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VICTORIA

STATE RIVERS AND WATER SUPPLY COMMISSION.

THIRTY-SECOND
ANNUAL REPORT,
1936-37.

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STATE RIVERS AND WATER SUPPLY COMMISSION.

ANNUAL REPORT, 1936-37.

In compliance with the provisions of the *Water Act* 1928, the State Rivers and Water Supply Commission submits the following Report and Statement for the Financial Year 1936-37, and Estimates for the ensuing year.

The personnel of the Commission is as follows :—

Mr. L. R. East, M.C.E., M.Inst.C.E., M.Am.Soc. C.E., M.I.E., Aust. ;
Chairman.

Mr. W. A. Robertson, M.C.E., M.Inst.C.E., M.I.E., Aust. ; Commissioner.

Mr. P. J. O'Malley ; Commissioner.

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ANNUAL REPORT

OF

THE STATE RIVERS AND WATER SUPPLY COMMISSION

FOR

YEAR ENDED 30TH JUNE, 1937.

PART I.—SUMMARY OF REPORT.

GENERAL.

- | | |
|--|------|
| 1. The State Rivers and Water Supply Commission was constituted on 1st May, 1906, under the provisions of the "Water Act 1905". | Page |
| 2. This Report covers the period 1st July, 1936, to 30th June, 1937. | 40 |
| 3. The Royal Commission on Water Supply has completed its inquiry, and its reports and recommendations are receiving consideration by the Government | 40 |

WATER SUPPLY.

- | | |
|---|----|
| 4. The total capacity of water storages controlled by the Commission is 1,891,350 acre feet | 33 |
| 5. The total net annual valuation of properties within irrigation and water supply and waterworks districts and the urban districts and divisions thereof, including Coliban System, amounted to £3,199,819, indicating a total capital value of over £80,000,000 | 45 |
| 6. The population dependent upon the works of the Commission for domestic supplies was 223,346 | 45 |
| 7. The total area of lands supplied with water for domestic and stock purposes by channels, tanks and bores was 15,065,000 acres | 30 |
| 8. The total area irrigated during the year was 518,827 acres as against 495,835 acres in the previous year | 37 |
| 9. The quantity of water delivered to water users in irrigation districts was 511,985 acre feet of which 53,056 acre feet were supplied by pumping, the comparative quantities for last year being 507,430 and 57,726 acre feet respectively | 30 |
| 10. Although delivery of water did not commence as early as usual on account of spring rainfall 87 per cent. of water rights was used in gravitation districts and 93½ per cent. in districts supplied by pumping | 30 |

IRRIGATION WORKS.

- | | |
|---|-------|
| 11. Reconditioning of channels and structures was continued throughout the year involving the expenditure of £27,450 made available from Unemployment Relief Funds | 48 |
| 12. For the irrigation of lands in the proposed Murray Valley District the construction of the main canal with a capacity of 1,000 cusecs and the main channel with a capacity of 800 cusecs has proceeded, about 1,000,000 cubic yards of excavation having been completed to date | 19-20 |
| 13. At Merbein the work on the first stage of the conversion of the Pumping Plant to electric drive has proceeded satisfactorily | 12 |
| 14. The question of enlarging and extending the Waranga Western Channel was referred by the Government to the Public Works Committee for investigation; the inquiries have not yet been completed | 20 |

URBAN SUPPLY WORKS.

- | | |
|---|----|
| 15. There are at present 109 country towns whose reticulated water supply systems are directly controlled by the Commission | — |
| 16. A scheme, estimated to cost £200,000, for the improvement of the Coliban System was approved by the Government, and work is proceeding with Unemployment Relief Funds | 16 |

17. In the Otway District, works for the supply of water to Camperdown, Cobden, Terang, and Warrnambool from the Otway Ranges have been further advanced	Page. 18-19
18. The work of extending the Mornington Peninsula Scheme to serve the bayside towns from Dromana to Sorrento and Portsea has been continued	17
19. From the Bellarine Peninsula system 544,420,000 gallons of water were supplied to the City of Geelong to supplement the supply from its own works. To enable an improved supply of water to be made available to towns served from this system an auxiliary basin at Warrn Ponds is to be constructed	18
20. To meet increasing demands and provide improved water supplies, reticulation systems were remodelled and extended at Lake Boga, Spring Vale, Minyip, Ouyen, Chillingollah, Chinkapook, Manangatang, Quambatook, Woomelang, and Woorinen; and additional storages were constructed at Lalbert, Quambatook, and Woorinen	12, 17, 14, 15

WATERWORKS DISTRICTS.

