

1921.

VICTORIA.

STATE RIVERS AND WATER SUPPLY COMMISSION.

SIXTEENTH
ANNUAL REPORT.

1920-21.

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

[Approximate Cost of Report.—Preparation, not given. Printing (600 copies), £50.]

By Authority:

ALBERT J. MULLETT, GOVERNMENT PRINTER, MELBOURNE.

2ND SESSION.—No. 11.—[1s. 6d.]—14720.

STATE RIVERS AND WATER SUPPLY COMMISSION.

WM. CATTANACH, CHAIRMAN,
J. S. DETHRIDGE, COMMISSIONER,
E. SHAW, COMMISSIONER.

ANNUAL REPORT, 1920-21.

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 1920-21, and Estimates for the ensuing year.

WORKS UNDER CONTROL OF COMMISSION.

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

A.—FREE HEADWORKS.

DESCRIPTION OF WORKS.	Capital Debit at 30th June, 1921. 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 Tutchevop, and to the Little Murray River, with water storage works at these lakes	16,355
4. Kow Swamp Works :—Intake from the Murray River with regulator, at the effluence of the Gunbower Creek; channel thence to the Kow Swamp Reservoir; and that Reservoir; channel along the northern side of the reservoir; channel from the outlet of the reservoir, about 23½ miles, to the left bank of the Loddon River	187,366
5. Lake Lonsdale Reservoir :—Reservoir at Lake Lonsdale, on the Little Wimmera River, near Ledcourt	49,054
6. Loddon River Works :—Laanecoorie Weir, on the Loddon; Bridgewater Weir, on the Loddon; Kinypanial Weir, on the Loddon	167,636
7. Long Lake Pumping Works :—Inlet to Lake Baker, from the Little Murray River; water storage works at Lake Baker and Long Lake, with channel connecting these lakes; pumping plant at Long Lake, with rising main thence about 7 miles to allotment 10M, parish of Kooem; system of main distributary channels, about 85 miles in length	27,346
8. Lower Wimmera Compensation Works :—Drung Drung Weir, on the Wimmera, near allotment 29, parish of Longerenong; Dimboola Weir, on the Wimmera, near Dimboola township; Antwerp Weir, on the Wimmera, at Antwerp Station homestead; Jeparit Weir, on the Wimmera, near Jeparit township	8,558
Total	1,208,072

B.—MAIN SUPPLY WORKS.

IRRIGATION AND WATER SUPPLY DISTRICTS AND FLOOD PROTECTION DISTRICTS.

Cost Apportioned and to be Apportioned to Districts benefited.

Name of Work.	Capital Debit at 30th June, 1921.	Tentative Debits to Districts, 1920-21.	
	£	£	
Goulburn Main Channels (Free Headworks excluded)—			
1. East Goulburn	133,385	Rodney 120,000	} 582,000
2. Waranga Reservoir to Campaspe	252,646	Tragowel Plains 100,000	
3. West of Campaspe	195,969	Rochester 74,000	
		Tongala 58,000	
		Shepparton 57,000	
		Deakin 24,000	
		Dingee 15,000	
		Stanhope 15,000	
	582,000	463,000	
Goulburn Storages—			
4. Sugarloaf Reservoir	559,560		} 871,960
5. Waranga Reservoir Enlargement	312,400		
	871,960		
Bacchus Marsh and Werribee Schemes—			
6. Ballan Tunnel	18,529	Werribee 8,000	} 161,497
7. Pykes Creek Reservoir	63,564	Bacchus Marsh 74,093	
8. Melton Reservoir	79,404	Werribee 46,000	
	161,497		
Maffra Scheme—			
9. Glenmaggie Reservoir	56,066		56,066
Flood Protection Districts—			
10. Koo-wee-rup and Cardinia	99,234	Lower Koo-wee-rup 21,000	} 129,053
11. Goulburn Levees	29,819		
	129,053		
Carried forward			3,008,648

WORKS UNDER CONTROL OF COMMISSION—*continued.*Capital Debit
at 30th June,
1921.
Exclusive
of Cost of Loan
Flotation.

Brought forward

£
3,008,648

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 1625 and 1651.	Redemption Paid to Treasury.	Capital Debit at 30th June, 1921.
	£	£	£	£
1. Bacchus Marsh	66,186	8,906	493	56,787
2. Boort	58,733	35,259	1,094	22,380
3. Campaspe	63,585	52,685	305	10,595
4. Cohuna	145,041	49,197	658	95,186
5. Deakin	87,538	34,748	2,144	50,646
6. Dingee	13,198	..	..	13,198
7. Dry Lake	1,704	686	299	719
8. Gannawarra	85,576	33,179	180	52,217
9. Kerang	84,000	35,338	2,134	46,528
10. Koondrook	113,568	30,872	1,562	81,134
11. Merbein	148,793	..	133	148,660
12. Nyah	54,597	..	..	54,597
13. Rochester	131,017	..	..	131,017
14. Rodney	389,844	149,949	8,946	230,949
15. Shepparton	77,076	..	200	76,876
16. Stanhope	43,994	..	..	43,994
17. Swan Hill	75,531	19,799	371	55,361
18. Tongala	66,855	..	..	66,855
19. Tragowel Plains	191,464	124,534	527	66,403
20. Werribee	56,834	..	..	56,834
Totals	1,955,134	575,152	19,046	1,360,936

1,360,936

D.—WATERWORKS AND FLOOD PROTECTION DISTRICTS.

Distributary Works within Districts under the control of the Commission.

Name of District (Including Urban Districts).	Total Capital Expenditure.	Capital Written Off by Acts 1625 and 1651.	Redemption Paid to Treasury.	Capital Debit at 30th June, 1921.			
	£	£	£	£			
1. Birchip	275,439	700	2,273	272,466			
2. Sea Lake							
3. Tyrrell							
4. Wycheproof							
5. Carwarp	13,362	..	..	13,362	
6. Coliban	1,273,622	..	..	1,273,622	
7. Dandenong	30,365	5,128	1,506	23,731			
8. Karkaroc	106,775	..	2,493	104,282			
9. Kerang North-west Lakes (Free Headworks excluded)	2,082	..	..	2,082	
10. Long Lake (Free Headworks excluded)	56,985	..	571	56,414			
11. Naval Base, Mornington Peninsula	228,763	..	..	228,763	
12. Ouyen	7,876	..	..	7,876	
13. Tyntynder	73,517	..	..	73,517	
14. Walpeup East	4,592	..	..	4,592	
15. Walpeup West	13,594	..	..	13,594	
16. Werribee	10,556	..	..	10,556	
17. Western Wimmera	262,001	132,835	15,148	114,018			
18. Wimmera United	199,764	36,392	12,101	151,271			
19. Wonthaggi	63,516	..	5,744	57,772			
20. Yelta	3,703	..	..	3,703	
21. Wimmera Main Channels	180,527	..	..	180,527	
22. Wimmera Storages—	Amounts being debited to Districts benefited.	..	..	..
Fyans Lake					38,181	..	38,181
Taylor's Lake					104,758	..	104,758
Pine Lake					365	..	365
Lake Whitton	9,443	..	..	9,443	
23. Echuca Flood Protection	869	..	..	869	
Totals	2,960,655	175,055	39,836	2,745,764			

2,745,764

Carried forward

7,115,348

WORKS UNDER CONTROL OF COMMISSION— <i>continued.</i>				Capital Debit at 30th June, 1921. Exclusive of Cost of Loan Flotation.
Brought forward				£ 7,115,348
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 Debit at 30th June, 1921.
	£	£	£	£
1. Avoca Water Trust—				
Rural District	9,670	2,494	1,696	5,480
Urban District (Quambatook)	3,786	..	340	3,446
2. Carrum Waterworks Trust ..	27,112	7,732	2,562	16,818
3. Loddon United Waterworks Trust—				
Rural District	22,534	1,717	4,222	16,595
Urban District (Mitiamo) ..	2,850	..	29	2,821
	65,952	11,943	8,849	45,160
Grand Total				£ 7,115,348

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, 20,894 square miles, equal to about 13,372,000 acres.

The area under irrigated culture, for all kinds of crop; was, notwithstanding the copious spring rains which rendered cereal irrigation almost unnecessary, 282,534 acres. Although this area is 88,714 acres less than the record area irrigated in the year 1919–20, it is about 31,870 acres greater than the average of the previous four years. The area irrigated last year includes some 15,000 acres watered under yearly permits granting authority to divert water from streams throughout the State.

The number of separate towns supplied, exclusive of the city of Melbourne and its suburbs, is as shown in the following statement :—

Controlling Authorities.	Number of Towns Supplied.	Estimated Population Served.
Commission	50	92,890
Waterworks Trusts	99	161,300
Local Governing Bodies	18	74,520
Totals	167	328,710

LANDS UNDER IRRIGATED CULTURE.

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

STATEMENT OF THE EXTENT OF IRRIGATION AND OF AREAS OF DIFFERENT KINDS OF CROPS WATERED—YEAR 1920-21.

Name of District.	Area Irrigated (Acres).							Total.
	Cereals.	Lucerne grown for Pasture and Hay.	Sorghum and other Annual Fodder Crops.	Pastures.	Vineyards, Orchards, and Gardens.	Fallow.	Miscellaneous.	
<i>Supplied from Goulburn State Works.</i>								
Shepparton	1,125	3,230	261	1,252	7,691	54	560	14,173
Rodney	101	17,306	1,071	11,859	7,925	329	354	38,945
Deakin	117	651	184	732	29	109	26	1,848
Stanhope	11	3,541	1,111	418	293	419	10	5,803
Tongala	91	5,880	364	1,155	1,511	515	29	9,545
Rochester	334	14,508	1,817	3,658	1,782	591	74	22,764
Dingee .. .. .	..	1,840	141	580	8	9	12	2,590
Tragowel Plains	3,974	1,172	6,197	21,948	12	46	..	33,349
Totals	5,753	48,128	11,146	41,602	19,251	2,072	1,065	129,017
<i>Supplied from Murray State Works.</i>								
<i>(a) Kow Swamp Works.</i>								
Kerang	4,072	319	2,535	10,047	22	40	65	17,100
Dry Lake	196	..	20	290	4	..	..	420
Lands supplied direct (outside Districts)	411	1,776	470	1,150	10	..	..	3,817
Totals	4,679	2,095	3,025	11,397	36	40	65	21,337
<i>(b) Other Works.</i>								
Cohuna	1,190	4,981	1,736	8,500	158	177	189	16,931
Gannawarra	1,759	2,041	3,192	11,993	33	..	932	19,950
Koondrook	1,514	877	1,428	11,359	731	77	..	15,986
Merbein .. .. .	..	180	..	..	6,610	..	392	7,182
Nyah	154	..	..	..	2,288	..	..	2,442
Swan Hill	2,356	3,266	839	1,337	958	696	6	9,458
Totals	6,973	11,345	7,195	33,189	10,778	950	1,519	71,949
Totals (Murray State Works)	11,652	13,440	10,220	44,586	10,814	990	1,584	93,286
<i>Supplied from Loddon State Works.</i>								
Boort	2,987	163	1,718	8,407	33	80	..	13,388
Tragowel Plains .. .. .	..	..	..	..	..	..	..	..
Totals	2,987	163	1,718	8,407	33	80	..	13,388
<i>Supplied from other State Works.</i>								
Bacchus Marsh .. .. .	..	1,698	112	634	73	87	25	2,629
Campaspe .. .. .	..	..	355	68	127	4	..	554
Coliban	192	408	309	502	3,541	236	155	5,343
Kerang North-West Lakes	649	440	183	2,661	18	..	7	3,958
Werribee	542	3,639	6	37	111	..	87	4,422
Western Wimmera	2	29	38	25	1,252	..	30	1,376
Totals	1,385	6,214	1,003	3,927	5,122	327	304	18,282
<i>Supplied from other Works.</i>								
First Mildura .. .. .	..	144	199	..	10,643	..	306	11,292
Kerang—Outside Districts (Private Diversions)	998	103	251	983	10	..	21	2,366
Other Private Diversions throughout the State	3,771	3,791	1,713	860	4,531	..	237	14,903
Totals	4,769	4,038	2,163	1,843	15,184	..	564	28,561
Grand Totals, 1920-21	20,546	72,338	25,963	100,424	50,281	3,465	3,517	282,534
Grand Totals, 1919-20	76,810	71,364	32,955	117,263	43,568	8,502	20,768	371,248

COMPARATIVE STATEMENT OF THE EXTENT OF IRRIGATION, 1916-17 TO 1920-21.

	Area under Irrigation (Acres).				
	1916-17.	1917-18.	1918-19.	1919-20.	1920-21.
Goulburn State Works	119,139	75,614	123,242	180,279	129,017
Murray State Works	77,601	51,600	89,221	118,759	93,286
Loddon State Works	15,205	5,682	18,973	11,272	13,388
Other State Works	15,678	12,478	17,743	24,598	18,282
Mildura and Private Diversions	30,082	29,422	32,980	36,340	28,561
Totals	257,705	174,796	282,159	371,248	282,534

VALUATIONS, RATES, FLOOD PROTECTION CHARGES, 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 all 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 flood protection rate was for the first time made in the Echuca (High-street) Flood Protection District; and, in the new Lower Kooweerup Flood Protection District, a charge on the acreage basis was also made. In the new Urban Districts of Carrum, Frankston, Mornington, and Merbein rates were also levied. Details of all these are included herein.

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; the Lower Kooweerup Flood Protection District was similarly divided into three divisions. As heretofore in the urban portion of the Coliban system, a minimum and a tapering rate have been made, while the Carrum Waterworks Trust District has, as in past years, been arranged in five rating divisions in accordance with the relative benefits derived by such lands from the works.

Under the powers conferred by Section 5 of the *Water Act* 1916, a minimum rate on the basis of £8 per 640 acres was fixed by the Commission on the first division lands of the Birchip, Karkaroc, Long Lake, Sea Lake, Tyntynder, Tyrrell, Western Wimmera, Wimmera United, and Wycheproof Waterworks Districts, while in the Walpeup West Waterworks District the minimum was fixed at £2 13s. 4d. per 640 acres.

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

A.—VALUATIONS, RATES, AND FLOOD PROTECTION CHARGES.

