

1917.

VICTORIA.

STATE RIVERS AND WATER SUPPLY COMMISSION.

T W E L F T H
ANNUAL REPORT.

1916-17.

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

APPROXIMATE COST OF REPORT.		£	s.	d.
Preparation—not given.
Printing (1,000 copies)
				60 0 0

By Authority:

ALBERT J. MULLETT, GOVERNMENT PRINTER, MELBOURNE.

No. 35.—[1s. 6d.]—13055.

THE GREAT WAR.

ROLL OF HONOUR.

Sixty-four members of the Commission's Staff volunteered and were accepted for Active Service in defence of the Empire. They have been granted leave of absence till the end of the war, and meanwhile their interests will be safeguarded in every possible way.

Of these, Captain G. Maxfield, District Secretary, Wonthaggi, and Lieutenant J. G. Burnell, Chief Mechanical Engineer of the Commission, have been awarded the Military Cross for gallantry in France, and R. G. Greig, L. T. Keep, J. Fleming, and A. F. J. Harrison have been awarded the Military Medal.

As a mark of appreciation, a Roll of Honour has been designed and provided by the Commissioners and the Staff. This was formally established in July 1915, at the Head Office, Melbourne. The following names now appear on the Roll :—

A. R. McCONCHIE.	A. G. LAWSON.
D. T. CURDIE.	J. T. MACAULAY.
C. D. COWAN.	G. D. MURRAY.
C. GALLOP.	R. FARRELL.
A. McCOLL.	B. M. LONG.
C. E. D'ALTON.	E. L. G. CRESWELL.
J. O'BRYAN.	F. J. COOKE.
F. ROGERSON.	K. J. F. COVENTRY.
C. THOMSEN.	M. D. GRACE.
W. LAMBERT.	J. LYONS.
G. MAXFIELD.	H. C. VALENTINE.
R. G. GREIG.	R. J. LONG.
A. CAMERON.	E. THOMPSON.
J. G. BURNELL.	A. P. FLOCKART.
R. B. BENNETT.	W. G. SIDES.
A. F. J. HARRISON.	S. G. MILLER.
V. G. COADY.	A. WATT.
G. E. IREDALE.	F. H. DAVIS.
J. FLEMING.	J. R. MOORE.
W. F. NEVILL.	H. HIRD.
L. V. BROWN.	A. E. SMITH.
F. R. LUCAS.	E. R. H. WONG.
J. F. McKELLAR.	J. CRAWFORD.
W. MURCOTT.	R. COUSTLEY.
L. G. MERKEL.	C. S. MURRAY.
C. F. THOMSEN.	R. A. HUNT.
G. CAMERON.	G. F. PEDLOW.
L. J. SCOTT.	J. A. AIRD.
L. T. KEEP.	V. FOSTER.
G. FOGARTY.	H. C. HALFORD.
W. R. WOODLAND.	G. MILLER.
F. SPLATT.	S. BROMFIELD.

With deep regret it has to be announced that the undermentioned have been killed in action :—

C. E. D'ALTON.
J. O'BRYAN.
A. CAMERON.
V. G. COADY.
A. McCOLL.
C. D. COWAN.

STATE RIVERS AND WATER SUPPLY COMMISSION.

ANNUAL REPORT, 1916-17.

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 1916-17, 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 Debt at 30th June, 1917. 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	10,014
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	187,084
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	£1,201,449

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 Debt at 30th June, 1917.		
	£	£	£	£		
1. Birchip	} 233,959	700	2,203	231,056		
2. Sea Lake						
3. Tyrrell						
4. Wycheproof						
5. Carwarp	7,855			7,855		
6. Coliban	1,251,492			1,251,492		
7. Karkaroc	94,115		2,493	91,622		
8. Kerang North-west Lakes (Free Headworks excluded)	2,000			2,000		
9. Long Lake (Free Head- works excluded)	46,078		571	45,507		
10. Naval Base and Mornington Peninsula	12,348			12,348		
11. Ouyen	3,591			3,591		
12. Tyntynder	51,006			51,006		
13. Walpeup East	3,493			3,493		
14. Walpeup West	4,157			4,157		
15. Western Wimmera	249,488	132,835	13,966	102,687		
16. Wimmera United	187,412	36,392	11,064	139,956		
17. Wonthaggi	62,990		2,237	60,753		
Wimmera Main Channels	130,765			130,765		
Wimmera Storages—						
Fyans Lake	} 35,989			35,989		
Taylors Lake		28,400			28,400	
Whitton Swamp		8,060			8,060	
	2,413,198	169,927	32,534	2,210,737	2,210,737	
Carried forward					£3,412,186	

WORKS UNDER CONTROL OF COMMISSION—*continued.*Capital Debt
at 30th June,
1917,
Exclusive
of Cost of Loan
Flotation.

Brought forward £ 3,412,186

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, 1917.
	£	£	£	£
1. Bacchus Marsh	58,088	8,906	493	48,689
2. Boort	54,840	35,259	894	18,687
3. Campaspe	63,361	52,685	305	10,371
4. Cohuna	128,693	49,197	521	78,975
5. Deakin	93,655	34,748	2,144	56,763
6. Dingee	12,789	..	..	12,789
7. Dry Lake	1,704	686	299	719
8. Gannawarra	82,615	33,179	180	49,256
9. Kerang	84,077	35,338	1,710	47,029
10. Koondrook	110,461	30,872	1,475	78,114
11. Merbein	78,632	..	..	78,632
12. Nyah	24,224	..	..	24,224
13. Rochester	117,659	..	..	117,659
14. Rodney	366,453	149,949	6,578	209,926
15. Shepparton	50,672	..	..	50,672
16. Swan Hill	54,567	19,799	342	34,426
17. Tongala	61,390	..	..	61,390
18. Tragowel Plains	186,709	124,534	444	61,731
Totals	1,630,589	575,152	15,385	1,040,052

1,040,052

D.—IRRIGATION AND WATER SUPPLY DISTRICTS.—
MAIN SUPPLY WORKS.

Cost to be Apportioned to Districts benefited on the Basis of Water Allotment.

		Tentative Debits to Districts, 1916-17—				
1. Goulburn Main Channels (Free Headworks exclu- ded)— East Goulburn .. Waranga Reservoir to Campaspe .. Campaspe to Ser- pentine .. Main Distributary Channels ..	Rodney .. .. .	..	..	..	£120,000	130,057 246,835 194,305 28,772 <hr/> 599,969
	Tragowel Plains .. .. .	..	..	..	100,000	
	Rochester .. .. .	..	..	..	74,000	
	Tongala .. .. .	..	..	..	67,000	
	Shepparton .. .. .	..	..	..	57,000	
	Deakin .. .. .	..	..	..	24,000	
	Dingee .. .. .	..	..	..	15,000	
					£457,000	
2. Goulburn Storages (Free Headworks excluded)— Sugarloaf Reservoir .. Waranga Reservoir Enlargement ..	.. .. .	..	..	..	..	154,259
	.. .. .	..	..	..	..	80,377
	.. .. .	..	..	..	..	234,636
3. Pykes Creek and Werribee Schemes— Ballan Tunnel .. Pykes Creek Reser- voir .. Diverting Weir and Distributary Works, Werribee Melton Reservoir	Bacchus Marsh .. .. .	..	..	..	£55,000	10,734 63,391 48,494 73,137 <hr/> 195,756

Carried forward .. .. .	..	..	..	..	..	£5,482,599

WORKS UNDER CONTROL OF COMMISSION—*continued.*Capital Debt
at 30th June,
1917,
Exclusive
of Cost of Loan
Flotation.

Brought forward £ 5,482,599

E.—WATERWORKS TRUSTS DISTRICTS.

DISTRICTS HELD IN TRUST BY THE COMMISSION.

Name of Trust.	Total Advances by State.	Capital written off by Acts 1825 and 1851.	Redemption paid to Treasury.	Capital Debt at 30th June, 1917.
	£	£	£	£
1. Avoca Water Trust—				
Rural District	8,709	2,494	910	5,305
Urban District (Quambatook)	3,786	..	69	3,717
2. Carrum Waterworks Trust	25,732	7,732	1,944	16,056
3. Loddon United Waterworks Trust	21,234	1,717	2,229	17,288
	59,461	11,943	5,152	42,366
			Grand Total	£ 5,482,599

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, 20,880 square miles, equal to about 13,363,000 acres. Notwithstanding the abnormally wet season the area irrigated last year was 257,705 acres; and although this is 30,302 acres less than the area irrigated in the previous year, it is within 3,000 acres of the average of the six last preceding years. The area irrigated includes about 17,000 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 154 as shown in the following statement :—

Controlling Authorities.	Number of Town Supplies.	Estimated Population Served.
Commission	40	69,000
Waterworks Trusts	97	157,000
Local Governing Bodies	17	67,000
Totals	154	293,000

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 comparative purposes.

STATEMENT OF THE EXTENT OF IRRIGATION AND OF AREAS OF DIFFERENT KINDS OF CROPS WATERED—YEAR 1916-17.

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	789	5,321	617	..	3,446	..	97	10,270
Rodney	64	29,213	1,091	12,799	12,284	294	936	56,681
Deakin	10	1,591	272	660	135	132	94	2,894
Tongala	28	2,480	127	719	735	35	40	4,164
Rochester	101	11,989	1,227	2,789	1,232	1,063	36	18,437
Dingee	12	811	20	186	13	62	36	1,140
Tragowel Plains	1,107	596	2,123	21,517	10	200	..	25,553
Totals	2,111	52,001	5,477	38,670	17,855	1,786	1,239	119,139
<i>Supplied from Kow Swamp State Works.</i>								
Kerang	4,649	633	1,257	10,075	15	126	217	16,972
Dry Lake .. .. .	..	..	..	350	6	..	2	358
Land supplied direct (outside Districts)	467	1,560	303	635	8	..	..	2,973
Totals	5,116	2,193	1,560	11,060	29	126	219	20,303
<i>Supplied from Loddon State Works.</i>								
Boort	2,025	186	1,080	6,707	23	..	..	10,021
Tragowel Plains	478	581	2,500	1,614	6	5	..	5,184
Totals	2,503	767	3,580	8,321	29	5	..	15,205
<i>Supplied from other State Works.</i>								
Bacchus Marsh	11	2,722	5	1,352	123	36	..	4,249
Campaspe .. .. .	..	307	20	20	9	10	..	366
Cohuna	1,068	5,754	1,077	6,422	158	49	..	14,528
Gannawarra	1,920	1,233	1,523	9,257	27	77	..	14,037
Koondrook	2,846	1,142	267	8,316	689	..	..	13,260
Merbein .. .. .	..	260	..	..	4,431	..	580	5,271
Nyah	200	20	60	..	1,246	..	..	1,526
Swan Hill	1,573	3,511	541	1,875	335	823	18	8,676
Werribee	150	2,618	22	61	50	28	..	2,929
Western Wimmera	3	21	17	4	957	..	1	1,003
Totals	7,771	17,588	3,532	27,307	8,025	1,023	599	65,845
<i>Supplied from other sources.</i>								
Kerang North-West Lakes	689	763	95	1,566	30	116	10	3,269
First Mildura .. .. .	..	360	289	..	9,545	..	2,052	12,246
Coliban	161	316	102	297	2,729	134	123	3,862
Kerang—Outside Districts (Private Diversions)	439	54	72	237	4	30	..	836
Other Private Diversions throughout the State .. .. .	..	..	..	..	..	..	17,000	17,000
Grand Totals, 1916-17	18,790	74,042	14,707	87,458	38,246	3,220	21,242	257,705
Grand Totals, 1915-16	61,663	70,372	15,412	82,622	32,918	5,621	19,399	288,007

COMPARATIVE STATEMENT OF THE EXTENT OF IRRIGATION, 1912-13 TO 1916-17.

	Area under Irrigation (Acres).				
	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.
Goulburn State Works	96,800	136,303	185,185	134,011	119,139
Kow Swamp State Works	30,454	34,409	11,179	21,857	20,303
Loddon State Works	18,885	14,336	4,298	17,051	15,205
Other State Works	59,374	80,457	81,632	72,307	65,845
Kerang North-West Lakes	4,546	12,020	10,547	5,916	3,269
First Mildura Trust Works	12,209	12,037	12,063	12,064	12,246
Coliban State Works	3,632	3,745	2,425	3,676	3,862
Private Works in Kerang District	5,083	5,980	2,016	4,125	836
Other Private Works throughout the State	19,000	18,000	15,000	17,000	17,000
Totals	249,983	317,287	324,345	288,007	257,705

The decrease in the area irrigated last year is due to the wet season, the rainfall having been fully twelve inches above the annual average for the portions of the State in which the Irrigation Areas are situated.

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 in the newly-constituted Waterworks District of Carwarp.

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.

In thirteen 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, 1917.	Period of Rate.	Estimated Number of Persons dwelling in District.
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IRRIGATION AND WATER SUPPLY DISTRICTS.

