400 acres, the greater portion of which is being subdivided into holdings for returned soldiers. On the older portions of the district some extensions of channel lining have been made. The season has been prosperous, and it has been found necessary to instal new machinery in the Cannery to cope with the increasing production of fruit.

SWAN HILL DISTRICT.

Although the season was one of very low rainfall, all demands for water for irrigation were met, and good progress was made throughout the district. About 2,050 acres have been acquired for Soldier Settlement and divided into 59 holdings, of which 50 have been allotted. Most of the soldier settlers are now on their holdings, and excellent results are being shown in many cases.

The construction of the necessary channelling for the new area has been the principal work for the year. It is so far advanced that water will be available for all holdings during the coming planting season.

DISTRICTS ADMINISTERED FROM KERANG CENTRE.

The self-acting doors at No. 1 Weir on the Gunbower Channel, near Gunbower, have been removed, and are being replaced by dropbars. Additional struts have been inserted in this structure to provide for needs when the Torrumbarry Weir is completed.

The old timber structure at the inlet to Cockatoo Lagoon, from the Gunbower Creek, was replaced by a reinforced concrete pipe inlet.

The dry season and the consequent early unavoidable shortage of supply from the Kow Swamp Storage led to the installation of a temporary pumping plant at Torrumbarry Headworks. The reinforced concrete flume provided for such an emergency after the specially dry season of 1914-15 served its purpose satisfactorily, being a great improvement on the wooden flumes used on previous occasions. This temporary pumping supply, cost of which is being borne by the land-owners, did much to mitigate the effects of a particularly dry period in the Kerang district.

In all the districts the channels, owing to the dry spell, were in use for the greater part of the year, and little work was possible beyond maintenance and repairs and provision of some small structures.

In the Kerang North-west Lakes District further progress was made with the levees on the west side of Racecourse Lake and the south side of Kangaroo Lake. A new reinforced concrete regulator and outlet combined was constructed in the channel between Kangaroo Lake and Lake Tutchewop.

The works to replace the old timber weir on the Loddon, just below the junction of the Pyramid Creek, near Kerang, have been commenced. They consist of an earthen bank across the Loddon through which a reinforced concrete pipe is laid to provide for flows at a low level. Large flows will pass through a cut which is being made across a bend in the river. Near the upper end of this cut a reinforced concrete regulator will be built, and at the lower end will be protective works against scour where it rejoins the Loddon.

DISTRICTS ADMINISTERED FROM COHUNA CENTRE.

In Cohuna District considerable extension of drainage systems was the most important feature of the year's work. The results are very encouraging, particularly as regards lowering of the water table and increasing freshness of the effluent.

Owing to the dry season the demand for water for irrigation was abnormal, but though an exceptional amount of pumping was necessitated all obligations were met.

In the Gannawarra District considerable work was done to improve the efficiency of the Right Branch Channel. Several large holdings have been subdivided, and generally there has been a marked increase in the area under cultivation. Both in Cohuna and Gannawarra the acreage watered during the season is the greatest on record.

In Cohuna Township rapid growth of population has necessitated the laying of 68 chains of additional water mains.

DISTRICTS ADMINISTERED FROM LODDON CENTRE.

In Tragowel Plains District the total deliveries of water exceeded the allotted water rights by 8,400 acre-feet. Owing to abnormal local dryness the watering season extended over ten months, thus small opportunity was afforded for work in existing channels. It was, however, found possible to do some reconstruction of earthwork and to renew some of the old timber work in structures.

In the Boort District the Kinypaniel Creek, near Fernihurst, has been greatly improved by clearing, with the result that the southern portion of the district will receive a better supply. In the northern portion of the district the Twelve-mile Weir has been put in good order, and much clearing of bulrushes and other growths in channels effected.

In Dingee District flood embankments have been repaired, channels cleaned out, and several new outlets provided.

DISTRICTS ADMINISTERED FROM ROCHESTER CENTRE.

In Rochester District the quantity of water used exceeded that of last year, which was a record, and undoubtedly more water could have been used if it had been available. The works for the year consist of preparation of schemes for supply of Echuca North and Nanneella East, and the extension of the works for drainage of Ballendella. On existing works, 52 chains of pug trenching to check seepage have been done, twelve new meter outlets have been installed, practically all meter wheels have been re-coated with tar mixture, and levels and designs for grading have been supplied to new settlers as required.

In Campaspe District, several compartments of the Campaspe Weir have been repaired and repacked with stone. Repairs were also effected to the apron and other parts of the Weir.

Throughout the channel system such necessary works as redecking of culverts and clearing of channels have received attention.

DISTRICTS ADMINISTERED FROM TONGALA.

In Tongala District new channels have been constructed for the supply of the Kyabram No. 2 Estate, which has been made available for soldier settlement. The McLeod Estate has also been made available, and the channels are now in course of construction. This area will be included in the district next year. Owing to the dry spring a very early demand was made for irrigation supplies. The water was turned on in August, 1919, and ran continuously till the end of May, 1920. This early and continued demand for water cut short the repair season, with the result that certain remodelling work to raise the full supply level of some channels had to be postponed. General repair and maintenance work was, however, carried out as far as the short season would permit.

In Stanhope District good progress is being made with the settlement of returned soldiers. All the main works for irrigation supply, including two concrete pipe siphons, one 36 inches in diameter and the other 30 inches in diameter over the main depression, have been completed, only the meter outlets having still to be constructed on some of the channels. Work of reticulating the adjoining lands which have been purchased is in hand, and the channels are nearing completion. It is intended to enlarge the Stanhope District next year by including the balance of the Estates known as Stanhope, Robgill, and Girgarre. The inclusion of Bonshaw Estate, which adjoins these, will follow in due course.

The maintenance and repair work in the district was light, the channels holding well. A small section in the very sandy country is showing signs of seepage, and will be treated during the year. Most of the maintenance work was caused by damages through an invasion of rabbits due to the dry spring.

In Deakin District work was confined to maintenance and dealing with bulrushes, the difficulty with the latter being very great in the channels which are partly used for drainage, and, therefore, contain water throughout the whole year. In many parts of the Deakin District there is a growing desire that a definite system of delivery under water rights be substituted for the present system of purchase when water is available.

BACCHUS MARSH AND WERRIBEE DISTRICTS.

At Bacchus Marsh some additions have been made to the distributary works for irrigation, and portions of the Parwan and Darley Channels have been lined with concrete. The repairs to the outlet of Pykes Creek Tunnel, mentioned in last annual report, have been completed, and the tunnel has been brought into full use in supplementing the inflow to Pykes Creek Reservoir with water from Werribee River.

In Werribee Irrigation District the efficiency of the main channel has been increased by raising the sill of the diversion weir in the Werribee River. Good progress has been made with the distributary works on subdivisions for soldier settlement. Throughout these works it has been deemed advisable to provide for complete concrete lining in the near future with a view to guarding as far as possible against seepage trouble. Drainage matters have received due attention. In the case of surface waters the Shire Council is co-operating wherever road drainage is concerned. In the southern portion of the district, where subsoil water has to be dealt with, a system of deep drains is being carried out.

The season has been a very successful one for lucerne growers, and the many thousands of tons placed on rail at Werribee must have done much to alleviate drought conditions elsewhere.

In the Werribee Waterworks District an efficient supply for domestic and stock purposes was maintained throughout the season.

MERBEIN DISTRICT.

The remodelling of about $1\frac{1}{2}$ miles of main channel necessary for supply of the southern portion of the Birdwood area has been carried out, and the embanked portions of the new work have been lined with concrete.

The Birdwood extension reticulation works have been completed, and nearly all the channels lined with concrete. Preparations are being made for the subdivision and reticulation for settlement of a further area of about 400 acres. This will complete the extension of Merbein district in this direction unless investigations shortly to be made show that a considerable area of high land within the First Mildura Trust District,

and included in the recent Red Cliffs purchase, can be commanded by the Merbein system. Notwithstanding shortage of cement, steady progress has been made with channel lining throughout the original district, some 34 miles being now completed.

The installation of additional pumping plant referred to in last annual report has been proceeded with as rapidly as possible. One new boiler is in position and ready for use, and all necessary foundations and other works have been prepared for reception of the second boiler, the engine, and the pump now under contract. It is expected that the new plant will be in running order in time for the more important waterings of the coming season.

For the supply of the township a reinforced concrete tank of 100,000 gallons capacity has been constructed, while 263 chains of reinforced concrete mains are now being laid. Two belt-driven pumps for the township supply have also been installed with combined capacity of 20,000 gallons per hour.

RED CLIFFS IRRIGATION DISTRICT.

Seventeen miles above Mildura, by the course of the River Murray, are to be found probably the finest lands in the Mallee frontage of that stream. They adjoin the prosperous irrigation settlement of Mildura, and are connected to markets and to populous centres by a regular railway service. The Government, on the advice of the Commission, purchased some 33,000 acres known as Debenture Holders' Land for a sum of £80,000, and in this area are included the fertile lands (about 15,000 acres) referred to above. It is estimated that with a water right these 15,000 acres will be worth at least £300,000.

It is proposed to irrigate these lands from the River Murray, and to make them available to returned soldiers in blocks of about 15 acres; the complete scheme thus providing 1,000 returned men with healthy and remunerative occupation. The new district will be known as Red Cliffs.

Of the total area of 15,000 acres, 5,000 acres will be allotted at an early date, and water will, it is expected, be available in 1921. This area of 5,000 acres is now being cleared, only returned soldiers being employed, and the whole work is well advanced. For the first portion of the area pumps will deliver through a reinforced concrete rising main to the distributaries. All channels will be concrete lined to protect the lands against seepage troubles. Provision will also be made for a complete drainage system. To insure a supply of reliable vines for the soldier settlers at a minimum cost, a nursery has been established, some 2,200,000 cuttings being already planted.

The Mildura Railway runs through the heart of the proposed settlement, and adjoining that railway a township will be laid out on modern lines.

PLAN OF RED CLIFFS IRRIGATION DISTRICT.

In view of the great importance of this new soldier settlement to the whole State, it has been thought advisable to insert in this report a small plan showing the new Red Cliffs District and its relation to the adjoining prosperous irrigation settlements at Mildura and Merbein.

NYAH DISTRICT.

During the year considerable progress has been made with the lining of channels with cement concrete, and the construction and improvement of drainage facilities in the original settlement. About 6 miles of supply channels were cement lined, making a total of 11½ miles to date. A further 5 miles of channels have been remodelled and provided with gravel in readiness for concrete lining as opportunity arises.

Good progress has been made in the settlement of the area of land set apart for returned soldiers. About 5 miles of supply and 3 miles of drainage channels have been constructed, and gangs are now at work concrete lining these channels, and gravel supplies are being distributed as rapidly as possible.

For the township at Nyah West a scheme for a domestic supply is being investigated.

Arrangements have been made and work commenced for the provision of an additional pumping plant to cope with the growth of the whole Nyah Irrigation Area.

MAFFRA DISTRICT IRRIGATION SCHEME.

Notwithstanding the effects of the general shortage of suitable labour, satisfactory progress has been made with all preliminary works required in connexion with the construction of the concrete masonry weir which will constitute the headworks of this scheme. The weir is being built on the Macallister River at Bradley's Creek Junction, just below Glenmaggie township.

A 2-ft. gauge tram line has been laid from Heyfield Railway Station to the weir site, and all necessary materials are being assembled in readiness for vigorously pushing on the foundation work of the weir during the ensuing summer.

Surveys for the location of the main supply channel to Newry and Avon River flats are well forward, and bores are being put down along the ridge overlooking Boisdale on the west to determine the best location for a tunnel to carry the main supply channel through to command the Avon flats. From extended surveys it has now been ascertained that a storage of at least 100,000 acre feet can, whenever required, be secured at a low additional cost by raising the weir crest a few feet higher than originally proposed, and in view of the fact that the unregulated flow of the river itself can be depended upon to yield generally an additional 100,000 acre feet during the earlier half of an ordinary irrigation season, it is evident that the scope of the scheme can be very considerably extended when so desired, and this aspect has been considered when designing the present works. The Commission has purchased about 5,000 acres within the commanded area of the Maffra District for the settlement of returned soldiers.