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, 1921.	Period of Rate.	Estimated Number of Persons dwelling in District.
IRRIGATION AND WATER SUPPLY DISTRICTS.				
	Valuation by Commission. £	s. d.		
1. BACCHUS MARSH	11,347	.. 1 0	1st July, 1920, to 30th June, 1921	725
2. BOORT	15,483	1st Division .. 2 0 2nd Division .. 1 0	" " "	800
3. CAMPASPE	9,921	1st Division .. 1 8 2nd Division .. 0 10 3rd Division .. 0 5	" " "	560
4. COHUNA	16,734	1st Division .. 2 0 2nd Division .. 1 0	" " "	1,025
5. DEAKIN	63,371	1st Division .. 1 6 2nd Division .. 0 9 3rd Division .. 0 4½	" " "	2,500
6. DINGEE	2,825	.. 1 0	" " "	220
7. DRY LAKE	250	(No rate made)	" " "	11
8. GANNAWARRA	11,204	1st Division .. 2 0 2nd Division .. 1 0	1st July, 1920, to 30th June, 1921	494
9. KERANG	17,628	1st Division .. 2 6 2nd Division .. 1 3 3rd Division .. 0 7½	" " "	779
10. KOONDROOK	11,896	1st Division .. 2 0 2nd Division .. 1 0	" " "	653
11. MERBEIN	6,005	.. 1 0	" " "	2,600
12. NYAH	2,033	.. 1 0	" " "	971
13. ROCHESTER	43,397	1st Division .. 1 0 2nd Division .. 0 6 3rd Division .. 0 3	" " "	2,890
14. RODNEY	146,241	1st Division .. 1 0 2nd Division .. 0 6 3rd Division .. 0 3	" " "	5,600
15. SHEPPARTON	18,365	.. 1 0	" " "	1,850
16. STANHOPE	12,173	.. 1 0	" " "	765
17. SWAN HILL	9,183	.. 2 0	" " "	790
18. TONGALA	14,439	.. 1 0	" " "	1,500
19. TRAGOWEL PLAINS	32,780	1st Division .. 1 0 2nd Division .. 0 6	" " "	1,200
20. WERRIBEE	7,037	.. 1 0	" " "	480

A.—VALUATIONS, RATES, AND FLOOD PROTECTION CHARGES—*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, 1921.	Period of Rate.	Estimated Number of Persons dwelling in District.		
WATERWORKS DISTRICTS.						
	Valuation by Commission. £	Divisions.				
		1st.	2nd.	3rd.		
		s. d.	s. d.	s. d.		
21. AXE CREEK ..	1,442	2 0	..	..	1st July, 1920, to 30th June, 1921	230
22. BIRCHIP ..	31,477	2 2	1 1	0 6½	" " "	2,400
23. CARWARP ..	7,169	3 6	1 9	0 10½	" " "	560
24. HARCOURT ..	6,215	1 6	..	..	" " "	575
25. KARKAROOC ..	86,940	1 10	0 11	0 5½	" " "	3,520
26. KERANG NORTH-WEST LAKES	6,902	0 6	..	..	" " "	505
27. LONG LAKE ..	50,393	2 6	1 3	0 7½	" " "	1,840
28. SEA LAKE ..	54,480	2 4	1 2	0 7	" " "	2,140
29. TYN TYNDER ..	30,396	3 0	1 6	0 9	" " "	1,500
30. TYRBELL ..	37,026	3 0	1 6	0 9	" " "	2,850
31. WALPEUP EAST ..	29,231	0 8	0 4	..	" " "	1,650
32. WALPEUP WEST ..	60,200	0 6	0 3	..	" " "	3,400
33. WERRIBEE ..	5,721	2 0	..	..	" " "	106
34. WESTERN WIMMERA ..	247,477	1 2	0 7	0 3½	" " "	10,550
35. WIMMERA UNITED ..	267,816	1 2	0 7	0 3½	" " "	8,700
36. WYCHEPROOF ..	51,086	2 2	1 1	0 6½	" " "	2,300
37. YELTA ..	2,130	3 0	..	..	" " "	60

URBAN DIVISIONS AND DISTRICTS.

	Municipal Valuation. £					
		s. d.				
38. BACCHUS MARSH ..	9,366	..	..	1 6	1st July 1920, to 30th June, 1921	1,675
39. BERRIWILLOCK ..	506	..	..	4 0	" " "	130
40. BEULAH ..	2,693	..	..	2 9	" " "	550
41. BIRCHIP ..	5,130	..	..	2 0	" " "	900
42. CARRUM ..	8,400	..	..	0 9	1st Jan., 1921, to 30th June, 1921	4,500
43. COHUNA ..	3,582	..	..	2 3	1st July, 1920, to 30th June, 1921	737
44. COROP ..	360	..	..	2 0	" " "	90
45. DANDENONG ..	21,803	..	..	1 6	" " "	3,600
46. DIMBOOLA ..	7,871	..	..	1 9	" " "	1,200
47. FRANKSTON ..	11,889	..	..	0 9	1st Jan., 1921, to 30th June, 1921	1,600
48. HOPE TOUN ..	2,385	..	..	2 9	1st July, 1920, to 30th June, 1921	450
49. JEPARIT ..	4,405	..	..	2 3	" " "	550
50. JUNG JUNG ..	496	..	..	3 0	" " "	130
51. KANEIRA ..	517	..	..	4 0	" " "	135
52. KOONDROOK ..	2,313	..	..	3 0	" " "	420
53. LAKE BOGA ..	1,502	..	..	3 0	" " "	280
54. LASCELLES ..	547	..	..	3 6	" " "	120
55. MERBEIN ..	1,350	..	..	2 0	1st Jan., 1921, to 30th June, 1921	400
56. MINYIP ..	3,227	..	..	3 0	1st July, 1920, to 30th June, 1921	600
57. MORNINGTON ..	5,843	..	..	1 0	1st Jan., 1921, to 30th June, 1921	1,400
58. NATIMUK ..	2,446	..	..	1 6	1st July, 1920, to 30th June, 1921	420
59. NYAH ..	419	..	..	2 6	" " "	162
60. OUYEN ..	4,887	..	..	2 9	" " "	500
61. RAINBOW ..	5,228	..	..	2 3	" " "	800
62. RUPANYUP ..	2,225	..	..	3 0	" " "	400
63. SEA LAKE ..	2,728	..	..	3 0	" " "	550
64. ULTIMA ..	1,901	..	..	3 0	" " "	290
65. WATCHEM ..	1,244	..	..	3 6	" " "	170
66. WERRIBEE ..	7,878	..	..	2 0	" " "	1,200
67. WONTHAGGI ..	24,260	..	..	1 6	" " "	7,000
68. WOOMELANG ..	1,637	..	..	3 0	" " "	410
69. WYCHEPROOF ..	3,439	..	..	2 6	" " "	720

COLIBAN SYSTEM.

	Municipal Valuation. £					
		s. d.				
70. COLIBAN ..	295,176	On Valuations up to £300 ..		1 6	1st July, 1920, to 30th June, 1921	61,000
		(Minimum 20s.)				
		From £301 up to £700 ..		1 3		
		From £701 on		1 0		
		Vacant lands ..		1 6		

A.—VALUATIONS, RATES, AND FLOOD PROTECTION CHARGES.—*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, 1921.	Period of Rate.	Estimated Number of Persons dwelling in District.
---	--------------------------------------	--	-----------------	---

WATERWORKS TRUSTS.

	Municipal Valuation. £		s. d.		
71. AVOCA	34,261	.. ..	0 4½	1st January, 1921, to 31st December, 1921	1,300
72. MITIAMO (URBAN) ..	652	.. ..	4 0	" " "	150
73. QUAMBATOOK (URBAN)	2,906	.. ..	2 9	" " "	300
74. CARRUM	35,285	1st Division ..	3 8	" " "	1,350
		2nd Division ..	1 10		
		3rd Division ..	1 4		
		4th Division ..	1 0		
		5th Division ..	0 4		
	Valuation by Commission. £				
75. LODDON UNITED ..	105,835	1st Division ..	0 8	" " "	2,900
		2nd Division ..	0 4		
		3rd Division ..	0 2		

FLOOD PROTECTION DISTRICTS.

	Valuation by Commission £		s. d.		
76. ECHUCA (HIGH-ST.) ..	845	.. ..	3 0	1st July, 1920, to 30th June, 1921	73
77. LOWER KOO-WEE-RUP	54,072	1st Div. (p.ac.)	2 0	" " "	2,200
		2nd Div. (p.ac.)	1 0	" " "	
		3rd Div. (p.ac.)	0 6	" " "	

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 ..	6,618	3,288	3,288	20s.	1st October, 1920, to 30th April, 1921
2. COHUNA	34,834	22,398	22,482	6s.	1st September, 1920, to 30th April, 1921
3. DINGEE	5,342	4,582	4,582	6s.	1st September, 1920, to 30th April, 1921
4. GANNAWARRA ..	44,177	17,020	17,020	6s.	1st September, 1920, to 30th April, 1921
5. KOONBROOK ..	52,772	14,030	14,030	6s.	1st September, 1920, to 30th April, 1921
6. MERBEIN	7,749	7,211	17,945	20s. Min. 50s. per acre.	1st August, 1920, to 30th April, 1921
7. NYAH	3,305	2,792	6,918	16s. Min. 40s. per acre.	1st August, 1920, to 30th April, 1921
8. ROCHESTER ..	129,666	32,426	32,426	5s.	1st September, 1920, to 30th April, 1921
9. RODNEY	266,885	184,743	49,448	5s.	1st September, 1920, to 30th April, 1921
10. SHEPPARTON ..	21,119	18,401	18,401	5s.	1st September, 1920, to 30th April, 1921
11. STANHOPE ..	20,063	15,460	7,401	5s.	1st September, 1920, to 30th April, 1921
12. SWAN HILL ..	19,165	12,928	12,928	5s.	1st September, 1920, to 30th April, 1921
13. TONGALA	26,308	18,583	18,583	5s.	1st September, 1920, to 30th April, 1921
14. TRAGOWEL PLAINS	180,635	126,255	25,038	6s.	1st September, 1920, to 30th April, 1921
15. WERRIBEE ..	8,081	6,337	6,337	10s.	1st October, 1920, to 30th April, 1921

CONTRACTS.

STATEMENT OF CONTRACTS ENTERED INTO DURING THE YEAR ENDED
30TH JUNE, 1921.

No.	Name of Contractor.	Work or Supply.	Amount (Loan and Vote).		
			£	s.	d.
1771	G. Webb	Firewood, Merbein	993	17	0
1773	Robert Harris	Firewood, Nyah	247	2	6
1774	A. J. Bell	Firewood, Nyah	268	18	9
1775	Jas. H. Summers, sen.	Firewood, Nyah	268	15	0
1776	G. R. Lacey	Firewood, Nyah	350	0	0
1777	C. J. Nicholas	Firewood, Nyah	131	5	0
1778	P. Mannix, jun.	Firewood, Nyah	512	4	0
1779	F. O. Wallin	Firewood, Swan Hill	625	0	0
1780	C. J. Petty	Firewood, Merbein	1,415	14	0
1781	Henry Walker	Firewood, Merbein	662	7	0
1782	H. E. Fasham	Firewood, Koondrook	97	10	0
1783	A. J. Harman	Firewood, Koondrook	131	5	0
1784	John Henry	Firewood, Koondrook	131	5	0
1785	H. G. Crombie	Firewood, Koondrook	453	17	6
1786	A. Fasham	Firewood, Koondrook	187	10	0
1787	E. W. Greenway	Firewood, Koondrook	131	5	0
1788	H. Mooring	Firewood, Koondrook	212	10	0
1789	Thos. S. Jones	Firewood, Koondrook	142	10	0
1790	Thos. Malone	Flood Protection Works, Echuca	888	10	0
1791	Hawke and Co.	Water Tube Boilers, Red Cliffs	24,520	0	0
1792	Australian Portland Cement Co.	20,000 casks Cement	18,750	0	0
1793	Australian Portland Cement Co.	30,000 casks Cement	28,375	0	0
1794	Thompson and Co.	Pumping Plant, Red Cliffs	9,022	14	0
1795	Welch, Perrin and Co.	Hydraulic Lifters, Sugarloaf Reservoir	2,300	0	0
1796	B. G. Jarvis	Engineer's Residence, Koo-wee-rup	667	5	0
1797	George Henry Olding	Dump Waggon, Hume Reservoir	6,000	0	0
1798	G. P. Conlon	Boring for Water, Tyalla and Wooroo	1,080	0	0
1799	V. F. Treadwell	Offices, Merbein, and Engineer's Residence, Red Cliffs	2,111	0	0
1800	Thompson and Co.	Turbines, Pumping Plant, Red Cliffs	34,577	2	10
1801	H. E. Ward	Firewood, Merbein	1,880	12	6
1802	John A. Smith	Firewood, Nyah	175	0	0
1803	James H. Summers, jun.	Firewood, Nyah	269	19	9
1804	F. MacPherson	Kulwin Township Channel and Larundel East Channel	926	6	0
1805	John G. Humphries	Temporary Offices, East Melbourne	747	6	6
1806	A. R. P. Crow and Sons	Chimney Stack, Red Cliffs	3,118	10	0
1807	Gov't. Dockyard, Newcastle, N.S.W.	Metal Work, Torrumbarry Weir	4,639	18	8
1808	Weymouth's Limited	Turbine Pumps, Red Cliffs	5,741	0	0
1809	Thos. Phyland	Main Channel, Red Cliffs	3,700	0	0
1810	Johnson and Sons Py. Ltd.	Retention Valve, Red Cliffs	282	12	6
1811	Johnson and Sons Py. Ltd.	Mild Steel Pipes and C.I. Bends, Red Cliffs	1,189	13	0
1812	Welch, Perrin and Co.	Boiler Feed Pumps, Red Cliffs	680	0	0
1813	A. R. P. Crow and Sons	Boiler Flues, Red Cliffs	427	11	0
1814	Horrocks, Roxburgh Pty. Ltd.	Travelling Crane, Red Cliffs	636	5	0
			159,669	2	6

PIECE-WORK AND DIRECT LABOUR.

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

Works.	Amount.
Sugarloaf Reservoir	£83,360
Waranga Reservoir	35,363
Goulburn Main and Distributary Channels	16,984
Wimmera-Mallee System	65,049
Mallee Tanks, Clearing Roads (Mallee)	4,301
Naval Base and Mornington Peninsula	15,026
Koo-wee-rup and Cardinia	20,952
Redcliffs and Merbein Irrigation Areas	93,837
Nyah, Rodney, Shepparton, Swan Hill, and Cohuna Districts	33,429
Bacchus Marsh and Werribee Districts	11,865
Coliban District	4,596
Maffra District (Glenmaggie Reservoir)	23,525
River Murray Storages	27,205
Other Works	6,876
Total	£442,368

WORKS CARRIED ON OR COMPLETED DURING THE YEAR ENDED 30TH JUNE, 1921.

COLIBAN DISTRICT.

The principal work for the year has been the substitution of a 5-ft. diameter reinforced concrete pipe for the existing two lines of 3-ft. diameter iron pipes that formerly conveyed the water across the valley of the Back Creek, at Taradale. The new pipe, which is now completed, has a carrying capacity equal to twice the combined capacity of the two smaller pipes. Other works, which now restrict the flow in the Main Channel, are also being enlarged.

Proposals to further increase the capacity of the Upper Coliban Reservoir, by providing regulating gates on the crest of the waste weir, are being examined.

Contour surveys have been made of a considerable portion of the reserved lands above the Big Hill and Crusoe Reservoirs, at Bendigo, for the purpose of ascertaining what facilities exist for the construction of settling basins to improve the quality of the local supply.

Throughout the principal reticulation several enlargements and renewals have been made, and pipe-scraping has been actively proceeded with.

Surveys and other investigations have been made of proposals for extensions at Ravenswood, Strathfieldsaye, and White Hills; and a scheme by which an improved supply could be given to Castlemaine is being investigated.

IRRIGATION AND WATER SUPPLY DISTRICTS.

RODNEY DISTRICT.

Steady progress has been made during the year with the work of increasing the capacity of the Wilson Channel by about 250 cubic feet per second, about 4 miles being now practically completed. Several miles of old channels have been remodelled, minor channel extensions have been made, and many new culverts, syphons, and outlet boxes installed. Much of this work has been necessitated by the settlement of returned soldiers on farms in the district.

Owing to plentiful rains, in the early part of the season, the demand for water for irrigation was not as great as usual. But in the dry autumn weather, which characterized the latter part of the season, a strong demand set in. All requirements were amply supplied.

SHEPPARTON DISTRICT.

An area of 300 acres adjoining the town of Shepparton was reticulated with channels, and added to the district. The channelling of the area of about 1,500 acres, known as Thomas's and Smith's, was completed in time for the irrigation season, and brought into operation. Thirty-five out of the 36 blocks made available have been taken up by returned soldiers; the number of soldier settlers in the Shepparton District being now 111.

The minor works carried out comprised structures in drainage channels and some extensions of channel lining.

SWAN HILL DISTRICT.

The area of 400 acres, known as Davies' Estate, which was recently acquired for soldier settlement, is being reticulated with channels, in preparation for the ensuing season. Nineteen of the twenty blocks into which it was subdivided have been allotted, and most of the settlers are in occupation, and preparing for the coming planting season.

Other works carried out during the year comprise 5 miles of distributary channels, together with the necessary structures thereon, 88 chains of cement concrete channel lining, a drainage syphon, and 2 miles of drains, and a bailiff's house at Woorinen.