21. In Wimmera-Mallee Districts water was supplied for domestic and stock purposes through 6,322 miles of Commission's channels to an area of 11,000 square miles	13
22. A proposal is under consideration for the enlargement of the main channels of the Wimmera-Mallee System. This would enable the whole watering to be completed in the winter and early spring months thereby effecting considerable savings in both money and water	13-14
23. Some measure of control of clearing, fallowing, cultivation, and burning-off in places liable to drift is required to reduce annual expenditure on clearing sand from channels. The annual expenditure for this work and water distribution in the Wimmera-Mallee has varied from £57,932 to £163,182	13
24. A water supply proposal for an area of high land west of Pimpinio between Horsham and Dimboola has been recommended to the Government.	20-21
25. It is proposed to proceed with the water supply works in the proposed Normanville Waterworks District as soon as funds can be made available	21

MAJOR WORKS.

26. The Hume Reservoir was officially opened on 21st November, 1936, the works having been completed to provide a storage of 1,250,000 acre feet. This great national work cost £5,524,974 which was borne in equal proportions by the Governments of the Commonwealth, New South Wales, Victoria, and South Australia	22
27. Further progress was made with the construction of the Yarrawonga Weir, the amount expended to date being £349,041. A traffic roadway and bridge is being provided across the structure, the cost being borne by the Road Authorities of New South Wales and Victoria	22-23
28. The installation of spillway gates at Melton Reservoir was completed, thereby increasing the storage capacity from 17,000 to 19,100 acre feet	26

DRAINAGE WORKS.

29. Further important works involving the construction, enlargement, and reconditioning of drains were carried out in the Kooweerup and Cardinia Districts	27
30. Main drainage works in many irrigation districts are either completed or well advanced and steps are being taken to constitute Drainage Districts in which rates will be levied for the maintenance of works. The expenditure to date has been £853,190, and the area benefited exceeds 400,000 acres	20
31. A scheme, estimated to cost £37,000, for the drainage of 7,692 acres of land at Woorinen in the Swan Hill District is under consideration by the Government	20

RIVERS AND STREAMS.

32. During the year 70 grants on a contributory basis from the Rivers and Streams Fund, amounting to £13,371, were recommended to and approved by the Commissioner of Public Works, making a total of 311 grants, totalling £50,422, since the establishment of the Fund in 1930	28
33. The systematic snagging of streams was continued during the year, and lengths, totalling 130 miles, of various rivers have been cleared to date at a cost of £46,500	28
34. The Government has adopted recommendations by the Public Works Committee that £46,000 be expended in snagging and bend cutting on the Latrobe River and £23,000 in improvement works on the Snowy River	28
35. Further consideration has been given to the serious problem of soil erosion and siltation	30
36. For the recording of the flow of the more important streams throughout the State the Commission maintains and operates 49 gauging stations. A statement showing all streams gauged and periods of gaugings is enclosed	31-32
37. There are now 1,969 permits and licences in force authorizing private landholders and companies to divert water from natural sources of supply	30

WATERWORKS TRUSTS AND SEWERAGE AUTHORITIES.

38. Many important works were carried out during the year by the 114 Waterworks Trusts and 17 Local Governing Bodies which operate under the supervision of the Commission 34
39. At 30th June, 1937, the Capital Liability to the State of these Trusts and Local Governing Bodies totalled £1,408,103 5s. 10d. and £567,647 6s. respectively 35-36
40. For the purpose of installing and controlling sewerage systems in country towns, twenty sewerage authorities have been constituted and schemes are in operation in ten sewerage districts. Further applications for the constitution of additional authorities are being examined 36

IRRIGATION PRODUCTION.

41. Dairy herds from irrigated areas again achieved outstanding success in open competitions conducted by Herd Testing Associations, and high awards overseas were also received for dairy products .. 38-39
42. The Australian production of canned fruits reached the record figure of 2,330,000 cases, Victoria's share being 1,722,000 cases, of which 65 per cent. was processed in the Shepparton, Ardmona, and Kyabram Canneries 38
43. In Victoria, some 44,000 tons of dried vine fruits were produced during the year, equal to 61 per cent. of the total production of Australia, 72,000 tons 38
44. There has been a considerable expansion of market-gardening in irrigation districts and a development of the canning industry in connexion with the marketing of the produce from such gardens 38

FINANCE.