	Valuation by Commission.	Rate		Period of Rate.	Estimated Number of Persons dwelling in District.
		£	s. d.		
1. BACCHUS MARSH ..	11,159	..	.. 1 0	1st July, 1916, to 30th June, 1917	600
2. BOORT ..	15,452	1st Division ..	2 0	" " "	750
3. CAMPASPE ..	9,823	2nd Division ..	1 0	" " "	490
		1st Division ..	1 8	" " "	
4. COHUNA ..	16,734	2nd Division ..	0 10	" " "	905
		3rd Division ..	0 5	" " "	
		1st Division ..	2 0	" " "	
5. DEAKIN ..	71,451	2nd Division ..	1 0	" " "	4,050
		1st Division ..	1 6	" " "	
		2nd Division ..	0 9	" " "	
6. DINGEE ..	2,696	3rd Division ..	0 4½	" " "	215
		..	.. 1 0	" " "	
7. DRY LAKE ..	250	(No rate made)		.. ..	11
8. GANNAWARA ..	11,224	1st Division ..	2 0	1st July, 1916, to 30th June, 1917	494
		2nd Division ..	1 0	" " "	
9. KERANG ..	17,637	1st Division ..	2 6	" " "	750
		2nd Division ..	1 3	" " "	
		3rd Division ..	0 7½	" " "	
10. KOONDROOK ..	11,896	1st Division ..	2 0	" " "	519
		2nd Division ..	1 0	" " "	
11. MERBEIN ..	5,395	..	.. 1 0	" " "	1,100
12. NYAH ..	1,833	..	.. 1 0	" " "	377
13. ROCHESTER ..	41,218	1st Division ..	1 0	" " "	2,720
		2nd Division ..	0 6	" " "	
		3rd Division ..	0 3	" " "	
14. RODNEY ..	143,229	1st Division ..	1 0	" " "	4,550
		2nd Division ..	0 6	" " "	
		3rd Division ..	0 3	" " "	
15. SHEPPARTON ..	16,673	..	.. 1 0	" " "	1,276
16. SWAN HILL ..	8,469	..	.. 2 0	" " "	640
17. TONGALA ..	13,879	..	.. 1 0	" " "	1,292
18. TRAGOWEL PLAINS ..	32,780	1st Division ..	1 0	" " "	1,050
		2nd Division ..	0 6	" " "	

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, 1917.	Period of Rate.	Estimated Number of Persons dwelling in District.
WATERWORKS DISTRICTS.				
	Valuation by Commission.			
	£	s. d.		
19. AXE CREEK	1,422	.. .. 2 0	1st July, 1916, to 30th June, 1917	200
20. BIRCHIP	29,978	1st Division .. 2 4 2nd Division .. 1 2 3rd Division .. 0 7	" " "	2,340
21. CARWARP	7,569	1st Division .. 1 9 2nd Division .. 0 10½ 3rd Division .. 0 5½	1st January, 1917, to 30th June, 1917	500
22. HARCOURT	5,550	.. .. 1 6	1st July, 1916, to 30th June, 1917	570
23. KARKAROOC	86,370	1st Division .. 1 10 2nd Division .. 0 11 3rd Division .. 0 5½	" " "	3,200
24. KERANG NORTH-WEST LAKES	6,078	.. .. 0 6	" " "	315
25. LONG LAKE	48,723	1st Division .. 2 6 2nd Division .. 1 3 3rd Division .. 0 7½	" " "	1,800
26. SEA LAKE	47,708	1st Division .. 2 4 2nd Division .. 1 2 3rd Division .. 0 7	" " "	2,030
27. TYNTYNDER	30,396	1st Division .. 3 0 2nd Division .. 1 6 3rd Division .. 0 9	" " "	1,500
28. TYRRELL	32,333	1st Division .. 3 0 2nd Division .. 1 6 3rd Division .. 0 9	" " "	2,040
29. WALPEUP EAST	31,084	1st Division .. 0 5 2nd Division .. 0 2½	" " "	2,000
30. WALPEUP WEST	47,852	1st Division .. 0 6 2nd Division .. 0 3	" " "	3,000
31. WESTERN WIMMERA	247,937	1st Division .. 1 2 2nd Division .. 0 7 3rd Division .. 0 3½	" " "	10,200
32. WIMMERA UNITED	267,816	1st Division .. 1 2 2nd Division .. 0 7 3rd Division .. 0 3½	" " "	8,600
33. WYCHEPROOF	48,123	1st Division .. 2 4 2nd Division .. 1 2 3rd Division .. 0 7	" " "	2,090
URBAN DIVISIONS AND DISTRICTS.				
	Municipal Valuation.			
	£	s. d.		
34. BACCHUS MARSH	7,684	.. .. 1 6	1st July, 1916, to 30th June, 1917	1,460
35. BERRIWILLOCK	498	.. .. 4 0	" " "	115
36. BEULAH	2,829	.. .. 2 9	" " "	575
37. BIRCHIP	5,386	.. .. 2 3	" " "	870
38. COHUNA	2,631	.. .. 2 9	" " "	460
39. COROP	352	.. .. 2 0	" " "	90
40. DIMBOOLA	6,538	.. .. 1 9	" " "	1,000
41. HOPETOUN	2,760	.. .. 2 9	" " "	450
42. JEPARIT	3,380	.. .. 2 6	" " "	550
43. KANEIRA	530	.. .. 4 0	" " "	130
44. KOONDRICK	2,406	.. .. 3 0	" " "	420
45. LAKE BOGA	1,510	.. .. 3 0	" " "	265
46. LASCELLES	778	.. .. 3 6	" " "	120
47. MINYIP	3,042	.. .. 3 0	" " "	600
48. NATIMUK	2,504	.. .. 1 6	" " "	420
49. NYAH	303	.. .. 2 6	" " "	48
50. RAINBOW	5,208	.. .. 2 3	" " "	850
51. RUPANYUP	2,173	.. .. 3 0	" " "	400
52. SEA LAKE	2,794	.. .. 3 0	" " "	520
53. ULTIMA	2,039	.. .. 3 0	" " "	262
54. WATCHEM	1,190	.. .. 3 6	" " "	170
55. WERRIBEE	6,787	.. .. 2 0	" " "	1,080
56. WONTHAGGI	17,500	.. .. 1 9	" " "	5,600
57. WOOMELANG	2,276	.. .. 3 0	" " "	410
58. WYCHEPROOF	3,310	.. .. 2 6	" " "	690

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, 1917.	Period of Rate.	Estimated Number of Persons dwelling in District.
COLIBAN SYSTEM.				
59. COLIBAN	Municipal Valuation. £ 308,499	<i>s. d.</i> On Valuation 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, 1916, to 30th June, 1917	61,600
WATERWORKS TRUSTS.				
60. AVOCA	£ 29,968	.. .. 0 4½	1st January, 1917, to 31st December, 1917	1,300
61. CARRUM	22,976	1st Division .. 4 0 2nd Division .. 1 6 3rd Division .. 0 3 4th Division .. 0 4 5th Division .. 2 0	" " "	950
62. QUAMBATOOK (URBAN)	2,176 Valuation by Commission. £	.. .. 3 3	" " "	300
63. LODDON UNITED ..	93,842	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 ..	6,625	3,302	3,302	20s.	1st October, 1916, to 30th April, 1917
2. COHUNA	34,884	22,323	22,408	5s.	1st September, 1916, to 30th April, 1917
3. DINGEE	5,359	4,961	4,961	6s.	1st September, 1916, to 30th April, 1917
4. GANNAWARRA ..	43,839	17,111	17,111	5s.	1st September, 1916, to 30th April, 1917
5. KOONDRÖÖK ..	52,780	14,524	14,524	5s.	1st September, 1916, to 30th April, 1917
6. MERBEIN	5,854	5,284	13,163	15s.	1st August, 1916, to 30th April, 1917
7. NYAH	2,882	2,293	5,700	14s.	1st August, 1916, to 30th April, 1917
8. ROCHESTER ..	128,999	32,059	32,059	5s.	1st September, 1916, to 30th April, 1917
9. RODNEY	265,847	184,897	48,633	5s.	1st September, 1916, to 30th April, 1917
10. SHEPPARTON ..	18,765	16,915	16,915	5s.	1st September, 1916, to 30th April, 1917
11. SWAN HILL ..	17,647	12,417	12,417	5s.	1st September, 1916, to 30th April, 1917
12. TONGALA	24,873	17,446	17,446	5s.	1st September, 1916, to 30th April, 1917
13. TRAGOWEL PLAINS	180,474	122,968	24,587	6s.	1st September, 1916, to 30th April, 1917

CONTRACTS.

STATEMENT OF CONTRACTS ENTERED INTO DURING THE YEAR ENDED
30TH JUNE, 1917.

No.	Name of Contractor.	Work or Supply.	Amount (Loan and Vote).		
			£	s.	d.
1505	F. O. Wallin	Firewood, Swan Hill	447	13	6
1506	F. Russell	Firewood, Merbein	607	18	0
1507	C. Andriske	Firewood, Merbein	614	3	0
1508	J. Spellacy	Firewood, Merbein	612	10	0
1509	W. H. Krake	Firewood, Merbein	618	15	0
1510	Albert de Forest	Firewood, Merbein	218	15	0
1511	H. Walker	Firewood, Merbein	85	0	0
1512	A. G. Cassidy	Firewood, Koondrook	231	5	0
1513	J. M. Harman	Firewood, Koondrook	118	15	0
1514	Martha Dickinson	Firewood, Cohuna	129	3	4
1515	Leslie Bramley	Firewood, Cohuna	516	13	4
1516	W. Monro	Firewood, Cohuna	146	17	6
1517	James Mannix	Firewood, Cohuna	147	5	4
1518	Thomas Bubb	Firewood, Cohuna	625	0	0
1519	Ernest E. S. Hipwell	Firewood, Cohuna	245	16	8
1520	George A. Hipwell	Firewood, Cohuna	333	6	8
1521	P. Mannix, sen.	Firewood, Nyah	948	12	6
1522	J. Nicholas	Firewood, Nyah	171	8	3
1523	Zenith Hoist Co.	Meter Wheels	828	15	0
1524	S. H. McLean	Tank, Nyang	166	13	0
1525	E. A. Olsen	Firewood, Swan Hill	193	15	0
1526	Arnold and Everett	Firewood, Long Lake	572	8	6
1527	Michael J. Holmes	Firewood, Long Lake	110	16	8
1528	Australian Portland Cement Co. Pty. Ltd.	20,000 casks Cement	11,000	0	0
1529	J. T. Trevorror and Son	Steel Shafting, &c., Waranga Basin	106	15	0
1530	John Alexr. Cameron	Firewood, Sugarloaf Reservoir	251	0	10
1531	N. Brook and G. Walton	Firewood, Sugarloaf Reservoir	94	15	10
1532	J. Janetzki	Portion Donald Main Channel	213	7	10
1533	F. Gilchrist	Portion Donald Main Channel	230	4	8
1534	J. Janetzki	Portion Donald Main Channel	158	0	0
1535	T. and J. Sheehan	Portion Donald Main Channel	180	17	11
1536	William Dole	Portion Donald Main Channel	148	2	6
1537	William Askew	Portion Donald Main Channel	130	14	6
1538	W. Branson	Portion Dingee-Mitiamo Channel	44	3	4
1539	G. P. Conlon	Boring for Water, Walpeup West	315	0	0
1540	Thos. Harty	Portion Donald Main Channel	160	8	4
1541	Dennis Sullivan	Portion Donald Main Channel	148	13	9
1542	Manasch McGuinness	Portion Lake Boga Main Channel	374	15	0
1543	Manasch McGuinness	Portion Lake Boga Main Channel	425	0	0
1544	Manasch McGuinness	Portion Lake Boga Main Channel	367	5	0
1545	Manasch McGuinness	Portion Lake Boga Main Channel	405	0	0
1546	Manasch McGuinness	Portion Lake Boga Main Channel	416	10	0
1547	Manasch McGuinness	Portion Lake Boga Main Channel	394	10	0
1548	Manasch McGuinness	Portion Lake Boga Main Channel	339	0	0
1549	Thos. Malone	Portion Lake Boga Main Channel	319	15	0
1550	Thos. Malone	Portion Lake Boga Main Channel	284	0	6
1551	Thos. Malone	Portion Lake Boga Main Channel	313	10	0
1552	Edgar J. Broadwood	Portion Donald Main Channel	156	15	0
1553	Geo. Kilpatrick	Portion Lake Boga Main Channel	298	10	0
1554	W. Mathers	Portion Embankment, Taylor's Lake Storage	1,919	18	4
1555	A. Leonard and H. McCann	Portion Embankment, Taylor's Lake Storage	1,042	17	6
1556	Determined.				
1557	J. J. Hannon	Portion Lake Boga Main Channel	444	0	0
1558	W. Sinclair and Co.	Enlargement No. 7 Yallock Drain, Koo-wee-rup	913	2	6
1559	W. Sinclair and Co.	Enlargement No. 7 Yallock Drain, Koo-wee-rup	844	11	8
1560	W. Sinclair	Extension of Little Yannathan Drain, Koo-wee-rup	185	0	0
1561	Wm. Sinclair and Co.	Enlargement No. 4 Drain, &c., Koo-wee-rup	1,107	1	8
1562	Wm. Sinclair and Co.	Enlargement No. 4 Drain, &c., Koo-wee-rup	754	3	4
1563	Wm. Sinclair and Co.	Enlargement No. 4 and Murray-road, Drains, Koo-wee-rup	816	13	4
1564	Hume Bros. Cement Iron Co. Ltd.	Reinforced Concrete Pipes, Mitiamo	800	0	10
1565	L. Tuana	Portion Echuca North Channel	340	2	6
1566	Philip H. Starr	Enlargement Waranga Reservoir Embankment	11,664	0	0
1567	A. J. Baker	Portion Lake Boga Main Channel	228	15	0
1568	A. J. Baker	Portion Lake Boga Main Channel	173	5	0
1569	Thos. Malone	Portion Lake Boga Main Channel	178	0	0
1570	Thos. Malone	Portion Lake Boga Main Channel	184	10	0
1571	Australian Portland Cement Co. Pty. Ltd.	20,000 casks Cement	12,000	0	0
1572	The Executors David Mitchell Estate	10,000 casks Cement	6,333	6	8
1573	Frederick Ernest Gray	Sawn Redgum Timber	724	3	0
1574	Vaughan Bros.	Portion Embankment Beaconsfield Reservoir	3,799	5	0
		Total	70,420	17	7

PIECE-WORK AND DIRECT LABOUR.