On the main gravitation channel from Boga a regulating offtake and sixteen meter outlets were installed; and on the channel between Long Lake and Lake Baker a bridge was constructed.

DISTRICTS ADMINISTERED FROM KERANG CENTRE.

In all these districts the clearing of channels and repairs to the structures connected therewith have received attention. Several old timber culverts over small spur channels crossing important roads have been replaced with modern reinforced pipe culverts. New spur channels to serve Closer Settlement Areas were constructed.

In the Koondrook District several leaky channel banks were trenched, treated, and strengthened, and new meter outlets installed where required. Works for increasing the efficiency of the Koondrook Pumping Plant have been carried out.

Additional stone protective works at the south end of the Kow Swamp Storage, and repairs to No. 2 regulator and other structures, were completed.

On the east bank of the Lower Gunbower Creek, upstream from Thomson's Weir, a substantial embankment, which will improve the storage capacity of both the Lower Gunbower and the Cockatoo Lagoon, was constructed.

Good progress has been made with the works to replace the old timber weir on the Loddon River, below the junction of Pyramid Creek, near Kerang. The earthen dam across the Loddon, together with the 36-in. reinforced concrete tube, with regulating tower to carry low river flows, and the diversion channel through a bend in the river, to carry the flood waters, have been completed. The construction of the reinforced concrete regulator across the head of this channel is nearly completed.

DISTRICTS ADMINISTERED FROM COHUNA CENTRE.

The principal work in Cohuna District consisted of the development of the two main drainage systems, known as Leitch's Creek and Wee-wee-rup Main Drains.

The Leitch's Creek Main Drain has been deepened and widened for a distance of 8 miles, and is now practically completed. The total length of this drain is 18 miles, and, for the greater part, it follows along the bed of Leitch's Creek. A petition for an extension of 5 miles is being investigated.

Four miles of excavation work were carried out on the Wee-wee-rup Main Drain, which completed this work. Pipe-laying is proceeding, and this drain is now in operation for 9 miles, and will be complete for its full length, 15 miles, within the next few months. It was designed to remove surface water from lands lying between Cohuna and Wee-wee-rup, and promises to be most effective.

Numerous lateral drains have been constructed, connecting lands with the main drains. This class of work, together with the providing of better outfalls for the Main Drains, will comprise the principal drainage improvement in the future.

The flume over Gunbower Creek, on the Main Channel from the Headworks, was washed out, but was soon repaired, little inconvenience being felt by irrigators. Several new structures were built, including a bridge over the Right Branch Channel, in the township of Cohuna, as well as checks and meter outlets in different parts of the district.

The usual work of maintenance of channels and wooden structures has been carried out.

A petition was received from land-owners on Gunbower Island to include their lands in Cohuna District, with a view to the allotment thereto of water rights on completion of the Torrumbarry Weir and Lock. The necessary investigation is now being made.

Work in Gannawarra District consisted, for the most part, of repairs to existing channels and structures. It is proposed to carry out a considerable amount of remodelling work on the Right Branch Channel, which serves portion of the district. This has become necessary on account of the increasing demand for water, due to the extension of intensive cultivation.

DISTRICTS ADMINISTERED FROM LODDON CENTRE.

In Tragowel Plains District the work carried out consisted mainly of renewals of structures, and the remodelling of some channels. Arrangements are now being made to proceed with many needed works on a much larger scale, and it is expected that great improvements will be effected during the coming year.

In the Boort District there was experienced the best year that has been known, from an irrigation point of view, the Loddon supplying water up to the second week in April. The good supply, by keeping channels full, militated against the execution of channel repairing, and not very much could be done; but, as in Tragowel Plains, it is proposed to effect many improvements during the year 1921-22.

The works in the Dingee District are all in very good order, and the only work necessary was the usual maintenance, which consisted mainly of the clearing of vegetation of various kinds from the channel beds.

DISTRICTS ADMINISTERED FROM ROCHESTER CENTRE.

In the Rochester District, in addition to the usual maintenance work, which has received due attention, the channels and structures for the area proposed to be constituted the Echuca North Irrigation and Water Supply District, a channel extension to Nanneella East, and the Ballendella drainage and irrigation channel, have been put in hand.

Consideration is being given to the drainage problems of the district, and many shafts and bores have been sunk to obtain information regarding the behaviour of seepage.

In the Campaspe District, in addition to usual maintenance, the stone filled boxes of the weir have been overhauled, and much of the decking reinforced. The portion of the Western Channel timber regulator, which was carried away by a flood last year, has been replaced with concrete, and the face of the Eastern Channel regulator has been repaired and made watertight. A syphon has been constructed across the important watercourse known as Murray's, and remodelling of the bridge on the Elmore-road has been commenced.

DISTRICTS ADMINISTERED FROM TONGALA.

In Tongala District the channel system has been extended by the construction of $6\frac{1}{2}$ miles of new channels, to supply an additional area of 1,576 acres, comprising 22 Closer Settlement Blocks, on all of which returned soldiers have been settled.

Additional structures have been put in the Koyuga Main Channel, to command the whole of the land in the Kyabram Estate.

General repairs and maintenance work have been carried out, and some sections of channels, affected by seepage, were pug-trenched.

Owing to the abundant rains, there was practically no demand for irrigation water until the middle of November, but towards the latter end of the season the demand increased, and held out until May.

In Stanhope District the channel construction has been continued throughout the year; and 10 miles of new channel and $1\frac{1}{2}$ miles of remodelling, practically all in the Bonshaw Estate, were completed. Two new syphons over the main depression were also constructed, one 2 ft. 6 in. diameter and 550 feet long, and the other 2 feet diameter and 400 feet long. Structures have also been put in the channels in the Robgill and Stanhope Estates. These structures were omitted last year, in order that water could be supplied to the settlers who were cultivating their blocks. In some channels which pass through sand ridges there has been slight seepage, and these channels have been trenched and pug-filled.

An additional check has been put in the Main Waranga-Deakin Channel, to raise the level so as to command extra land in the Robgill Estate.

The general repairs and maintenance work in the District have been kept well in hand.

In Deakin District general repairs and maintenance work were carried out. The channels in this District, though serving the purpose of a domestic and stock supply for which they were originally designed, are not large enough for irrigation, and will require to be remodelled if irrigation is to be supplied as now requested by settlers.

BACCHUS MARSH AND WERRIBEE DISTRICTS.

A new 60 feet span timber truss is in course of erection to support the Maddingley flume across the Bacchus Marsh Shire Council's stone quarry. This work was decided upon conjointly with the Country Roads Board and the Bacchus Marsh Shire Council to enable the quarry to be extended. Minor extensions of concrete lining have been made throughout the channel system. In the Lerderberg River a considerable amount of work has been done for the purpose of preventing erosion of the banks at flood times.

At the request of the residents in the Urban District, additions and extensions will be carried out early in the coming year. It is expected that the proposed improvements will give an increased supply not only for domestic and stock purposes, but also for the irrigation of small plots under the sprinkler system.

A section of the Pyke's Creek Tunnel between Nos. 4 and 5 shafts consisting of rock and clay seams, which gave trouble early in the year, has been concrete lined, and is now ready for the passage of water from the Werribee River to Pyke's Creek Reservoir.

In the Werribee Irrigation District the construction of channels for the supply of the new Soldier Settlement has been completed, and necessary check and outlet structures are practically finished. Short sections of earth channel showing signs of seepage have been lined with concrete.

A system of drainage has also been introduced. Surface drains for the removal of surplus water have been constructed on the new Soldier Settlement, and that portion of the older settlement which was suffering from high-water table is now relieved by open drains of minimum depth of 6 feet. This system of deep drainage will be extended during the coming year. Road construction on the Closer Settlement area has received attention, and several miles of formation have been completed under a joint agreement between the Commission and the local Shire Council.

The construction of the pipe line for the supply of the area known as the Police Paddock has been started, and this area will be brought under irrigation during the ensuing season.

In the Werribee Urban District proposals for improving the quality of the town supply are under consideration.

In the Werribee Waterworks District the system of channels has been extended to reach holdings not previously supplied, and to provide for the irrigation of small areas as arranged with landholders.

MERBEIN DISTRICT.

A further extension of the District has been made during the year by adding thereto 500 acres of land south of the previous extension of Birdwood, and on this 30 soldiers were settled. Supply channels have been carried into the area, and the land is now in readiness for planting. The new unit mentioned in the last annual Report has been installed at the Pumping Station, and was made use of in the last irrigation season.

The work of channel lining with cement concrete to prevent seepage has been continued through the year, the length done being 6 miles, making the total completed about 40 miles.

The reticulation of the township area has been carried out as far as practicable, and most of the dwellings therein have been supplied with water for domestic use and for the irrigation of small gardens.

RED CLIFFS IRRIGATION DISTRICT.

A general description of the scheme was given in the last annual Report. The first subdivision of the proposed area of 15,000 acres was allotted in December, 1920. It embraces that portion—4,650 acres—lying between the Mildura Railway Line and the River Murray, and this has been subdivided into 295 Soldier Settler blocks averaging 16 acres each. The whole area has been grubbed and cleared, while the main channels and general reticulation are near completion. A second allotment of 149 blocks was made in August, 1921. The total area cleared is now over 8,000 acres. A township on modern lines has been laid out, the sale of allotments therein being most successful, prices reaching to £9 per foot.

The pumping plant when completed will have a total capacity of 250 cubic feet per second, or 500 acre-feet per day, against a total head of 105 feet. One unit, a turbine pump with a capacity of 50 cubic feet per second driven by a high-speed triple-expansion engine of 750 b.h.p., similar in all respects to the unit recently installed at Merbein, is now erected, and delivered water early in October, 1921. The remainder of the plant will comprise two 48-in. turbine pumps, each having a capacity of 100 cubic feet per second. Each pump will be driven by a 1,600 b.h.p. steam turbine through suitable reduction gearing. Steam will be generated by six water-tube boilers of Australian make, each with heating surface of 3,100 square feet. The central smoke-stack has been erected. It is of brick, 150 feet high and 8 ft. 6 in. internal diameter.

The rising main is of reinforced concrete, and is 6 ft. 6 in. diameter and 34 chains in length. An electric generator of about 500 kw. capacity will be installed to provide for the second lift of portion of the water to those parts of the area above the general level. The construction of the main channel has involved some heavy earthwork both in cuts and in high fills; nearly 250,000 cubic yards of earth have been excavated in the main and tributary channels.

During the year from 800 to 1,000 returned soldiers have been employed in preparing the land for settlement, and most of these will take up blocks.

NYAH DISTRICT.

The activities of the Commission have largely been in the direction of the completion of means of supply to the Nyah South Soldier Settlement and the carrying out of works generally in connexion with the Soldier Settlements, to the south and north of the district. Some $7\frac{1}{2}$ miles of main and distributary channels were constructed. Throughout the district concrete channel lining has been extended, the total length of channels concrete lined being increased during the year from $11\frac{1}{2}$ miles to $15\frac{1}{4}$ miles.

A new rising main, part reinforced concrete and part wrought-iron pipe, is in course of construction, and will replace the present wood pipe main and flume.

At Nyah West a 4,000 cubic yard tank has been excavated for the urban supply of this rapidly-growing township, and a scheme has been prepared for a reticulation supply therefrom; this is now being considered by the residents.

An additional boiler has been installed, and an additional pumping plant is in course of erection, so that the increased demand for water owing to extensions of the district may be met.

MAFFRA DISTRICT IRRIGATION SCHEME.

During the year operations upon these works have necessarily been chiefly confined to the construction of the foundations of the large cyclopean concrete dam to be built on the Macallister River at Bradley's Creek junction, just below Glenmaggie township. This has been carried on as vigorously as conditions permitted; a "by pass," designed to carry 2,000 cubic feet per second, has been cut through solid rock 20 feet wide and up to 20 feet deep some 12 chains in length, and concrete "cut off" walls have been constructed across the river both above and below the site of the main wall, so that all ordinary river flows can now be passed without retarding the progress of the dam proper. The river bed at the dam site has been explored and cleaned up satisfactorily. This will enable the foundations and lower part of the main structure to be carried on uninterruptedly as soon as the spring freshes in the river are past, and it is anticipated that during the ensuing summer this work will be sufficiently advanced to allow of valuable diversions of river flows being made to the head of the channel systems.

Further surveys have established even more clearly the value of this site as a storage basin; at least 120,000 acre-feet can be stored at a very reasonable cost with a dam of only some 90 feet maximum height. As an almost equal additional volume of unregulated flows can be drawn from the river during the first half of an ordinary irrigation season, it is evident that very considerable extensions of the original scheme in the near future are feasible. It is, therefore, proposed to establish the foundations and lower part of the dam upon lines sufficiently large to allow of the completion of the work when required to the full height mentioned.

WATERWORKS DISTRICTS.

CARWARP DISTRICT.

During the year the old Carwarp pumping plant supplied the Soldiers' Camps and the Nursery at Red Cliffs, in addition to pumping for the District for the 1920-21 watering. The 1921-22 watering started on 30th May, and is proceeding. The new large Red Cliffs pumping plant will commence in October, and thereafter the Carwarp District will be watered therefrom, thus insuring a better and more regular supply.

WIMMERA-MALLEE WATER SUPPLY.

During the year all of the districts included in the vast Wimmera-Mallee Domestic and Stock System—covering some 9,000 square miles—were watered systematically during the winter and spring, the season being a fairly favorable one.

While the work of supply was carried out expeditiously and efficiently, the cost of operations continues to rise owing to steadily increasing charges for wages and materials.

In order to assist in meeting this increased expenditure, it will be necessary during the current year to revise the rates and the minimum payment in the first rating division in certain areas. Even with this partial relief, however, it is inevitable that a new scheme of rating by dividing the system into zones for the purpose of causing the incidence of rating to be more fairly and evenly distributed must be adopted in the near future.

The Commission intends to enforce the provisions of the Water Acts, making it compulsory for land-owners to construct tanks, it being essential for the economical watering of the huge system that each individual land-holder should do his part by providing on his holding sufficient storage to carry him through the approximate period of twelve months which must elapse between waterings. A gratifying advance has been made in this direction, but there still remains very much to be done in the northern and more remote areas, which are the most difficult to serve. ●

The various urban districts in this area have all received good supplies, little or no shortage being experienced anywhere. In order to stop avoidable waste in the various townships the Commission is, in the general interest, insisting on the installation of meters by all owners of gardens and by other large consumers. These meters may be provided by the householder, or may be hired from the Commission.

WESTERN WIMMERA, WIMMERA UNITED, AND KARKAROOC DISTRICTS.

The works in connexion with the new pumping scheme for the supply of the large area of high country, north of Dooen and Horsham, lying between the Wimmera River and the Main Western Gravitation Channel, portion of which was formerly supplied from Dooen, have been completed and are in use. The old pump at Dooen, where the lift was about 80 feet, has been superseded by a smaller efficient pumping plant on Jung Ridge, with a lift of only 30 feet from the Main Western Gravitation Channel. The new site, moreover, enables an area hitherto not commanded north and west of Jung to be supplied, in addition to carrying on the full domestic and stock services of the old plant at Dooen. To meet the new conditions a storage with a capacity of 8,000 cubic yards has been constructed near Dooen, from which water will gravitate to supply the township. To supply irrigation water to the several small orchards at Dooen a suitable oil engine has also been installed, which will be operated by the orchardists concerned as required.

Forty miles of new channels have been constructed and are in use, chiefly on either side of the Yarriambiack Creek. These were constructed to serve the various townships along the Creek and to supply rural areas previously drawing their supplies from this very wasteful source. The channels will also supply many Soldier Settlers' blocks.

The storage for the township of Rosebery, hitherto supplied from the Yarriambiack Creek, has been enlarged from 4,000 cubic yards to 8,000 cubic yards capacity, and connected by channel. A similar scheme is in progress for the township of Goyura. A new storage for the Lascelles Urban supply has been completed, increasing the capacity available for use there from 14,000 cubic yards to 84,000 cubic yards, thus forming, in addition, a valuable reserve supply for the district.