WATERWORKS DISTRICTS.

CARWARP DISTRICT.

Surveys have been made of the high lands surrounding Carwarp Railway Station, and a scheme for their supply, involving a second pumping lift, is being prepared. It is anticipated that the pumping plant shortly to be installed for the service of the new Red Cliffs Soldier Settlement will be the future source of supply for this district. Meanwhile, the present Carwarp pumping plant will be utilized for the supply of the Nursery and the Soldiers' Camps at the Red Cliffs Soldier Settlement. There is every prospect of the whole area of Carwarp being watered early in the season of 1920-21.

WIMMERA-MALLEE WATER SUPPLY.

The whole of the districts served by the Wimmera Mallee System received their regular yearly supply, and, in addition, many of the earlier run channels were rewatered in order to relieve as much as possible the severe shortage caused by the exceptionally dry conditions which prevailed generally during the year. This second run would not, however, have been necessary if land-owners had made proper tank provision upon their holdings to conserve the full year's supply which is the essential basis of the Wimmera-Mallee Scheme. In this respect it is gratifying to note that many holders, who suffered through inadequate provision of storages upon their blocks, are now making tanks of suitable capacity. Very much more, however, still remains to be done in this direction, and now that the financial stress, caused in these districts by the dry season which prevailed last year, appears likely to be quite relieved by an abundant harvest during the coming year, the Commission intends putting into operation forthwith those provisions of the Water Acts which make compulsory the construction of tanks of suitable capacity and dimensions upon all holdings served.

Notwithstanding the satisfactory equalizing effect of the minimum rate of £8 per square mile of holding fixed in connexion with all lands in the first rating division in all Wimmera-Mallee districts, there still exist many undesirable anomalies in rating due to the wide ranges of values within the boundaries of the existing districts. In order, therefore, to cause the incidence of rating to be more fairly and evenly distributed, it is proposed, as early as practicable, to arrange for the re-subdivision for rating purposes of the present Wimmera-Mallee Districts into much narrower belts or zones in which the conditions as regards land values will be as uniform as possible.

WESTERN WIMMERA, WIMMERA UNITED, AND KARKAROOC DISTRICTS.

During the year, a start was made upon the excavation of the main channel for the supply of the large area of high country lying between the southern end of the Jung ridge and Dooen, which is at present unsupplied, but which it is intended to command by means of a low lift pumping plant installed on the Main Western Channel,

near Jung. The necessary pumping plant has been secured, and if sufficient scoop teams can be obtained, the greater part of the channelling to reticulate this area should be constructed during the coming year.

Every endeavour is being made to complete the system of branch channelling which will command the country immediately along each side of the Yarriambiac Creek between Warracknabeal and Hopetoun. Much of this has been carried out, and it is hoped that the full work will be in running order for the watering season of 1921. The whole of the Yarriambiac Creek will then be thrown out of use as a conveyor of regulated flows, and the present serious losses of water therein will be avoided. A start has also been made upon the construction of those minor extensions of the existing channel systems which were projected some years ago but which had to be unavoidably held over owing to the difficulties caused by war conditions. If sufficient suitable labour is available, the greater part of this work should be overtaken during the ensuing year.

Surveys for some 20 miles of further proposed minor channel extensions were also made, and arrangements completed to put in hand immediately the survey of an important lengthy extension of the Wilhelmina Channel of the East Karkaroo System to Patchewollock. Should a feasible route through reasonably good running country be secured this channel extension will be carried out, as it will serve a large area of country long settled but hitherto dependent on natural catchments alone.

BIRCHIP, WYCHEPROOF, SEA LAKE, AND TYRRELL DISTRICTS.

Activities in these districts were chiefly confined to the survey and construction of branch channels to reticulate the newly settled areas in the parishes of Mittyack, Woorack, Wagant, Kulwin, Larundel, and Winnambool lying to the North-West and North of Lake Tyrrell, the greater part of which has been devoted to the settlement of discharged soldiers. Owing to the serious shortage of suitable labour, progress in carrying out these extensions has not been as great as anticipated, but it is anticipated that the situation will be considerably relieved during the coming year. Some 25 miles of branch channels were also constructed in other parts of these districts, chiefly in the neighbourhood of Wycheproof and Curyo.

PROPOSED SUPPLY TO MARNOO, SWANWATER, AND CHARLTON DISTRICTS.

The recent dry season caused a very serious shortage of water for domestic and stock requirements in the large stretch of country lying between the right banks of the Avon and Richardson Rivers and Charlton. In response to a strong petition from residents of Marnoo, Swanwater, Gooroc, and Charlton, the Commission made a preliminary investigation into the possibility of giving a channel supply to areas from the Wimmera River and Lonsdale Storage. A trial survey has shown that no difficulty exists in locating a channel, taking off from the Wimmera-Mallee Main Central Channel, near Glenorchy, and running generally in a North-westerly direction through Marnoo, Swanwater, and Gooroc to Charlton, and also supplying the latter town by gravitation. Such a supply should be of very great benefit to some 600 square miles of excellent country, and the Commission is now preparing a complete scheme for submission to the district residents concerned at an early date.

LONG LAKE AND TYNTYNDER DISTRICTS.

On account of the abnormally dry season and the generally inadequate provision of proper tanks upon holdings, a second run in many of the channels in the Wimmera-Mallee Districts was found unavoidable. This caused a severe strain upon Wimmera Storages, and it was found advisable to restart temporarily the pumping plants at Long Lake and Nyah, so as to meet the needs of these two districts. On account of the recent replenishment of the Wimmera storages, these plants have now been thrown out of use, and abundant gravitation supplies are again available for use.

During the greater part of the year there was serious shortage of water in the Avoca Valley, particularly in the vicinity of Quambatook, due to the almost complete cessation of the river flow. In order to relieve the situation, a connexion was made between the town storage at that place and the main Wycheproof-Goschen gravitation channel. By this means the town of Quambatook was kept fully supplied and a most valuable centre established for supply to the immediately surrounding districts.

The work of surveying channel extensions to serve areas being newly settled, principally by returned soldiers, in the parishes of Burra, Coonimur, Wakool, Pines, and Mirkoo, was vigorously proceeded with, and the work of excavating these channels is being carried out as rapidly as available labour will permit. Special efforts will be made in this direction during the coming year, and it is hoped that most of the channels will be ready for use during the watering season of 1921.

NAVAL BASE AND MORNINGTON PENINSULA WATER SUPPLY SCHEME.

Notwithstanding serious delays caused by difficulty in securing suitable materials and labour, good progress was made with the works of this most important scheme. The Beaconsfield Reservoir (capacity 200,000,000 gallons) has been kept replenished from Toomuc Creek, and a supply regularly maintained to the Naval Base Service Basin, near Bittern (capacity 1,000,000 gallons), and to the auxiliary twin service basins (capacity 5,000,000 gallons), established near the same point for general district requirements. Arrangements are now being made to lay on a supply at an early date to the Bittern Railway Station for the requirements of the Stony Point and Red Hill railway lines. The Frankston Reservoir (capacity 180,000,000 gallons) is now nearing completion. Surplus flows from Toomuc Creek, are now being sent forward to this reservoir, which should be filled in readiness for the ensuing summer. The 15-inch main to Frankston has been completed, and the greater part of the reticulation of the town of Frankston carried out. The 12-inch diameter main, 10 miles in length, along the foreshore from Frankston to Seaford, Carrum, Chelsea, Edith Vale, Aspendale, and Mordialloc has been laid, and the greater portion of the residents of these important seaside towns should be in a position to receive supply during the ensuing summer.

An important modification of the original scheme has been made regarding the supply to the town of Mornington. Instead of passing all Mornington supplies through Frankston Reservoir, with a consequent considerable loss of head, a separate local reservoir has been established near Mornington, a very suitable situation having been found about $1\frac{1}{2}$ miles from the town. By means of an earthen bank, a reservoir of 44,000,000 gallons capacity has been constructed, and this can be readily and cheaply enlarged to 70,000,000 gallons capacity to meet future requirements. The Mornington Reservoir is directly connected with the Main Cranbourne-Frankston pipe line by a 12-inch main. This pipe main is now in full working order, and the reservoir is being steadily filled. Arrangements have been made to begin installing the Mornington Town reticulation forthwith, and the greater portion of the town should be connected in the approaching summer.

As arranged, the Commission took over control of the works of the Dandenong Trust on 1st January this year. Several extensions and some remodelling of the town mains have already been carried out, and preparations have been made for an early start in the construction of the 24-inch diameter main from Berwick to Dandenong.

Careful consideration of existing surroundings have made it very evident that in the near future extensive developments may be expected which will result in considerable increase of population in the neighbourhood of Dandenong, Noble Park, and Springvale, especially if a good water supply could be secured to this locality. The Commission is, therefore, making investigations for the purpose of ascertaining if a suitable site for a large local storage is available in the vicinity of Springvale in which the full flow of the pipe line during winter could be stored in readiness for local use during summer. Such a storage would, by means of a connexion from it to the foreshore main from Frankston to Mordialloc, not only ensure a full and certain auxiliary supply for all foreshore requirements, but would also greatly assist in developing the fine stretch of market garden lands lying between Springvale and the sea.

WONTHAGGI DISTRICT.

Work in this district during the year was confined to minor repairs and maintenance. Various proposals for improving the supply to the high levels of the town, and for extending the service to North Wonthaggi, are under consideration.

NORTHERN MALLEE WATER SUPPLY.

Work in the area of over 1,250,000 acres, which adjoins the Wimmera-Mallee Districts but above its channel levels, has been pushed on as rapidly as the restricted supply of labour permitted. The expenditure for the year, including that in the districts of Walpeup East and Walpeup West, was £12,000. The past season was of a very dry character, and the crops consequently were poor. A greatly increased area is now being cultivated, farmers being attracted by the high price ruling for wheat, in addition to being influenced by the belief that a very dry season in the Mallee is followed by an extra good one.

TANKS.

Eighteen additional tanks were completed during the year, involving 57,000 cubic yards of excavation, and providing some 90,000 cubic yards of storage. There are now 160 tanks, capable of holding nearly 900,000 cubic yards of water.

BORES.

The contract for three bores in the parishes of Tutye, Duddo, and Goongee has been completed. The bore at Tutye was previously described. At Duddo, a locality in which two previous bores had failed to find usable water, good water was struck at 491 feet, rising to 79 feet from the surface. The total depth of the bore is 511 feet. At Goongee, even better water was obtained at a depth of 245 feet, rising to 81 feet from the surface, the total depth bored being 284 feet. A further contract was let for two bores at Boinka and Underbool. At Boinka, the bore had a total depth of 522 feet. Good water was struck at 480 feet, rising to 50 feet from the surface. The Underbool bore, 502 feet deep, struck water of fair quality only, but similar to that of the neighbouring bores, at a depth of 450 feet, rising to 7 feet from the surface. As there is low ground closely adjoining, a pipe is being put in below water level in the bore connecting to a tank in the low ground, thus making this bore artesian or flowing. Tenders will shortly be invited for additional bores, two in the parish of Warooa, and one in Tyalla. The total number of successful bores is now 90.

ROADS.

Seventy-eight miles of roads have been cleared and grubbed during the year, while 1,125 chains have been "metalled" with the local limestone rubble, and 925 chains scooped on sand hills. A road has been metalled from the Yallum District through some poor white sand country, enabling settlers there to get to the railway station at Speed, their natural outlet. Owing to scarcity of labour, but little progress could be made with the Ouyen-Hattah-Carwarp roads. These important works, as well as the provision of tanks and bores, are being undertaken by the Commission out of funds provided by the Public Works Department.

WATER SUPPLY, MALLEE SOLDIER SETTLEMENTS.