With several of its larger works the Commission is continuing for the present the systems of "piece-work" and "direct labour." The principal works on which these systems have been employed are the new storages at "Sugarloaf" on the Goulburn River, the enlargements of Waranga and Upper Coliban Reservoirs, the Naval Base and Mornington Peninsula Water Supply Works, the connecting tunnel from Werribee River to supply Pykes Creek Reservoir, and the storage works in connexion with the Wimmera-Mallee System. The amount thus expended was £112,102 for the year. Channel work was also carried out by these methods in the Merbein, Tyntynder, Stanhope, Rochester, Shepparton, and other districts. This expenditure amounted to £19,558 for the year.

WORKS CARRIED ON OR COMPLETED DURING THE YEAR ENDED 30TH JUNE, 1917.

COLIBAN DISTRICT.

The work of increasing the capacity of the Upper Coliban Reservoir is now completed. The height the water level has been raised is 11 feet, and the increase in capacity is from 15,200 to 22,500 acre feet; in other terms, a gain of about 2,000 million gallons.

The reservoir has been filled to the new raised level, and the increased supply is now available for requirements.

The scheme recently completed for improvement of the supply to Maldon has proved efficient, and the service to that town is now equal to that of the other principal centres of the Coliban system.

Renewals as found necessary and minor extensions have been carried out on the channel and pipe reticulation works throughout the whole Coliban District.

IRRIGATION AND WATER SUPPLY DISTRICTS.

RODNEY DISTRICT.

The principal works for the year consisted of additional drainage syphons, new outlets, renewals of timber structures, and remodelling of earthwork on a number of existing channels.

Some reduction in the area under irrigation is likely to result from the flooding of low-lying lands close to the Goulburn River, but such reductions will be more than compensated for by the increase of intense culture in other parts of the district, which is already heavily taxing the capacities of distributary channels.

SHEPPARTON DISTRICT.

Channel lining with cement mortar for the prevention of seepage was extended as opportunity offered, nearly 2 miles being done during the year. Works for dealing with surface drainage of No. 2 Estate have been well advanced; similar works for the drainage of No. 1 Estate are about to be put in hand.

The area of 157 acres near the township of Shepparton, known as Dudley's, has been subdivided and made available under closer settlement conditions.

SWAN HILL DISTRICT.

Good progress has been made with the construction of the main channel for bringing water from the Little Murray Weir by gravitation to the Swan Hill District. Given reasonably favorable conditions, this channel should be in operation next season. New registering outlets are being provided throughout the district as required.

The area known as Burton's Estate being nearly all taken up by settlers, some 500 acres of neighbouring Crown lands have been subdivided and provided with supply channels. Ten blocks of this latter area have already been settled.

DISTRICTS ADMINISTERED FROM KERANG CENTRE.

In Kerang District the flume on the Macorna channel over Pyramid Creek has been extensively altered to provide additional waterway for floods.

In Koondrook District the bank along the Guttram Forest Reserve below the town of Koondrook was strengthened to afford protection against the floods of the Murray River, and a survey has since been made and estimates prepared for works to secure increased protection in the future. New work on the irrigation scheme was confined to the provision of occupation bridges, outlets and subways.

In the Kerang North-West Lakes District a reinforced concrete regulator has been built on the channel leading from Race-course Lake to Cullens Lake, and embankments are in course of construction on the western shore of the former. These works are part of the scheme for increasing the storage capacity of Kangaroo Lake, Race-course Lake and Lake Charm.

DISTRICTS ADMINISTERED FROM COHUNA CENTRE.

In Cohuna District progress has been made with the connecting-up of holdings, and the forming of inlets to the main channel of the deep drainage scheme, the completed portion of which is giving highly satisfactory results. Surveys for the extension of this channel easterly along Leitchs Creek have been completed.

The damage to the main supply channel across Gunbower Island by the flood of September, 1916, was repaired at the beginning of the irrigation season, but unfortunately this channel has again been injured by the flood of June, 1917, and further repairs will thus be necessary.

Other works comprise remodelling of earthwork of existing channels, cement lining to prevent seepage, and installation of measuring outlets.

In Gannawarra District a reinforced concrete syphon of 3 feet 6 inches diameter has been constructed to convey the flow of the channel known as "Lateral K" beneath the depression carrying flood waters from Pyramid Creek near Yeoburn.

DISTRICTS ADMINISTERED FROM LODDON CENTRE.

In Tragowel Plains and Boort Districts renewal of timber structures and remodelling of the earthwork of channels have been proceeded with as far as the unfavorable conditions resulting from an exceptionally wet season would permit.

In Dingee District operations have been confined to ordinary maintenance.

DISTRICTS ADMINISTERED FROM ROCHESTER CENTRE.

For prevention of seepage a mile of channel has been lined with cement mortar and 20 chains have been strengthened and pugged at the outer toes of their embankments. Repairs have been effected to works damaged by floods, and some short extensions of channel have been constructed.

Preparations have been made for drainage work at Ballendella, the construction of pipe subways under existing channel, the installation of 150 measuring outlets, and repairs to drops in channels.

In Campaspe District operations have been confined to ordinary maintenance.

DISTRICTS ADMINISTERED FROM TONGALA.

In Deakin District the channel construction throughout the subdivided portion of Stanhope Estate has been brought near completion. The total length of new channels is about 100 miles. It has been found that in some sections seepage occurs, and these are being lined with cement mortar or trenched or pugged. In the older portion of the district many channels have been badly silted or otherwise damaged by floods. The removal of silt and other repair work are in hand.

In Tongala District 6 miles of new channels have been constructed and the structures rendered necessary by new subdivisions have been provided.

BACCHUS MARSH DISTRICT AND WERRIBEE SCHEME.

In Bacchus Marsh District the work for the year has consisted of the restoration of several chains of concrete lined channel destroyed by the flood of September, 1916, replacement of old timber structures by new ones of reinforced concrete, and experimental work for the protection of eight chains of the banks of the Lerderberg River, which were being eroded by floods at a rate that meant the loss annually of many acres of land of the highest value. The tunnel from Werribee River to supplement the supply to Pykes Creek Reservoir is nearing completion.

In the Werribee District operations comprised removal of silt from main channel, general maintenance, and contour and subdivisional surveys of the irrigable area of about 1,000 acres not yet made available for settlement.

MERBEIN DISTRICT.

Distributary works have been constructed for the supply of about 350 acres of the recently added area between Merbein and Mildura. This land has been subdivided into 23 blocks and allotted to Returned Soldiers. All of the successful applicants are now in occupation, and good progress is being made with improvements.

Throughout the whole district the lining of channels with either cement concrete or cement mortar is being proceeded with, the cases being, as far as practicable, dealt with in the order of their urgency. The length completed during the year was $3\frac{1}{2}$ miles, making the total now lined 20 miles, or rather more than half the total length of channels in the district.

NYAH DISTRICT.

About a mile of channel lining and some drainage improvement works were carried out during the year. Investigations are proceeding with a view to making the drainage system still more efficient.

WATERWORKS DISTRICTS.

CARWARP DISTRICT.

This district, constituted last year, comprising about 200,000 acres south-east of Mildura, is situate on the River Murray, and is supplied therefrom by pumping.

The scheme of distribution comprises 80 miles of main and distributing channels, while eight public storage tanks have been constructed. At several places where bad runaway holes occur the channels will be lined with limestone concrete, the materials for which are obtainable from natural deposits near the work.

LONG LAKE AND TYNTYNDER DISTRICTS.

At present these districts are supplied by pumping, the Tyntynder District directly from the river at Nyah, and the Long Lake District from Long Lake and Lake Boga storages, which are themselves replenished from the Murray River. In each case on account of the high lifts involved the supply is necessarily expensive and limited. This is particularly so at Long Lake where water has to be lifted against some 200 feet head through an 18-inch diameter rising main 7 miles in length. The life of this rising main is now almost at an end, and it could only be replaced at a cost of some £20,000. In view of this and of the imperative necessity for securing for the districts the cheapest and most abundant supply possible, the Commission decided to extend the Wimmera-Mallee channel system so as to command these large and important areas, and to give them the benefits of a much more abundant and at the same time cheaper gravitation supply. This is being effected by an extension of the Donald-Corack-Wycheproof main channel from Wycheproof to Goschen so as to connect at that point with the head of the existing Long Lake distributary channel system, and thence by means of the existing Harveys Tank Channel and Northern Channel to the head of the Tyntynder channel system near Nyah. The two districts will then be supplied by gravitation. The results now obtainable from the main supply channels of the reorganized Wimmera-Mallee system, together with the large additional capacity of the new Wimmera storages now being completed, have made it quite clear that there will be abundant supplies to supplement as necessary the present local sources of supply from the Avoca, Richardson, and Avon Rivers. Apart from the fact that the cost of the connecting main channel outlined above will be less than that of a new rising main at Long Lake, the great benefits to be derived by the gravitation supply are clearly apparent. The new work is well in hand, and it is hoped that a substantial portion of the Long Lake Area will be supplied by the new method during the ensuing season, while both districts should receive a full gravitation supply in the watering season of 1918.

There have been some 30 miles of distributary channel constructed in the Tyntynder District during the year, and important projects for extensions to serve new areas in the parishes of Pines, Mirkoo, and Myall have been investigated.

The work of reticulating Waitchie township is being put in hand so that the work will be completed in readiness for the ensuing summer.

WIMMERA-MALLEE WATER SUPPLY.

An abundant supply of water was available during this year, and, the channels being generally in good order, watering was carried out expeditiously. The new main channel system worked very effectively, and demonstrated its suitability for the work of rapid, effective, and economical distribution of water over the large dependent areas. The main channel extension from Corack to Wycheproof is now almost finished, and will be in working order before the next watering is completed, while the still further highly important extension of this main channel from Wycheproof to Goschen, to supply Long Lake and Tyntynder Districts, has been advanced sufficiently to insure its completion during the coming year. When this latter work is completed the Wimmera-Mallee channel system will command by gravitation the whole of the large area set out on the plan inserted. This is approximately some 8,500 square miles in extent. Probably no such extensive, comprehensive, and effective individual scheme of domestic supply channels exists in any other part of the world.

PLAN OF WIMMERA-MALLEE SYSTEM.

This system is so far advanced that it has been thought advisable to insert in this Report a Plan showing the sources of supply and the ramifications of the various main and distributary channels, which now have a combined length of over 3,600 miles.

WESTERN WIMMERA AND WIMMERA UNITED DISTRICTS.

In these districts minor remodellings of channels were undertaken during the year.

In the Wimmera United District a work of some magnitude put in hand was the new reticulated scheme of supply for the town of Warracknabeal, which is being carried out by the Commission for the local Trust as previously arranged. These works are well advanced, and will be ready during the next few months.

BIRCHIP, WYCHEPROOF, SEA LAKE, AND TYRRELL DISTRICTS.

Distributary channel operations in these districts were chiefly in the Tyrrell District, where some 25 miles of channelling, inclusive of the Ouyen Channel, were completed. Surveys for some 30 miles of other branch channels have been undertaken, including the survey of an important projected extension of the Gorya Channel, in the parishes of Dering and Mittyman north-westerly, to serve lands lying to the south of Ouyen and Walpeup, which are outside the area within which it is practicable to obtain water by boring. It had been arranged to complete the channel to supply the important centre of Ouyen, but owing to the scarcity of labour during last year this was impracticable; as, however, a good supply of catchment water was gathered this winter, it has been arranged to finish the reticulation of Ouyen so that such supply could, pending the construction of the channel, be made available during the ensuing summer. In the southern portions of these districts the Commission's operations were chiefly confined to the work of expediting the carrying out of the Corack-Wycheproof main channel and its extension to Goschen; satisfactory progress being made with these important works.

KARKAROOC DISTRICT.

Some 6 miles of distributary channels were constructed during the year, and, except for some short extensions which may be necessary in the future, the work of channel reticulation in this large district is now almost complete.

NAVAL BASE AND MORNINGTON PENINSULA WATER SUPPLY SCHEME.

During the year substantial progress has been made. Since the original scheme was outlined in last year's Report a more complete survey of the natural features of the country traversed by the first portion of the main pipe line, as originally proposed, made clear the practicability of continuing the open-lined race for a further distance of some 15 miles to Beaconsfield. The general advantages which would be obtainable by bringing so far forward, at a cheap rate, a large volume of water which could in turn be readily augmented in future were so manifest that it was decided to adopt this course, provided

a suitable regulating storage could be established near Beaconsfield at the head of the remaining shortened pipe line. A favorable site was found in the "Haunted Gully," about 3 miles north of Beaconsfield, where over 200 million gallons of water could be stored at a cost of only some £8,000, and the construction of this reservoir and that portion of the main race between it and the Toomuc Creek were put in hand immediately. These works are well advanced, and it is expected they will be completed early in 1918, so as to enable the Beaconsfield Reservoir to be filled temporarily from the head waters of the Toomuc Creek, pending the completion of the upper part of the main race to tap the chief sources of supply which will be provided by the Bunyip River and its principal tributaries.

It was further ascertained that the natural features of the country between Cranbourne and the proposed Frankston Reservoir were even more favorable than anticipated, and would permit of the location for the greater part of the distance of a pipe line requiring little or no head. This fact permitted the use at a relatively low cost of cement piping of large diameter with a low grade, thus enabling a large volume to be delivered with little loss of elevation. Consequently, in this considerable length of the main pipe line 2-ft. diameter pipes are being built "in place" on a grade of 2 feet per mile. The connecting high pressure main between Beaconsfield and Cranbourne, about 7 miles in length, will be 18-in. diameter, with a grade sufficient to bring supply to the 2-ft. main mentioned.

In working out the details of all portions of this scheme, the Commission has kept steadily in view the policy of utilizing the natural features of the country, so as to widen the field of operations of the scheme, and to provide as liberally as possible for small irrigation supplies, in addition to those for domestic and stock requirements.

The Commission is arranging to expedite those portions of the works which more directly affect the Naval Base, so as to give water to that important area as early as possible in 1918; but it is expected that within a few months the construction of the other main-pipe lines for the various town supplies will be also well advanced.