45. The net Loan Liability of the State for works of water supply and drainage at 30th June, 1937, was £25,159,373 66
46. The total Interest Charges for 1936-37, including £101,905 exchange on overseas payment, on this liability amounted to £1,137,208 66
47. The total receipts for the financial year 1936-37 amounted to £549,785, the largest amount collected in any one year, and an increase of £24,445 on the previous year's receipts 50
48. The reduction by 10 per cent. in all rates in respect of domestic and stock supplies in Irrigation and Waterworks Districts was, by direction of the Government, continued during the year 42
49. The total Vote expenditure including Special Appropriations (£3,068 Administration and £500 Depreciation) was £359,704, leaving £190,081 available to meet interest charges 50
50. In addition, Waterworks Trusts and Local Water Authorities paid to the Treasury as interest on loans, the sum of £81,198 66
51. After deducting the sum of £12,841 debited by the Treasury for pensions, the amount available to meet interest and exchange was £258,438 leaving £878,770 to be borne by the Treasury as the gross deficiency on water supply undertakings 48-49
52. Of this amount of £878,770 borne by the Treasury £55,095 represented interest on capital written off 38 years ago; £59,686 represented interest on cost of free headworks; and £118,938 represented interest on liability in respect of River Murray Works 49
53. The cost of services rendered to the State and other charges not debited to the districts was £23,414; this total included an amount of £17,714 for general services of a national character which are not directly revenue producing 48-50
54. The deficiency on expenditure chargeable to the Commission was £521,056, of which £269,333 represented interest on cost of main supply works not at present debited to districts 48-49
55. The total expenditure during the year on water distribution, maintenance of water supply and drainage works, and administration was £404,567, of which £359,704 was provided from Vote Funds and £44,863 from Unemployment Relief Funds 48
56. The total expenditure on capital works was £677,232, of which £326,239 was from Loan and £350,993 from Unemployment Relief Funds 49
57. A total amount of £1,950,113 has been made available to the Commission from Unemployment Relief Funds since 1st June, 1930. Of this amount £1,887,118 was expended as at 30th June, 1937. The total number of men to whom employment had been provided was 33,710 58-62
58. An amount of £500 only was provided for Depreciation as against an annual provision of at least £50,000 which would be required to provide adequately for the renewal of all water supply works of a perishable nature, such as machinery and pipe lines 47
59. The amount included in the Budget Estimate 1937-38 for Vote expenditure on works and services under the control of this Commission is £340,316. This sum, however, has been augmented by funds from other sources 63
60. A comprehensive mechanized accounting and costing system has been introduced to operate from 1st July, 1937. This will cover all expenditure from Loan and Unemployment Relief Works respectively, in addition to the administrative and operating costs in the 67 Rural and 86 Urban Districts and Divisions administered by the Commission 47

MAP AND STATISTICS.

61. A map of the Otway Waterworks District outlining the scheme of works now under construction for the supply of water to Western District towns, and a statistical summary, are attached to this Report

PART II.

WORKS CARRIED ON OR COMPLETED DURING THE YEAR.

The most important works carried out by the Commission during the year and the main items of interest in each of the Districts controlled by the Commission are outlined in the following pages.

REPORTS OF DIVISIONAL ENGINEERS.

GOULBURN AND GIPPSLAND DIVISION.

(*E. P. Kendall, B.C.E., A.M.I.E. Aust., Divisional Engineer.*)

RODNEY IRRIGATION AND WATER SUPPLY DISTRICT.

Irrigation channels in this District total 639 miles in length. Improvements to the existing system were carried out with funds made available under unemployment relief conditions. These funds enabled lengthy sections of distributary channels to be remodelled, and outlets and regulating facilities to be improved. In addition, culverts were reconditioned and renewed where required.

The construction during the year of escapes for the Allen and Cussen Main Channels into the Rodney Main Outfall Drain will bring about a considerable saving in the maintenance of the channels of this system. The placing of concrete corewalls in high embankments to prevent leakage from channels was also carried out. A section of the Harston Channel near the township of Merrigum was removed from the roadway and replaced with a 30 inch diameter reinforced concrete pipe, 450 feet in length.