Some 30 miles of channels were constructed during the year for the supply of the parishes of Pines, Wakool, Mirkoo, Myall, Winnambool, Larundel, and Kulwin, which have been set apart for Soldier Settlement. The four survey parties set apart for this special work have located and pegged more than four times that length, and these will be constructed as soon as sufficient labour is available. A pumping plant was erected on the Miller's Tank Extension Channel, lifting 15 feet into the Natya Channel, supplying the new township of Bolton in the parish of Myall, pending its direct supply by gravitation from the Burra Channel through the parish of Mirkoo. This proved quite successful, and a good supply is now available there.

DRAINAGE AND FLOOD PROTECTION SCHEMES.

KOO-WEE-RUP AND CARDINIA.

Notwithstanding the great scarcity of suitable labour, substantial advance was made during the year in carrying out the works for draining and protecting from floods the large and fertile area of the Koo-wee-rup Swamp. The progress made with the various main drains has only been possible by the use of suitable excavating machinery. The land dredger, originally worked by the Public Works Department at

Lang Lang, continued to give a most satisfactory regular output, and an additional machine of similar type and capacity, which was built in the State to the order of the Commission, was put into use in January last and proved quite as efficient as the original.

The Northern Main Catch Drain has been excavated from Cora Lynn, Ararat Creek junction, to its sea outlet, near the Southern Main-road, and all connecting drains have been linked up. The Western Boundary Drain has been completed from its sea outlet to the drain, known as McDonald's, and the new dredger is now continuing this drain northwards.

The dredger bank of the Western Boundary Drain between the railway line and the offtake of McDonald's Drain has been formed into a good serviceable roadway, replacing the old road along the main drain, and other new roads connecting with it have been formed. Simultaneously with the raising of the dredger bank to protect the west side of the main drain from overflow, a sufficient bank to afford similar protection to the east side of the main drain has been raised by utilizing the material from the catch drain excavated along the east side of the main drain.

In the Yallock area, the works of the scheme are well advanced, and are already giving highly satisfactory results. The necessary enlargements of No. 4 and No. 6 Yallock, Scanlan's, Little Yannathan, and Southern Boundary Drains are practically complete, and the enlargement of No. 7 Yallock Drain is also well advanced. The lower reaches of this drain, which is 6 miles in length, have been completed, and the balance partly excavated.

On account of the scarcity of suitable labour, and the necessity for paying special attention to the Koo-wee-rup Scheme, progress in the area of the Cardinia Scheme was somewhat retarded. Still, steady and substantial advancement was made with the most urgent of the internal drains of the scheme. The Bullarto-road to Tooradin Inlet Drain is now complete, and considerable portions of the Muddy Gates, Toomuc, and Cardinia Drains have been excavated. The Commission is now endeavouring to make available one of the dredgers for use on the larger drains of the Cardinia Scheme.

ECHUCA.

A Flood Protection District, embracing an area of lands in Echuca (High-street), was constituted during the year. The works in this District will consist of an embankment along the right bank of the Campaspe River in the township of Echuca, to prevent the damaging overflows which frequently placed a considerable portion of High-street, one of the most important thoroughfares of the town, under water.

GOULBURN LEVEES.

Following the Conference of the interested land-owners with the Honorable the Minister of Water Supply and the Commission, referred to in the last report, a ballot was held in April last. This resulted in an almost unanimous rejection of the scheme prepared by the Commission for complete protection against floods of moderate volume and partial protection from great floods. Matters now remain practically as they have been since the floods of 1917, and in view of the result of the vote, it is not proposed to proceed with the scheme.

RIVER EROSION AND GENERAL.

The year was one of extremely light winter flows, and but few complaints as to erosion and flood damages have been received. A number of cases have been dealt with under the provisions of the *Water Act 1915*, and permission has been given to the interested parties to construct approved works at their own cost.

The conference of officers representing New South Wales and Victoria on the question of new levees in the Murray Valley and the extension of existing ones, has completed its investigations. Plans are now being prepared, and a final report may be expected shortly.

A number of requests for investigation as to the feasibility of forming new Flood Protection Districts has been received from interested land-owners in various parts of the State, and these are being reported upon. Included in these requests is one from land-owners on the Ovens River, between Wangaratta and the Pioneer Bridge, who are desirous of protecting their lands from the overflow of the Ovens River.

RIVER GAUGING.

As provided by section 32 of the *Water Act* 1915, the work of gauging and recording the flows of the principal rivers and streams of the State has been continued. The returns of volumes stored in reservoirs have been made available weekly for publication. The field observations and office work are being kept up to date, and the results of all gaugings since the last publication in 1918 have been tabulated and are available to the end of 1919.

During the year the gauging stations on the Hopkins River at Allansford and the Glenelg River at Sandford have been abandoned in favour of four new stations on the tributaries of these rivers at Dunkeld, Wickliffe, Streatham, and Skipton.

A joint report by the Gauging Officers of New South Wales, Victoria, and South Australia on the measures necessary to insure uniformity in the method of all gaugings connected with the River Murray System has been submitted to the River Murray Commission.

DIVERSION OF WATER.

In the exercise of the right of the State to the use and flow and to the control of water in rivers, creeks, streams or water-courses, lakes, lagoons, swamps, or marshes, supervision has been maintained over all such waters. In northern parts of the State the dry conditions caused a marked increase in the number of applications for authority to divert. In addition to renewal of 963 permits previously granted, 320 new ones were issued during the year.

The authorized diversions now in force are :—

Yearly permits	..	..	..	..	..	1,283
Flood permits	..	..	..	..	..	2
Licences..	..	..	..	..	..	22
						<hr/>
		Total	..	..	..	1,307
						<hr/>

GOULBURN HEAD-WORKS AND MAIN CHANNELS.

These works comprise the Goulburn Weir; the Goulburn-Waranga Channel, extending from the weir to Waranga Reservoir, a distance of $23\frac{1}{2}$ miles; the Waranga Reservoir; the main channel, extending westerly from the Waranga Reservoir to the Serpentine Creek, a distance of 92 miles; and the main eastern channel, which extends from the Goulburn Weir to the Shepparton District, a distance of $31\frac{1}{2}$ miles. The total length of main channels is 147 miles; the total storage provided at present by the reservoirs and the weir is 218,000 acre feet; but, as explained under the heading "New Storages," this will be largely increased by the Sugarloaf Reservoir and the work for enlarging Waranga Reservoir, now in course of construction. The irrigation districts supplied are Shepparton, Rodney, Deakin, Tongala, Stanhope, Rochester, Dinglee, and Tragowel Plains.

The year was an extremely dry one on the catchment of the Goulburn River, at some stations the rainfall for the season being from 40 to 50 per cent. below the average. To guard as far as practicable against shortage in the areas supplied directly from the Goulburn Weir, its capacity was temporarily increased by planking up on the flood gates to a height of nearly 2 feet above ordinary top water level.

Owing to the main western channel being brought into use about a month earlier than usual to meet the pressing needs of the Tragowel Plains District, work on the large subway near Rochester, described in last year's report, had to be suspended.

NEW STORAGES.

SUGARLOAF RESERVOIR.

The dam for this reservoir is situated on the Goulburn River, below the junction of the Delatite River, about 18 miles from Alexandra. The bed of the river at the site is at an elevation of about 700 feet, the datum being low water, Hobson's Bay. The design now being carried out will store water to a height of 820 feet above the same datum, and will have a capacity of from 280,000 to 300,000 acre feet. Surveys made show that a storage basin to the elevation of 875 feet above datum, with a capacity of 918,000 acre feet, could be constructed, and, when necessary, such increased capacity could be attained by progressive stages.

The dam being constructed consists of a diaphragm wall of reinforced concrete, built from bed-rock—which in places is 75 feet below ground surface—to crest level, a wall of clayey material on the up stream side of the diaphragm, and supporting masses of rock quarried from the adjacent hills. The concrete diaphragm has been raised to a height of 80 feet above river bed and contains 20,370 cubic yards, and the construction of embankment to that height is partly completed. The outlet tunnel for the temporary diversion of the river, through which subsequently the regulated flow will be delivered, and part of the valve tower, 9,400 yards of concrete in all, are constructed. In the wing wall and spillway 30,100 cubic yards of concrete have been placed.

Between the wing wall and Sugarloaf Hill, a temporary bridge has been erected on concrete piers, with deck 80 feet above river bed, across which rock excavated from the spillway on Sugarloaf Hill is being conveyed to the embankment. Beneath this bridge ample room for the passage of flood waters has been provided.

Most of the cases of land resumption on the Goulburn River have been completed, and the Commission is treating for further areas on the Delatite River.

The number of men employed in connexion with the works is over 400.

It is proposed to commence impounding water next winter.

WARANGA RESERVOIR ENLARGEMENT.

The earthwork of the main embankment is now completed, and stone for the facing of the wet side is being brought by tram lines from the quarries, one at each end of the embankment. The deviation of the Murchison to Rushworth railway line has been carrying all traffic since the end of 1919, and the several road diversions around the reservoir are so far advanced that raising the water level will involve no interruption of traffic.

The whole work is now nearly completed and the water level has already been raised nearly 3 feet above the old full supply water level, and the contents are about to be further increased to a degree that will preclude all possibility of shortage during the coming season.

WIMMERA STORAGES.

Taylor's Lake storage was well advanced towards completion during the year, the greater part of the necessary beaching being put in position. It is now being gradually filled by means of the inlet channel from Burnt Creek. A start has been made with the construction of the channel from the Wimmera and Little Wimmera Rivers, which will be its main inlet, and it is hoped that sufficient teams will be available to complete this work before next winter. The outlet channel from this Storage has been completed to connect with the main central channel near Murtoa, so that the whole of the Wimmera-Mallee Channel system west of the Yarriambiack Creek, as well as a large portion on the east side of that Creek, can now be supplied from Taylor's Lake as well as from Wartook Storage.

In order to meet the steadily increasing demands on Wimmera Storages, the Commission has arranged to put in hand, with as little delay as possible, the proposals outlined some years ago to convert into Storages the remainder of the Drung Drung Lakes, adjacent to Taylor's Lake, and known as Pine Lake, Green Lake, and perhaps Dock Lake. Pine Lake is a natural basin, with a bed level 420 R.L., which can hold naturally about 24,000 acre feet. Approximately one-half of this water can be drawn off by gravitation to serve the Wimmera-Mallee Channel System, and the remainder could be secured at a low cost by means of an average lift of only 12 feet. It is proposed to materially increase the capacity of this natural basin by banking along its low margins so as to raise the full supply level from 455 R.L. to 480 R.L. The volume impounded would thus be raised from 24,000 acre-feet to 62,000 acre-feet, of which 50,000 acre-feet would be available for gravitational use by the Wimmera-Mallee Channel System. As the average depth of the increased storage is approximately 30 feet, the proposed Storage at Pine Lake will form a most valuable district reserve. Green Lake is a smaller but still a valuable basin. By raising an embankment around its low margin it can be made to hold some 10,000 acre feet, the whole of which would be available to the Wimmera-Mallee Channel System by gravitation.

As the inlet and outlet channels required for Taylor's Lake Storage can, with slight extensions, be made available at a very low cost for the Pine Lake and Green Lake Storages, the construction and linking up of these reservoirs is the natural development of the Taylor's Lake Scheme. The total capacity of the Drung Drung Lake Storages, *i.e.*, Taylor's Lake, Pine Lake, and Green Lake, when completed will amount to 102,000 acre-feet, and this increase will be more than sufficient to meet all possible demands for years.

TOTAL STORAGES IN STATE.

In 1902 the total capacity of storages in the State was 172,000 acre-feet. The present capacity is about 664,000 acre-feet, and when the Sugarloaf, Waranga, Wimmera, and Maffra Storages are complete the total capacity will exceed 1,100,000 acre-feet. The Hume Reservoir, in course of construction, will also contain fully 1,000,000 acre-feet, half of which can, subject to the provisions of the River Murray Agreement, be credited to the State of Victoria. The following statement sets out the capacities of the various Storages in the State:—

NAMES OF STORAGES.