Sixty miles of surveys of channels have been completed, chiefly to supply new country, including Soldier Settlers' blocks. The channels in question will be constructed at the first favorable opportunity. The route of the Yallum Channel—an extension from the Wilhelmina Channel near Hopetoun—to supply the country in the vicinity of Yallum and Patchewollock has been located, some 15 miles of its construction being already completed. This new main channel and branches, 60 miles in all, will serve a large new area; it will run through some patches of poor sandy country which will necessitate special treatment by suitably lining it for considerable distances; while this will be very expensive, the cost will be amply justified by its great value to the remote and difficult district which it will serve.

BIRCHIP, WYCHEPROOF, SEA LAKE, AND TYRRELL DISTRICTS.

The works undertaken in these districts consisted chiefly of maintenance and renewals.

Twenty miles of new channels were constructed and are in use, besides which some 10 miles of the Tyrrell West Channel are being remodelled for use as a main channel. Sixty miles of new channels, mainly to supply new areas and Soldier Settlers' blocks in the parishes of Mittyack, Wagant, Kulwin, Manangatang, Larundel, and Winnambool, in the Tyrrell District, have been surveyed, and are ready for construction at a favorable opportunity.

An arrangement to supply the Railway Department at Ouyen with water from the urban scheme is being completed; hitherto that Department has depended on catchment supplies, which have been poor and insufficient for requirements. This supply to the Railways will necessitate the enlargement of the existing town storage and the provision of a larger pumping engine. Works will be undertaken immediately to provide an additional 250,000 cubic yards of water to be held mostly above ground; the quantity of excavation required being only 25,000 cubic yards.

PROPOSED SUPPLY TO MARNOO, SWANWATER, AND CHARLTON DISTRICTS.

As a result of the very dry season experienced during the year 1918-19, a very strong petition was presented to the Commission by residents of Marnoo, Swanwater, Gooroc, and Charlton for a domestic and stock supply by channel from the Wimmera River and Lonsdale Storage to the large stretch of country lying between the right banks of the Avon and Richardson Rivers and Charlton. In response a scheme to give the area the desired channel supply and to give an improved gravitational reticulated supply to the town of Charlton upon lines and upon terms identical with those ruling in the adjoining waterworks districts, was prepared by the Commission and presented to those concerned. To definitely ascertain the attitude of landholders interested a poll was taken with the result that of those voting approximately two-thirds were for, and one-third against, the scheme. The principal objection to the scheme came from landholders south of the St. Arnaud-Donald Railway line. The Commission is now carefully investigating the position with a view to ascertaining whether the objections of the minority could be substantially met without unduly prejudicing the interests of the majority.

LONG LAKE AND TYNTYNDER DISTRICTS.

The watering of these districts has been started for this season from the Wimmera-Mallee Gravitation System, and as ample supplies are available in the reservoirs, there will be no necessity to use the Long Lake and Nyah pumps for this purpose.

About 40 miles of new channels have been constructed to supply the parishes of Turoar, Pines and Mirkoo; in the latter parish Kooloonong, the present terminus of the railway from Swan Hill, has received a supply by channel for the first time. This will obviate the running of water trains so frequently required in past summers.

A new storage for the township and district of Piangil has been constructed with a capacity of 14,000 cubic yards. A scheme to provide a reticulated supply for the rapidly growing township of Nyah West has been submitted to the townspeople for acceptance.

On account of the short supply in the Avoca River during the year, the service for the town of Quambatook and adjacent district was supplemented with gravitation water from the Main Wycheproof Goschen Channel by the channel connexion recently made.

NAVAL BASE AND MORNINGTON PENINSULA SCHEME.

In spite of great delays caused by difficulty in securing suitable materials, steady and satisfactory progress was made during the year with the works of this most important scheme. The Beaconsfield Reservoir (200,000,000 gallons capacity), Mornington Reservoir (44,000,000 gallons capacity), and Bittern Basins (6,000,000 gallons capacity), were filled and kept replenished, and the Frankston Reservoir (180,000,000 gallons capacity) was completed and filled. The greater portions of the reticulations of Mornington, Frankston, Seaford, Carrum, Chelsea, Edithvale, and Aspendale are now completed, and during the ensuing summer a full supply should be available for practically all parts of these towns. Arrangements are also being made for the early reticulation of Berwick, Beaconsfield, Cranbourne, Somerville, and Pakenham.

Special attention is being paid to the extensions to serve Dandenong, Noble Park, and Spring Vale, in order to provide for the considerable increase of population which may be expected in the near future in these well-situated centres.

Pending the completion of the full line of the projected 2 feet diameter main from Beaconsfield to the proposed reservoir two miles north of Spring Vale, the Dandenong end of this main from the Police Paddock to Heywood's Hill, Dandenong, has been put in hand and is being laid, together with a 12-in. diameter branch, to link up with the existing reticulation at Dandenong. This will connect the large service basins (6,000,000 gallons capacity) of the existing Dandenong supply scheme effectively with the town reticulation, and give full service pending the completion of the large main previously referred to, which will bring supplies from Beaconsfield Reservoir as arranged.

It is proposed to construct a service basin with a capacity of 23,000,000 gallons and with an elevation of 270 feet R.L. at a suitable site on Heywood's Hill, about two miles north-west of Dandenong. The construction of this local storage will enable a supply main to be laid to serve existing populations at Spring Vale and Noble Park.

The Commission, in view of the probable requirements of the rapidly expanding districts lying between Dandenong, Spring Vale, and the Bay, will, in laying out its scheme of supply, provide as far as practicable for all demands which will probably arise in the near future.

WONTHAGGI DISTRICT.

Considerable improvements were carried out to the reticulation system with the object of increasing the supply to the high level portions of the town. This was accomplished by increasing the size of the main supplying this area. Further consideration has been given to the question of extending the supply to North Wonthaggi, but in view of the high cost of material, the matter is being held over for a time.

Minor repairs were effected and the usual maintenance work carried out.

NORTHERN MALLEE WATER SUPPLY.

In the area of over 1,250,000 acres which adjoins the Wimmera-Mallee Districts but above its channel levels, work has been pushed on as rapidly as practicable. The past year was a good one both from the point of view of area under wheat and the harvest. Each year shows an increased area under wheat, improved road facilities, and more tanks, bores, and channels for the supply of water for domestic and stock purposes.

TANKS.

An additional tank was completed during the year involving 2,500 cubic yards in excavation. There are now 161 tanks in the district capable of holding about 900,000 cubic yards of water, equal to 152,000,000 gallons.

BORES.

The contract for the sinking of three bores in the parishes of Worooa and Tyalla has been completed and work has commenced on a further bore in the parish of Tyalla. In the bore already put down in Tyalla which was in doubtful country, and which was sunk to a total depth of 701 feet, usable water was not obtained although the whole of the water bearing beds were pierced. Both bores in the parish of Worooa were successful. One, at allotment 39, reached a total depth of 376 feet, good water being found at 342 feet and rising to 98 feet from the surface. The other bore at the south-east corner of allotment 29 reached a total depth of 351 feet, good water being met with which rose to 65 feet from the surface. The total number of successful bores is now 92.

ROADS.

One hundred miles of roads were grubbed and cleared during the year; 540 chains were metalled with the local limestone; and 1,260 chains of roads on sandhills were scooped.

WATER SUPPLY, MALLEE SOLDIER SETTLEMENTS.

The parishes of Pines, Wakool, Mirkoo, Myall, Winnambool, Larundel, Kulwin, Margooya, Wandown, and Annuello have been mainly set apart for soldier settlement, and in these areas about 130 miles of water channels have been constructed. Further areas are being subdivided and investigation surveys are being made with a view to extending the system of channels for domestic and stock supply into the country between the parishes mentioned and the River Murray. Four survey parties have been engaged in this district in the location and pegging of channels. During the year nearly 200 miles of channels have been marked on the ground.

Owing to the lack of contractors, construction has not kept pace with the surveys, but, nevertheless, progress has been good, 40 miles of channels having been constructed, involving about 100,000 cubic yards of excavation. The shortage of contractors continues notwithstanding the liberal prices offered. During the coming year the Commission will add to its own horse teams considerably, and better progress in channel construction can therefore be anticipated in the future.

WATER SUPPLY, MILLEWA.

Investigation surveys are being made with a view of ascertaining whether a feasible scheme can be drawn up for a pump supply from the River Murray for domestic and stock purposes for lands in the county of Millewa. This agricultural area which lies between the Mildura Railway line and the South Australian boundary is approximately 1,000,000 acres in extent, including some of the finest wheat-growing lands in the Mallee country. While it will undoubtedly be costly to supply, the farm returns now being obtained from Mallee lands would appear to make the area eminently suitable for soldier settlement.

INTER-STATE CONFERENCE ON ARTESIAN WATERS.

Owing to the interference with departmental work in the various States by the War, research and compilation work in connexion with the investigations into the several Australian Artesian Basins have been held over, and the meeting in South Australia which had been arranged to be held in 1916 was indefinitely postponed. Notification has now been received that the meeting will be held during September, 1921, and the Commission has arranged to be represented.

DRAINAGE AND FLOOD PROTECTION SCHEMES.

KOO-WEE-RUP AND CARDINIA.

Substantial advance was made during the year on the drainage and flood protection works of these districts. The two land dredgers continue to give most satisfactory results. Because of their efficiency and regularity of output in comparison with the results obtained by horse teams, it was decided to procure an additional steam-driven machine in the form of a drag line excavator and place it on the No. 7 Yallock Drain. The manufacture of this machine is now well advanced, and the plant should be at work on the No. 7 Drain early in the coming year.

The No. 2 Dredger is now excavating the Main Western Drain along the course of the old McDonald's Drain, and should link up with the Deep Creek early in the coming year, thus affording flood protection to a very large area of rich land between McGregor's Drain and Toomuc Drain. New roadways have been formed to link up with all private holdings on both sides of the Main Western Boundary Drain.

The 10 Mile Drain at Cora Lynn, known as the Ararat Creek Drain, has been banked off from the Main Drain and connected up with the Northern Main Catch Drain. This work will give very substantial relief from flooding for a considerable distance upstream from the old Ararat Creek junction, as well as lessen the liability to overflow of flood-waters to the westward pending the completion of the Northern Boundary Drain, which should effectively cut off all flood trouble from the North. The Railway bridges spanning the Northern Main Catch Drain and Main Western Boundary Drain are complete, and these drains have now an uninterrupted independent passage to the sea.

Steady progress has been maintained with the Commission's horse teams on the excavation of the South-Eastern Main Catch Drain, the material from which forms the new bank along the Main Drain on that side. The completion of this bank and drain will cut off all connexion with the Main Bunyip Drain and allow of the uninterrupted passage of all local waters independently to the sea. A newly formed and graded roadway has been completed on the East side of the South-Eastern Main Catch Drain as far as Cora Lynn. This takes the place of the old roadway along the original Main Drain bank and completes a through system for road traffic from the Railway to Cora Lynn on both sides of the Main Bunyip Drain, with provision for cross traffic at the Railway, Five Mile, and Cora Lynn.

The original No 1 Dredger has done very satisfactory work in the excavation of a large drain between the Old Cardinia Drain and Toomuc Creek Drain from the Great Southern Railway line northerly to the point where these drains diverge. It is now continuing this drain along the Cardinia Creek, and will shortly enlarge the Toomuc Creek Drain. The Muddy Gates Drain is now complete from the outlet to its junction with the Clyde Drain, and a projected further extension to the north-west along the Clyde Drain, which will be taken in hand during the coming year, should cut off the overflow of the Clyde Creek waters from the area to the eastward.

In the Yallock Area the No. 6 and Scanlan's Drains are now complete, and with the advent of the steam-driven drag line excavator previously mentioned, it is expected that the coming year will see the completion of the No. 7 Drain also. By cutting off the Lang Lang overflow, which work it is proposed to also put in hand, the Yallock drainage system, which is a vital part of the works, should be ample to effectively deal with all flood waters coming from the east and north.

Good progress continues to be made with the erection of new substantial bridges over the enlarged drains, on both new and old roadways as well as occupation bridges, to meet the requirements of settlers throughout the flood-protected area. Careful attention is also being given to the erection of substantial fencing along new boundary lines, and also protective fencing to roadways.

ECHUCA.

The scheme of works for the protection from floods of property in the vicinity of High-street, Echuca, has been completed, and has already proved successful for the purpose for which it was designed.

GOULBURN LEVEES.

The residents below Loch Garry on the east bank of the Goulburn River having urged the Commission to undertake flood protection works, with the view of reducing the present overflow into the lake to what it was previous to the construction of levees, a scheme involving about £16,000 was outlined, and the interested land-holders have now on hand the matter of ascertaining whether a district can be defined to bear the annual charges involved.

MURRAY LEVEES.

The Inter-State Conference on River Murray Levee proposals, comprising representative officers of the New South Wales Water Conservation and Irrigation Commission, the Victorian Public Works Department, and the State Rivers and Water Supply Commission, have held several meetings during the year. A final report containing suggestions for the limitation of reclamation works on the river is being prepared and will be submitted early in the coming year.

RIVER EROSION AND GENERAL.

The year was not marked by any exceptional floods, and consequently few complaints were received as to erosion and flood damage.

Requests for investigations as to feasibility and advantages of forming new Flood Protection Districts in various parts of the State have been received and are being investigated. These include applications from land-owners adjoining the Barwon, Ovens, Snowy, Tambo, and other rivers.

Many minor cases were dealt with under the provisions of the *Water Act* 1915, and permission was given to the interested parties to construct approved works at their own cost.

RIVER GAUGING.

As provided by section 32 of the *Water Act 1915*, the work of gauging and recording the flows of the principal rivers and streams of the State has been continued. The returns of volumes stored in reservoirs have been made available weekly for publication. The field observations and office work are being kept up to date, and the results of all gaugings since the last publication in 1918 have been tabulated and are available to the end of 1920.

During the year a new gauging station on the Goulburn River at Shepparton has been established, the field work connected therewith has been done, and gaugings at this station will be recorded in future publications. The zero mark of the new gauge is 3 feet lower than that of the old gauge.

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 and water-courses, lakes, lagoons, swamps and marshes supervision has been maintained over all such waters. A steady demand continues for authority to divert water. In addition to renewals of 982 permits previously granted, 294 new ones were issued during the year.

The authorized diversions now in force are :—

Yearly permits	..	..	..	..	1,276
Flood permits	..	..	..	..	2
Licences	..	..	..	..	23
					1,301

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 irrigation districts supplied are Shepparton, Rodney, Deakin, Tongala, Stanhope, Rochester, Dingee, and Tragowel Plains. Surveys have been made for extension of the Waranga Western main channel from Serpentine Creek to the Loddon River.

The large concrete subway near Rochester referred to in last year's report was finished after the conclusion of the irrigation season, and a permanent gauge weir was installed in the main channel below the offtake of the Deakin-Wyuna Channel.

NEW STORAGES.

SUGARLOAF RESERVOIR.

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

The dam being constructed consists of a diaphragm wall of reinforced concrete, built from bed-rock—which in places is 75 feet below ground surface—to crest level, a wall of clayey material on the up-stream side of the diaphragm, and supporting masses of rock quarried from the adjacent hills. The diaphragm and embankment have been practically completed to a height of 80 feet above the river bed, and preparations are now being made to further increase their height. The valve tower has been built up

to a height of 132 feet above the river bed. Within the tower the lower tier of valves has been placed, and the work of fixing the valve stems and of erecting the four lines of cast-iron pipes leading to the upper tier of valves is well advanced. Early delivery is anticipated of the hydraulic lifters for valve operation, as they are now approaching completion. Concrete work in the river section of spillway is proceeding, the crest being over 30 feet above the river bed. Throughout the year between 400 and 500 men have been employed, and 230,000 cubic yards of rock fill, together with considerable quantities of other materials, have been placed in position.