NORTHERN MALLEE WATER SUPPLY.

In the extreme north-west of the State, adjoining the districts supplied by the Wimmera-Mallee system, there is an area of 1,250,000 acres above channel level known as the "Northern Mallee," and embracing portions of the Waterworks Districts of Walpeup East and Walpeup West. This area is supplied principally by tanks depending on local catchment and by bores. The whole area has again enjoyed a bountiful harvest with plentiful supplies of fodder. During the year over £7,000 has been expended on works of water supply and in making roads, the latter work being carried out for the Lands Department, as it is found the utilization of the Commission's staff, which is necessarily located there, is a most economical arrangement.

TANKS.

Five tanks were completed during the year, making the total number 130, with an aggregate storage capacity of 721,000 cubic yards.

BORES.

During the year a bore was put down in the parish of Duddo to a depth of 805 feet, and the bore in the parish of Mamengorooock, referred to in last Report, was put down to a depth of 932 feet. In each case, however, the whole of the waters met with were salt, and unfit for use.

A bore, "Hayter's," is being sunk in the parish of Boinka, where it is anticipated good stock water will be obtained.

The total number of successful bores is now 82, all of which are in the Walpeup West Waterworks District. These bores, which were put down to provide a water supply to settlers during the early stages of settlement, have met all requirements up to the present. With increasing settlement, however, they are proving insufficient to meet the growing demands, especially in that part of the district east of Cowangie. As attempts to provide supplies on farms by excavated tanks have been unsatisfactory, both catchments and holding ground being unsuitable, it would appear, as mentioned in last year's Report, that an increase in the present number of public bores will be necessary to meet the full requirements of the district, and this will, of course, necessitate a corresponding increase in the annual rates now levied.

ROAD CLEARING.

There are over 3,000 miles of roads cleared and grubbed, 50 miles being the total completed for the year. Forty-five sand hills in the most recently subdivided areas have been scooped or metalled. This work is, as previously stated, being carried out by the Commission at the request of the Lands Department.

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 raising Waranga Reservoir, now in course of construction. The irrigation districts supplied are Shepparton, Rodney, Deakin, Tongala, Rochester, Dingee, and Tragowel Plains, to which will be added the new Stanhope Closer Settlement District.

All the principal works of the Goulburn scheme withstood the severe test of the record flood of September, 1916, successfully, but on the Main Eastern Channel there was some breaching of channel embankments in the vicinity of Seven Creeks. Preparations have been made for the construction of emergency flood-ways where this occurred.

DRAINAGE AND FLOOD PROTECTION SCHEMES.

KOO-WEE-RUP AND CARDINIA.

Although these two schemes must necessarily be kept distinct, on account of the widely different conditions affecting them, yet together they embrace the whole of one large continuous depression, which lies south of the main Gippsland railway line and along the seaboard of Western Port between Lang Lang and Sherwood. This depression is roughly 100,000 acres in extent. It is a most fertile tract of country, but its proper development has been seriously retarded by periodical inundations.

The continuance of very wet conditions, during the past few years especially, made it very clear to the settlers that existing works were quite inadequate, and that no successful farming operations were possible unless proper provisions were made for the flood protection and drainage of the whole area. At the request of the settlers schemes of works were prepared by the Commission for securing these results. These were submitted to those interested, who approved, and asked that they should be carried out as early as practicable. Accordingly, the Lower Koo-wee-rup Flood Protection District, which embraces the greater portion of the Koo-wee-rup area, was constituted this year, while arrangements are being made to constitute the Cardinia Flood Protection District forthwith. At a later suitable date the Upper Koo-wee-rup Flood Protection District, which deals with the north-eastern corner of the Koo-wee-rup area, will be constituted.

KOO-WEE-RUP.

For the purpose of enabling the incidence of rating to be more fairly distributed, it was decided to divide the Koo-wee-rup area into two districts. The main district—the Lower Koo-wee-rup Flood Protection District—will embrace an area of some 57,000 acres, while the area included in the north-eastern portion, or Upper Koo-wee-rup Flood Protection District, is about 17,000 acres.

The Commission's scheme of works provides for the substantial enlargement and remodelling of most of the existing principal drains, as well as the construction of new internal drains, and of important new protection channels on the northern, western, and eastern margins of the district. The rating proposed will be on an acreage basis, and the various lands will be divided into classes in accordance with the varying degrees of benefits received. The whole of the reclaimed swamp lands as originally subdivided and sold by the State will be included in either the Lower or the Upper Koo-wee-rup District, and adjustments will be made between the boundaries of the Cardinia and Lower Koo-wee-rup Districts to insure this.

CARDINIA.

The area embraced under this scheme is some 32,000 acres in extent. The existing works in this district are not of any special magnitude or utility, consequently the proposed expenditure compared to that in the Koo-wee-rup Districts is relatively considerably larger. The main work proposed by the Commission in this district consists of a large contour drain running along the northern and western margins of the district, and protecting it from the flood flows brought down by the Toomuc, Cardinia, and Clyde Creeks. This contour drain will be some 12½ miles in length, and will be of sufficient capacity to convey the maximum flood flows of these creeks direct to the sea through an independent outlet about midway between Tooradin and Rutherford Inlets. An adequate system of internal drains will also be provided. The rating proposed will be sufficient to meet all annual charges, the various holdings being, as in Koo-wee-rup Districts, divided into classes, which will accord with the varying degrees of benefit each derives from the scheme.

LATROBE VALLEY AND OTHER SCHEMES.

In addition to the Koo-wee-rup and Cardinia Drainage and Flood Protection Schemes, the Commission has, at the request of the landowners, made a preliminary investigation of the Latrobe River Valley, with a view of ascertaining the practicability of protecting it from flooding. The landowners, who have been furnished with a rough outline of the scheme and of the financial responsibility in which it would involve them, have agreed to later advise the Commission as to whether they desire it being proceeded with. A number of other minor schemes have been examined, and the landowners interested therein have been similarly advised.

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 for weekly publication by the press. The field observations and office work are being kept up to date, and the results of all gaugings since the last publication in 1912 will be published in book form at an early date.

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, sanction to divert has been given in a large number of cases; 281 new permits have been issued during the year, in addition to renewals of those granted in former years.

Notwithstanding the year having been one of copious rainfall, the renewal of permits is greater than, and the number of new permits is nearly double that, for the previous year :—

The authorized diversions now in force are :—

Yearly permits	..	..	..	..	1,001
Flood permits	..	..	..	..	8
Licences	..	..	..	..	19
					<hr/>
					1,028
					<hr/>

NEW STORAGES.

MELTON RESERVOIR.

The new reservoir, formed by an embankment of earth and rock with diaphragm of reinforced concrete, in the Werribee River 3 miles below Melton Railway Station, is completed. The embankment is about 100 feet high. It impounds 17,000 acre-feet of water, which extends over 10 miles upstream from the dam, with an average width of 8 chains, and has the valleys of both the Werribee and Lerderberg Rivers for catchment. The reservoir has practically been full to overflowing since it first filled in September, 1916, and there is no doubt it will prove satisfactory in maintaining and regulating the supply for the irrigation and other interests dependent on it at Werribee.

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 above low water, Hobsons 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 built 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 upstream side of the diaphragm, and supporting masses of rock quarried from the adjacent hills. The concrete diaphragm has been completed to natural surface for the greater part of its length, and the tunnel containing the outlet works has been finished. During the year the average number of men employed was about 220.

In September, 1916, a flood, with volume of about 80,000 cubic feet per second, occurred, but, while causing some damage to the temporary bridge used for construction, did not injure the permanent work. In June of 1917 there was another flood of almost equal volume, but no damage was caused.

The experience of such floods, greater than any previously recorded, will necessitate some alterations in both methods of construction and the design of the work.

WARANGA RESERVOIR ENLARGEMENT.

The increase in capacity that will result from this enlargement is 133,000 acre-feet, making the total capacity 330,000 acre-feet. The conditions of abnormal rainfall that prevailed throughout the greater part of the year proved altogether unfavorable for advance with this work. Nevertheless, steady progress was made whenever opportunity offered.

In addition to work by direct labour, contracts to the value of about £12,000 have been let. The northern outlet works are at the point of completion, and good progress has been made with the main western outlet.

UPPER COLIBAN RESERVOIR.

The work of raising the surface level of this reservoir by 11 feet, and increasing its capacity from 15,200 acre-feet to 22,500 acre-feet, or, in other terms, by 2,000 million gallons, was finished early in 1917, and the reservoir has since been filled to overflowing.

The total capacity of storage provided by the two reservoirs on the Coliban River is now 34,800 acre-feet, or 9,474 million gallons. These works are the principal source of supply for Bendigo, Castlemaine, Maldon, and several small towns, and, in addition, provide water for irrigation and mining throughout the districts surrounding these centres of population.

TUNNEL TO AUGMENT SUPPLY TO PYKES CREEK RESERVOIR.

This tunnel, from the Werribee River near Ballan through a dividing spur to connect with the stream running to the reservoir, is approaching completion. Some 70 chains of the total length of 80 chains have been completed; and the tunnel should be in operation during the ensuing year.

WIMMERA STORAGES.

The newly-completed storage at Black Swamp—now known as Fyans Lake—is in full working operation, and is answering all expectations. Its capacity of 17,100 acre-feet will form a most useful adjunct to the Lake Lonsdale storage of 45,000 acre-feet, as its much greater average depth, some 14 feet, will enable it to be worked as a reserve storage in connexion with the shallower Lake Lonsdale.

Steady progress has been made during the year with Taylors Lake storage, capacity 30,000 acre-feet, the main banking being now completed. A temporary tram-line, 2-ft. gauge, some 8 miles in length, chiefly taken from Fyans Lake works, is being laid from Mt. Zero to Taylors Lake storage to convey the necessary beaching stone, as it is found this is the most economical means of obtaining the required supply. It is anticipated that the bulk of this beaching will be laid during the coming year. A start will shortly be made with the construction of the necessary inlet channels from the Little Wimmera River and from Burnt Creek. These latter works will be so designed as to enable use to be made of the very valuable depressions adjoining Taylors Lake, known as Pine Lake, Green Lake, and Duck Lake, and thereby adding a further volume of at least 30,000 acre-feet for the use of the general scheme.

MURRAY RIVER WATERS.

On 31st January, 1917, the Acts passed by the Parliaments of the Commonwealth and the States of New South Wales, Victoria, and South Australia to ratify the Agreement between the Prime Minister and the State Premiers came into force. The Agreement provides that on its ratification a Commission to be called "The River Murray Commission" shall be appointed, and that such Commission shall consist of four members, of whom one shall be appointed by the Governor-General and one by each of the Governors of the interested States. In accordance with this provision, Mr. J. S. Dethridge, a Commissioner of the State Rivers and Water Supply Commission, has been appointed to act as Representative for Victoria.

The Agreement further provides that the Governments of the three States shall each, as soon as practicable, cause to be prepared and submitted to the River Murray Commission for its approval a general scheme of the works to be constructed by each of them under the Agreement. With a view to compliance with this provision, the State Rivers and Water Supply Commission is conferring with the authorities of New South Wales, in order that the scheme of works on the portion of the River Murray between New South Wales and Victoria above the junction of the River Darling, where construction by South Australia ceases, may be prepared conjointly.

In the estimate of anticipated expenditure for the current financial year submitted by the Government of this State to the River Murray Commission, prominence is given to the Upper Murray storage and also to the weirs and locks proposed at Torrumbarry and Mildura.

The testing of sites for the storage by parties placed in the field by New South Wales and Victoria has been continued throughout the year. Twenty-three sites have now been tested, but, owing to the great depth to rock suitable for foundation throughout the river valley generally, only one site—that immediately below the junction of the Murray and Mitta Rivers—seems so far to be suitable.

GOULBURN RIVER FLOOD PROTECTION.

A scheme for the protection from floods of a certain height of the large areas adjoining the Goulburn River, which were periodically submerged, was prepared by the Commission, and the work of protection was commenced in the year 1913. After a certain portion had been carried out, the settlers at a meeting held at McCoy's Bridge in October of that year asked that the work should be discontinued, and the then Government decided to "stop the Goulburn Levee Works forthwith and not re-start until landowners within the area to be benefited furnish satisfactory assurance of their concurrence in the scheme to the Government."

In the year 1916, landowners whose land in the meantime had been periodically partially flooded again asked the Government to undertake the carrying out of the flood protection scheme, and notwithstanding the fact that in September, 1916, a flood of record volume occurred they, in November of that year, agreed to risk the recurrence

of such a calamity, and requested that the original scheme propounded by the Commission in 1913 should, with some necessary modifications, be put in hand, and agreed to accept the rating responsibility therefor. The Government acceded to the request of the landowners, and authorized the Commission to again commence the carrying out of the scheme, and in March, 1917, the work was re-started,

This scheme provided for the confining to the river, by means of levees, deepening of channels, and cutting off bends, of a flood volume of no less than 36,000 cubic feet a second, as gauged at Murchison. This flow had only, according to official gaugings, been exceeded once—September, 1916—in some thirty-five years. As such a flood as that in September was unlikely to recur at any frequent intervals, and was in any case absolutely uncontrollable, it was believed that the scheme submitted was a reasonable safeguard. Unfortunately, however, in June, 1917, that is within nine months of the September calamity, another flood of huge volume—reaching something like 54,000 cubic feet a second—has occurred, and all protective works, including the small new portion commenced in March, 1917, again proved ineffective.

In view of the fact that these two floods of surpassing magnitude have occurred within one year, the Commission has recommended the Government to suspend operations until the whole position can be reconsidered and dealt with in accordance with the new flood gaugings now supplied.

As these new flood records would have such a close bearing on any scheme of works, and as it is desirable that all interested land-holders should be fully seized of the new problems created, the Commission has arranged to circulate a diagram showing the flow of the Goulburn River from the year 1881 to 1917. A copy of the diagram is inserted in this Report.