EXISTING WORKS.							Capacities in Acre-feet.
<i>Goulburn System—</i>							
Goulburn Weir	..	..	..	..	..	..	20,700
Waranga (including part enlargement)	..	..	..	..	..	..	281,300
							302,000
<i>Loddon-Murray System—</i>							
Laanecoorie	..	..	..	..	..	..	14,000
Kerang North-west Lakes	..	..	..	..	..	..	88,500
Kow Swamp	..	..	..	..	..	..	40,860
Lake Boga	..	..	..	..	..	..	28,000
Long Lake	..	..	..	..	..	..	3,820
							175,180
<i>Wimmera Mallee System—</i>							
Lake Lonsdale	..	..	..	..	..	..	45,480
Wartook	..	..	..	..	..	..	23,800
Fyans Lake	..	..	..	..	..	..	17,100
Taylor's Lake (part)	..	..	..	..	..	..	15,000
Lower Wimmera Weirs	..	..	..	..	..	..	2,870
Batyo Catyo (Avon Regulator)	..	..	..	..	..	..	5,000
Lake Whitton	..	..	..	..	..	..	1,300
Earthen Storages, Township Reservoirs, and Mallee Tanks	..	..	..	..	..	..	2,440
							112,990
<i>Coliban System—</i>							
Upper Coliban	..	..	..	..	..	..	22,500
Malmsbury	..	..	..	..	..	..	12,300
Subsidiary Reservoirs	..	..	..	..	..	..	5,070
							39,870
<i>Werribee System—</i>							
Pykes Creek	..	..	..	..	..	..	14,850
Melton	..	..	..	..	..	..	17,000
							31,850
<i>Miscellaneous—</i>							
Wonthaggi	..	..	..	..	..	..	1,550
Sundry Township Reservoirs	..	..	..	..	..	..	740
							2,290
Total capacity of existing works							664,180
WORKS IN COURSE OF CONSTRUCTION.							
<i>Goulburn System—</i>							
Waranga Reservoir (part enlargement)	..	..	..	..	..	..	52,100
Sugarloaf Reservoir	..	..	..	..	..	..	300,000
							352,100
<i>Wimmera-Mallee System—</i>							
Taylor's Lake Reservoir (part)	..	..	..	..	..	..	15,000
Pine Lake	..	..	..	..	..	..	62,000
Green Lake	..	..	..	..	..	..	10,000
							87,000
<i>Maffra System—</i>							
Glenmaggie Reservoir (First stage)	..	..	..	..	..	..	60,000
<i>Murray System—</i>							
Hume Reservoir, at Junction with Mitta River, half share	..	..	..	..	..	..	500,000
Total capacity of storages, when works in hand are completed							1,663,280

UTILISATION OF NEW STORAGES.

While it is undoubted that existing districts will require a supply of water for irrigation in addition to the water rights at present allotted, and in this respect it has to be admitted that during last year Rochester, Tongala, and other Goulburn supplied districts could have used a much larger quantity than the existing storages provided, it seems most probable that there will be available from the new Storages a considerable quantity for other areas. As the Sugarloaf and enlarged Waranga Reservoirs are nearing completion, the Commission has already made an examination of areas which could be served with advantage from them, with a view of recommending the extension of works of distribution, if such seems warranted. In the same way, it is proposed to make an examination of the lands which could eventually be most advantageously served by means of the large Hume Reservoir.

RIVER MURRAY WATERS.

GENERAL OUTLINE.

The scheme of works provided in the River Murray Waters Acts passed by the Governments of the Commonwealth and of the States of New South Wales, Victoria, and South Australia, comprises storages on the Upper River Murray and at Lake Victoria, locks and weirs in the course of the River Murray from its mouth to Echuca, and also locks and weirs on the lower part of the River Darling or the River Murrumbidgee, as may be decided by the Government of New South Wales. The Acts also provide that for purposes of construction the Minister for Public Works of New South Wales shall be the Constructing Authority for that State; that for the State of South Australia, the Commissioner of Public Works shall be the Constructing Authority; and that the State Rivers and Water Supply Commission shall be the Constructing Authority for Victoria.

Owing to certain difficulties that have arisen mainly on account of the rates of wages throughout the three States acting as Constructing Authorities being unequal, the Prime Minister and Ministers representing these States have met in conference and agreed to submit Bills to their respective Parliaments for the ratification of amendments of the River Murray Waters Acts which, *inter alia*, would make the River Murray Commission the Constructing Authority for the whole of the works provided for in the River Murray Agreement. The amendments also deal with a new allocation of the cost quotas as between the Commonwealth and the States.

UPPER MURRAY STORAGE.

As explained in last year's report, the site finally chosen for the Upper Murray Storage is on the River Murray, almost immediately below the junction of the Mitta Mitta River. By mutual agreement of authorities concerned, the storage which will have a capacity of 1,000,000 acre feet is to be known as the Hume Reservoir. The total length of the dam will be about 3,600 feet. Of this, about one-fourth will be concrete work extending from the abutment in New South Wales across the river to the Victorian bank. It is in this portion that the outlet works and flood escape gates, which are to be of the Goulburn Weir type, are to be placed. The other three-fourths of the length will be in Victoria, and will consist of an earthen embankment about 90 feet high, containing a concrete core wall which will extend from the granite rock underlying the river flat at an average depth of about 35 feet nearly to the full height of the embankment. The width of crest will be 30 feet, and the side slopes 3 to 1 on the water side and $2\frac{1}{2}$ to 1 on the dry side.

The ceremony of turning the first sod was performed by the Governor-General on 28th November, 1919.

Good progress has been made with the erection of buildings for workshops, offices, and officers' and men's quarters; and much plant and general material have been brought to the site.

After extended investigations, it has been decided that the gravel at an alluvial mining dump near Chiltern is the most suitable material available for the aggregate of the concrete in core wall. To economically handle and transport the large quantity required, it is proposed to build spurs from the main North-Eastern railway line, near Chiltern to the dump, and from Ebdon Railway Station to the site of the dam. Surveys for these lines have been completed, rails have been secured, and contracts for the supply of sleepers have been let.

Owing to an industrial dispute arising out of the difference between the rates of wages paid to workmen in New South Wales and Victoria, actual construction on the work of the dam in Victoria has been practically suspended since the end of February, 1920. On the New South Wales side of the river good progress has been made by the Authorities of that State in the opening up of quarries, construction of roads, and tramway lines, installation of plant, and erection of the necessary buildings.

TORRUMBARRY WEIR AND LOCK.

This structure will be the first downstream from Echuca of the weirs and locks provided in the Acts. In addition to its use in making the river navigable this work will be of great value in not only improving the supply to all districts in the Kerang area, but also in saving pumping expenses at Cohuna, Koondrook, and Swan Hill.

Early in 1919 the clearing of site was completed, offices, workshops, and other camp buildings were erected, a protective levee $2\frac{1}{2}$ miles long was built round the site of works and camp, and a 2-ft. gauge tramway $6\frac{1}{2}$ miles long was laid from the railway line near Patho to the works.

By the end of February, 1920, about 100,000 cubic yards of earth had been removed from the excavation in which the lock and movable weir are to be constructed, but unfortunately the industrial dispute at the Hume Reservoir extended to the Torrumbarry works and has since caused almost complete suspension of operations.

WORKS CONTROLLED BY OTHER AUTHORITIES.

SEWERAGE IN COUNTRY DISTRICTS.

The Bendigo Sewerage Authority which has been engaged on a detailed survey since its constitution in November, 1916, recently submitted for the approval of the Commission plans and estimates for the first portion of its scheme. This portion which includes the reticulation of the No. 1 or Central City Area, main outfall sewer and treatment works, comprising septic tanks and filters, near the junction of the Bendigo and Eaglehawk Creeks, is estimated to cost £119,000. Tentative approval has been given by the Commission, and the Sewerage Authority is now considering the question of raising funds to commence construction.

The Ballarat Water Commissioners, at the instance of the Municipal Councils of the City of Ballarat and the Town of Ballarat East, have prepared preliminary plans for the sewerage of Ballarat, and application is being made for the constitution of the Ballarat Water Commissioners as a Sewerage Authority under the provisions of the *Sewerage Districts Act 1915*. The proposed Sewerage District embraces the Municipal Districts of the city and town. The works are designed to provide for a future population of 90,000, and comprises reticulation and branch sewers, sub-mains and a main outfall sewer which will run parallel with the Yarrowee Creek to the proposed treatment works. The site for these works is east of and adjoining the above Creek, about 1 mile below the southern municipal boundaries. The sewage will be settled in tanks designed on the Emscher principle, and passed through percolating filters; the sludge being run on to drying beds with facilities for removal when dried. The scheme is estimated to cost £320,000.

COUNTRY WATER SUPPLIES.

Numerous works were carried out during the year by Waterworks Trusts and other authorities under the general supervision of the Commission.

The First Mildura Irrigation Trust has installed a new boiler at the 90-foot station, and a new engine and pump are practically completed. This plant, together with the new rising main and improvements which are being carried out in the scheme of water distribution, will not only enable additional land to be brought under irrigated culture, but should appreciably reduce the pumping period and the unit cost of operation.

A scheme of water supply to the township of Orbost was inaugurated during the year. Improvements to the Storage Reservoir at Wedderburn have been completed. A new concrete weir on the Tarago River has been constructed by the Warragul Waterworks Trust and improvements to the service basin carried out. The Woodend Waterworks Trust carried out the duplication of the supply main to the town and improvements to the reticulation.

At Maryborough, the work of enlarging the Evansford Reservoir from 200,000,000 to 380,000,000 gallons has been taken in hand, but there has been some interruption of operations owing to shortage of cement.

The construction of an auxiliary storage reservoir, which was commenced during the year by the Kilmore Waterworks Trust, has been greatly delayed owing to industrial troubles. The new reservoir of 4,000,000 gallons on Spring Creek, with pipe main and reticulation of the township of Hepburn are nearing completion. The Heathcote Waterworks Trust is constructing new head-works and replacing several old flumes by concrete pipe siphons. A new boiler is being installed and inlet works constructed at the pumping station of the Shepparton Urban Waterworks Trust.

An electrically operated pumping plant of 30,000 gallons per hour capacity is being installed by the Swan Hill Waterworks Trust, and a new 12-in. diameter cast-iron rising main is being laid. At Ararat, the remodelling of the reticulation which was held up owing to the difficulty in obtaining materials is now proceeding.

The Waterworks Authorities at Colac and Donald have undertaken the installation of meters on an extensive scale in order to conserve water.

Tenders have been approved for work to supply the townships of Rosedale and Colbinabbin. Contracts have also been let for the construction of a concrete diversion weir on the Tyers River and improvements to the supply main thence to the township of Traralgon.

Pipe extensions and other works were undertaken by the Local Authorities at Alexandra, Avoca, Benalla, Colac, Donald, Elmore, Gisborne, Horsham, Korumburra, Kyabram, Lorne, Murtoa, Rochester, Rushworth, Rutherglen, Upper Macedon, Warburton, and Yarram.

Proposals were investigated for improving the supplies at Boort, Bright, Charlton, Cobram, Colac, Healesville, Inglewood, Kerang, Koroit, Kyneton, Leongatha, Marysville, Murchison, Nagambie, Nhill, St. Arnaud, Tallangatta, Tongala, and Yea.

New schemes for the supply of Apollo Bay, Birregurra, Bruthen, Casterton, Coleraine, Corryong, Ferntree Gully, Lakes Entrance, Mystic Park, Port Fairy, Portland, and Trafalgar Townships are under consideration.

GENERAL.

LANDS UNDER CLOSER SETTLEMENT IN IRRIGATION DISTRICTS.

The Closer Settlement operations of the Commission during the past year have again been confined almost exclusively to the settlement of discharged soldiers. A strong demand by soldiers for irrigable blocks was maintained throughout the year, but the lands held in reserve for the purpose, together with several purchases made during the year, proved sufficient to meet the bulk of the requirements. Since the last Annual Report was issued 540 applications for new blocks were granted, and of this total 529 were to soldiers, the remaining 11 blocks, being not quite up to the standard adopted for soldier settlement, being allotted under the Closer Settlement Acts to experienced agriculturists, who expect to be able to work them to advantage. The total area now occupied on the irrigable Closer Settlement Estates subdivided by the Commission is 114,000 acres, while 15,000 acres in Irrigation Districts outside the Closer Settlement Areas have been settled under Section 20 of the *Closer Settlement Act 1915* referred to below.