Although the irrigation season opened late, the abnormally dry autumn was responsible for a very heavy demand for irrigation water, and a total of 66,694 acre feet was delivered to the irrigators, an increase of 5,217 acre feet over the previous year.

The District drainage scheme was further advanced with Unemployment Relief Funds provided by the Government. The completion of the Rodney Main Outfall Drain enabled the Commission to proceed with the construction of the Rodney and Ardmona Drains, and good progress is now being made.

At Wyuna, a further extension of the Settler's Drain was constructed, and extensions were made to the Lancaster and Wyuna Main Drains, east of Kyabram. The total length of drainage channels in this District is now 55 miles.

SHEPPARTON CENTRE.

In the Shepparton, Katandra, North Shepparton, and South Shepparton Irrigation and Water Supply Districts controlled from this centre there are now 308 miles of irrigation channels and 188 miles of drainage channels. Considerable improvements to the irrigation system were carried out with Unemployment Relief Funds made available for reconditioning of channels. The works carried out comprised the relining with concrete of four small spur channels aggregating one mile in length, the alterations to checks and regulators to obviate waste of water, and general repairs to road crossings and occupation culverts.

In the Katandra District repairs were effected to the concrete lined channels, and a new regulating check, constructed in the Main Channel, will avoid the necessity of holding the water up, thus minimizing seepage.

In North Shepparton District, the banks of the Narioka Main Channel were strengthened, and similar work was carried out on the spur channels through Harper's Estate. Four miles of the Dunbulbalane domestic and stock channel were cleaned out and banks strengthened.

Channel banks in the South Shepparton District have been raised and strengthened and other minor improvements carried out.

Extensive drainage works have been carried out in the Districts controlled from this centre during the year with Unemployment Relief Funds.

In Shepparton District, 11 miles of drains were remodelled and the grades improved, while in North Shepparton District, 9 miles of drains, mostly main drains, have been constructed. In the Katandra District, 4½ miles of drains have been remodelled and enlarged.

TONGALA CENTRE.

The Districts controlled from this centre are the Tongala, Stanhope, Deakin, and half of Echuca North Irrigation and Water Supply Districts, the Kanyapella Flood Protection District, and the Corop and Stanhope Urban Divisions. The total lengths of channels in these Districts are 366 miles for irrigation and 289 miles for drainage. During the past year, 48,369 acre feet of water were delivered for irrigation purposes.

The constant employment of a limited number of maintenance men was fully justified by the results obtained, particularly with regard to the removal and control of weed growth in irrigation channels. The growth of cumbungie in the channels is being rapidly brought under control, resulting in a more efficient delivery of water to the irrigators.

Unemployment Relief Funds amounting to £3,910 have been expended on the reconditioning of irrigation channels and structures, with the result that much of the delayed maintenance and repair works has been brought up to date. However, a great deal of this work still remains to be carried out before the channel systems are in first class order.

A new extension to the irrigation system involved the construction of 23 chains of channel.



Outfall of Tongala Drain.

The Drainage System has been extended by the construction of $2\frac{1}{2}$ miles of new drains; and, during the year, £4,040 was expended in cleaning out the drainage system in the Stanhope District. Owing to the rapid weed growth which develops in the drains, the maintenance of the drainage system in a satisfactory condition is a difficult problem.

The Stanhope Urban reticulation system has been improved by the installation of larger mains, and by repairs to the storage tanks.

ROCHESTER CENTRE.

From this centre the Rochester, Campaspe, and portion of Echuca North Irrigation and Water Supply Districts, and the Lockington Urban Division, are controlled. The channels total in length 448 miles, 333 miles for irrigation and 115 miles for drainage.

The past irrigation season was one of the best experienced for some years, and although irrigation did not commence until the middle of October, it continued, with only minor interruptions, until the middle of May. The total quantity of water turned into the Rochester District (including portion of Echuca North) was 112,120 acre feet, of which 68,222 acre feet were delivered to the irrigators. This is the second largest amount used in the history of the district.

All types of irrigation culture have been adopted in the Rochester District, and for the year 27,000 cases of citrus fruits were despatched from the district by rail, in addition to a considerable quantity being delivered by road. The swing from lucerne to pasture continues, although lucerne still holds its place as the most prolific permanent fodder crop under irrigation, particularly for hay production.