WORKS CONTROLLED BY OTHER AUTHORITIES.

During the year a large amount of work was, with the concurrence of the Commission, carried out by Waterworks Trusts and other Authorities.

A 10-in. diameter supply main from Langi Ghiran to Ararat, principally of wood and reinforced concrete, but also including some cast-iron piping, with pressure reducing valves, was laid down by the Ararat Borough Council. The embankment to the Oliver's Gully Reservoir was also raised, the capacity being thereby increased from 26,000,000 to about 40,000,000 gallons. The new main delivers 900,000 gallons per 24 hours into this storage, as compared with 150,000 gallons previously obtained by the Ararat authority.

The Colac Waterworks Trust has built a storage basin of 3,500,000 gallons for the improvement of its town supply. An earthen reservoir of some 20,000,000 gallons being constructed by the Sunbury Waterworks Trust for improving the supply to the town of Sunbury and to the Hospital for the Insane, is nearing completion. The reservoir will also provide some additional compensation supply to Riddell's Creek.

A scheme for the supply of Mortlake, which has a population of 850, has been carried out by the recently constituted local Waterworks Trust. The works comprise an electrically-driven centrifugal pump, delivering water from springs at Mount Shadwell to a stand-pipe tank connected to the reticulation.

Pipe extensions, and other works, were carried out by the local Water Authorities at Benalla, Boort, Euroa, Lawloit, Lowan Shire, Mildura, Omeo, Stawell, Swan Hill, Wahgunyah, Warburton, and Warracknabeal.

Proposals for the improvement of the supplies at Charlton, Inglewood, and Yea are being investigated.

Three Waterworks Trusts were during the year constituted to provide supplies to Marysville, Orbost, and Rosedale.

GENERAL.

A YEAR OF FLOOD.

As stated in last Report, while the rainfall in 1914 was so far below the average as to create a drought of the most severe and devastating nature, in September, 1916, very heavy floods occurred which in the Goulburn exceeded all previous records.

The effects of flooding are being even more severely felt in 1917, for, while no Goulburn flood has reached in height that of September, 1916, in most of the principal rivers in the North not only has there been a continuance of flooding extending over fully four months, but in some cases the high levels of September, 1916, have been exceeded.

At points so far apart as Echuca and Mildura on the Murray River, at Seymour and Shepparton on the Goulburn River, at Wangaratta on the Ovens River, and Benalla on the Broken River, there has hardly been a week during the period named that the rivers have not risen above what is known as the flooding stage.

As was done during the great flood of September, 1916, the Commission arranged that its various works should be specially watched during the repeated floodings, and so far no serious damage has occurred, although at the time of compilation of this Report the position (more particularly in the Benjeroop and Kerang districts) is still very critical and needs the closest attention.

As might be expected, the great and unusually long sustained increase that has taken place in the flows during the last two years of almost all the rivers in the State has led to a number of problems in connexion with their overflow, their erosion, and in some cases their silting up. Quite a large number of applications have been received from local authorities for advice, and in a number of instances the rivers and watercourses referred to were specially examined and reported upon by the Commission. In all cases the Commission endeavoured to advise the local authorities and those land-owners interested who, under Section 12 of the *Water Act* 1915, are responsible for carrying out any improvement works. This "erosion" problem itself is becoming so serious and is in many ways so complicated that the Honorable the Minister of Public Works suggested that a Committee should be formed to investigate the whole question, and report as to the best means of dealing therewith. This Committee, which consists of representatives of the Departments of Lands, Mines and Forests, and Public Works, the Country Roads Board, and this Commission, has commenced its meetings and should report at an early date.

PROGRESS OF CLOSER SETTLEMENT.

The demand for blocks in the Irrigated Closer Settlement Areas in 1916-17 was slightly greater than in the previous year, the decline then noted as due to the war conditions having been followed by an improvement, due, to some extent, to the desire of returned soldiers to settle on irrigable farms. During the year the Commission granted blocks to 127 applicants, nineteen of whom were returned soldiers, while the Lands Department made available some 400 acres known as the "Mid Area," between Merbein and Mildura. After the Commission had reticulated this area, it was subdivided into 23 irrigation blocks, which were all allotted to returned soldiers.

There was also a good demand at Stanhope, where 25 blocks were allotted; at Shepparton, where 22 were settled; and at Swan Hill, where more than half of the 481 acres of Crown lands, comprising the No. 3 Estate, were taken up.

The reports received regularly from the officers in charge of Irrigation Districts indicate that in nearly all cases the settlers are making good progress on their holdings, and that there is undoubtedly an increasing feeling of security and permanence pervading these settlements.

At Cohuna, one of the earlier Irrigation Closer Settlements, some of the settlers have made such satisfactory progress that they have paid in full their land and other instalments, though their leases, which are for 31½ years, are now only some seven years old. At Merbein the settlers had last year very large returns. The production would approximately reach a total value of over £150,000, and comprised some 2,600 tons of dried fruits, 4,000 tons of distillery grapes, and 6,600 cases of fresh fruits.

The total area now settled in the Irrigation Districts, as a whole, is over 82,000 acres. Of this, 27,000 acres are under lucerne, 12,000 acres under fruit, and 15,000 acres under other crops.

The following table shows the areas purchased and subdivided by the State, the families on such lands when purchased, and the number now occupying blocks under the State's Closer Settlement Scheme:—

CLOSER SETTLEMENT IN IRRIGATION DISTRICTS.

Closer Settlement Estates.	Area of Lands purchased by the State.	Properties Subdivided.						Present Increase in number of Families.
		Area.	Number.	Number of Families thereon when Purchased.	Subdivided into—		Number of Closer Settlement Blocks now occupied.	
					Number of Closer Settlement Blocks.	Average Area.		
Shepparton	9,200	9,200	21	20	269	32	258	238
Stanhope	20,900	8,200	2	9	153	49	51	42
Kyabram	3,000	1,000	1	3	31	30	24	21
Tongala	15,200	15,200	31	30	242	60	196	166
Cornelia Creek	2,500	2,500	} Pt. 1	..	{ 14	176	14	14
Koyuga	4,200	4,200				61	65	49	49
Nanneella	8,600	8,600	16	6	112	74	88	82
Echuca	3,200	3,200	6	4	26	122	26	22
Bamawm	13,400	13,400	28	21	173	73	149	128
Dingee	500	500	3	1	18	25	14	13
Cohuna	11,500	11,500	27	8	130	85	95	87
Koondrook	3,400	3,400	5	4	41	80	25	21
Swan Hill No. 1	5,400	5,400	18	9	81	65	65	56
Swan Hill No. 2 (Burtons)	1,500	1,500	1	1	54	25	44	43
Swan Hill No. 3 (Crown lands)	500	500	1	..	18	27	9	9
Werribee	8,000	6,700	1	6	145	43	102	96
	111,000	95,000	162	122	1,568	..	1,209	1,087
<i>Murray Frontage Settlements</i>								
Nyah	2,900	2,900	25	5	141	20	128	123
Merbein	6,400	6,400	Crown lands	..	239	26	239	239
	120,300	104,300	187	127	1,948	..	1,576	1,449

LANDS AVAILABLE FOR CLOSER SETTLEMENT IN IRRIGATION DISTRICTS.

The lands made available during the year were Dudley's Estate, adjoining the town of Shepparton, which provided 20 allotments totalling 140 acres, and the Swan Hill No. 3 Estate, comprising 481 acres of Crown lands taken over from the Lands Department by the Commission, which, when reticulated, provided 18 holdings.

In addition, as previously stated, the Lands Department subdivided some 400 acres at Merbein into 23 holdings, which were taken up by returned soldiers.

The total area now subdivided is 104,300 acres, which, after making the necessary deductions for roads, channels, and township reserves, has been made available to settlers in 1,948 blocks of an aggregate area of 100,000 acres, an average of 51 acres per block. Of this, as previously stated, 82,000 acres have been settled.

There are now available (including lands at Nyah and Merbein) 374 allotments, in sizes varying from 2 to 100 acres each, in addition to which there are about 2,000 acres near Kyabram, 13,000 acres at Stanhope, and 1,000 acres at Werribee which can be made available as required.

DISPOSAL OF PRODUCTS FROM CLOSER SETTLED IRRIGATION DISTRICTS.

The closer settlers in the Irrigation Districts, in common with other settlers, found great difficulty in disposing of their products mainly owing to war conditions. While this applied to lucerne and pig products it particularly applied to soft fruits, of which last year there was an undoubted glut. In the case of lucerne a most useful pool arrangement was made whereby the settlers received at least a fair return for their lucerne hay. While this arrangement is being continued for the ensuing year the settlers, acting on the advice of the Commission, are arranging for a much greater consumption of the product on their own farms. In respect to pigs, arrangements were made for a "pool," but thereupon prices improved so much that there was no need to operate it.

In regard to soft fruits, however, there was in December and January last a very heavy glut, and the position was so critical that the Commission arranged a peach pool for the Irrigation Closer Settlement Districts. This was continued until the Government, by obtaining some large extra "War" Jam Contracts, was able in a great measure to arrange for the absorption of the surplus.

In Shepparton District the settlers, in view of last year's difficulty in disposing of their fruit, have now requested the Government to advance them a sum under the proposed Fruit Act for the establishment at Shepparton of a Fruit Processing Factory, and the Government has signified its willingness to assist as suggested.

ADMINISTRATION.

EXTENSIONS AND EXCISIONS.

Only minor extensions of a few districts were made last year. These were in the Merbein, Rodney, and Tongala Irrigation Districts, the Cohuna Urban Division and in the Wonthaggi Waterworks District.

Small excisions were made from Deakin and Shepparton Irrigation and Water Supply Districts, and the Wycheproof Waterworks District.

NEW DISTRICT CONSTITUTED.

An area of about 200,000 acres south-east of Mildura, situate on the River Murray, having been reticulated with channels by the Commission, has been constituted a district under the name of the Carwarp Waterworks District. The district will receive its supply by pumping from the Murray.

PROPOSED DISTRICTS.

The Melton Reservoir, on the Werribee River, having been now completed, it is proposed to constitute the irrigable portion of the Werribee Closer Settlement Estate, consisting of some 8,000 acres, an Irrigation and Water Supply District, and the remaining portion, consisting of some 15,000 acres, a Waterworks District.

As the reticulation of the township of Mitiamo is nearing completion, it is proposed to form it into an Urban District, while a similar district will be formed at Ouyen, where the reticulation works are also well advanced. It is proposed, also, to constitute Flood Protection Districts, embracing the area of some 100,000 acres comprised in the Koo-wee-rup and Cardinia Creek swamps, where works have already been commenced.

BENDIGO SEWERAGE DISTRICT.

In September, 1915, the *Sewerage Districts Act* was passed, providing for the constitution of sewerage districts throughout the State. The Bendigo City Council applied for the constitution of the greater part of its municipal area as a sewerage district, and this was so constituted on 20th November, 1916. The Sewerage Authority, which is the Council itself, is now preparing a detailed scheme of works for submission to this Commission, which is intrusted with the administration of the Act.

NEW APPOINTMENTS AND TRANSFERS.

Mr. S. McTavish, an old and valued officer of both the Water Supply Department and the Commission, who had been Resident Collector at Bendigo for the last six years, having met with a fatal accident in his office last year, Mr. M. H. O'Grady, Resident Collector at Castlemaine, was appointed to fill the vacancy, and Mr. C. H. Tilley was transferred from the Bendigo office to the position at Castlemaine.

Mr. W. F. Nevill, formerly District Engineer at Shepparton, who enlisted in the Australian Imperial Force, and was wounded while on active service, has returned. He has been appointed District Engineer and Secretary of the Cohuna and Gannawarra Districts in place of Mr. H. F. Bahmeier, who had accepted a position in the United States of America.

Mr. J. Schreiber, who was Resident Engineer in the Coliban District, resigned last year, and the duties have since been carried out by Mr. G. Berry.

RETURNED SOLDIERS.

The Commission, while, keeping open the positions of all its officers who have enlisted, is as far as practicable appointing Returned Soldiers to positions becoming vacant. Amongst other appointments, Returned Soldiers have been appointed Water Bailiffs, and they have filled these positions satisfactorily.

IRRIGATION SCHOLARSHIPS.

Mr. John Allan Aird and Mr. Hubert Edward Harding, who were the last of the four students awarded Irrigation Scholarships, have returned after having pursued studies in the United States of America in accordance with the terms of the scholarships. Both were appointed to positions in the service of the Commission. Mr. Aird has since enlisted.

FIRE INSURANCE.

The policy initiated in July, 1909, of carrying the fire risks on its own buildings, has been continued by the Commission. The premiums thus saved now amount to £1,765. No losses have occurred since the date named.

RECEIPTS, DISBURSEMENTS, AND ESTIMATES.

The total receipts of the Commission for the past year were £230,425, the highest amount yet collected in any year by the Commission. This result is the more satisfactory as the sales of water, usually a source of much additional revenue in Irrigation Districts, were very small owing to the exceptionally wet season. This fact also emphasizes the wisdom of having introduced the system of Compulsory Irrigation Charges whereby a stable income is assured to meet a reasonable proportion of the heavy outlay of the State for irrigation works.

The Coliban District shows a decrease in receipts of £699 as compared with the preceding year, while the net disbursements were slightly higher, being £108 more. The overtaking of the deficit, which for the year was £23,916, or £1,126 more than for the previous year, must largely depend on the general development of the district as the amount of rating is specially limited by the Water Acts. The position may, however, be somewhat improved in the future by the sale for irrigation of some of the extra water made available by the new addition to the main reservoir.