Since the work of Repatriation was commenced, the Commission has settled 1,000 discharged soldiers on irrigable farms. Of this total 200 have selected fruit blocks on the Murray Frontage Settlements at Nyah and Merbein, 92 are at Swan Hill and 19 in the Cohuna District engaged in fruit culture and dairying; while in the Goulburn Valley there are over 200 on the Stanhope Estate and 118 at Tongala on lands mainly devoted to dairying, 84 at Shepparton—principally orchardists—and 45 in the Rochester district, who have adopted mixed farming. At Werribee 74 are settled on dairying blocks, while in the new irrigation centre at Maffra there are 19 engaged in beet-growing and dairying. About 230 of the soldier settlers in these Closer Settlement Areas and Irrigation Districts generally availed themselves of the provisions of Section 20 of the *Closer Settlement Act 1915*, which enabled them to acquire, by agreement with the owners, irrigable farms selected by themselves, such agreements, after careful inspection and valuation of the properties by competent valuers, being ratified by the Governor in Council on the recommendation of the Commission.

The following statement shows the lands purchased and subdivided by the State and the extent of settlement on each estate. From this statement it will be seen that the subdivided portions of these estates are already supporting more than fifteen times as many families as were living on them prior to their subdivision for closer settlement. The statement shows also particulars of settlement effected under Section 20 of the *Closer Settlement Act 1915* outside the large estates subdivided by the Commission:—

Closer Settlement Estates.	Area of Lands purchased by the State in Acres.	Properties Subdivided.						
		Area in Acres.	Number.	Number of Families thereon when Purchased.	Subdivided into—		Number of Closer Settlement Blocks now occupied.	Present Increase in Number of Families.
					Number of Closer Settlement Blocks.	Average Area in Acres.		
Shepparton	10,700	10,700	26	24	323	31	309	285
Tatura	100	100	1	..	4	24	4	4
Stanhope	20,500	20,500	6	12	299	63	248	236
Kyabram	3,000	2,500	5	7	47	53	40	33
Tongala	15,900	15,500	32	31	245	62	240	209
Cornelia Creek	2,500	2,500	1	..	14	176	13	13
Koyuga	4,200	4,200				53	76	50	50
Nanneella	8,600	8,600	16	6	101	82	95	89
Echuca	3,200	3,200	6	4	27	117	25	21
Bamawm	13,400	13,400	28	21	175	73	171	150
Dingee	500	500	3	1	15	30	14	13
Cohuna	11,500	11,500	27	8	127	87	109	101
Koondrook	3,400	3,400	5	4	33	99	33	29
Swan Hill	9,500	9,450	24	14	203	44	195	181
Werribee	8,850	8,850	1	11	193	41	172	161
Maffra	4,900	600	5	4	19	32	17	13
Nyah	3,500	3,500	7	1	193	17	183	182
Merbein	7,700	7,700	Crown Lands Pt. 1	..	354	22	354	354
Red Cliffs	33,000	800		3	12	13	12	9
	165,350	127,800	194	151	2,437	49	2,284	2,133
Properties acquired under Section 20, <i>Closer Settlement Act 1915</i> , outside above Estates	14,977	..	..	..	..	..	152	..

LANDS AVAILABLE FOR CLOSER SETTLEMENT IN IRRIGATION DISTRICTS.

There are now available, and ready for immediate occupation, 153 allotments, varying from 2 to 150 acres, containing in all 6,770 acres. In addition to this, the Commission has in process of reticulation and sub-division, some 20,000 acres of irrigable land, mainly at Red Cliffs and Maffra, referred to hereunder, and about 17,000 acres of Mallee land at Red Cliffs, which, being above channel level, will be disposed of in large areas.

The demand for lands in the Murray Frontage districts was so keen that the Commission, with a view to making ample provision for all soldiers desiring to make homes in this district, has acquired the large estate of 33,000 acres—known as “Red Cliffs”—adjoining the Mildura Settlement. The estate is now being subdivided and made ready for occupation. The preparatory work is providing employment for some 300 returned soldiers.

The Commission also recently acquired, for soldier settlement, some 5,000 acres of land on the rich river flats along the Macallister, Avon, and Thomson Rivers, near Maffra, Stratford, and Sale. These lands are eminently suitable for beet culture and dairying; and the existence of sugar, butter, and condensed milk factories in the vicinity, as well as the proximity of the purchased properties to railway stations, has already made this new irrigation centre attractive to soldier applicants. In view of the demand for blocks, part of this land has been already subdivided in its present condition, and nineteen allotments have been settled, provision being made whereby adjoining land may be leased by soldiers whose blocks—pending irrigation—may prove too small for a living area.

Owing to the continued development of the Stanhope Estates, and an increased demand for building sites in the townships of Stanhope and Girgarre, further sales of allotments in these townships were held, for which very satisfactory prices were realized.

PROGRESS OF CLOSER SETTLED IRRIGATION DISTRICTS.

The progress of settlers in the various districts continues to be most satisfactory. The prices now being obtained for their products have enabled a very large number to improve their position, while the high values now placed on and being obtained for irrigation lands is convincing evidence of the great advance made during the last few years.

The volume of production from the irrigated districts is increasing at a most rapid rate. In Shepparton, where two years ago about 1,000 tons of fruit were treated at the co-operative cannery, it is expected that during the coming season 5,000 tons will have to be processed. To cope with this great expansion the Government is advancing to the Shepparton Fruit Preserving Company a further large amount for the installation of the most modern canning machinery. The cannery has proved a great boon to the district, and a large number of applications for fruit-processing plants have been received from other centres.

The Murray River Settlements, both at Nyah and Merbein, are each year becoming more prosperous, and there seems little doubt that the soldiers to be settled at the new Red Cliffs Irrigation Settlement adjoining Merbein will in a few years be able to share in the general prosperity.

In other centres, such as Cohuna, Rochester, Swan Hill, and Tongala, there is also a gratifying change in the settlers' position, the splendid returns from dairying being responsible in a marked degree for the improvement; while at Werribee, which is fast becoming a great lucerne-producing centre, the returns received by the settlers last year from the sale of that fodder were most encouraging.

The Commission continues to receive quarterly reports as to the progress of each soldier settler, and half-yearly reports as to other settlers; and a regular and close examination of those reports showed that the improvement being made is very gratifying.

ADMINISTRATION.

EXTENSIONS AND EXCISIONS.

The Merbein Irrigation Area was extended during the year by the addition of an area of 800 acres, being the new Discharged Soldier Settlement recently allocated. A further area of 750 acres of the Birdwood (Mid-Area) Soldier Settlement will be added immediately.

Minor extensions were also made of the Rodney and Shepparton Irrigation and Water Supply Districts, by the addition of lands excised from the Deakin Irrigation and Water Supply District, and the Waterworks Districts of the Shepparton Urban and Shire of Shepparton Waterworks Trusts.

NEW DISTRICTS CONSTITUTED.

The scheme of works designed for the protection of certain low-lying lands at Echuca, near the junction of the Campaspe and Murray Rivers, together with the rating proposals for financing such scheme, having been endorsed by the land-holders concerned, the area affected has been constituted the Echuca (High-street) Flood Protection District. The construction of the works has been pushed forward, and they have already successfully protected the area from flooding.

The works of the already constituted Lower Koo-wee-rup Flood Protection District are almost completed, and as the land-holders concerned have derived considerable benefits therefrom, it is proposed to make a Flood Protection Charge during the ensuing year. The holdings will be classified in three divisions and the charge will be levied differentially according to the benefits received from the works.

PROPOSED DISTRICTS.

As the reticulation works for the supply of the township of Merbein are near completion, the township will be proclaimed an Urban District during the coming year.

Steps are being taken for the constitution of a district to be known as Echuca North Irrigation and Water Supply District, comprising lands near Echuca, which are being supplied by special works with water for irrigation. The land-owners interested have already agreed to the scheme and to the charges proposed.

In connexion with the development of the Naval Base and Mornington Peninsula Scheme, the district of the Dandenong Waterworks Trust has been taken over and is now being administered by the Commission as part of the scheme. It is proposed to proclaim Urban Districts at Carrum, Frankston, Mornington, and other centres.

STAFF.

With deep regret the Commission records the death of Mr. Allan Deal, Assistant Mechanical Engineer, and Mr. Wm. Thomson, Ganger, who were accidentally killed at Koo-wee-rup, on 12th August, 1920, by a collision between a motor car and a railway train.

Mr. W. F. Nevill has been transferred from the position of District Engineer, Secretary and Collector for the Cohuna Centre, to that of Resident Engineer for the new Soldier Settlement District of Red Cliffs; and Mr. S. P. Bromfield, of the Head Office Staff, has been transferred to Cohuna Centre to fill the vacancy thus created. Mr. H. C. Valentine has been transferred from the Head Office to the position of Officer in Charge of Nyah Irrigation District, to fill the vacancy caused by the resignation of Mr. R. A. Black. Mr. A. P. Flockart, an Engineer on the Head Office Staff, was transferred to the Werribee Centre as District Engineer, to fill the vacancy caused by the resignation of Mr. Benson. Recently, however, Mr. Flockart resigned, and Mr. H. E. Harding, Assistant Engineer, has been appointed District Engineer, Secretary and Collector for the Werribee Centre. Mr. A. W. Johnson has been appointed Resident Engineer in Charge of the Waranga Reservoir Enlargement Works, the previous officer in charge, Mr. L. N. Welch, having been transferred to Murtoa, in place of Mr. R. F. McNab, transferred to Head Office. Mr. M. D. Grace, an officer of the Commission, was appointed District Secretary and Collector at Ouyen, in place of Mr. F. T. Holt, transferred to take charge of field work of surveys for Soldier Settlements in the Mallee. Mr. J. F. Callahan, who for eight years had acted as Collector for the Commission for Avoca Trust, resigned, and Mr. E. R. Jeffreys has been appointed in his place. Mr. K. G. McAlpin, Secretary of the late Dandenong Waterworks Trust, has been appointed by the Commission as District Secretary at Dandenong.

FIRE INSURANCE.

The policy of carrying the fire risks on its own buildings has been continued by the Commission. The premiums thus saved now amount to £2,655. No losses have occurred since the date of inauguration—July, 1909.

RECEIPTS, DISBURSEMENTS, AND ESTIMATES.

The receipts last year totalled £270,377, and represent a record collection, being more than £70,000 over the amount collected some six years ago. The revenue is again evenly divided between Irrigation Districts and Water Supply Districts.

The net disbursements from annual votes amounted to £149,838. This is an increase of £37,470 over the previous twelve months, and while such increase is largely accounted for by the protracted dry conditions of last year, which necessitated the prolonging of the running of channels for eight or nine months, involving an additional expenditure in pumping districts alone of some £20,000 for firewood, still it is undoubted that the advances in cost of labour and material are such that the question of increasing the charges for water, with a view of meeting such higher costs, must now be considered. The expenditure of loan moneys amounted to £562,325, details of which are set out in this Report.

In the Irrigation and Water Supply Districts the receipts show an increase of £16,090 over those of the previous year, and are the highest collections yet made. Owing to the greatly protracted dry conditions, the expenditure in these districts last year, particularly for pumping, was excessively heavy in proportion to the increased revenue obtainable; but, notwithstanding this, after debiting the districts with their full proportion of interest on the cost of supply works chargeable, and including all working expenses, the deficit in last year's operations was not more than £21,572, which will also be further reduced by an additional amount, £6,600, owing for water specially supplied very late in the year. As previously stated, however, the advances in cost of labour and material are such that some increases in charges for water seem inevitable, but in no instance will these need to be of such a character as to in any way embarrass irrigators.