Works have been reconditioned as far as possible with Unemployment Relief Funds made available for this purpose.

During the year 16 miles of new drainage channels were constructed, and 8 miles of existing drains were enlarged and deepened. There is a marked improvement in those parts of the District where drainage works have been carried out, and further works of this nature are still in progress.

General maintenance works were carried out in the Echuca North District during the year, and some channels and structures were reconditioned by the expenditure of Unemployment Relief Funds. With the exception of a short period when the demand by irrigators greatly exceeded the capacity of the channel system, the supply of water was maintained throughout the season. In this District there has been a development of subterranean clover and Wimmera rye grass for winter pastures on land which is too heavy for regular summer irrigation. The results being obtained are proving very satisfactory, and are increasing the value of this land which previously was of little account for grazing purposes.

Due to the low river flow, supplies to the Campaspe District were not available later than October, the river practically ceasing to flow during the summer. At the Campaspe Weir, repair works, designed to staunch leakage through the structure, were completed at a cost of £500, and will be of distinct benefit to the District in the coming season.

In the Lockington Urban Division ample supplies of water to meet all requirements were available. Necessary maintenance to the windmill and engine was carried out during the year.

MAFFRA-SALE IRRIGATION AND WATER SUPPLY DISTRICT.

In this District there are 194 miles of irrigation channels and 87 miles of drainage channels. A somewhat dry season was experienced, only $19\frac{1}{2}$ inches of rain being recorded. This dry spell, following three consecutive wet years, resulted in a marked increase in the demand for irrigation water. The total delivery for the year to the irrigators was 17,617 acre feet, equal to 96 per cent. of the total water rights allotted to this District. During the month of February the demand was so great that the carrying capacity of the Main Northern Channel was severely taxed, necessitating a restriction of deliveries and some slight delays. Check gaugings were taken at all structures on this channel to determine where enlargement or duplication may be necessary.

The District was enlarged by the inclusion of additional areas totalling 870 acres served by the construction of $2\frac{1}{2}$ miles of new channels, and works are proceeding for the inclusion of further areas next season.

The record flood in the Avon River in June, 1936, caused erosion and loss of two sections of supply channels. In Boisdale a deviation was necessary, and 33 chains of reinforced concrete box channel were constructed, and in Nuntin 10 chains of earthen channel were excavated. On the Macalister River, erosion of the bank was indirectly responsible for two deviations of the Newry River Channel.

A dragline excavator was purchased for the District and has been used for the remodelling of part of the Nuntin Drain and for the excavation of the new section as an outfall to the Avon River. The provision of this outfall, the structures of which are now nearing completion, will enable the drainage from Boisdale to be diverted direct to the Avon River and will relieve the drainage over the Nuntin Flats.

A spillway structure and concrete box channel have been constructed to relieve the Main Northern Channel and the Sale Channel by permitting discharge into the Nuntin drainage outlet. This work is being carried out with Unemployment Relief Funds and will be of great benefit to the scheme, as it will enable storm waters, otherwise carried in the channels, to be quickly discharged into the river.

The drainage scheme for the District has progressed a further stage. With funds provided by the Government, $5\frac{1}{2}$ miles of drainage channels have been constructed at Tinamba, Newry, Boisdale, and Sale. Other drainage works are still in progress.

To prevent seepage below the Heyfield Urban Water Supply an intercepting drain $1\frac{1}{4}$ miles in length was constructed with satisfactory results.

BACCHUS MARSH AND WERRIBEE DISTRICTS.

The total quantity of water supplied for irrigation during the year from the 47 miles of channels in the Bacchus Marsh Irrigation and Water Supply District was 5,263 acre feet. In this District there are also 25 miles of drainage channels. Owing to erosion of the banks of the Lerderderg River caused by flood waters, it was necessary to construct further protective works consisting of three large wire mesh and stone groynes, together with stone-filled wire mesh gabions. The vertical banks surrounding and between these works were thatched with willows.

Protective work to prevent further scour and undermining, and to strengthen the structure, was carried out at the Werribee River Diversion Weir. The work involved the placing of a stepped concrete wall abutting the downstream side of the weir, and the strengthening of the foundations.

As salt had appeared on some of the rich alluvial flats north of Lerderderg Street, a drainage channel, consisting of 27 chains of 15 inch diameter concrete pipes, and 65 chains of open channel, with an average depth of $4\frac{1}{2}$ feet, was constructed to the Lerderderg River.