Notwithstanding the unusually wet season and a consequent reduction in sales of water, the Irrigation and Water Supply Districts show a decrease in receipts of only £4,981 as against the receipts for 1915-16, which were the highest recorded. After debiting them with their full proportion of the cost of the Supply Works chargeable, the aggregate revenue deficit of all the Irrigation and Water Supply Districts, which up to the previous year had accumulated to £124,694, is now £133,720, an increase of £9,026 for the past year. Although this loss is, mainly for the reason stated, more than last year, it is less than for some six years previously, and should with the return of normal seasons be considerably reduced.

The Commission has, exclusive of the Coliban District, the direct control of thirty-eight waterworks districts. The loss in these for the year 1914-15 was £25,461, for the year 1915-16 the loss was £6,533, last year, however, operations show a surplus of £10,540, and the aggregate revenue deficit which was previously £43,488 has now been reduced to £32,948. This old deficit, which was mainly due to a heavy additional expenditure in repairing damage by the recent drought, is being met by a small increase in rating which was levied last year, and which will be continued during the ensuing year.

The net disbursements for the past year from annual votes were £107,790, which show the saving of £13,625 as compared with the disbursements for the previous year. The expenditure of loan moneys amounted to £242,987, details of which are set out in this Report.

The Estimates for 1917-18 show a decrease in disbursements of £6,900 as compared with the Estimates for 1916-17, while the estimated receipts show, notwithstanding the high estimate for last year, an increase for 1917-18 of £13,000.

The loan liability of the State for Works of Water Supply at the close of the year was £8,932,075. Of this total £1,236,873 is for Free Headworks; £1,263,228 has been written off; £147,046 was advanced to some early-formed local Authorities; £891 has not been expended, and £260,561 has been paid off by Authorities. The balance, £6,023,476, is the sum in respect of which those benefited by the various works are liable for payment of interest.

The present interest charges on loans amount to £307,304. Of this amount £93,846 is not chargeable to any districts, being debitable against Free Headworks, Amounts Written Off, and Unexpended Balances, leaving £213,458 as debitable against the Commission and other Authorities. The amount available last year from the Revenues of the Commission and other Authorities to meet such interest was, as set out in the statement on page 36 of this Report, £181,181 as against £167,775 for the previous year.

RECEIPTS AND DISBURSEMENTS.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1917.

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	36,791	10,791	144	10,647	26,144	...
Other State Works—						
Broken River	7	203	...	203	...	196
Goulburn	283	2,064	...	2,064	...	1,781
Kow Swamp	188	1,885	...	1,885	...	1,697
Lake Lonsdale	7	375	...	375	...	368
Loddon River	8	309	...	309	...	301
Lower Wimmera ... ..	...	74	...	74	...	74
North-West Lakes	68	906	...	906	...	838
Irrigation Districts	105,071	48,136	...	48,136	56,935	...
Waterworks Districts	65,436	24,117	492	23,625	41,811	...
Urban Districts and Divisions	14,354	4,089	...	4,089	10,265	...
Licences, Diversions, Miscellaneous	8,212	3,891	...	3,891	4,321	...
	230,425	96,810	636	96,204	139,476	5,255
<i>Not Revenue Producing—</i>						
River Gauging, Surveys and Re- ports, New Projects ... ..	...	3,691	...	3,691	...	3,691
Irrigation Engineering Scholar- ships ... ..	...	152	...	152	...	152
Waterworks Trusts ... ..	...	...	...	...	...	...
Boring for Water, Road } Clearing, Mallee, and } Land Settlement } Loan Works ... ..	...	4,969 2,774	...	4,969 2,774	...	4,969 2,774
Cost of Admin- istration	...	...	...	...	...	...
Totals	230,425	108,426	636	107,790	139,476	16,841
					2,000	
					120,635	

COLIBAN SYSTEM.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1917,
and of Interest charged at the rate of 4 per cent. on Capital Debts.

Districts.	Capital Debit at 30th June, 1917.	Receipts.	Disbursements and Interest Charged.			Excess.	
			Disbursements.	Interest.	Total.	Receipts over Disbursements and Interest.	Disbursements and Interest over Receipts.
	£	£	£	£	£	£	£
Coliban	1,235,297	35,628	9,826	49,412	59,238	...	23,610
Axe Creek	1,750	189	114	70	184	5	...
Harcourt	14,445	974	707	578	1,285	...	311
Totals	1,251,492	36,791	10,647	50,060	60,707	5	23,921

IRRIGATION AND WATER SUPPLY DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1917; 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, 1917. (Free Head-works excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1916.	1916-17.					Grand Total at 30th June, 1917.
		Rates.	Compulsory Irrigation Charge.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£	£
1. Bacchus Marsh	18,515	518	2,868	334	57	3,777	22,292
2. Boort	20,590	1,686	..	861	36	2,583	23,173
3. Campaspe	6,175	634	..	16	2	652	6,827
4. Cohuna	56,602	1,696	5,188	420	172	7,476	64,078
5. Deakin	33,150	4,470	..	1,062	83	5,615	38,765
6. Dingee	2,114	120	1,117	145	25	1,407	3,521
7. Dry Lake	318	..	..	..	29	29	347
8. Gannawarra	40,301	996	3,830	359	62	5,247	45,548
9. Kerang	40,750	2,230	..	3,203	20	5,453	46,203
10. Koondrook	35,633	1,077	3,176	362	60	4,675	40,308
11. Merbein	35,868	275	11,505	49	486	12,315	48,183
12. Nyah	11,231	85	2,413	12	86	2,596	13,827
13. Rochester	29,076	1,609	6,422	1,195	233	9,459	38,535
14. Rodney	155,318	7,089	12,161	1,770	285	21,305	176,623
15. Shepparton	13,755	642	3,349	191	43	4,225	17,980
16. Swan Hill	30,273	654	2,329	635	194	3,812	34,085
17. Tongala	13,005	496	2,474	187	32	3,189	16,194
18. Tragowel Plains	59,130	1,799	7,908	1,365	184	11,256	70,386
	601,804	26,076	64,740	12,166	2,089	105,071	706,875

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District.	DISBURSEMENTS.					INTEREST CHARGED.			(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1917.	
	1st May, 1906, to 30th June, 1916.	1916-17.				Total at 30th June, 1917.	1st May, 1906, to 30th June, 1916.	1st July, 1916, to 30th June, 1917.			Total at 30th June, 1917.
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.						
	£	£	£	£	£	£	£	£	£		
1. Bacchus Marsh	4,437	274	578	119	971	5,408	15,504	3,460	18,964	..	24,372
2. Boort	12,587	266	621	126	1,013	13,600	7,673	767	8,440	(B) 500	22,540
3. Campaspe	3,565	179	176	85	440	4,005	3,937	415	4,352	..	8,357
4. Cohuna	43,157	1,168	3,105	371	4,644	47,801	22,016	2,958	24,974	(A) 6,230	79,005
5. Deakin	15,712	719	1,043	279	2,041	17,753	22,992	3,221	26,213	..	43,966
6. Dingee	1,030	323	329	78	730	1,760	2,691	1,112	3,803	..	5,563
7. Dry Lake	1	..	..	..	..	1	317	29	346	..	347
8. Gannawarra	26,268	883	1,973	288	3,144	29,412	15,025	1,970	16,995	(A) 3,414	49,821
9. Kerang	22,686	792	797	319	1,908	24,594	17,365	1,921	19,286	(A) 150 (B) 1,500	45,530
10. Koondrook	23,517	1,106	1,603	382	3,091	26,608	20,028	2,975	23,003	(A) 3,001	52,612
11. Merbein	27,114	57	4,507	510	5,074	32,188	11,562	3,145	14,707	(A) 5,278	52,173
12. Nyah	10,926	308	1,831	230	2,369	13,295	4,858	964	5,822	(A) 2,362	21,479
13. Rochester	20,812	1,472	2,603	588	4,663	25,475	33,254	7,666	40,920	..	66,395
14. Rodney	70,487	1,548	4,513	832	6,893	77,380	93,579	13,197	106,776	..	184,156
15. Shepparton	9,351	1,313	645	311	2,269	11,620	13,935	4,307	18,242	..	29,862
16. Swan Hill	25,124	1,035	1,717	321	3,073	28,197	8,660	1,377	10,037	(A) 3,168	41,402
17. Tongala	11,584	941	722	225	1,888	13,472	18,938	5,136	24,074	..	37,546
18. Tragowel Plains	30,852	1,734	1,943	248	3,925	34,777	34,223	6,469	40,692	..	75,469
	359,210	14,118	28,706	5,312	48,136	407,346	346,557	61,089	407,646	25,603	840,595

WATERWORKS DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st July, 1906, to 30th June, 1917; 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, 1917. (Free Head-works excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1916.	1916-17.				Grand Total at 30th June, 1917.
		Rate.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
1. Birchip	81,112	3,706	41	70	3,817	99,572
2. Sea Lake		6,040	104	135	6,279	
3. Tyrrell		3,952	..	154	4,106	
4. Wycheproof		4,154	63	41	4,258	
5. Carwarp .. .. .	..	27	..	27	27	
6. Karkaroc	29,341	7,994	..	133	8,127	37,468
7. Kerang North-west Lakes	51	318	228	1	547	598
8. Long Lake	40,085	6,620	50	246	6,916	47,001
9. Tyntynder	8,657	3,433	..	157	3,590	12,247
10. Walpeup East	961	542	..	29	571	1,532
11. Walpeup West	1,543	1,049	..	48	1,097	2,640
12. Western Wimmera	75,284	10,374	965	67	11,406	86,690
13. Wimmera United	91,489	14,401	106	188	14,695	106,184
	328,523	62,610	1,557	1,269	65,436	393,959

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District.	DISBURSEMENTS.						INTEREST CHARGED.				Grand Total at 30th June, 1917.	
	1st May, 1906, to 30th June, 1916.	1916-17.				Total at 30th June, 1917.	1st May, 1906, to 30th June, 1916.	1st July, 1916, to 30th June, 1917.	Total at 30th June, 1917.	(A) DEPRECIATION. (B) REDEMPTION.		
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.					£		£
	£	£	£	£	£	£	£	£	£	£	£	
1. Birchip	49,115	3,478	1,396	832	5,706	54,821	51,817	9,196	61,013	..	115,834	
2. Sea Lake												
3. Tyrrell												
4. Wycheproof												
5. Carwarp .. .. .	..	115	316	49	480	480	..	314	314	(a) 100	894
6. Karkaroc	13,815	1,148	502	401	2,051	15,866	20,051	4,551	24,602	..	40,468	
7. Kerang North-west Lakes	298	18	36	20	74	372	231	80	311	..	683	
8. Long Lake	31,062	1,233	2,221	491	3,945	35,007	9,442	1,518	10,960	(a) 6,542	52,509	
9. Tyntynder	8,791	510	1,187	221	1,918	10,709	4,348	2,040	6,388	..	17,097	
10. Walpeup East	808	268	..	73	341	1,149	395	140	535	..	1,684	
11. Walpeup West	1,770	321	509	104	934	2,704	282	166	448	(a) 600	3,752	
12. Western Wimmera	44,426	1,686	2,119	681	4,486	48,912	26,987	4,268	31,255	(a) 2,044 (b) 5,500	87,711	
13. Wimmera United	49,596	1,392	1,669	629	3,690	53,286	42,592	8,400	50,992	(b) 5,000	109,278	
	199,681	10,169	9,955	3,501	23,625	223,306	156,145	30,673	186,818	19,786	429,910	

URBAN DISTRICTS AND DIVISIONS.

STATEMENT of Moneys received and disbursed from 1st July, 1906, to 30th June, 1917; 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, 1917. (Free Head-works excluded.)

RECEIPTS.

District or Division.	1st May, 1906, to 30th June, 1916.	1916-17.				Grand Total at 30th June, 1917.
		Rate.	Water Sales.	Interest and Miscellaneous.	Total.	
1. Bacchus Marsh	£ 7,527	£ 585	£ 392	£ 5	£ 982	£ 8,509
2. Berriwillock	236	103	4	1	108	344
3. Beulah	1,694	420	43	15	478	2,172
4. Birchip	5,658	739	226	37	1,002	6,660
5. Cohuna	1,043	357	53	1	411	1,454
6. Corop	126	39	..	1	40	166
7. Dimboola	10,853	588	744	32	1,364	12,217
8. Hopetoun	1,740	434	84	23	541	2,281
9. Jeparit	2,019	430	134	3	567	2,586
10. Kaneira	221	108	37	3	148	369
11. Koondrook	1,185	391	..	4	395	1,580
12. Lake Boga	1,380	183	9	3	195	1,575
13. Lascelles	123	89	..	1	90	213
14. Minyip	3,191	482	45	8	535	3,726
15. Natimuk	3,389	194	229	5	428	3,817
16. Nyah	52	17	..	..	17	69
17. Rainbow	4,753	584	52	7	643	5,396
18. Rupanyup	2,894	286	56	2	344	3,238
19. Sea Lake	2,610	436	91	22	549	3,159
20. Ultima	678	262	88	10	360	1,038
21. Watchem	496	227	15	4	246	742
22. Werribee	1,092	467	133	5	605	1,697
23. Wonthaggi	18,885	1,501	1,554	56	3,111	21,996
24. Woomelang	1,705	373	296	19	688	2,393
25. Wycheproof	3,217	461	27	19	507	3,724
	76,767	9,756	4,312	286	14,354	91,121