The Coliban District shows for the year a revenue increase of £2,442, while the disbursements have only increased £967. After allowing for a small amount of additional interest, the deficit for the year is £23,028, as against £24,191 for 1918-19. As previously pointed out, the rating in the Coliban District is specially limited by the Water Acts, and any appreciable reduction in this regular annually recurring deficit can only be brought about by a general development of the district, of which there are, however, now some prospects, owing to an additional supply of water being available through the enlargement of the main reservoir.

The Commission has now the direct control of forty-four Waterworks Districts, exclusive of the Coliban District. Mainly owing to the dry conditions previously referred to, and the consequent necessity of an almost continuous running of the channels throughout the year, the expenditure—including interest—exceeded the revenue by £8,604, and the aggregate revenue deficit of the districts was raised to £33,972, which, however, is still considerably less than the deficit of a few years ago. Notwithstanding that it is probable a large part of last year's expenditure will not need to be again incurred, it would appear that there must be some further adjustment in rating charges, so as to secure not only additional revenue, but also a more equitable distribution of the present rating, and this can possibly be best attained without hardship to settlers by arranging the larger Waterworks Districts into new rating zones or divisions.

The Estimate for disbursements during the coming year is £163,500, an increase of £29,200 over the previous year's amount. This increase is necessary to meet the great expansion in the operations of the Commission, coupled with the heavy additional expenditure required for wages and cost of materials. On the other hand, the Estimate of receipts has this year been raised to £265,000, as against last year's estimate of £235,000.

The Loan Liability of the State for Works of Water Supply at the close of the year was £10,236,709. Of this total, £1,240,299 is for Free Headworks; £1,453,904 was written-off; £147,046 was advanced to some early-formed Local Authorities; £17,624 has not been expended; £307,152 has been paid off by Authorities, and £1,310,085 is represented by uncompleted works which are not yet revenue producing, and are set out separately on Statement of Loan Liability in this Report. The balance, £5,760,599, is the sum in respect of which those benefited by the various works are this year liable for payment of interest.

The present Interest Charges on loans amount to £366,221. Of this amount £105,571 is not chargeable to any districts, being debitabie against Free Headworks, Amounts Written Off, and Unexpended Balances, while £48,347, although recorded for future charging, is not at present chargeable, being interest on cost of Uncompleted Works which are not yet revenue producing, leaving £212,303 as debitabie this year against the Commission and other Authorities. The amount available last year from the Revenues of the Commission and other Authorities to meet such interest (after providing a sum of £18,395 for non-revenue producing works and services not chargeable to any district) was £177,697, as set out in the statement on page 36.

RECEIPTS AND DISBURSEMENTS.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1920.

Works.	Receipts.	DISBURSEMENTS, exclusive of Interest, Redemption, and Depreciation Charges.			Excess.	
		From Annual Votes and Special Appropriation.	Deduct Capital and Other Disbursements not Chargeable to Districts.	Net Disbursements on Maintenance and Management.	Receipts over Net Disbursements.	Disbursements over Receipts.
	£	£	£	£	£	£
Coliban	39,621	12,060	...	12,060	27,561	...
Other State Works—						
Broken River	7	283	...	283	...	276
Goulburn	367	2,123	50	2,073	...	1,706
Kow Swamp	558	1,330	...	1,330	...	772
Lake Lonsdale	4	451	...	451	...	447
Loddon River	7	314	...	314	...	307
North-West Lakes	332	484	...	484	...	152
Irrigation Districts	127,473	75,006	1,116	73,890	53,583	...
Waterworks Districts	69,183	35,228	501	34,727	34,456	...
Urban Districts and Divisions	16,714	5,950	...	5,950	10,764	...
Licences, Diversions, Miscellaneous	16,111	3,541	...	3,541	12,570	...
	270,377	136,770	1,667	135,103	138,934	3,660
<i>Not Revenue Producing—</i>						
River Gauging, Surveys and Re- ports, New Projects ... ..	...	4,103	...	4,103	...	4,103
Waterworks Trusts						
Boring for Water, Road	} Cost of Administration	...	6,566	...	6,566	6,566
Clearing, Mallee and Land Settlement		...	4,066	...	4,066	4,066
Loan Works ... ..	...	4,066	...	4,066	...	4,066
Totals ..	270,377	151,505	1,667	149,838	138,934	18,395

Amount available to meet Redemption and Depreciation £2,000
Amount available to meet Interest as per page 36 of Report £118,539

COLIBAN SYSTEM.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1920,
and of Interest charged at the rate of 4 per cent. on Capital Debts.

Districts.	Capital Debit at 30th June, 1920.	Receipts.	Disbursements and Interest Charged.			Excess.	
			Disbursements.	Interest.	Total.	Receipts over Disbursements.	Disbursements and Interest over Receipts.
	£	£	£	£	£	£	£
Coliban	1,248,547	38,046	11,077	49,941	61,018	...	22,972
Axe Creek	1,750	307	158	70	228	79	...
Harcourt	14,445	1,268	825	578	1,403	...	135
Totals	1,264,742	39,621	12,060	50,589	62,649	79	23,107

IRRIGATION AND WATER SUPPLY DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1920; and of Interest, charged at the rate of 4 per cent. on Capital Debits; and also of Depreciation and Redemption charged, as at 30th June, 1920. (Free Head-works excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1919.	1919-20.				Grand Total at 30th June, 1920.	
		Rates.	Compulsory Irrigation Charge.	Water Sales.	Interest and Miscellaneous.		
	£	£	£	£	£	£	
1. Bacchus Marsh	30,958	573	3,441	1,306	64	5,384	36,342
2. Boort	27,333	1,643	..	1,363	23	3,029	30,362
3. Campaspe	8,260	673	..	149	2	824	9,084
4. Cohuna	79,020	1,775	5,685	1,020	196	8,676	87,696
5. Deakin	49,322	4,128	..	1,974	59	6,161	55,483
6. Dingee	5,943	141	1,063	350	40	1,594	7,537
7. Dry Lake	405	..	..	..	29	29	434
8. Gannawarra	56,956	1,183	4,846	1,504	70	7,603	64,559
9. Kerang	55,285	2,157	..	2,562	5	4,724	60,009
10. Koondrook	49,944	1,328	3,618	875	70	5,891	55,835
11. Merbein	71,354	273	12,230	23	215	12,741	84,095
12. Nyah	20,068	100	3,555	79	180	3,914	23,982
13. Rochester	60,070	1,900	7,457	2,080	295	11,732	71,802
14. Rodney	217,898	7,009	12,134	1,945	393	21,481	239,379
15. Shepparton	28,973	1,050	4,697	658	218	6,623	35,596
16. Stanhope	648	362	701	261	25	1,349	1,997
17. Swan Hill	43,515	915	3,370	1,421	95	5,801	49,316
18. Tongala	25,810	699	3,482	322	168	4,671	30,481
19. Tragowel Plains	90,106	1,556	7,254	2,262	83	11,155	101,261
20. Werribee	4,858	335	2,140	1,524	92	4,091	8,949
Totals	926,726	27,800	75,673	21,678	2,322	127,473	1,054,199

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District.	DISBURSEMENTS.					INTEREST CHARGED.			(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1920.	
	1st May, 1906, to 30th June, 1919.	1919-20.				Total at 30th June, 1920.	1st May, 1906, to 30th June, 1919.	1st July, 1919, to 30th June, 1920.			Total at 30th June, 1920.
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.						
	£	£	£	£	£	£	£	£	£	£	
1. Bacchus Marsh	7,247	183	937	170	1,290	8,537	26,862	4,100	30,962	..	39,499
2. Boort ..	16,074	263	771	93	1,127	17,201	9,959	820	10,779	(B) 700	28,680
3. Campaspe ..	4,802	97	254	108	459	5,261	5,182	423	5,605	..	10,866
4. Cohuna ..	56,188	896	6,844	357	8,097	64,285	31,062	3,256	34,318	(A) 8,312	106,915
5. Deakin ..	21,920	400	906	183	1,489	23,409	32,632	3,212	35,844	..	59,253
6. Dingee ..	3,313	257	402	66	725	4,038	6,034	1,124	7,158	..	11,196
7. Dry Lake ..	1	..	..	..	..	1	404	29	433	..	434
8. Gannawarra ..	35,748	1,077	4,279	300	5,656	41,404	20,973	2,034	23,007	(A) 5,062	69,473
9. Kerang ..	28,587	819	1,050	293	2,162	30,749	23,017	1,846	24,863	(A) 375 (B) 1,800	57,787
10. Koondrook ..	32,332	528	4,843	234	5,605	37,937	29,056	3,059	32,115	(A) 4,126	74,178
11. Merbein ..	46,285	26	14,332	598	14,956	61,241	21,934	4,820	26,754	(A) 8,565	96,560
12. Nyah ..	17,616	403	3,468	302	4,173	21,789	8,159	1,551	9,710	(A) 3,442	34,941
13. Rochester ..	33,652	1,563	3,002	533	5,098	38,750	56,404	7,811	64,215	..	102,965
14. Rodney ..	91,875	2,319	6,412	848	9,579	101,454	133,301	13,571	146,872	..	248,326
15. Shepparton ..	15,730	1,488	990	306	2,784	18,514	27,426	5,037	32,463	..	50,977
16. Stanhope ..	715	568	598	167	1,333	2,048	1,586	1,784	3,370	..	5,418
17. Swan Hill ..	32,421	760	1,785	298	2,843	35,264	12,895	2,007	14,902	(A) 4,368	54,534
18. Tongala ..	16,880	750	846	206	1,802	18,682	34,073	4,853	38,926	..	57,608
19. Tragowel Plains	42,440	1,322	2,358	206	3,886	46,326	53,717	6,589	60,306	..	106,632
20. Werribee ..	1,402	93	584	149	826	2,228	5,204	3,326	8,530	..	10,758
Totals ..	505,228	13,812	54,661	5,417	73,890	579,118	539,880	71,252	611,132	36,750	1,227,000

WATERWORKS DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1920; and of Interest charged, at the rate of 4 per cent. on Capital Debts; and also of Depreciation and Redemption charged, as at 30th June, 1920. (Free Head-works excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1919.	1919-20.				Grand Total at 30th June, 1920.
		Rate.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
1. Birchip	135,663	3,335	87	12	3,434	153,396
2. Sea Lake		5,305	198	88	5,591	
3. Tyrrell		3,722	14	54	3,790	
4. Wycheproof		4,768	120	30	4,918	
5. Carwarp	633	226	..	230	863	
6. Karkaroc	53,072	7,716	75	7,881	60,953	
7. Kerang North-West Lakes	962	174	22	198	1,160	
8. Long Lake	60,134	6,176	277	6,539	66,673	
9. Naval Base and Mornington Peninsula .. .. .	..	..	2,690	2,690	2,690
10. Tyntynder	20,636	4,030	42	4,173	24,809	
11. Walpeup East	2,224	384	..	397	2,621	
12. Walpeup West	4,712	1,103	..	1,128	5,840	
13. Werribee	381	420	5	427	808	
14. Western Wimmera	110,339	11,155	1,499	12,689	123,028	
15. Wimmera United	135,862	14,047	685	14,800	150,662	
16. Yelta	221	292	..	298	519	
Totals	524,839	62,853	5,714	69,183	594,022	

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District.	DISBURSEMENTS.					INTEREST CHARGED.			(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1920.		
	1st May, 1906, to 30th June, 1919.	1919-20.				1st May, 1906, to 30th June, 1919.	1st July, 1919, to 30th June, 1920.	Total at 30th June, 1920.				
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.							
	£	£	£	£	£	£	£	£	£			
1. Birchip	66,476	2,645	3,323	1,147	7,115	73,591	81,121	10,946	92,067	..	165,658	
2. Sea Lake		1,576	115	3,340	88	3,543	5,119	1,042	529	1,571	(a) 408	7,098
3. Tyrrell		21,247	1,426	647	448	2,521	23,768	34,199	4,669	38,868	..	62,636
4. Wycheproof		522	26	39	18	83	605	471	80	551	..	1,156
5. Carwarp	42,024	1,306	3,347	597	5,250	47,274	15,452	3,057	18,509	(a) 8,305	74,088	
6. Karkaroc .. .. .	..	268	..	20	288	288	..	£ 402	2,402	..	2,690
7. Kerang North-west Lakes	15,653	1,332	1,591	275	3,198	18,851	10,994	3,736	14,730	..	33,581	
8. Long Lake	1,853	276	..	60	336	2,189	796	167	963	..	3,152	
9. Naval Base & Mornington Peninsula	4,438	291	641	95	1,027	5,465	949	413	1,362	(a) 1,050	7,877	
10. Tyntynder	59	93	77	37	207	266	509	510	1,019	..	1,285	
11. Walpeup East	60,277	1,791	3,609	775	6,175	66,452	40,110	6,258	46,368	(a) 2,797 (b) 6,500	122,117	
12. Walpeup West	61,804	2,357	1,845	673	4,875	66,679	68,782	7,713	76,495	(b) 6,000	149,174	
13. Werribee	100	7	80	22	109	209	148	148	296	..	505	
14. Western Wimmera	Totals	276,029	11,933	18,539	4,255	34,727	310,756	254,573	40,628	295,201	25,060	631,017

DISTRICTS HELD IN TRUST BY THE COMMISSION.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1919.