Heavy rains during the year caused a land slip which damaged portion of the Gorge to Gorge Channel, necessitating the construction of a reinforced concrete box section for a distance of 140 feet.

In the Bacchus Marsh Urban Division, the water pressure to the Slackville Subdivision, one of the highest parts of the town, was improved by the laying of a new main, consisting of 5 inch and 4 inch diameter pipes, for a distance of 2,857 feet direct from the new service basin at Grant's Gully.

At the Commission's workshops at Bacchus Marsh, 170 large and 25 small water-measuring wheels were manufactured for use in Districts under the Commission's control.

In the Werribee Irrigation and Water Supply District there are 48 miles of channels to supply water for irrigation purposes, and, during the year, 12,607 acre feet were delivered to irrigators to meet the demands for water. These demands have become heavier in recent years as a result of the settlers tending to change from lucerne to other pastures and market gardens requiring more frequent waterings.

Works carried out during the year included the installation of seven additional outlets and wheels, and the remodelling and concrete lining for a distance of 16 chains of spur channel 9K. The drainage channel along Duncans Road was deepened and concrete lined for 70 chains to its junction with the Main Drain at spur channel 7. This new drain will also provide an outlet for surplus water from a large area of irrigated land.

To prevent seepage from spur channel 1K and the Main Supply Channel entering the Melbourne and Metropolitan Board of Works sewer, the old 2 inch concrete lining on these channels was replaced with 130 feet of reinforced concrete box section channel. A pipe crossing and nine chains of channel were constructed to drain the low lands of allotments 37 and 38, Section K.

Some 13 miles of drainage channels were cleaned out, and 16 miles of irrigation channels were similarly treated and repaired.

An area of 10,279 acres of land is served by the 42 miles of drainage channels now constructed, and steps are being taken to constitute a Drainage District.

During the year, 1,100 acres of land traversed by water supply channels were added to the Werribee Waterworks District. Four miles of the 24 miles of channels in the District were cleaned out, and supplies were provided to all landholders in the District.

LODDON DIVISION.

(F. Rogerson, A.M.I.E.Aust., Divisional Engineer.)

PYRAMID HILL CENTRE.

The Districts administered from this centre are Tragowel Plains, Dingee, and Calivil Irrigation and Water Supply Districts, Loddon United Waterworks Trust District, and Pyramid Hill, Dingee, and Mitiamo Urban Districts.

The total length of irrigation and domestic supply channels in these Districts is 608 miles, and 4 miles of drainage channels have now been constructed.

The season commenced with late winter rains and some flooding in most parts of the Districts, but, as rainfall from January onwards was exceptionally light, the irrigation season extended until the end of May. Water delivered during the year totalled 45,175 acre feet, a quantity well above the average.

Works to give an irrigation supply to approximately 950 acres of land in the Tragowel Plains District near Kow Swamp were completed during the year.

Grants made from Unemployment Relief Funds enabled considerable improvements to be effected during the year to channels and structures generally. These works included the replacement with concrete of 44 old timber checks, 6 road bridges, and 4 subways, as well as extensive repairs to other structures and the installing or reconditioning of 61 meter outlets.

During the year drainage works to serve the northern section of the Tragowel Plains District were commenced and the work is well advanced.

Along practically the whole length of the Waranga Western Main Channel from the 56-mile Regulator to the Loddon River, and also on the Tandarra-Calivil Channel, the cumbungie growths have been cut, and it is anticipated that by annual maintenance such growths will be effectively held in check in the future.

BOORT IRRIGATION AND WATER SUPPLY DISTRICT.

In this District, channels to supply water for irrigation have a total length of 144 miles. Despite the late commencement of the watering season the quantity of water delivered, 11,831 acre feet, was well above the average, a steady demand continuing until the end of May.

During the year a considerable amount of reconstruction work was carried out with Unemployment Relief Funds, and, as a result, the areas served by the Main Eastern and the Wandella No. 2 Main Channels will have the benefit of a greatly improved water supply.

Throughout the District a steady increase in the area under lucerne and sown pastures has been maintained. In the season 1932-33, the area under lucerne was 406 acres, and that under sown pastures 733 acres, whereas in 1936-37 season the areas sown were lucerne 821 acres and pastures 3,062 acres.