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District or Division.	DISBURSEMENTS.					INTEREST CHARGED.				(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1917.
	1st May, 1906, to 30th June, 1916.	1916-17.				Total at 30th June, 1917.	1st May, 1906, to 30th June, 1916.	1st July, 1916, to 30th June, 1917.	Total at 30th June, 1917.		
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.						
1. Bacchus Marsh	£ 2,479	£ 22	£ 140	£ 85	£ 247	£ 2,726	£ 4,098	£ 681	£ 4,779	(a) 224 (b) 250	£ 7,979
2. Berriwillock	118	3	39	10	52	170	197	42	239	(a) 9	418
3. Beulah	481	1	102	33	136	617	1,081	299	1,380	(a) 16	2,013
4. Birchip	2,134	30	244	64	338	2,472	2,746	441	3,187	(a) 228 (b) 300	6,187
5. Cohuna	261	..	86	15	101	362	436	201	637	(a) 84 (b) 150	1,233
6. Corop	45	..	10	5	15	60	66	9	75	(a) 6	141
7. Dimboola	6,280	141	355	107	603	6,883	2,631	470	3,101	(a) 1,060 (b) 830	11,874
8. Hopetoun	744	2	146	35	183	927	755	200	955	(b) 150	2,032
9. Jeparit	335	7	71	30	108	443	1,469	412	1,881	(b) 100	2,424
10. Kaneira	98	8	40	11	59	157	165	70	235	(a) 9	401
11. Koondrook	592	3	152	34	189	781	591	149	740	(a) 75	1,596
12. Lake Boga	163	..	5	14	19	182	940	165	1,105	(a) 48 (b) 150	1,485
13. Lascelles	39	9	14	18	41	80	72	72	144	(a) 16	240
14. Minyip	1,327	15	84	36	135	1,462	2,065	311	2,376	(a) 221	4,059
15. Natimuk	514	..	45	25	70	584	2,054	346	2,400	(b) 750	3,734
16. Nyah	20	..	5	5	10	30	10	5	15	(a) 12	57
17. Rainbow	947	5	103	39	147	1,094	2,951	449	3,400	(a) 320 (b) 400	5,214
18. Rupanyup	1,074	26	67	32	125	1,199	1,558	258	1,816	(a) 168	3,183
19. Sea Lake	1,766	3	159	43	205	1,971	842	199	1,041	(a) 219	3,231
20. Ultima	186	5	55	16	76	262	481	167	648	(a) 40	950
21. Watchem	128	6	18	19	43	171	407	151	558	(a) 20	749
22. Werribee	339	1	153	97	251	590	712	396	1,108	(a) 105	1,803
23. Wonthaggi	2,192	104	210	196	510	2,702	13,119	2,450	15,569	(b) 2,200	20,471
24. Woomelang	585	38	166	45	249	834	1,272	352	1,624	(a) 80	2,538
25. Wycheproof	2,011	6	131	40	177	2,188	1,487	225	1,712	(a) 206	4,106
	24,858	435	2,600	1,054	4,089	28,947	42,205	8,520	50,725	8,446	88,118

DISTRICTS HELD IN TRUST BY THE COMMISSION.

AVOCA WATER TRUST.—BALANCE-SHEET.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1916.

<i>Revenue Account.</i>			
RECEIPTS.			
	£	s.	d.
Bank Balance from 1915	519	15	8
Arrears of Rates	242	15	1
Current Rate	377	12	7
Interest on Rates	23	12	5
Sales of Water	75	17	0
Miscellaneous	1	13	0
Total	£1,241	5	9

DISBURSEMENTS.			
	£	s.	d.
Interest on Loan	214	15	8
Redemption of Loan	50	9	10
Maintenance and Repairs	286	12	8
Management	27	15	2
Rate Collector	52	0	0
Refund Overpaid Rate	1	18	5
Bank Charges	3	11	3
Bank Balances, 31/12/16	604	2	9
Total	£1,241	5	9

<i>Statement of Assets and Liabilities.</i>							
LIABILITIES.			ASSETS.				
	£	s.	d.	£	s.	d.	
Treasurer of Victoria—Loan ..	5,331	5	5	Works at Cost	8,709	5	0
Rates Overpaid	0	14	4	Less Amount			
Balance—General Account ..	1,713	0	0	Written Off,			
				Act No.			
				1625 ..	2,494	0	0
				Repayment of			
				Loan ..	124	5	6
					2,618	5	6
Total	£7,044	19	9				
				Arrears of Rates			
				Bank Balances, 31/12/16	604	2	9
				Total	£7,044	19	9

<i>Statement of Rates.</i>							
	£	s.	d.		£	s.	d.
Current Rate	566	9	10	Current Rate Collected	377	12	7
Arrears from 1915	404	15	1	Arrears of Rates Collected	242	15	1
				Rates Abandoned	0	19	9
				Arrears carried forward to 1917	349	17	6
Total	£971	4	11	Total	£971	4	11

DISTRICTS HELD IN TRUST BY THE COMMISSION—*continued.*

QUAMBATOOK URBAN DISTRICT OF AVOCA WATER TRUST.—BALANCE-SHEET.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1916.

<i>Revenue Account.</i>								
RECEIPTS.				DISBURSEMENTS.				
		£	s.	d.				
Bank Balance from 1915	49	14	6	Interest on Loan	223	8	7
Arrears of Rates	187	1	5	Redemption of Loan	30	13	7
Current Rate	225	5	0	Pumping Expenses	136	15	2
Interest on Rates	10	17	7	Maintenance and Repairs	6	11	10
Overpaid Rate	1	0	0	Rate Collector	26	0	0
					Management	7	15	7
					Refund Overpaid Rate	1	0	0
					Bank Charges	1	5	4
					Bank Balance, 31/12/16	40	8	5
Total	£473	18	6	Total	£473	18	6

Statement of Assets and Liabilities.

LIABILITIES.				ASSETS.				
		£	s.	d.				
Treasurer of Victoria—Loan	3,726	9	10	Works at Cost—	£	s.	d.
Treasurer of Victoria—Interest	75	5	8	Earthen Storage ..	1,003	1	10
Balance—General Account	316	6	5	Concrete Standpipe ..	754	1	4
					Reticulation ..	1,434	1	2
					Windmills ..	337	17	6
					Pumping Plant ..	212	15	0
					Contingencies ..	44	7	11
						3,786	4	9
					Arrears of Rates	291	8	9
Total	£4,118	1	11	Bank Balance, 31/12/16	40	8	5
					Total	£4,118	1	11

Statement of Rates.

		£	s.	d.			£	s.	d.
Current Rate .. ..	..	379	16	3	Current Rate Collected .. ..	..	225	5	0
Arrears from 1915 .. ..	..	338	0	3	Arrears of Rates Collected .. ..	..	187	1	5
					Rates Abandoned .. ..	..	14	1	4
					Arrears carried forward to 1917 .. ..	..	291	8	9
Total .. ..	..	£717	16	6	Total .. ..	..	£717	16	6

DISTRICTS HELD IN TRUST BY THE COMMISSION—*continued.*

CARRUM WATERWORKS TRUST.—BALANCE-SHEET.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1916.

RECEIPTS.				DISBURSEMENTS.						
	£	s.	d.	£	s.	d.	£	s.	d.	
Bank Balance from 1915	492	17	10				Interest on Loan	650	4	10
Cash in hand from 1915	0	0	6				Redemption of Loan	157	10	2
				492	18	4	Maintenance and Repairs	883	11	0
Arrears of Rates				330	5	1	Flood Protection Reserve Fund	250	0	0
Current Rate				1,316	5	0	Rate Collector	96	0	0
Interest on Rates				40	18	6	Management	62	6	1
Interest on Flood Protection Fund				26	15	3	Refund Overpaid Rates	0	18	0
Rates Overpaid				0	11	0	Bank Charges	2	18	8
Miscellaneous				0	3	0	Cash in hand	27	16	9
							Bank Balance, 31/12/16	76	10	8
Total				£2,207	16	2	Total	£2,207	16	2

Special Works Account.

RECEIPTS.				DISBURSEMENTS.					
	£	s.	d.		£	s.	d.		
Bank Balance from 1915				Bank Charges			0	10	0
Arrears of Rates				Bank Balance, 31/12/16			139	15	3
Total				Total			£140	5	3

Statement of Assets and Liabilities.

LIABILITIES.				ASSETS.						
	£	s.	d.		£	s.	d.			
Treasurer of Victoria—Loan	16,137	2	4	Works at Cost	25,732	9	6			
Overpaid Rates		4	7	Less Amount Written Off	7,732	0	0			
Balance—General Account..	3,331	16	5				18,000	9	6	
				Arrears of Rates			368	9	7	
Total	£19,473	6	6	Flood Protection Fund—						
				Government Stock			1,000	0	0	
Special Works—				Cash in hand			27	16	9	
Balance of Works to be carried out	1,013	15	0	Bank Balance, 31/12/16			76	10	8	
				Total			£19,473	6	6	
Total	£1,013	15	0							
				Special Works—						
				Amount of Special Rate	8,144	15	6			
				Less Amount Received	8,111	3	3			
								33	12	3
				Balance in Trust Fund, Treasury			840	7	6	
				Bank Balance, 31/12/16			139	15	3	
Total	£1,013	15	0	Total			£1,013	15	0	

Statement of Rates.

	£	s.	d.		£	s.	d.
Current Rate	1,566	17	5	Current Rate Collected	1,316	5	0
Arrears of Rates from 1915	448	2	3	Arrears of Rates Collected	330	5	1
				Arrears carried forward to 1917	368	9	7
Total	£2,014	19	8	Total	£2,014	19	8

Special Works Rate.

	£	s.	d.		£	s.	d.
Arrears from 1915	94	8	9	Amount Collected in 1916	60	16	6
				Arrears carried forward to 1917	33	12	3
Total	£94	8	9	Total	£94	8	9

DISTRICTS HELD IN TRUST BY THE COMMISSION—*continued.*

LODDON UNITED WATERWORKS TRUST.—BALANCE-SHEET.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1916.

				<i>Revenue Account.</i>									
RECEIPTS.				DISBURSEMENTS.									
				£	s.	d.							
Bank Balance from 1915	103	7	10	Interest on Loan	..	..	..	704	8	5
Arrears of Rates	375	17	2	Redemption of Loan	..	..	..	173	16	11
Current Rate	1,829	19	8	Maintenance and Repairs	..	..	..	496	17	5
Interest on Rates	36	19	5	Water Distribution	..	..	..	206	4	10
Rates Overpaid	7	5	3	Management	..	..	..	116	12	3
							Bank Balance, 31/12/16	..	..	..	655	9	6
Total	£2,353	9	4	Total	..	..	..	£2,353	9	4

Statement of Assets and Liabilities.

LIABILITIES.				ASSETS.									
				£	s.	d.	£	s.	d.				
Treasurer of Victoria—Loan	17,379	8	11	Works at Cost	..	..	..	19,617	4	9
Overpaid Rates	23	1	8	Less transferred to						
Balance—General Account	3,169	18	4	Dingee I. & W. S. Dist.	100	0	0			
											19,517	4	9
							Arrears of Rates	..	..	..	396	7	8
							Sales of Water	..	..	..	3	7	0
							Bank Balance, 31/12/16	..	..	..	655	9	6
Total	£20,572	8	11	Total	..	..	..	£20,572	8	11

Statement of Rates.

				£	s.	d.							
Current Rate	2,001	10	9	Current Rate Collected	..	..	..	1,829	19	8
Arrears from 1915	642	10	8	Arrears of Rates Collected	..	..	..	375	17	2
							Rates Abandoned	..	..	..	41	16	11
							Arrears carried forward to 1917	..	..	..	396	7	8
Total	£2,644	1	5	Total	..	..	..	£2,644	1	5

LOAN EXPENDITURE.

STATEMENT OF LOAN EXPENDITURE DURING THE YEAR ENDED 30TH JUNE, 1917.

Name.	Loans Application Act No. 2804.		Loans Application Act No. 2874 and other Sources.		Total.	
	£	s. d.	£	s. d.	£	s. d.
<i>Free Headworks.</i>						
1. Kerang North-West Lakes	84	1 3	167	2 1	251	3 4
2. Loddon River (Laanecoorie) .. .. .	..	..	160	9 4	160	9 4
3. Waranga Reservoir	1,222	1 8	..	..	1,222	1 8
<i>Reservoirs and Storages.</i>						
4. Goulburn Storages—						
Sugarloaf Reservoir	28,914	0 0	33,799	11 4	62,713	11 4
Waranga Reservoir Enlargement	14,541	15 5	22,346	11 0	36,888	6 5
5. Melton Reservoir	12,862	2 5	5,727	15 10	18,589	18 3
6. Upper Coliban Reservoir	3,851	15 11	3,067	13 9	6,919	9 8
7. Upper Murray Storage Sites Surveys	1,301	5 3	603	5 1	1,904	10 4
8. Wimmera Mallee Storages—						
Fyans Lake	412	10 5	9,331	16 11	9,744	7 4
Taylors Lake	99	11 6	14,021	7 2	14,120	18 8
Whitton Swamp .. .. .	..	..	2,343	0 0	2,343	0 0
<i>Waterworks Districts.</i>						
9. Birchip, Sea Lake, Tyrrell, and Wycheproof	37	13 7	6,221	11 2	6,259	4 9
10. Carwarp	259	3 1	606	13 2	865	16 3
11. Karkaroc .. .. .	..	..	861	1 3	861	1 3
12. Long Lake	49	5 11	320	5 10	369	11 9
13. Naval Base and Mornington Peninsula .. .. .	..	..	11,962	9 2	11,962	9 2
14. Tyntynder .. .. .	..	..	5,981	12 0	5,981	12 0
15. Walpeup East	1	7 9	19	18 6	21	6 3
16. Walpeup West	937	3 10	..	..	937	3 10
17. Western Wimmera .. .. .	..	..	130	13 0	130	13 0
18. Wimmera United .. .. .	..	..	1,069	17 10	1,069	17 10
19. Wimmera Main Channels	76	4 0	8,322	2 4	8,398	6 4
<i>Towns.</i>						
20. Bacchus Marsh	2	2 0	0	14 0	2	16 0
21. Birchip .. .. .	..	..	5	11 9	5	11 9
22. Coliban	757	9 7	162	2 11	909	12 6
23. Hopetoun .. .. .	..	..	0	6 3	0	6 3
24. Jeparit .. .. .	..	..	1	0 0	1	0 0
25. Minyip .. .. .	..	..	0	14 5	0	14 5
26. Ouyen	146	6 1	28	0 8	174	6 9
27. Rainbow .. .. .	..	..	1	9 4	1	9 4
28. Sea Lake .. .. .	..	..	3	19 2	3	19 2
29. Werribee	102	9 2	17	2 2	119	11 4
30. Wonthaggi	24	4 10	145	13 8	169	18 6
31. Woomelang .. .. .	..	..	96	6 5	96	6 5
32. Wycheproof .. .. .	..	..	15	16 4	15	16 4
<i>Irrigation and Water Supply Districts.</i>						
33. Bacchus Marsh and Werribee	5,521	11 8	5,998	19 3	11,520	10 11
34. Boga	678	6 11	1,732	19 3	2,411	6 2
35. Boort	21	11 9	..	..	21	11 9
36. Campaspe	5	19 0	0	17 6	6	16 6
37. Cohuna	473	4 6	2,625	12 10	3,098	17 4
38. Dingo	41	2 0	8	2 1	49	4 1
39. Gannawarra	361	1 11	757	2 6	1,118	4 5
40. Kerang	0	7 3	30	12 7	30	19 10
41. Koondrook	332	9 6	566	12 5	899	1 11
42. Merbein	138	11 4	6,440	2 9	6,578	14 1
43. Nyah	420	15 10	441	7 7	862	3 5
44. Rochester	2,388	4 10	1,068	3 0	3,456	7 10
45. Rodney	1,955	15 5	928	2 9	2,883	18 2
46. Shepparton	1,667	0 1	1,395	3 1	3,062	3 2
47. Swan Hill	117	5 3	488	14 8	605	19 11
48. Tragowel Plains	364	15 8	379	13 8	744	9 4
49. Tongala	242	3 2	655	16 5	897	19 7
50. Goulburn Main Channels and Distributaries	2,119	13 6	3,087	1 11	5,206	15 5
<i>Miscellaneous.</i>						
51. Avon, Latrobe, and Macallister Rivers	3	15 3	25	18 11	29	14 2
52. Goulburn Levees	346	17 1	3,395	18 6	3,742	15 7
53. Koo-wee-rup and Gardinia Creek	55	15 5	1,899	2 8	1,954	18 1
54. Maribyrnong River Storages Surveys	7	12 5	..	..	7	12 5
55. Murray River—Surveys, Narrung, Millewa, &c.	324	2 5	255	19 4	580	1 9
Total	83,270	15 10	159,715	17 6	242,986	13 4