A commencement will now be made with the impounding of water.

WARANGA RESERVOIR ENLARGEMENT.

All of the works of the main embankment, including the stone facing and grouting with cement concrete, are now practically completed, only a small portion of work remaining unfinished on the inlet channel and road deviations. The surface of the impounded water was raised 5 feet above the old full supply level. This is one-half of the additional height for which the enlargement provides. It is intended to further raise the surface by gradual stages during the early part of the coming season.

WIMMERA STORAGES.

The earthwork of all embankments to Taylors Lake Storage was practically completed during the year, and the remainder of the upper beaching will be placed during the ensuing spring, so that the storage can then be filled to its full capacity of 30,000 acre-feet. The main portion of the inlet channel to the storage from the Little Wimmera River has been completed, and only the short length connecting the Little Wimmera River and the Main Wimmera River remains to be carried out. Some two-thirds of this storage was available and was filled recently by means of the Burnt Creek Inlet Channel. Already the storage is of great use in expediting the present district watering, as the outlet channel connecting the Main Central Channel near Murtoa enables supply to be kept up to the Main Western Channel without drawing upon Lonsdale reserve.

The Commission is steadily developing its policy of converting into storages the other Drung Drung Lakes adjacent to Taylors Lake, viz., Pine Lake, Green Lake, and Dock Lake. Pine Lake is the most valuable of these depressions, and its natural holding capacity of 24,000 acre-feet can be increased to 62,000 acre-feet by banking along its lower margins at a reasonable cost. As the average depth of this 62,000 acre-feet will be some 30 feet, its value as a strong general district reserve will be undoubted.

Last winter sufficient water was run from Burnt Creek Channel into Pine Lake depression to fill it to a depth of some 17 feet. This water was held during the succeeding summer with only usual evaporation losses, thus satisfactorily establishing the holding nature of the depression. It is expected that a considerable additional volume can be run into the depression from Burnt Creek Channel during the ensuing winter and spring, and as the Main Wimmera-Taylors Lake Inlet Channel is now being extended so as to connect with Pine Lake, this depression should shortly be fully commanded from both the eastern and western sources of supply.

The Wimmera Storages have now an actual capacity of over 118,000 acre-feet as against 69,000 acre-feet a few years ago, and with the completion of the storage works in course of construction, the capacity will be raised to no less than 200,000 acre feet.

TOTAL STORAGES IN STATE.

In 1902 the total capacity of storages in the State was 172,000 acre-feet. The present capacity is about 742,000 acre-feet, and when the Sugarloaf, Wimmera, and Maffra Storages are complete the total capacity will approach 1,200,000 acre-feet. The Hume Reservoir, in course of construction, will also contain fully

1,000,000 acre-feet, half of which can, subject to the provisions of the River Murray Agreement, be credited to the State of Victoria. The following statement sets out the capacities of the various Storages in the State :—

EXISTING STORAGES.

							Capacities in Acre-feet.	
<i>Goulburn System—</i>								
Goulburn Weir	..	..	..	..	..	..	20,700	
Waranga	..	..	..	..	..	..	333,400	
Sugarloaf (part of 300,000 acre-feet)	..	..	..	..	..	..	20,000	
								374,100
<i>Loddon-Murray System—</i>								
Laanecoorie	..	..	..	..	..	..	14,000	
Kerang North-west Lakes	..	..	..	..	..	..	88,500	
Kow Swamp	..	..	..	..	..	..	40,860	
Lake Boga	..	..	..	..	..	..	28,000	
Long Lake	..	..	..	..	..	..	3,820	
								175,180
<i>Wimmera Mallee System—</i>								
Lake Lonsdale	..	..	..	..	..	..	45,480	
Wartook	..	..	..	..	..	..	23,800	
Fyans Lake	..	..	..	..	..	..	17,100	
Taylor's Lake (part of 30,000 acre-feet)	..	..	..	..	..	..	20,000	
Lower Wimmera Weirs	..	..	..	..	..	..	2,870	
Batyo Catyo (Avon Regulator)	..	..	..	..	..	..	5,000	
Lake Whitton	..	..	..	..	..	..	1,300	
Earthen Storages, Township Reservoirs, and Mallee Tanks	..	..	..	..	..	..	2,510	
								118,060
<i>Coliban System—</i>								
Upper Coliban	..	..	..	..	..	..	22,500	
Malmsbury	..	..	..	..	..	..	12,300	
Subsidiary Reservoirs	..	..	..	..	..	..	5,070	
								39,870
<i>Werribee System—</i>								
Pykes Creek	..	..	..	..	..	..	14,850	
Melton	..	..	..	..	..	..	17,000	
								31,850
<i>Miscellaneous—</i>								
Wonthaggi	..	..	..	..	..	..	1,550	
Sundry Township Reservoirs	..	..	..	..	..	..	1,450	
								3,000
Total capacity of existing Storages								742,060

ADDITIONAL STORAGE BEING PROVIDED BY WORKS IN COURSE OF CONSTRUCTION.

<i>Goulburn System—</i>								
Sugarloaf Reservoir (balance of 300,000 acre-feet)	..	..	..	..	..	..	280,000
<i>Wimmera-Mallee System—</i>								
Taylor's Lake Reservoir (balance of 30,000 acre-feet)	..	..	..	..	..	..	10,000
Pine Lake	..	..	..	..	..	..	62,000
Green Lake	..	..	..	..	..	..	10,000
								82,000
<i>Maffra System—</i>								
Glenmaggie Reservoir (First stage)	..	..	..	..	..	..	60,000
<i>Murray System—</i>								
Hume Reservoir, at Junction with Mitta River, half share	..	..	..	..	..	..	500,000
Total capacity of Storages, when works in hand are completed								1,664,060

UTILIZATION OF NEW STORAGES.

As the Waranga Reservoir Enlargement is at the point of completion and the new Sugarloaf Reservoir is advanced sufficiently to permit a useful volume to be impounded, the Commission during the year has continued its examination of new lands which could be with advantage served from these storages.

The area at present governed and supplied with water for irrigation by the existing Goulburn Irrigation System is some 400,000 acres. In the area thus supplied water rights amounting to 160,000 acre-feet had been allotted, partly on the basis of an acre-foot of water to each irrigable acre, and partly on the basis of an acre-foot of water for every 4 or 5 acres of irrigable land. With the new storages now being made available, additional water rights amounting to 200,000 acre-feet could be provided over an aggregate area of 500,000 acres, thus doubling the area and extent of water rights previously supplied from this system. The new allocation will be used in the first place to fully strengthen the supplies to existing districts, and after that supplies will be provided either on the one to one basis or the part system to an aggregate area of approximately 500,000 acres extending from Katandra on the east to the Avoca River on the west, where the Goulburn System could at some later date be with advantage connected with the Eastern Branch of the extensive Wimmera-Mallee Domestic and Stock Scheme.

In connexion with the allocation now proposed, it is felt also there should be an adjustment of charges for water supplied for irrigation as between the districts where the land-owner is required to take a full water right and those other districts where the land-owner is only required to take a small water right, but where the cost of supply is heavier. This adjustment is, of course, apart from the general increase that will have to be made in the charge for water supplied under the Goulburn System, which, notwithstanding the great increase in cost of labour and material and higher rates of interest, have not been altered since their inception many years ago.

This new allocation is, made on the basis of the Sugarloaf Reservoir, as is now proposed, only providing 300,000 acre-feet; if, however, the capacity of the reservoir is increased by stages so as to ultimately reach its possible maximum of say 800,000 to 900,000 acre-feet, not only could additional allocations be from time to time submitted, but those now proposed could, if experience justified, be so altered as to increase the supplies in those new districts where full and good use had been made of the water provided.

A full outline of the allocation will be submitted in a separate statement at a later date.

RIVER MURRAY WATERS.

GENERAL OUTLINE.

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

Although at a Premiers' Conference in 1920 it was agreed that the River Murray Waters Acts be amended to extend the powers of construction by the River Murray Commission, the necessary amending legislation has not yet been passed by all of the interested Parliaments, and the State of Victoria has suggested that the present arrangements should be continued pending further consideration.

The industrial dispute referred to in last report has now been satisfactorily settled, and work has been in progress since March last.

SURVEYS AND BORING.

The field work of the base survey between Echuca and Wentworth was completed in June, 1920.

As suggested by the River Murray Commission during its visit of inspection in March, 1920, some bores were put down at the site for a weir and lock between Bruce Bend and Mildura, known as Gol Gol, but though a depth of 50 feet was reached there was no indication of firm foundation. Boring operations were resumed at a site where surface indications appeared promising near the western end of the Mildura Town Common, but so far its results have been no better than at Gol Gol.

HUME RESERVOIR.

The embankment on the flats on the Victorian side of the river has been commenced by building portion of the upstream and downstream toes so as to form an enclosure, in which progress is being made with the excavation for the core wall and the stripping of the seat of the embankment.

The main approach roads have been formed and gravelled where necessary, and the railway from Ebden to the works has been commenced. Some important land resumption cases embracing an area of 1,450 acres required for the works have been settled.

The plant now assembled on the works includes five locomotive cranes, grab and bottom dump buckets, concrete mixers, belt conveyors, dump waggons, locomotives, and workshop machinery. The buildings erected on the camp site, besides offices, comprise residences for the Engineer-in-Charge and the married members of the staff, quarters for single officers and foremen, barracks for the accommodation of some 200 workmen, cement shed, pumping station, chaff house, stables, and other buildings.

The number of men engaged on the Victorian section at end of June, 1921, was 180.

TORRUMBARRY WEIR AND LOCK.

During twelve months ended March, 1921, the foundation for the lock chamber which had been taken out to full depth during the previous year was under a loading test of 4.3 tons per square foot. The permeability of the formation also was tested by the river rising to high levels outside the embankment enclosing the site. In respect to both bearing power and watertightness, the experience was very satisfactory. The under drainage works and concrete of the lock chamber are now being proceeded with in accordance with plans submitted by this Commission and approved by the River Murray Commission.

The 2-ft. gauge tramway, about 6 miles long, which connects the works with the Victorian Railways, is now in full operation. About 3,000 cubic yards of gravel and much other material have been transported over it, the hauling being by light steam locomotives. The erection of cableway towers and concrete bins is well advanced.

Contracts have been prepared for two units of the movable trestlework proposed for closing the navigation pass, and for the timber work for lock gates.

At the end of June, 1921, the number of men employed was 100.

PLAN SHOWING AREAS COMMANDABLE FROM TORRUMBARRY WEIR.

In view of the wide interest taken in the Torrumbarry Weir and Lock a general plan of the lands commandable therefrom is published with this Report. The gross area is approximately 600,000 acres. While every part might not be suitable for irrigation, it is beyond doubt that very considerable extensions could be made of the present irrigation, and there would be the very great advantage that supply by gravitation instead of pumping at such supply points as Cohuna, Gannawarra, Koondrook, and Swan Hill would alone permit of an average annual saving of some £13,000 in pumping expenses.

WORKS CONTROLLED BY OTHER AUTHORITIES.

SEWERAGE IN COUNTRY DISTRICTS.

The Bendigo Sewerage Authority has been engaged on detail surveys. Satisfactory arrangements have been made by the Authority for an outside loan of £120,000, and a commencement is expected to be made with the construction of the main outfall sewer at an early date.

The Ballarat Sewerage Authority is engaged on preliminary surveys, investigations, and preparation of detail plans, for which a temporary loan of £6,000 has been arranged.

Colac Waterworks Trust is engaged on preliminary surveys with the object of making application for the construction of sewerage works.

Special drainage areas have been constituted under the Geelong Waterworks and Sewerage Act. Sewerage works are to be constructed for the effectual sewerage and drainage of these areas and for the purpose of preventing or minimizing the pollution of the Barwon River.

COUNTRY WATER SUPPLIES.

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

The Mildura Urban Water Trust District was constituted during the year, the new district being formerly the Urban Section of the First Mildura Irrigation Trust.

Regulators at the junction of Mosquito Creek and Avoca River, in the district of the Avoca Water Trust were constructed.

The Colac Trust carried out extensions to the reticulation, and additional meters were installed. Works of erecting a windmill and tanks, and the laying of mains were carried out by the Colbinabbin Trust. A new concrete weir and reinforced concrete siphons for the Heathcote water supply were satisfactorily carried out. The water supply scheme for the township of Hepburn was brought to completion during the year. The Kilmore Waterworks Trust constructed a new storage basin to provide additional supply for the summer months. Progress was made with the additions to the Maryborough reservoir, notwithstanding the continuance of the difficulty in obtaining cement. Renewals and improvements to the pipe main were also effected.

The weir, race, and piping for the improvement of the water supply to Marysville were completed. A concrete gravitation main from the Goulburn River to the pump well is under construction by the Shepparton Urban Waterworks Trust. The scheme of water supply for the township of Rosedale is nearing completion, and water should be available to residents at an early date. Improvements to the service basin are being undertaken at Seymour, and tenders have been let for a new concrete weir on Falls Creek.

At Traralgon a new concrete weir was constructed across the Tyers River, and 2 miles of the old 7-inch supply main has been replaced by a 10-inch reinforced concrete pipe. The new pump and rising main at Swan Hill were completed. Improvements were effected to the Tongala water supply by the addition of a windmill and extensions to pipe mains. Works of enlarging and cleaning out of existing drains were carried out by the Yatchaw Trust. The embankment of the Creswick storage reservoir, which was breached by flood waters, was renewed.

The installation of meters was carried out extensively by the Stawell Borough Council, and repairs effected to the existing fluming. Pipe extensions and sundry works were carried out by Local Authorities at Ararat, Donald, Kyabram, Orbost, Rochester, Romsey, Rutherglen, Warragul, Woodend, and Yarram.

Proposals were investigated for improving the water supplies to Clunes, Hamilton, Healesville, Kerang, Lawloit, Leongatha, Mansfield, Maffra, Murchison, Nagambie, Nhill, St. Arnaud, Tatura, and Wodonga.

New schemes of water supply are under consideration for the following townships:—Apollo Bay, Bruthen, Casterton, Coleraine, Corryong, Fern Tree Gully, Lakes Entrance, Portland, Toora, Trafalgar, and Yarragon.

GENERAL.

LANDS UNDER CLOSER SETTLEMENT IN IRRIGATION DISTRICTS.

The policy of giving preference to the settlement of discharged soldiers, in the Closer Settlement operations of the Commission, was strictly adhered to during the past year. The strong demand for irrigation blocks experienced in the previous year was more than maintained; but the estates specially purchased for soldiers, together with the balance of the lands held in reserve for them, enabled the Commission to cope with the increased demand. During the year, 682 holdings in Irrigated Closer Settlements were allotted, 636 to discharged soldiers, and the remaining 46—being not quite up to the standard adopted for soldier settlement—to specially selected experienced agriculturists who expect to be able to work them to advantage. The total area acquired by the Commission for subdivision is about 168,000 acres, of which 131,000 acres are now occupied; while an additional area of 17,500 acres, within Irrigation Districts but outside the Closer Settlement areas, has been purchased and settled under section 20 of the *Closer Settlement Act* 1915. With the exception of the Red Cliffs Estate, purchased last year, all the estates acquired by the Commission have been wholly subdivided for settlers. Two subdivisions at Red Cliffs have been made, comprising 7,500 acres of the irrigable portion of the estate, and some 2,000 acres of the lands unsuitable for irrigation have been disposed of in large areas. The balance of the high land will be sold in the same way.