The Commission donated a prize of water to the value of £15 to the winners of various sections of the annual pasture and fodder crop competitions conducted by the Boort Agricultural and Pastoral Society, and the quality of the entries was very favourably commented upon by the judge.

The Commission's new offices at Boort were completed during the year and have greatly facilitated the work of the district staff.

COHUNA CENTRE.

The Districts administered from this centre are the Cohuna and Leitchville Irrigation and Water Supply Districts and the Urban Divisions of Cohuna and Leitchville.

Supply channels serving these Districts have a total length of 202 miles, and drainage channels 117 miles. During the year, 47,890 acre feet of water were delivered to lands within the Districts, and 10,200 acre feet were diverted from the Gunbower, Taylor's, and Pyramid Creeks by some 185 adjoining landholders outside the districts.

With funds made available by the Government for unemployment relief purposes considerable improvements were effected to supply channels, and old timber bridges and structures, built some 40 years ago, were replaced with concrete structures.

Improvement works were continued on the Barr Creek, which is the main drainage carrier for the Cohuna and Leitchville Districts, and during the year mechanical excavators deepened the creek for a further 12 miles upstream. The reconditioning of the subsidiary drainage channels was commenced during the early part of this year with Unemployment Relief Funds, and some 10 miles of drains were deepened to a grade which will allow of soil drainage to a depth of 3 feet below the lower lying areas of the Districts.

During the year the erection of a steel water tower to link up with the new 6 inch rising main to serve the Leitchville Urban Division was completed, and considerable improvement to the water supply both in pressure and quality was effected.

KERANG CENTRE.

The Irrigation and Water Supply Districts of Kerang, Koondrook, and Third Lake, the Urban District of Koondrook, and the Urban Division of Murrabit are controlled from this centre. There are 430 miles of supply channels and 105 miles of drainage channels serving the area now administered from the Kerang Centre, and, during the irrigation season, 46,883 acre feet of water were delivered to these lands notwithstanding that, on account of the early spring rains, no water was delivered until late in September.

During the year a further 36 meter outlets were installed to replace old wooden orifice structures, while considerable improvements to the channel system were effected by the replacement of old timber bridges and regulators with concrete structures, and by the cutting of cumbungie and the cleaning out of channels by means of a dragline excavator.

The Kerang East drainage scheme, carried out with Unemployment Relief Funds made available by the Government, is now in full operation, the subsidiary drains having been completed during the year.

In co-operation with the Department of Agriculture and the Commonwealth Council for Scientific and Industrial Research, investigations into the seepage and salt problems of the Kerang District have been further advanced. These investigations necessitate an extensive soil survey which is now in progress over an area of 15,000 acres in the District.

SWAN HILL CENTRE.

Administration from this centre embraces the Irrigation and Water Supply Districts of Swan Hill, Nyah, and Tresco, and the Urban Districts of Nyah, Nyah West, and Lake Boga.

The Tresco sub-centre includes the Irrigation and Water Supply Districts of Mystic Park, Tresco, and Fish Point, and the Kerang North-West Lakes Waterworks District. Supply channels in these Districts total 90 miles in length, and drainage channels, 31 miles.

To serve the Swan Hill and Nyah Irrigation Districts there are 139 miles of supply channels and 53 miles of drainage channels. Within the Swan Hill District a total of 27,637 acre feet of water was supplied during the year, of which 20,201 acre feet were delivered as water rights. In the Nyah District, 6,914 acre feet of water were supplied, including 6,625 acre feet delivered as water rights.

During the year considerable improvements were effected to the supply systems of the districts administered from the Swan Hill centre. This was made possible by an Unemployment Relief Grant received from the Government for district reconstruction. The works completed include the cleaning out of 5 miles of main channel and the removal of weed growths from 60 miles of channels. Fourteen of the old timber bridges, constructed by the Swan Hill Trust, were repaired, and one bridge and five regulators were replaced with concrete structures. Three culverts on the Murray Valley Highway were widened to provide the greater road width required

by present traffic. The supply systems of Woorinen, Nyah, and Tresco received particular attention, and, altogether, 20 miles of concrete lined channels have been treated for the prevention of seepage, 3 miles of channels were relined, and 1 mile of concrete channel was topped up.

To supplement the supply to the Beverford area the Main Western Channel was extended and connected with the Beverford Channel, provision being made to enable surplus water to be turned into the River Murray.