Name of Trust.	Bank Balance, at 31st December, 1918.	1919.				Grand Total, 31st December, 1919.
		Rates.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
Avoca	462	536	6	1	543	1,005
Avoca (Quambatook, Urban)	124	326	10	1	337	461
Carrum	140	1,562	..	13	1,575	1,715
Loddon United	754	2,081	10	87	2,178	2,932
Loddon United (Mitiamo, Urban) .. .. .	..	133	50	..	183	183
Totals	1,480	4,638	76	102	4,816	6,296

DISBURSEMENTS, INTEREST AND REDEMPTION CHARGED.

Name of Trust.	1919.				Interest.	Redemption.	Grand Total, 31st December, 1919.	Balance carried forward, 1st January, 1920.
	Repairs and Maintenance.	Water Distribution.	Management.	Total.				
	£	£	£	£	£	£	£	
Avoca	671	..	99	770	95	38	903	Cr. 102
Avoca (Quambatook, Urban)	23	40	45	108	141	30	279	Cr. 182
Carrum	916	..	166	1,082	620	88	1,790	Dr. 75
Loddon United	1,099	293	79	1,471	687	249	2,407	Cr. 525
Loddon United (Mitiamo, Urban)	110	..	16	126	114	14	254	Dr. 71
Totals	2,819	333	405	3,557	1,657	419	5,633	Cr. 809 Dr. 146

URBAN DISTRICTS AND DIVISIONS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1920; and of Interest charged, at the rate of 4 per cent. on Capital Debts; and also of Depreciation and Redemption charged, as at 30th June, 1920. (Free Head-works excluded.)

RECEIPTS.

District or Division.	1st May, 1906, to 30th June, 1919.	1919-20.				Grand Total at 30th June, 1920.
		Rate.	Water Sales.	Interest and Miscellaneous.	Total.	
1. Bacchus Marsh	£ 10,420	£ 609	£ 654	£ 7	£ 1,270	£ 11,690
2. Berriwillock	544	96	7	1	104	648
3. Beulah	2,992	373	32	12	417	3,409
4. Birchip	8,307	527	242	27	796	9,103
5. Cohuna	2,225	258	88	1	347	2,572
6. Corop	228	38	2	1	41	269
7. Dandenong .. .. .	..	844	55	19	918	918
8. Dimboola	14,995	551	1,025	31	1,607	16,602
9. Hopetoun	3,219	333	94	13	440	3,659
10. Jeparit	3,616	422	110	2	534	4,150
11. Jung Jung	174	79	45	..	124	298
12. Kaneira	600	96	30	..	126	726
13. Koondrook	2,267	300	18	3	321	2,588
14. Lake Boga	2,097	198	1	5	204	2,301
15. Lascelles	452	87	25	1	113	565
16. Minyip	4,808	400	26	1	427	5,235
17. Natimuk	4,712	213	260	1	474	5,186
18. Nyah	137	20	..	..	20	157
19. Ouyen	481	725	76	13	814	1,295
20. Rainbow	6,921	485	137	1	623	7,544
21. Rupanyup	4,017	326	107	1	434	4,451
22. Sea Lake	4,018	411	91	12	514	4,532
23. Ultima	1,725	295	37	24	356	2,081
24. Watchem	1,185	198	6	1	205	1,390
25. Werribee	3,192	676	91	7	774	3,966
26. Wonthaggi	28,873	1,795	1,873	70	3,738	32,611
27. Woomelang	3,562	248	182	3	433	3,995
28. Wycheproof	4,721	421	109	10	540	5,261
Totals	120,488	11,024	5,423	267	16,714	137,202

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District or Division.	DISBURSEMENTS.					INTEREST CHARGED.			(A) DEPRECIATION. (B) REDEMPTION.		Grand Total at 30th June, 1920.
	1st May, 1906, to 30th June, 1919.	1919-20.			Total at 30th June, 1920.	1st May, 1906, to 30th June, 1919.	1st July, 1919, to 30th June, 1920.	Total at 30th June, 1920.	(A)	(B)	
		Repairs and Maintenance.	Distribution of Water.	Management.								Total.
1. Bacchus Marsh	£ 3,141	£ 4	£ 92	£ 98	£ 194	£ 3,335	£ 6,651	£ 968	£ 7,619	(a) 308 (b) 250	£ 11,512
2. Berriwillock	284	..	36	18	54	338	318	38	356	(a) 18 (b) 28	712
3. Beulah	904	2	126	42	170	1,074	1,898	219	2,117	(a) 28 (b) 324	3,219
4. Birchip	3,079	70	616	77	763	3,842	4,070	452	4,522	(a) 300 (b) 147	8,988
5. Cohuna	587	5	57	22	84	671	1,065	251	1,316	(a) 150 (b) 150	2,284
6. Corop	100	..	10	6	16	116	103	19	122	(a) 15 (b) 253	905
7. Dandenong .. .. .	..	..	104	93	197	197	..	708	708	..	905
8. Dimboola	8,418	244	633	127	1,004	9,422	4,044	489	4,533	(a) 1,480 (b) 830	16,265
9. Hopetoun	1,223	6	179	36	221	1,444	1,355	200	1,555	(a) 150 (b) 100	3,149
10. Jeparit	696	..	95	43	138	834	2,645	332	2,977	(a) 18 (b) 822	3,911
11. Jung Jung	158	14	84	18	116	274	49	37	86	..	360
12. Kaneira	289	30	45	18	93	382	375	47	422	(a) 120 (b) 2257	2,480
13. Koondrook	1,059	1	74	39	114	1,173	1,038	149	1,187	(a) 66 (b) 150	2,257
14. Lake Boga	235	10	193	23	226	461	1,447	132	1,580	(a) 40 (b) 400	631
15. Lascelles	224	6	60	19	85	309	258	24	282	(a) 291 (b) 750	5,299
16. Minyip	1,676	19	16	34	69	1,745	3,000	263	3,263	(a) 70 (b) 1,435	5,027
17. Natimuk	751	4	43	41	88	839	3,092	346	3,438	(a) 24 (b) 1,337	124
18. Nyah	50	..	5	5	10	60	30	10	40	..	1,337
19. Ouyen	173	80	140	33	253	426	451	460	911	..	7,341
20. Rainbow	1,423	4	116	61	181	1,604	4,398	499	4,897	(a) 440 (b) 400	4,352
21. Rupanyup	1,483	75	60	30	165	1,648	2,272	201	2,473	(a) 294 (b) 1,900	4,598
22. Sea Lake	2,459	2	287	56	345	2,804	1,369	131	1,500	(a) 70 (b) 1,435	4,301
23. Ultima	448	52	87	23	162	610	1,031	189	1,220	(a) 231 (b) 4,200	31,067
24. Watchem	302	34	46	17	97	399	860	126	986	(a) 140 (b) 5,496	4,154
25. Werribee	1,007	9	151	101	261	1,268	2,233	569	2,802	(a) 291	5,496
26. Wonthaggi	3,653	51	233	206	490	4,143	20,372	2,352	22,724	(a) 291	5,496
27. Woomelang	1,169	10	51	50	111	1,280	2,380	354	2,734	(a) 291	5,496
28. Wycheproof	2,573	5	195	43	243	2,816	2,162	227	2,389	(a) 291	5,496
Totals	37,564	737	3,834	1,379	5,950	43,514	68,966	9,793	78,759	11,906	134,179

LOAN EXPENDITURE.

STATEMENT OF LOAN EXPENDITURE DURING THE YEAR ENDED 30TH JUNE, 1920.

Work.	Loans Application Act No. 2973.		Loans Application Act No. 3013 and other Sources.		Total.	
	£	s. d.	£	s. d.	£	s. d.
<i>Free Headworks.</i>						
1. Kerang North-West Lakes	290	2 6	1,777	13 11	2,067	16 5
2. Kow Swamp .. .. .	..	..	31	16 0	31	16 0
<i>River Murray Waters Acts—Works.</i>						
3. Storages, Weirs, and Locks	3,727	3 1	90,648	15 10	94,375	18 11
<i>Reservoirs and Storages.</i>						
4. Goulburn Storages— Sugarloaf Reservoir	7,904	12 5	99,488	4 2	107,392	16 7
Waranga Reservoir Enlargement	6,583	19 4	67,069	9 6	73,653	8 10
5. Maffra, Glenmaggie Dam	8	6 9	16,785	6 0	16,793	12 9
6. Wimmera-Mallee Storages—Taylor's Lake	1,396	12 3	19,489	19 9	20,886	12 0
<i>Waterworks Districts.</i>						
7. Birchip, Sea Lake, Tyrrell and Wycheproof	363	2 11	11,725	1 7	12,088	4 6
8. Carwarp	514	8 10	2,473	12 7	2,988	1 5
9. Karkaroc	0	7 5	2,740	18 2	2,741	5 7
10. Long Lake	518	17 10	1,657	11 6	2,176	9 4
11. Naval Base and Mornington Peninsula .. .. .	..	..	62,708	3 6	62,708	3 6
12. Tyntynder	139	19 2	9,538	6 0	9,678	5 2
13. Walpeup East	64	4 5	639	5 10	703	10 3
14. Walpeup West	203	7 3	2,603	9 6	2,806	16 9
15. Western Wimmera .. .. .	..	..	1,789	4 6	1,789	4 6
16. Wimmera United	204	11 4	1,856	15 5	2,061	6 9
17. Wimmera Main Channels	695	0 8	8,445	4 3	9,140	4 11
<i>Towns.</i>						
18. Bacchus Marsh	12	0 0	113	16 2	125	16 2
19. Berriwillock, Beulah, and Birchip .. .. .	..	..	288	10 1	288	10 1
20. Cohuna	148	10 0	455	3 11	603	13 11
21. Coliban	352	15 3	7,469	16 6	7,822	11 9
22. Dimboola, Hopetoun, Jeparit, and Jung Jung .. .. .	..	..	483	8 2	483	8 2
23. Kaneira, Lake Boga, and Lascelles	13	11 0	244	18 6	258	9 6
24. Merbein	120	0 0	1,940	10 7	2,060	10 7
25. Ouyen	9	19 1	211	11 3	221	10 4
26. Rainbow, Rupanyup, and Sea Lake	6	4 0	163	2 6	169	6 6
27. Ultima and Watchem	99	3 2	236	3 5	335	6 7
28. Werribee, Woomelang, and Wycheproof	8	5 0	76	0 2	84	5 2
<i>Irrigation and Water Supply Districts.</i>						
29. Bacchus Marsh and Werribee	745	17 6	8,637	5 5	9,383	2 11
30. Boga	13	15 9	127	15 4	141	11 1
31. Boort .. .. .	..	..	1,183	18 5	1,183	18 5
32. Campaspe .. .. .	..	..	205	19 10	205	19 10
33. Cohuna	51	2 10	4,344	12 7	4,395	15 5
34. Deakin .. .. .	..	..	119	12 11	119	12 11
35. Dingee .. .. .	..	..	33	7 6	33	7 6
36. Gannawarra	4	0 0	1,012	12 6	1,016	12 6
37. Kerang	27	11 8	129	0 6	156	12 2
38. Koondrook	25	5 0	335	18 7	361	3 7
39. Merbein	1,228	7 2	22,484	11 2	23,712	18 4
40. Nyah	21	15 4	7,277	12 0	7,299	7 4
41. Rochester	43	1 6	1,073	6 6	1,116	8 0
42. Rodney	38	16 6	7,253	4 2	7,292	0 8
43. Shepparton	336	6 5	6,998	19 8	7,335	6 1
44. Stanhope	13	11 0	4,916	8 6	4,929	19 6
45. Swan Hill	53	16 7	4,059	13 7	4,113	10 2
46. Tongala	24	18 2	512	19 7	537	17 9
47. Tragowel Plains	37	8 2	1,252	4 3	1,289	12 5
48. Goulburn Main Channels	836	3 7	10,201	3 8	11,037	7 3
<i>Miscellaneous.</i>						
49. Drainage Districts .. .. .	..	..	658	0 1	658	0 1
50. Goulburn Levees	4	3 6	101	18 11	106	2 5
51. Kerang District—Torrumbarry Pumping (to be defrayed from Surplus Revenue) .. .. .	..	..	3,983	3 10	3,983	3 10
52. Koo-wee-rup and Cardinia Flood Protection	1,342	19 11	33,456	19 8	34,799	19 7
53. Torrumbarry Districts—New Districts commanded by pro- posed Torrumbarry Weir and Lock .. .. .	..	..	578	14 0	578	14 0
Total	28,234	4 3	534,091	2 5	562,325	6 8

STATEMENT OF EXPENDITURE DURING THE YEAR ENDED 30TH JUNE, 1920.