Since the work of Repatriation was commenced, the Commission has placed 1,700 soldiers on irrigable farms. Of this total, some 630 have settled in the districts served by the Goulburn Irrigation System, 870 in the newer settlements on the Murray frontage, and the others mainly at Werribee and Maffra. In the Goulburn areas there are 230 on the Stanhope Estate of 21,000 acres (now wholly subdivided), and 135 at Tongala, on lands mainly devoted to dairying; 106 at Shepparton—principally orchardists—106 in the Rodney District, and over 50 in the Rochester District, occupied in mixed farming. In the Murray Districts there are 62 in the Districts administered from Cohuna and Kerang centres, and 120 at Swan Hill, engaged in fruit culture and dairying, while 226 have chosen fruit blocks on the Murray frontage settlements at Nyah and Merbein, and 446 at the new Red Cliffs Settlement. The other important Settlements are at Werribee, where 71 are settled on dairying blocks, and at Maffra, where 43 are engaged in beet growing and dairying. About 300 of the soldier settlers in these Closer Settlement Areas and in Irrigation Districts generally acquired their farms under the provisions of section 20 of the *Closer Settlement Act* 1915.

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

Closer Settlement Estates.	Area of Lands purchased by the State in Acres.	Properties Subdivided.						
		Area in Acres.	Number.	Number of Families thereon when Purchased.	Subdivided into—		Number of Closer Settlement Blocks now occupied.	Present Increase in Number of Families.
					Number of Closer Settlement Blocks.	Average Area in Acres.		
Shepparton	10,700	10,700	26	24	325	31	325	301
Tatura	100	100	1	..	4	24	4	4
Stanhope	20,900	20,900	6	12	309	62	291	279
Kyabram	3,000	3,000	7	10	56	52	53	43
Tongala	16,300	16,300	33	31	255	61	255	224
Cornelia Creek	2,500	2,500	Pt. 1	..	14	176	13	13
Koyuga	4,200	4,200						
Nanneella	9,000	9,000	17	7	105	83	104	97
Echuca	3,200	3,200	6	4	27	117	26	22
Bamawm	13,400	13,400	28	21	178	73	178	157
Dingee	500	500	3	1	15	30	15	14
Cohuna	11,800	11,800	28	9	131	87	118	109
Koondrook	3,400	3,400	5	4	34	99	34	30
Swan Hill	9,900	9,900	26	15	226	42	226	211
Werribee	8,900	8,900	Pt. 1	11	198	41	179	168
Maffra	4,900	4,900						
Nyah	3,800	3,800	8	1	208	17	200	199
Merbein (Crown Lands)	8,300	8,300	..	..	384	21	384	384
Red Cliffs	33,000	9,500	1	3	446	15	446	443
	167,800	144,300	204	157	3,075	42	2,945	2,788
Properties under Sec. 20, C.S. Act 1915, outside above Estates	17,500	..	..	..	..	..	194	..
	185,300							

LANDS AVAILABLE FOR CLOSER SETTLEMENT IN IRRIGATION DISTRICTS.

With the exception of a few blocks on various estates, now available and ready for occupation, the lands in the earlier closer settlements which had been held in reserve for soldiers have been disposed of. The Commission has on hand, however, some 3,000 acres at Maffra temporarily occupied under lease to enable the soldier settlers there to make a living under the existing dry-farming conditions. This land will be made available on completion of the irrigation scheme. With a view to meeting the present demand, it is proposed to make the third subdivision of the Red Cliffs Estate available for application early next year. The balance of the irrigable portion of the estate will be made available as required.

PROGRESS OF IRRIGATED CLOSER SETTLED DISTRICTS.

The satisfactory progress of settlers in the various Irrigation Districts, noted in last Annual Report, has been fully maintained during the year under review. The steady work carried out on the various holdings, while resulting in very many cases in gratifying financial returns to the settlers, has considerably improved the security of the State.

Taking two typical Irrigation Districts, Rochester and Shepparton, as an example, it is found that the value of permanent improvements effected by settlers have doubled in three (3) years; and this, of course, is altogether apart from increases in the value of herds and implements belonging to settlers, which, in such districts as Cohuna, Swan Hill, and Tongala, have increased enormously. In many cases settlers are now owning and rearing specially-selected herds, and many prize-takers come from the Irrigation Districts.

Production is increasing most satisfactorily in all the Irrigation Districts. At Shepparton two years ago 101,000 dozen cans of fruit were processed in the season at the co-operative cannery, while last year the pack was 214,000 dozen cans. The prospect of disposing of this large stock seemed remote, as London buyers were disinclined to purchase Australian fruits on any account. The Government appointed a special representative to visit Great Britain, and the Shepparton Company forwarded consignments of fruits, to show all oversea buyers the greatly improved methods of packing and grading. The result has been that gradually the confidence of London buyers has been won back, and the future outlook is now more promising than has been the case for the past two years. To cope with the great increase in fruit production in Irrigation Districts it will be necessary to consider further schemes for processing fruit, with a view to its export, and co-operative companies have been, or are being, formed for this purpose at Ardmona, Rochester, and Tongala. At Kyabram the management of the Butter Factory has now been formed into a co-operative company, in which a number of soldier settlers are interested as shareholders. The output of this factory—casein, cheese, and butter—has yielded returns that have induced the company to extend its sphere of operations, and it has recently established branches at the irrigation centres of Girgarre, Koyuga, and Stanhope.

The Swan Hill and Nyah Settlements continue to show very marked progress, and are generally very prosperous. The soldiers on the Nyah South Settlement secured an extremely good strike of vines, and already the area presents an attractive appearance. The expansion of the business of the Nyah Packing Company has led to the establishment of a branch at Woorinen, which will greatly facilitate the disposal of the products of the orchards.

Merbein Centre continues to prosper; the soldier settlers at both Merbein and Red Cliffs are making good. The action of the Commission in establishing a nursery, for the propagation of vines, at the same time as the holdings were being cleared, has been much appreciated.

The dairying industry continues to grow at Werribee, and a satisfactory commencement has been made in this respect by the Maffra settlers, pending the intense culture that will be practicable when the irrigation works, now being pushed on, are in operation.

The Commission continues its practice of obtaining quarterly reports as to the progress of each soldier settler, and half-yearly reports as to other settlers, and these have been generally very satisfactory.

ADMINISTRATION.

EXTENSIONS AND EXCISIONS.

An extension of the Merbein Irrigation Area was made during the year by the addition of 730 acres, comprising the second subdivision of the Birdwood (mid-area) Soldier Settlement. The balance of this subdivision, about 480 acres, will also be included during the ensuing year.

The Nyah Irrigation Area was extended by the addition of an area of 540 acres formerly in Tyntynder Waterworks District and known as the Nyah South Soldier Settlement; a further extension of the district is about to be made by adding thereto the Nyah North Soldier Settlement, comprising about 300 acres, mainly Crown lands.

The Shepparton Irrigation and Water Supply District was extended by the addition of 2,450 acres, including 1,500 acres recently purchased and subdivided for the settlement of returned soldiers.

The Stanhope Irrigation and Water Supply District was extended to 20,060 acres by including therein some 9,400 acres, being the Gargarre, Robgill, and Stanhope portions of the Stanhope Estate, which was purchased some time ago, but was held for, and is now settled by, returned soldiers. These lands formed part of Deakin District, and the consequent excision therefrom has been made.

Tongala Irrigation and Water Supply District was extended by including 830 acres of land purchased and subdivided for soldiers, and a further extension of the same extent will be carried out this coming year. All the lands were previously in Deakin District.

The Swan Hill Irrigation and Water Supply District has been extended by including therein 1,090 acres of land subdivided for soldier settlement, and a further area of 590 acres also allotted to soldiers will shortly be added.

The Werribee Irrigation and Water Supply District has been extended by including 200 acres generously presented to the State by Mr. George Chirnside for soldier settlement.

Karkaroc Waterworks District has been extended by adding 3,600 acres of newly settled Mallee lands. Long Lake Waterworks District has been extended by the addition of 3,900 acres excised from the Avoca Water Trust District.

NEW AND PROPOSED DISTRICTS.

Urban Districts have been proclaimed in respect of the townships of Carrum, Frankston, and Mornington, in Mornington Peninsula, and the township of Merbein, adjoining Mildura, all of which are now receiving supplies by pipe reticulation.

At the request of land-owners arrangements are being made for taking over the distribution of water at the Mystic Park private irrigation area of some 17,500 acres, and for its constitution as an Irrigation and Water Supply District.

The Commission is also considering, at the request of land-owners, the taking over of the private irrigation scheme at Tresco, covering about 3,500 acres.

STAFF.

Mr. C. H. Kernot, Executive Engineer for Sugarloaf Reservoir Works, on the Upper Goulburn River, and the Hume Reservoir Works on the Upper Murray, resigned to accept service with the Electricity Commissioners. The position at Sugarloaf was filled by the transfer of Mr. C. P. F. Wright from the position of District Engineer for Kerang Centre, which latter position was filled by the promotion of Mr. C. R. Thompson, Assistant Engineer. Mr. E. D. Shaw, hitherto Executive Engineer for Torrumbarry Weir and Lock, was appointed to the position of Executive Engineer for Hume Reservoir Works, with general supervision over the Torrumbarry Works, Mr. R. G. Knight, an officer of the Commission, being appointed Executive Engineer for Torrumbarry Weir and Lock Works.

Mr. W. F. Nevill was transferred from the position of Resident Engineer, Red Cliffs, to that of Engineer-in-Charge of Waterworks Trusts, his position at Red Cliffs being filled by the transfer of Mr. C. M. B. Neylon, hitherto Engineer-in-Charge of Waterworks Trusts. Mr. W. G. Sides, of the Engineering Branch at Head Office, was appointed District Engineer at Bendigo in charge of the Coliban system of works. Mr. L. T. Keep was transferred from the position of Surveyor-in-Charge of Field Work to that of Assistant Engineer for River Gauging. Messrs. T. J. Nihill, J. E. Jones, and W. B. Thomas were appointed District Secretaries and Collectors for the Mornington, Frankston, and Carrum Urban Districts respectively, and Mr. J. J. Ahern was appointed District Secretary and Collector for Lower Koo-wee-rup Flood Protection District.

FIRE INSURANCE.

The Commission has continued its policy of carrying the fire risks on its own buildings. Premiums thus saved now amount to £3,020, from which, however, a sum of £450 must be deducted for water bailiff's quarters at Gannawarra destroyed by fire during the year. This is the first loss that has occurred since the date of inauguration—July, 1909.

RECEIPTS, DISBURSEMENTS, AND ESTIMATES.

Last year's receipts represent a record collection, being £284,064, which is £90,000 over the amount collected some seven years ago. The revenue is again evenly distributed between Irrigation Districts and Waterworks Districts.

The net disbursements from annual votes amounted to £155,273, which is only some £5,435 over the previous twelve months. While this increase is small, it is undoubted that the great advances not only in cost of material and labour, but also in rates of interest on capital used in water supply works, are such that, as forecasted in previous reports, some increases in water charges and rates must be made. The expenditure of loan moneys amounted to £804,839, details of which are set out in this Report.

Receipts in the twenty Irrigation and Water Supply Districts show an improvement of £7,838 over those of the previous year, and represent also the highest collection yet made. After debiting the districts with their full proportion of interest on the cost of supply works chargeable, and including all working expenses, the deficit in last year's operations was only £16,823. It is undoubted, however, that unless water charges are advanced, this annually recurring deficit must materially increase, as the item for interest alone, owing to high loan conversion rates, will, from this on, require the provision of a large additional sum. It is not felt, however, that the increases in water charges need be of such a character as to in any way embarrass irrigators.

In the Coliban Districts the deficit for the year is £26,985, which is somewhat higher than last year, the increase being mainly due to extra cost of labour and material and to special expenditure on pipe cleaning and works to improve the supply. As pointed out in last Report, the rating in the Coliban District is specially limited by the Water Acts, and any great reduction in this regular annually recurring deficit can only be brought about by the general advance of the whole district.

The Commission, in addition to the Coliban Districts, directly controls forty-eight Waterworks Districts. Last year the expenditure—including interest—exceeded the revenue by £2,750, making the revenue deficit of the districts £36,722. As in the case of the Irrigation Districts, the great advance in the cost of material and labour, combined with the much higher rate of interest now chargeable owing to loan conversions, will require some commensurate increase in the water rates now levied.

The Estimate for disbursements during the coming year is £183,500, an advance of £20,000 over the previous year. The increase is mainly necessary to meet additional expenditure required for establishing new districts, but from which a satisfactory revenue return will be later obtained. The Estimate of receipts, on the other hand, has this year been raised to £300,000, as against last year's estimate of £265,000.

The Loan Liability of the State for Works of Water Supply at the close of the year was £10,960,265. Of this total, £1,243,522 is for Free Headworks; £1,263,228 was written-off; £147,046 was advanced to some early-formed Local Authorities; £44,784 has not been expended; £361,046 has been paid off by Authorities; and £1,629,991 is represented by Uncompleted Works which are not yet revenue producing, and are set out separately in the Statement of Loan Liability in this Report. The balance, £6,270,648, is the sum in respect of which those benefited by the various works are this year liable for payment of interest.

The present Interest Charges on loans amount to £451,105. Of this amount £114,852 is not chargeable to any districts, being debitable against Free Headworks, Amounts Written Off, and Unexpended Balances, while £69,371, although recorded for future charging, is not at present chargeable, being interest on cost of Uncompleted Works which are not yet revenue producing, leaving £266,882 as debitable this year against the Commission and other Authorities. This latter amount is £54,579 in excess of the amount debitable against the Commission and other Authorities last year, and of this approximately £30,000 is accounted for by the higher rate of interest that is now payable on recently converted loans. The amount available last year from the Revenues of the Commission and other Authorities to meet such interest (after providing a sum of £23,655 for non-revenue producing works and services not chargeable to any district) was £203,363, as set out in the statement on page 37.

RECEIPTS AND DISBURSEMENTS.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1921.

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	38,244	14,309	115	14,284	23,960	...
Other State Works—						
Broken River	7	303	...	303	...	296
Goulburn	320	2,499	...	2,499	...	2,179
Kow Swamp	245	2,075	...	2,075	...	1,830
Lake Lonsdale	6	447	...	447	...	441
Loddon River	6	389	...	389	...	383
North-West Lakes	217	497	...	497	...	280
Irrigation Districts	135,311	78,667	6,220	72,447	62,864	...
Waterworks Districts	76,426	33,020	488	32,532	43,894	...
Urban Districts and Divisions	20,170	7,964	...	7,964	12,206	...
Flood Protection Districts... ..	1,072	172	...	172	900	...
Licences, Diversions, Miscellaneous	12,040	3,418	...	3,418	8,622	...
	284,064	143,850	6,823	137,027	152,446	5,409
<i>Not Revenue Producing—</i>						
River Gauging, Surveys and Re- ports, New Projects ... ..	...	4,203	...	4,203	...	4,203
Waterworks Trusts						
Boring for Water, Road	} Cost of Administration	8,453	...	8,453	...	8,453
Clearing, Mallee and Land Settlement						
Loan Works ... ..	...	5,590	...	5,590	...	5,590
Totals	284,064	162,096	6,823	155,273	152,446	23,655
					£2,000	
					£126,791	

COLIBAN SYSTEM.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1921, and of Interest charged at the rate of 4 per cent. on Capital Debts.