STATEMENT OF EXPENDITURE DURING THE YEAR ENDED 30TH JUNE, 1917,

IN CONNEXION WITH

BORING FOR WATER, CONSTRUCTION OF TANKS, FORMING ROADS, AND ROLLING MALLEE SCRUB.

This Expenditure was met either by the Lands Department or the Public Works Department.

	£	s. d.
1. Boring for Water	1,506	1 0
2. Mallee Tanks (Public Tanks)	2,339	13 4
3. Forming Roads	2,143	2 9
4. Rolling Mallee	7	19 6
Total	£5,996	16 7

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, 1918, and 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, 1918.

ESTIMATED DISBURSEMENTS.

A.

Revenue Producing Works—			
Coliban District	.. .. .	£10,000	
Irrigation and Water Supply Districts	.. .. .	46,400	
Waterworks Districts	.. .. .	25,550	
Drainage and Flood Protection Districts	.. .. .	450	
General Expenditure and Salaries (proportion) over £250 to be apportioned to above Districts	.. .. .	15,000	
			£97,400

B.

Non-Revenue Producing Works—			
General Services—			
River Gaugings, Diversions from Streams, Surveys, New Projects, Boring for Water, Land Settlement, General Expenditure and Salaries (proportion) over £250	.. .. .	6,500	
Loan Works, Services on Account defrayed from Votes	.. .. .	3,475	
Waterworks Trusts Administration	.. .. .	1,700	
			£11,675

C.

Non-Revenue Producing Works—			
Free Headworks—			
Broken River	.. .. .	£225	
Goulburn-Waranga	.. .. .	1,650	
Kow Swamp	.. .. .	1,600	
Lake Lonsdale	.. .. .	350	
Loddon River	.. .. .	200	
Lower Wimmera	.. .. .	125	
North-west Lakes	.. .. .	275	
			£4,425
			£113,500

ESTIMATED RECEIPTS.

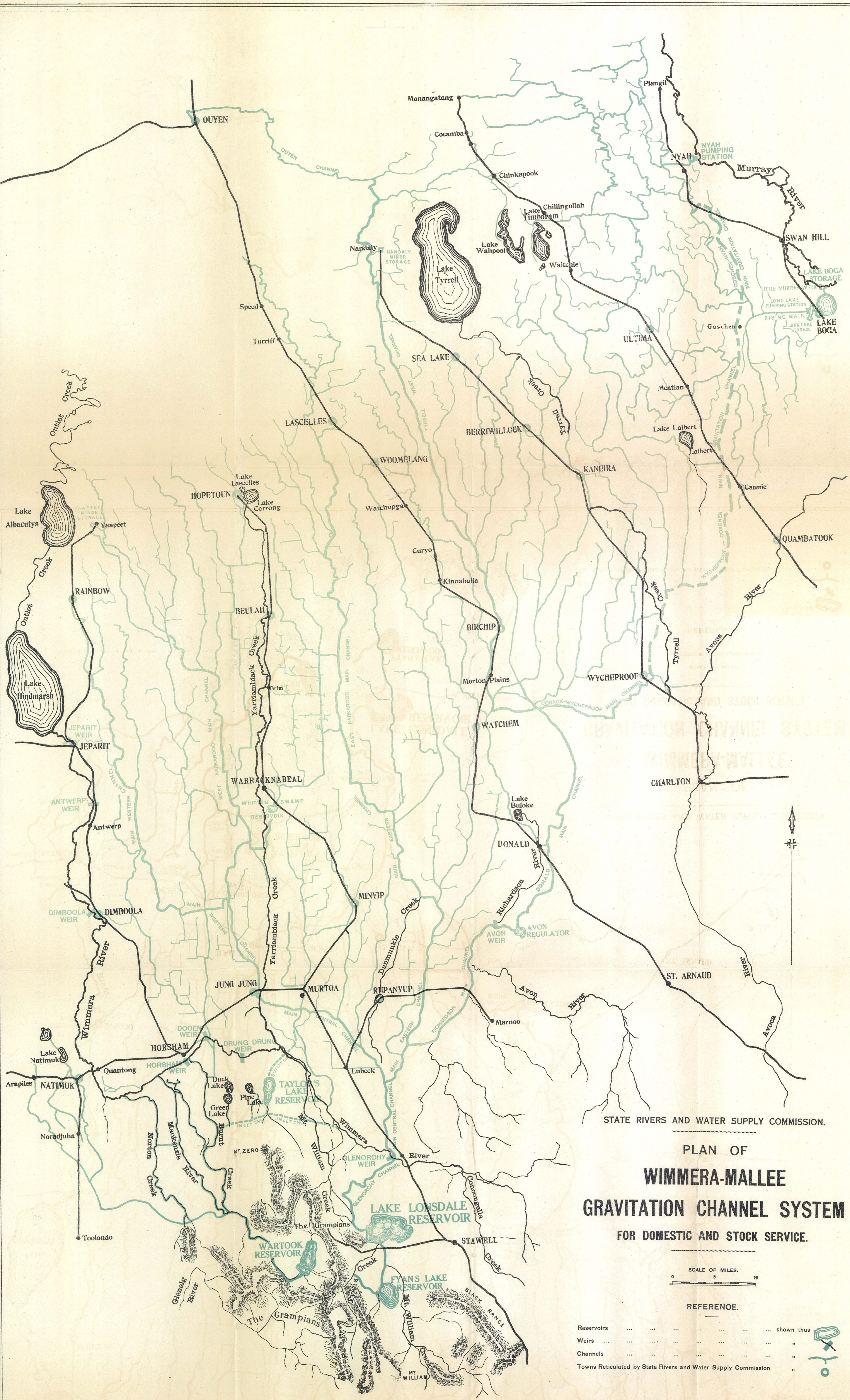
Coliban District	.. .. .	£36,200	
Irrigation and Water Supply Districts	.. .. .	103,000	
Waterworks Districts	.. .. .	73,500	
Miscellaneous	.. .. .	7,300	
			£220,000

Estimated amount available from Revenue Producing Works to meet interest	.. .. .	£122,600	
Less expenditure as per "B" and "C" above on Non-revenue Producing Works	.. .. .	16,100	
			£106,500
To which add Estimated Revenues from other Authorities—			
Waterworks Trusts	.. .. .	£38,000	
Local Bodies	.. .. .	23,000	
			£61,000
Total Estimated amount available from Revenues of all Authorities to meet Interest	.. .. .	£167,500	

STATEMENT OF LOAN LIABILITY.

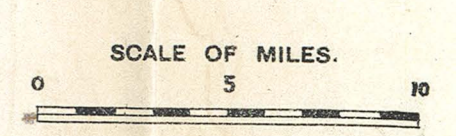
STATEMENT of the amount provided by the State to meet Interest on its Loan Expenditure for Works of Water Supply, both State Works of Water Supply and Works vested in Authorities other than the Commission; and of the sums paid from the revenues of the Commission, and from the moneys received from such other Authorities, to provide such Interest for the year ended 30th June, 1917:—

Works.	Loan Liability of State for Works of Water Supply at 30th June, 1917, exclusive of Melbourne Water Supply.					Interest payable by State on Net Advances.	Total Interest of £307,304 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.) Loans Unexpended.	Balance at Debit of Authorities.		(A.) Written Off. (B.) Free Head-works. (C.) Loans Unexpended.	Commission and Other Authorities.		
	£	£	£	£	£	£	£	£		
Waterworks Districts	2,436,278	32,534	2,403,744	(A.) 169,927	2,233,817	85,187	(A.) 6,023	79,164	£120,635	
Irrigation and Water Supply Districts	1,704,419	15,385	1,689,034	(A.) 575,152	1,113,882	59,858	(A.) 20,386	39,472	(after deducting £16,841 for non-revenue producing works including other State works).	
Goulburn Works (exclusive of Free Headworks) Pykes Creek, Melton, and Werribee	843,613	50	843,563	..	843,563	29,894	..	29,894		
Waterworks Trusts (including First Mildura)	191,090	..	191,090	..	191,090	6,771	..	6,771		
Local Bodies (Municipalities)	1,480,782	120,782	1,360,000	(A.) 321,665	1,038,335	48,197	(A.) 11,400	36,797	£60,516	
Irrigation Trusts Abolished	733,102	91,360	641,742	(A.) 163,760	477,982	22,742	(A.) 5,804	16,938		
Free Headworks	32,754	30	32,724	(A.) 32,724	..	1,158	(A.) 1,158	..		
Free Grants to Local Authorities	1,237,293	420	1,236,873	(B.) 1,236,873	..	43,834	(B.) 43,834	..		
Surveys, Exploratory, and Preliminary Works, including Purchase of Land reserved for Reservoirs	147,046	..	147,046	(B.) 147,046	..	5,210	(B.) 5,210	..		
Loan Moneys unexpended	124,807	..	124,807	..	124,807	4,422	..	4,422		
	891	..	891	(C.) 891	..	31	(C.) 31	..		
Totals	8,932,075	260,561	8,671,514	2,648,038	6,023,476	307,304	93,846	213,458	181,181	



STATE RIVERS AND WATER SUPPLY COMMISSION.

PLAN OF
WIMMERA-MALLEE
GRAVITATION CHANNEL SYSTEM
 FOR DOMESTIC AND STOCK SERVICE.

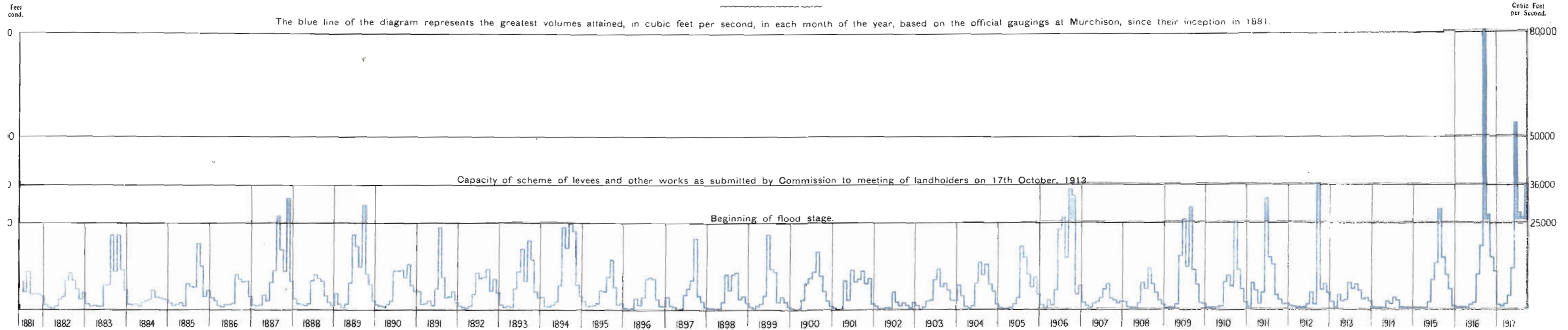


REFERENCE.

- Reservoirs shown thus
- Weirs "
- Channels "
- Towns Reticulated by State Rivers and Water Supply Commission "

STATE RIVERS AND WATER SUPPLY COMMISSION.

GOULBURN RIVER—DIAGRAM OF FLOODS—1881 to 1917.



Dated at the Office of the State Rivers and Water Supply Commission, Treasury
Gardens, Melbourne, the 15th day of October, 1917.

WM. CATTANACH, Chairman.

J. S. DETHRIDGE, Commissioner.

E. SHAW, Commissioner.

M. NALLY, Secretary