CONSTRUCTION OF TANKS AND FORMING ROADS IN THE MALLEE, AND INVESTIGATION AND SURVEYS FOR SOLDIER SETTLEMENT IN THE MILLEWA DISTRICT, WEST OF MILDURA RAILWAY LINE.

This Expenditure was met by the Public Works Department.

	£	s. d.
1. Mallee Tanks (Public Tanks)	7,131	19 11
2. Clearing Roads	3,215	1 2
3. Millewa Surveys	1,652	18 11
Total	12,000	0 0

RED CLIFFS SOLDIER SETTLEMENT.

1. Surveys, Clearing Land, and Making Channels (charged to the Discharged Soldiers Settlement Fund)	£5,327	9 4
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ESTIMATES.

Anticipated requirements to meet Disbursements by the Commission and Estimate of the moneys available from its Revenues to provide the same for the year ending 30th June, 1921, with Estimate of the total amount available from the Revenues of all Authorities to meet interest payable by the State for the year ending 30th June, 1921.

ESTIMATED DISBURSEMENTS.

A.

Revenue Producing Works—		
Coliban District	£11,000	
Irrigation and Water Supply Districts	74,500	
Waterworks Districts	33,000	
Drainage and Flood Protection Districts	1,000	
Diversions from Streams	700	
General Expenditure and Salaries (proportion) over £250 to be apportioned to above Districts	22,800	
		£143,000

B.

Non-Revenue Producing Works—		
General Services—		
River Gaugings, Surveys, New Projects, Boring for Water, Land Settlement, General Expenditure and Salaries (proportion) over £250	£9,000	
Loan Works, Services on Account defrayed from Votes	5,000	
Waterworks Trusts Administration	2,000	
		£16,000

C.

Non-Revenue Producing Works—		
Free Headworks—		
Broken River	£250	
Goulburn-Waranga	1,600	
Kow Swamp	1,500	
Lake Lonsdale and Lower Wimmera	450	
Loddon River	300	
North-west Lakes	400	
		£4,500
		£163,500

ESTIMATED RECEIPTS.

Coliban District	£38,000
Irrigation and Water Supply Districts	128,000
Waterworks Districts	86,000
Miscellaneous	13,000
	£265,000

Estimated amount available from Revenue Producing Works to meet interest	£122,000
Less expenditure as per "B" and "C" above on Non-Revenue Producing Works	20,500
	£101,500
To which add Estimated Revenues from other Authorities—	
Waterworks Trusts	£37,000
Local Bodies	24,000
	£61,000
Total Estimated amount available from Revenues of all Authorities to meet Interest	£162,500

STATEMENT OF LOAN LIABILITY.

STATEMENT of the amount provided by the State to meet Interest on its Loan Expenditure for Works of Water Supply, both State Works of Water Supply and Works vested in Authorities other than the Commission; and of the sums paid from the revenues of the Commission, and from the moneys received from such other Authorities, to provide such Interest for the year ended 30th June, 1920:—

Works.	Loan Liability of State for Works of Water Supply at 30th June, 1920, exclusive of Melbourne Water Supply.				Total Interest of £366,221 debitable to—				Amount received from Revenues of all Authorities to meet interest.
	Total Advances, including Cost of Loan Flotation.	Deduct Redemption Paid.	Net Advances.	(A.) Amounts Written Off. (B.) Free Head-works. (C.) Uncompleted Works. (D.) Loans Unexpended.	Balance at Debit of Authorities.	Interest payable by State on Net Advances.	(A.) Written Off. (B.) Free Head-works. (C.) Uncompleted Works. (D.) Loans Unexpended.	Commission and Other Authorities.	
Waterworks Districts	£ 2,430,117	£ 36,754	£ 2,393,363	£ 169,927	£ 2,223,436	£ 88,289	£ 82,002	£ 118,539	
Irrigation and Water Supply Districts	1,938,742	18,714	1,920,028	575,152	1,344,876	70,838	21,280	(after provid- ing £18,395 for non-revenue producing works, including Free Head-works).	
Goulburn Channel Works (Free Headworks excluded) Pykes Creek, Melton, and Distributary Works { Districts supplied are being debited with their pro- portion of Interest on this Expenditure	589,189	90	589,099	117,873	471,226	21,722	4,361		
Sugarloaf Reservoir	417,925	..	417,925	32,293	113,253	5,367	1,194		
Waranga Reservoir Enlargement	258,548	..	258,548	417,925	..	15,419	..		
Naval Base and Mornington Peninsula	181,425	..	181,425	258,548	..	9,533	..		
Koo-wee-rup and Cardinia Flood Protection Schemes	83,154	..	83,154	120,761	60,664	6,690	4,468		
Waterworks Trusts (including First Mildura)	1,524,975	150,830	1,374,145	83,154	..	3,064	..		
Local Bodies (Municipalities)	758,738	100,314	658,424	321,665	1,052,480	50,669	11,901	£59,158	
River Murray Agreement Works	165,769	..	165,769	163,760	494,664	24,278	6,059		
Irrigation and Waterworks Trusts Abolished	223,430	30	223,400	165,769	..	6,113	..		
Free Headworks	1,240,719	420	1,240,299	223,400	..	8,237	..		
Free Grants to Local Authorities	147,046	..	147,046	1,240,299	..	45,735	..		
Surveys, Exploratory, and Preliminary Works, including Purchase of Land reserved for Reservoirs	113,762	..	113,762	147,046	..	5,421	..		
Loan Moneys unexpended	17,624	..	17,624	113,762	..	4,195	..		
Totals	10,236,709	307,152	9,929,557	4,168,958	5,760,599	366,221	153,918	£177,697	

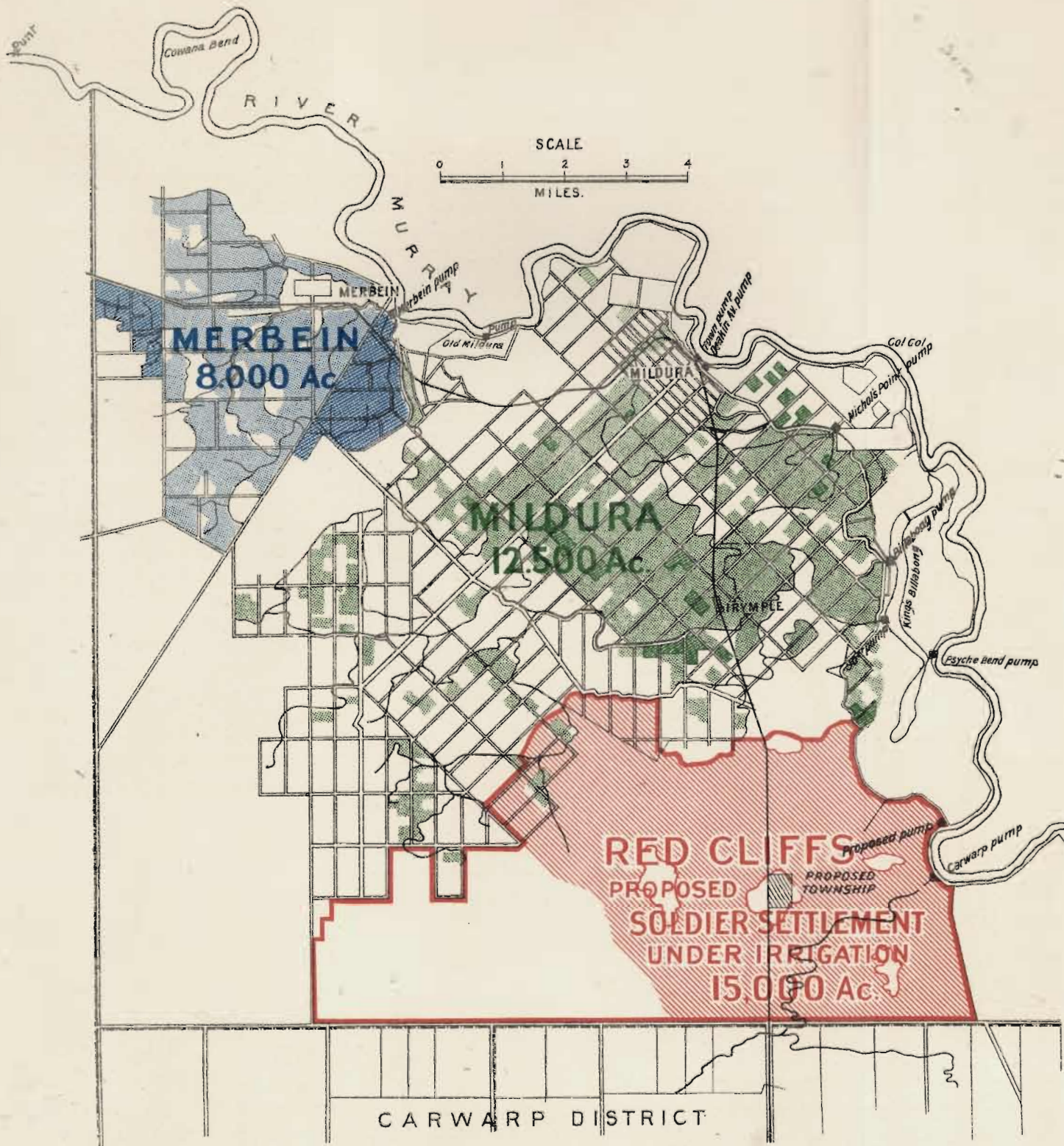
STATE RIVERS AND WATER SUPPLY COMMISSION.

MILDURA-MERBEIN IRRIGATION CENTRE,

SHOWING

RED CLIFFS ESTATE

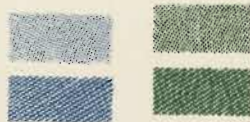
ACQUIRED FOR SOLDIER SETTLEMENT UNDER IRRIGATION.



REFERENCE.

Existing Irrigated Areas shown thus—

Soldier Settlements shown hatched thus—



By Authority,
A. J. Mallett, Government Printer,
Melbourne.

Dated at the Office of the State Rivers and Water Supply Commission, Treasury
Gardens, Melbourne, the 26th day of October, 1920.

WM. CATTANACH, Chairman.

J. S. DETHRIDGE, Commissioner.

E. SHAW, Commissioner.

M. NALLY, Secretary.