Districts.	Capital Debit at 30th June, 1921.	Receipts.	Disbursements and Interest Charged.			Excess.	
			Disbursements.	Interest.	Total.	Receipts over Disbursements and Interest.	Disbursements and Interest over Receipts.
	£	£	£	£	£	£	£
Coliban	1,257,427	37,128	13,210	50,297	63,507	...	26,379
Axe Creek	1,750	244	171	70	241	3	...
Harcourt	14,445	872	903	578	1,481	...	609
Totals	1,273,622	38,244	14,284	50,945	65,229	3	26,988

FLOOD PROTECTION DISTRICTS.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1921; and of Interest charged at the rate of 4 per cent. on Capital Debts; and also of Depreciation and Redemption charged:—

District.	1920-21.			Total at 30th June, 1921.
	Rate.	Interest and Miscellaneous.	Total.	
1. Echuca	119	..	119	119
2. Lower Koo-wee-rup..	953	..	953	953
	1,072	..	1,072	1,072

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District.	DISBURSEMENTS.			INTEREST CHARGED.		(A) DEPRE- CIATION. (B) RE- DEMP- TION.	Total at 30th June, 1921.
	1920-21.			Total at 30th June, 1921.	1st July, 1920, to 30th June, 1921.		
	Repairs and Mainte- nance.	Mortgage- ment.	Total.				
	£	£	£	£	£	£	£
1. Echuca	30	30	60	60	35	35	95
2. Lower Koo-wee-rup..	15	97	112	112	840	840	952
Totals	45	127	172	172	875	875	1,047

IRRIGATION AND WATER SUPPLY DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1921; 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, 1921. (Free Head-works excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1920.	1920-21.					Grand Total at 30th June, 1921.
		Rates.	Compulsory Irrigation Charge.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£	£
1. Bacchus Marsh	36,342	597	3,320	437	454	4,808	41,150
2. Boort	30,362	1,537	..	1,066	15	2,618	32,980
3. Campaspe	9,084	617	..	31	1	649	9,733
4. Cohuna	87,696	1,660	6,441	812	615	9,528	97,224
5. Deakin	55,483	4,156	..	693	42	4,891	60,374
6. Dingee	7,537	175	1,577	434	45	2,231	9,768
7. Dry Lake	434	..	..	..	29	29	463
8. Gannawarra	64,559	1,039	4,714	1,214	439	7,406	71,965
9. Kerang	60,009	2,109	..	2,281	4	4,394	64,403
10. Koondrook	55,835	1,118	3,914	840	446	6,318	62,153
11. Merbein	84,095	288	13,970	220	171	14,649	98,744
12. Nyah	23,982	113	4,321	34	92	4,560	28,542
13. Rochester	71,802	2,078	7,740	2,300	674	12,792	84,594
14. Rodney	239,379	7,198	12,588	3,821	371	23,978	263,357
15. Shepparton	35,596	862	4,382	283	562	6,089	41,685
16. Stanhope	1,997	573	1,486	618	412	3,089	5,086
17. Swan Hill	49,316	890	3,166	992	464	5,512	54,828
18. Tongala	30,481	822	4,263	864	537	6,486	36,967
19. Tragowel Plains	101,261	1,755	7,537	2,149	110	11,551	112,812
20. Werribee	8,949	355	2,098	816	464	3,733	12,682
	1,054,199	27,942	81,517	19,905	5,947	135,311	1,189,510

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District.	DISBURSEMENTS.					INTEREST CHARGED.			(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1921.	
	1st May, 1906, to 30th June, 1920.	1920-21.				Total at 30th June, 1921.	1st May, 1906, to 30th June, 1920.	1st July, 1920, to 30th June, 1921.			Total at 30th June, 1921.
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.						
	£	£	£	£	£	£	£	£	£	£	
1. Bacchus Marsh	8,537	266	935	144	1,345	9,882	30,962	4,265	35,227	..	45,109
2. Boort	17,201	244	858	106	1,208	18,409	10,779	895	11,674	(B) 700	30,783
3. Campaspe	5,261	500	248	141	889	6,150	5,605	424	6,029	..	12,179
4. Cohuna	64,285	1,019	6,419	390	7,828	72,113	34,318	3,612	37,930	(A) 9,010	119,053
5. Deakin	23,409	692	1,141	376	2,209	25,618	35,844	2,967	38,811	..	64,429
6. Dingee	4,038	263	499	65	827	4,865	7,158	1,128	8,286	..	13,151
7. Dry Lake	1	..	..	..	..	1	433	29	462	..	463
8. Gannawarra	41,404	906	4,881	350	6,137	47,541	23,007	2,089	25,096	(A) 5,694	78,331
9. Kerang	30,749	1,038	1,081	373	2,492	33,241	24,863	1,861	26,724	(A) 450 (B) 1,800	62,215
10. Koondrook	37,937	796	3,504	298	4,598	42,535	32,115	3,096	35,211	(A) 4,501	82,247
11. Merbein	61,241	101	8,523	526	9,153	70,394	26,751	5,675	32,426	(A) 9,928	112,751
12. Nyah	21,789	628	2,812	326	3,766	25,555	9,710	2,169	11,879	(A) 3,802	41,236
13. Rochester	38,750	1,819	3,512	660	5,991	44,741	64,215	8,201	72,416	..	117,157
14. Rodney	101,454	1,818	6,973	1,130	9,921	111,375	46,872	14,038	60,910	..	272,285
15. Shepparton	18,514	1,612	1,165	373	3,150	21,664	32,463	5,355	37,818	..	59,482
16. Stanhope	2,048	796	657	180	1,633	3,681	3,370	2,360	5,730	..	9,411
17. Swan Hill	35,264	1,493	1,672	299	3,464	38,728	14,902	2,214	17,116	(A) 1,768	60,612
18. Tongala	18,682	1,092	991	277	2,360	21,042	38,926	4,994	43,920	..	61,962
19. Tragowel Plains	46,326	1,257	2,893	205	4,355	50,681	60,306	6,656	66,962	..	117,643
20. Werribee	2,228	327	644	150	1,121	3,349	8,530	3,756	12,286	..	15,635
Totals	579,118	16,670	49,408	6,369	72,447	651,565	611,132	75,784	686,916	40,653	1,379,134

WATERWORKS DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1921; 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, 1921. (Free Head-works excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1920.	1920-21.				Grand Total at 30th June, 1921.
		Rates.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
1. Birchip	153,396	3,266	39	16	3,321	174,389
2. Sea Lake		6,406	97	86	6,589	
3. Tyrrell		5,745	8	244	5,997	
4. Wycheproof		4,996	71	19	5,086	
5. Carwarp	863	1,015	..	44	1,059	1,922
6. Karkaroc	60,953	7,743	..	78	7,821	68,774
7. Kerang North-West Lakes	1,160	183	13	1	197	1,357
8. Long Lake	66,673	6,073	54	62	6,189	72,862
9. Naval Base and Mornington Peninsula	2,690	..	4,000	..	4,000	6,690
10. Tyntynder	24,809	4,939	30	203	5,172	29,981
11. Walpeup East	2,621	649	..	31	680	3,301
12. Walpeup West	5,840	1,726	..	98	1,824	7,664
13. Werribee	808	480	1	1	482	1,290
14. Western Wimmera	123,028	11,237	1,236	41	12,514	135,542
15. Wimmera United	150,662	14,712	363	149	15,224	165,886
16. Yelta	519	267	..	4	271	790
	594,022	69,437	5,912	1,077	76,426	670,448

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District.	DISBURSEMENTS.						INTEREST CHARGED.				Grand Total at 30th June, 1921.
	1st May, 1906, to 30th June, 1920.	1920-21.				Total at 30th June, 1921.	1st May, 1906, to 30th June, 1920.	1st July, 1920, to 30th June, 1921.	Total at 30th June, 1921.	(A) DEPRECIATION. (B) REDEMPTION.	
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.						
	£	£	£	£	£	£	£	£	£	£	
1. Birchip	73,591	3,757	3,156	1,273	8,186	81,777	92,067	11,960	104,027	..	185,804
2. Sea Lake											
3. Tyrrell											
4. Wycheproof											
5. Carwarp	5,119	84	675	63	822	5,941	1,571	534	2,105	A 586	8,632
6. Karkaroc	23,768	2,198	744	472	3,414	27,182	38,868	4,834	43,702	..	70,884
7. Kerang North-west Lakes	605	36	64	19	119	724	551	83	634	..	1,358
8. Long Lake	47,274	1,316	2,474	496	4,286	51,560	18,569	3,225	21,734	A 8,305	81,599
9. Naval Base & Mornington Peninsula	288	609	300	106	1,015	1,303	2,402	2,985	5,387	..	6,690
10. Tyntynder	18,851	824	1,109	169	2,102	20,953	14,730	4,158	18,888	..	39,841
11. Walpeup East	2,189	302	..	118	420	2,609	963	184	1,147	..	3,756
12. Walpeup West	5,465	224	578	196	998	6,463	1,362	544	1,906	A 1,200	9,569
13. Werribee	266	63	96	37	196	462	1,019	529	1,548	..	2,010
14. Western Wimmera	66,452	1,266	3,531	1,058	5,855	72,307	46,368	6,611	52,979	{ A 3,028 B 6,500 }	134,814
15. Wimmera United	66,679	1,798	2,336	860	4,994	71,673	76,495	9,000	85,495	B 6,000	163,168
16. Yelta	209	10	90	25	125	354	296	148	444	..	778
Totals	310,756	12,487	15,153	4,892	32,532	343,288	295,201	44,795	339,996	25,619	708,903

DISTRICTS HELD IN TRUST BY THE COMMISSION.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1920.

Name of Trust.	Bank Balance, at 31st December, 1919.	1920.				Grand Total, 31st December, 1920.
		Rates.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
Avoca	Cr. 102	541	84	2	627	729
Avoca (Quambatook, Urban)	Cr. 182	313	..	..	313	495
Carrum	Dr. 75	1,690	..	54	1,744	1,669
Loddon United	Cr. 525	2,553	10	32	2,595	3,120
Loddon United (Mitiamo, Urban)	Dr. 71	161	75	3	239	168
	Dr. 146	5,258	169	91	5,518	6,181
	Cr. 809					

DISBURSEMENTS, INTEREST AND REDEMPTION CHARGED.

Name of Trust.	1920.				Interest.	Redemption.	Grand Total, 31st December, 1920.	Balance carried forward, 1st January, 1921.
	Repairs and Maintenance.	Water Distribution.	Management.	Total.				
	£	£	£	£	£	£	£	
Avoca	415	..	110	525	133	..	658	71
Avoca (Quambatook, Urban)	97	128	35	260	140	30	430	65
Carrum	1,031	..	236	1,267	350	..	1,617	52
Loddon United	349	379	239	967	683	254	1,904	1,216
Loddon United (Mitiamo, Urban)	49	..	13	62	113	15	190	Dr. 22
	1,941	507	633	3,081	1,419	299	4,799	Cr. 1,404 Dr. 22

URBAN DISTRICTS AND DIVISIONS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1921; 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, 1921. (Free Head-works excluded.)

RECEIPTS.

District or Division.	1st May, 1906, to 30th June, 1920.	1920-21.				Grand Total at 30th June, 1921.
		Rates.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
1. Bacchus Marsh	11,690	768	534	9	1,311	13,001
2. Berriwillock	648	99	7	..	106	754
3. Beulah	3,409	371	55	15	441	3,850
4. Birchip	9,103	502	374	19	895	9,998
5. Carrum .. .. .	..	413	..	..	413	413
6. Cohuna	2,572	365	80	2	447	3,019
7. Corop	269	46	..	3	49	318
8. Dandenong	918	1,784	13	8	1,805	2,723
9. Dimboola	16,602	728	836	27	1,591	18,193
10. Frankston .. .. .	..	704	..	..	704	704
11. Hopetoun	3,659	329	85	13	427	4,086
12. Jeparit	4,150	516	139	2	657	4,807
13. Jung Jung	298	75	45	..	120	418
14. Kaneira	726	110	..	..	110	836
15. Koondrook	2,588	342	..	3	345	2,933
16. Lake Boga	2,301	251	19	10	280	2,581
17. Lascelles	565	78	11	1	90	655
18. Merbein .. .. .	..	116	..	..	116	116
19. Minyip	5,235	525	72	5	602	5,837
20. Mornington .. .. .	..	276	..	..	276	276
21. Natimuk	5,186	198	266	1	465	5,651
22. Nyah	157	52	..	1	53	210
23. Ouyen	1,295	592	127	8	727	2,022
24. Rainbow	7,544	660	219	7	886	8,430
25. Rупanyup	4,451	338	73	3	414	4,865
26. Sea Lake	4,532	395	101	12	508	5,040
27. Ultima	2,081	298	8	7	313	2,394
28. Watchem	1,390	233	8	2	243	1,633
29. Werribee	3,966	820	179	18	1,017	4,983
30. Wonthaggi	32,611	1,836	1,681	64	3,581	36,192
31. Woomelang	3,995	246	398	4	648	4,643
32. Wycheproof	5,261	422	94	14	530	5,791
Totals	137,202	14,488	5,424	258	20,170	157,372

DISBURSEMENTS, AND INTEREST DEPRECIATION AND REDEMPTION CHARGED.

District or Division.	DISBURSEMENTS.					INTEREST CHARGED.				(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1921.
	1st May, 1906, to 30th June, 1920.	1920-21.				Total at 30th June, 1921.	1st May, 1906, to 30th June, 1920.	1st July, 1920, to 30th June, 1921.	Total at 30th June, 1921.		
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.						
1. Bacchus Marsh	3,335	51	185	100	336	3,671	7,619	971	8,590	(a) 336 (b) 250	12,847
2. Berriwillock	338	50	37	19	106	444	356	39	395	(a) 21 (b) 32	860
3. Beulah	1,074	7	193	41	241	1,315	2,117	223	2,340	(a) 32 (b) 300	3,687
4. Birchip	3,842	82	439	77	598	4,440	4,522	353	4,875	(a) 356 (b) 300	9,971
5. Carrum .. .. .	..	62	30	59	151	151	..	262	262	..	413
6. Cohuna	671	13	154	40	207	878	1,316	270	1,586	(a) 170 (b) 150	2,784
7. Corop	116	..	10	6	16	132	122	19	141	(a) 18 (b) 500	291
8. Dandenong	197	15	221	150	386	583	708	949	1,657	(a) 500 (b) 830	2,740
9. Dimboola	9,422	296	808	130	1,234	10,656	4,533	392	4,925	(a) 1,620 (b) 830	18,031
10. Frankston .. .. .	..	108	53	65	226	226	..	478	478	..	704
11. Hopetoun	1,444	16	407	34	457	1,901	1,555	202	1,757	(b) 150	3,808
12. Jeparit	834	5	44	42	91	925	2,977	334	3,311	(b) 100	4,336
13. Jung Jung	274	11	101	21	133	407	86	44	130	..	537
14. Kaneira	382	15	33	19	67	449	422	72	494	(a) 21	964
15. Koondrook	1,173	8	143	41	192	1,365	1,187	149	1,336	(a) 135 (b) 72	2,836
16. Lake Boga	461	31	211	23	265	726	1,580	98	1,678	(a) 72 (b) 150	2,626
17. Lascelles	309	3	28	25	56	365	282	95	377	(a) 48	790
18. Merbein .. .. .	..	..	42	20	62	62	..	54	54	..	116
19. Minyip	1,745	21	10	33	64	1,809	3,263	273	3,536	(a) 295	5,640
20. Mornington .. .. .	..	46	23	31	100	100	..	176	176	..	276
21. Natimuk	839	54	50	46	150	989	3,438	346	3,784	(b) 750	5,523
22. Nyah	60	..	5	5	10	70	40	20	60	(a) 28	158
23. Ouyen	426	137	212	41	390	816	911	465	1,376	..	2,192
24. Rainbow	1,604	12	49	61	122	1,726	4,897	507	5,404	(a) 480 (b) 400	8,010
25. Rупanyup	1,648	98	122	28	248	1,896	2,473	203	2,676	(a) 252	4,824
26. Sea Lake	2,804	45	399	51	495	3,299	1,500	155	1,655	(a) 309	5,263
27. Ultima	610	30	102	23	155	765	1,220	194	1,414	(a) 80	2,259
28. Watchem	399	57	28	16	101	500	986	154	1,140	(a) 60	1,700
29. Werribee	1,268	..	160	78	238	1,506	2,802	572	3,374	(a) 273	5,153
30. Wonthaggi	4,143	94	239	232	565	4,708	22,724	2,371	25,095	(b) 5,700	35,503
31. Woomelang	1,280	50	149	55	254	1,534	2,734	359	3,093	(a) 160	4,787
32. Wycheproof	2,816	8	198	42	248	3,064	2,389	229	2,618	(a) 328	6,010
Totals	43,514	1,425	4,885	1,654	7,964	51,478	78,759	11,028	89,787	14,374	155,639

LOAN EXPENDITURE.

STATEMENT OF LOAN EXPENDITURE DURING THE YEAR ENDED 30TH JUNE, 1921.

Work.	Loans Application Act No. 3013.			Loans Application Act No. 3065 and other Sources.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.
<i>Free Headworks.</i>									
1. Kerang North-West Lakes	1,208	15	7	1,996	16	5	3,205	12	0
<i>River Murray Waters Acts—Works.</i>									
2. Storages, Weirs, and Locks	13,552	18	6	104,644	4	8	118,197	3	2
<i>Reservoirs and Storages.</i>									
3. Goulburn Storages—									
Sugarloaf Reservoir	18,890	6	3	127,054	2	2	145,944	8	5
Waranga Reservoir Enlargement	10,592	14	7	46,177	3	8	56,769	18	3
4. Maffra, Glenmaggie Dam	6,727	12	6	31,749	12	11	38,477	5	5
5. Melton Reservoir	227	10	3	1,874	15	5	2,102	5	8
6. Wimmera-Mallee Storages—									
Taylors Lake	134	11	4	31,455	2	9	31,589	14	1
Fyans Lake .. .. .	..	..	..	78	5	7	78	5	7
Pine Lake .. .. .	..	..	..	365	10	0	365	10	0
<i>Waterworks Districts.</i>									
7. Birchip, Sea Lake, Tyrroll, and Wycheproof	126	17	0	15,858	6	3	15,985	3	3
8. Carwarp	22	6	0	120	15	9	143	1	9
9. Karkaroc	31	1	10	6,231	19	9	6,263	1	7
10. Kerang North-West Lakes .. .. .	..	..	..	82	1	3	82	1	3
11. Long Lake	22	0	0	1,464	2	8	1,486	2	8
12. Naval Base and Mornington Peninsula .. .. .	..	..	..	56,155	13	1	56,155	13	1
13. Tyntynder	97	8	6	9,259	6	9	9,356	15	3
14. Walpeup East	24	18	8	383	1	6	408	0	2
15. Walpeup West	596	17	7	2,674	2	7	3,271	0	2
16. Werribee .. .. .	..	..	..	454	15	5	454	15	5
17. Western Wimmera	51	8	0	8,171	0	5	8,222	8	5
18. Wimmera United	48	0	0	4,786	7	2	4,834	7	2
19. Wimmera Main Channels	536	18	0	3,884	4	10	4,421	2	10
20. Yelta .. .. .	..	..	..	3	0	4	3	0	4
<i>Towns.</i>									
21. Bacchus Marsh	2	0	0	53	4	3	55	4	3
22. Berrillock, Beulah, and Birchip .. .. .	..	..	..	113	12	11	113	12	11
23. Cohuna	144	6	0	322	13	5	466	19	5
24. Coliban	31	0	4	8,890	11	1	8,921	11	5
25. Dimboola, Hopetoun, Jeparit, and Jung Jung	145	10	7	168	9	0	313	19	7
26. Kaneira, Lake Boga, and Lascelles	2	4	8	1,649	12	1	1,651	16	9
27. Merbein	374	6	3	4,157	18	2	4,532	4	5
28. Ouyen	4	11	3	119	10	11	124	2	2
29. Rainbow, Rупanyup, and Sea Lake	7	10	3	813	11	3	821	1	6
30. Ultima and Watchem	11	0	6	172	17	9	183	18	3
31. Werribee, Woomelang, and Wycheproof	3	4	10	195	2	2	198	7	0
32. Wonthaggi .. .. .	..	..	..	473	11	1	473	11	1
<i>Irrigation and Water Supply Districts.</i>									
33. Bacchus Marsh and Werribee	1,882	8	9	12,980	16	5	14,863	5	2
34. Boga .. .. .	..	..	..	467	11	5	467	11	5
35. Boort	7	9	7	1,876	0	0	1,883	9	7
36. Campaspe .. .. .	..	..	..	18	13	0	18	13	0
37. Cohuna	935	3	2	6,140	4	3	7,075	7	5
38. Dingee .. .. .	..	..	..	102	1	6	102	1	6
39. Ganawarra	180	18	6	1,178	12	3	1,359	10	9
40. Kerang	63	7	2	693	2	10	756	10	0
41. Koondrook	47	2	0	926	9	3	973	11	3
42. Merbein	3,053	7	3	20,698	1	9	23,751	9	0
43. Nyah	470	5	6	15,110	16	11	15,581	2	5
44. Red Cliffs	38	0	0	35,293	8	8	35,331	8	8
45. Red Cliffs—Clearing land charged to Discharged Soldiers' Settlement Fund .. .. .	..	..	..	91,445	13	2	91,445	13	2
46. Rochester .. .. .	..	..	..	9,733	6	5	9,733	6	5
47. Rodney	2,221	12	2	9,514	2	9	11,735	14	11
48. Shepparton	27	12	5	7,984	6	0	8,011	18	5
49. Stanhope	63	10	0	8,339	15	1	8,403	5	1
50. Swan Hill	412	13	4	4,767	12	7	5,180	5	11
51. Tongala	8	5	6	3,524	11	6	3,532	17	0
52. Tragowel Plains	75	11	9	1,593	10	8	1,669	2	5
53. Goulburn Main Channels .. .. .	..	..	..	2,570	18	2	2,570	18	2
<i>Miscellaneous.</i>									
54. Drainage Districts	49	16	0	1,421	9	7	1,471	5	7
55. Koo-wee-rup and Cardinia Flood Protection	882	15	3	15,724	17	10	16,607	13	1
56. Koo-wee-rup and Cardinia Flood Protection—Grant from Surplus Revenue Act No. 3021, Item 9 .. .. .	..	..	..	14,873	16	7	14,873	16	7
57. Investigations Storages .. .. .	..	..	..	748	13	5	748	13	5
58. Torrumbarry Districts—New Districts commanded by proposed Torrumbarry Lock-Weir .. .. .	..	..	..	1,017	9	1	1,017	9	1
Total	64,037	17	7	740,801	6	6	804,839	4	1

STATEMENT OF EXPENDITURE DURING THE YEAR ENDED 30TH JUNE, 1921.

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

This Expenditure was met by the Public Works Department.

	£	s.	d.
1. Mallee Tanks (Public Tanks)	3,260	15	10
2. Clearing Roads	2,533	11	0
3. Boring for Water	192	17	5
4. Millewa Surveys	2,018	0	7
Total	£8,005	4	10

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, 1922, with Estimate of the total amount available from the Revenues of all Authorities to meet interest payable by the State for the year ending 30th June, 1922.

ESTIMATED DISBURSEMENTS.

A.	
Revenue Producing Works—	
Coliban District	£14,000
Irrigation and Water Supply Districts	84,000
Waterworks Districts	36,000
Drainage and Flood Protection Districts	2,000
Diversions from Streams	700
General Expenditure and Salaries (proportion) over £250 to be apportioned to above Districts	22,800
	£159,500
B.	
Non-Revenue Producing Works—	
General Services—	
River Gaugings, Surveys, New Projects, Boring for Water, Land Settlement, General Expenditure and Salaries (proportion) over £250	£10,000
Loan Works, Services on Account defrayed from Votes	6,500
Waterworks Trusts Administration	2,500
	£19,000
C.	
Non-Revenue Producing Works—	
Free Headworks—	
Broken River	£300
Goulburn-Waranga	1,750
Kow Swamp	1,700
Lake Lonsdale and Lower Wimmera	500
Loddon River	350
North-west Lakes	400
	£5,000
	£183,500

ESTIMATED RECEIPTS.

Coliban District	£38,000	
Irrigation and Water Supply Districts	145,000	
Waterworks Districts	104,000	
Flood Protection Districts	3,000	
Miscellaneous	10,000	
	£300,000	
Estimated amount available from Revenue Producing Works to meet interest		£140,500
Less expenditure as per " B " and " C " above on Non-Revenue Producing Works	24,000	£116,500
To which add Estimated Revenues from other Authorities—		
Waterworks Trusts	£37,000	
Local Bodies	24,000	£61,000
Total Estimated amount available from Revenues of all Authorities to meet Interest		£177,500

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, 1921:—

Works.	Loan Liability of State for Works of Water Supply at 30th June, 1921, exclusive of Melbourne Water Supply.					Interest payable by State on Net Advances.	Total Interest of £451,105 debitable to—				Amount received from Revenues of all Authorities to meet interest.
	Total Advances, including Cost of Loan Flotation.	Deduct Redemption Paid.	Net Advances.	(A.) Amounts Written Off. (B.) Free Head-works. (C.) Uncompleted Works. (D.) Loans Unexpended.	Balance at Debit of Authorities.		(A.) Written Off. (B.) Free Head-works. (C.) Uncompleted Works. (D.) Loans Unexpended.	Commission and Other Authorities.			
Waterworks Districts	£ 2,744,727	£ 39,836	£ 2,704,891	(A.) 175,055	£ 2,529,836	£ 115,121	(A.) 7,450	£ 107,671	£ 126,791	} (after providing £23,655 for non-revenue producing works, including Free Head-works).	
Irrigation and Water Supply Districts	2,114,752	19,046	2,095,706	(A.) 575,152	1,520,554	89,194	(A.) 24,478	64,716	64,716		
Goulburn Channel Works (Free { Districts supplied are being Headworks excluded) Pykes Creek, Melton, and portion of Interest on Distributary Works this Expenditure	590,771	90	590,681	(C.) 119,455	471,226	25,140	(C.) 5,085	20,055	20,055		
Sugarloaf Reservoir	565,298	..	565,298	(C.) 565,298	..	24,059	(C.) 24,059	..	..
Waranga Reservoir Enlargement	315,575	..	315,575	(C.) 315,575	..	13,430	(C.) 13,430	..	..
Naval Base and Mornington Peninsula	231,702	..	231,702	(C.) 127,240	104,462	9,861	(C.) 5,415	4,446	4,446		
Koo-wee-rup, Cardinia, Echuca Flood Protection Schemes	101,017	..	101,017	(C.) 79,869	21,148	4,298	(C.) 3,398	900	900		
Waterworks Trusts (including First Mildura)	1,531,487	195,782	1,335,705	(A.) 316,537	1,019,168	56,849	(A.) 13,473	43,376	43,376		
Local Bodies (Municipalities)	760,597	105,842	654,755	(A.) 163,760	490,995	27,866	(A.) 6,969	20,897	20,897		
River Murray Agreement Works	277,999	..	277,999	(C.) 277,999	..	11,832	(C.) 11,832	..	..
Irrigation and Waterworks Trusts Abolished	32,754	30	32,724	(A.) 32,724	..	1,392	(A.) 1,392	..	..
Free Headworks	1,243,942	420	1,243,522	(B.) 1,243,522	..	52,926	(B.) 52,926	..	..
Free Grants to Local Authorities	147,046	..	147,046	(B.) 147,046	..	6,258	(B.) 6,258	..	..
Surveys, Exploratory, and Preliminary Works, including Purchase of Land reserved for Reservoirs	110,149	..	110,149	(C.) 110,149	..	4,688	(C.) 4,688	..	..
Loan Moneys unexpended	44,784	..	44,784	(D.) 44,784	..	1,906	(D.) 1,906	..	..
Totals	10,960,265	361,046	10,599,219	4,328,571	6,270,648	451,105	184,223	266,882	£203,363		

Dated at the Office of the State Rivers and Water Supply Commission, Treasury
Gardens, Melbourne, the 25th day of October, 1921.

WM. CATTANACH, Chairman.

J. S. DETHRIDGE, Commissioner.

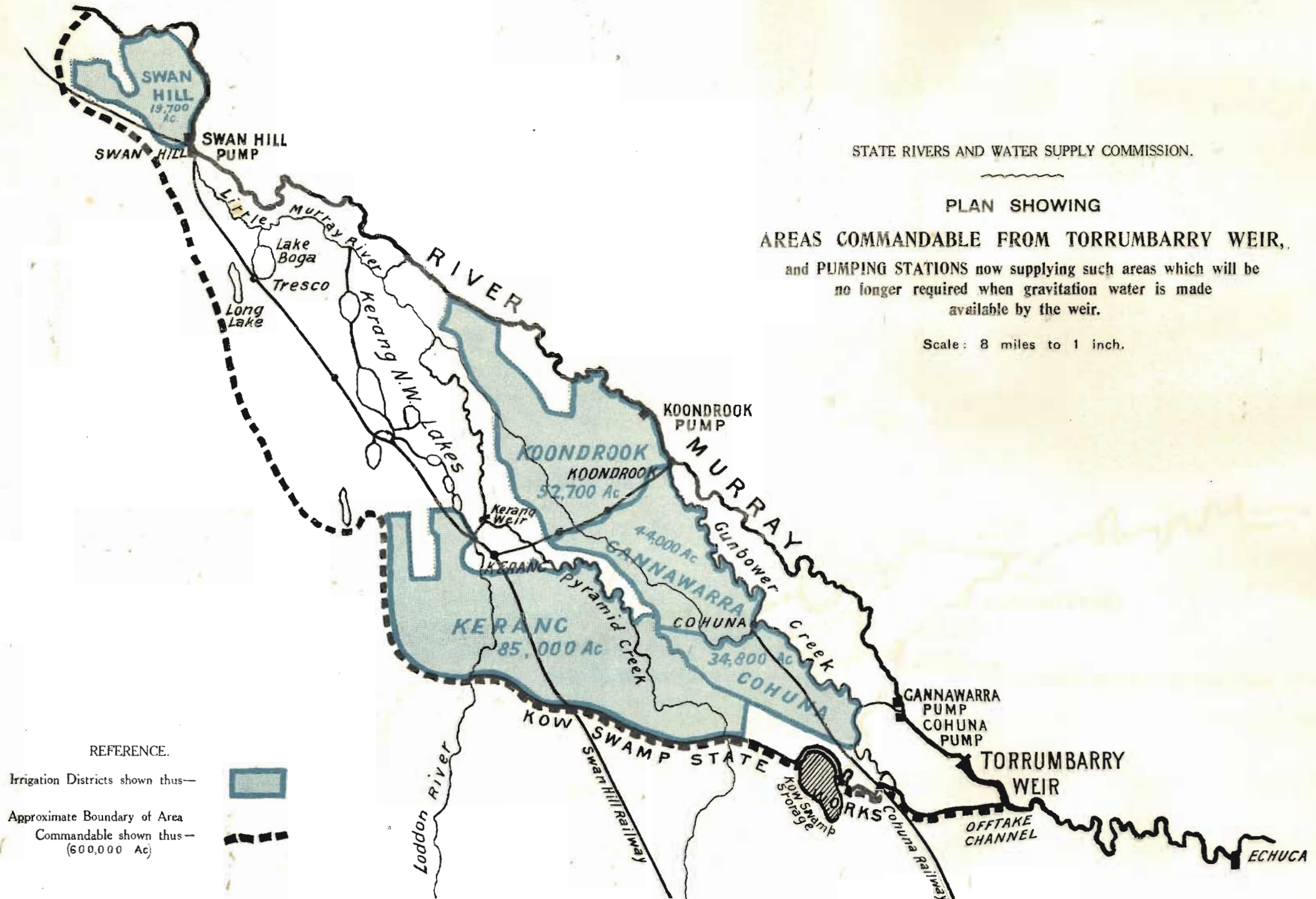
E. SHAW, Commissioner.

M. NALLY, Secretary.

STATE RIVERS AND WATER SUPPLY COMMISSION.

PLAN SHOWING
AREAS COMMANDABLE FROM TORRUMBARRY WEIR,
and PUMPING STATIONS now supplying such areas which will be
no longer required when gravitation water is made
available by the weir.

Scale: 8 miles to 1 inch.



REFERENCE.

Irrigation Districts shown thus—



Approximate Boundary of Area
Commandable shown thus—
(600,000 Ac)