A scheme designed to give protection to the Swan Hill Flats from the River Murray during periods of high flow was commenced during the year. The work, consisting of the reconditioning and remodelling of the existing levee banks, is proceeding satisfactorily, and the more dangerous sections of the old levee bank have already been strengthened.

The dried fruit crop marketed by the Woorinen Fruitgrowers' Society was 2,700 tons as compared with 2,100 tons for the previous year. The crop on the whole was of excellent quality. The quantity of butter manufactured by the Swan Hill Co-operative Dairying Company was 551 tons, compared with 596 tons in the preceding year. In the Nyah District, the dried fruit crop was 3,700 tons, practically equal to the record yield in 1933, while 21,400 cases of citrus fruit were despatched from the Nyah West Railway Station.

The Lake Boga Urban Water Supply System was remodelled during the year, Unemployment Relief Funds being made available for that purpose by the Government. An electrically driven pump unit has been installed on the bank of Lake Boga, which is now the direct source of supply, and 4,000 feet of new mains were laid. These works, together with the reconditioning of the old mains, have resulted in a greatly improved supply to the township.

WIMMERA-MALLEE DIVISION.

(R. F. McNab, L.S., A.M.I.E.Aust., Divisional Engineer.)

RED CLIFFS AND MERBEIN IRRIGATION AND WATER SUPPLY DISTRICTS.

There are in operation in the Red Cliffs District 125 miles of irrigation channels and 5 miles of drainage channels, and in the Merbein District 54 miles of irrigation channels and 5 miles of drainage channels.

All requirements for water were supplied in both Districts during the past season, 46,142 acre feet of water being delivered to irrigators as compared with 49,822 acre feet in the previous season. Heavy rains in January, which interfered to some extent with the supply of irrigation water, affected the grade of dried fruits and resulted in some losses of crop through mould. Limited damage from frost and hail was also experienced. However, the yields of dried fruit for the season were reasonably good, 14,500 tons being obtained at Red Cliffs, and 10,585 tons at Merbein, as compared with 16,000 tons and 9,286 tons respectively for the previous year.

In both Districts small extensions were made to the channel systems, which were also generally improved by concrete lining, drainage of seepages, and the construction of new culverts.

The work in connexion with the first stage of the scheme for the electrification of the Merbein Pumping Plant, consisting of the installation of a turbo-alternator at Red Cliffs Pumping Station, a transmission line from Red Cliffs to Merbein Pumping Station, and a 50-cusec motor-driven pump at Merbein, is proceeding satisfactorily. The transmission line has been completed, and the installation of the turbo-alternator and motor-driven pump is now well in hand. It is expected that this first stage unit will be in operation for the irrigation in September, 1937. During the financial year 1937-38, the Commission intends to proceed with the second stage of the scheme, which provides for the duplication of the generating plant at Red Cliffs and of the motor and pump at Merbein.

Good progress has been made with the installation of sub-surface drainage for the Red Cliffs, Merbein, and the First Mildura Irrigation Trust Districts. Unemployment Relief Funds have been made available from time to time by the Government for these works, the landholders contributing towards the cost at the rate of £5 an acre of their holdings by payments spread over a period of five years.

In the Red Cliffs District, the whole of the projected sub-surface drainage schemes covering an area of 9,797 acres and comprising 87 miles of main drains are now practically completed.

The East and South-East Drainage Systems in the Merbein District were completed during the year. The South-West Scheme, which is the only one remaining to be done in this District, is well advanced and will be finished in the near future. With the completion of this system, the total area of 7,661 acres in the District will be benefited by 58 miles of sub-surface drainage mains.

Substantial progress has been made in the First Mildura Irrigation Trust District with drainage schemes being carried out by the Commission on behalf of the Trust. The West System has been finished, the Irymple Valley and East Schemes are nearing completion, and

work is in progress in the North-West area. Funds having been made available for the installation of the North System, arrangements were put in hand to commence this work, which will be carried out during the coming year, and will complete the whole of the proposed drainage schemes for the Trust District involving the laying of 108·5 miles of sub-surface main drains to serve an area of more than 11,000 acres.

In these three Districts as many as 700 men at one time have been employed, under Unemployment Relief Work conditions, on drainage works.

The reticulation system of the Merbein Urban District was extended during the year; 800 feet of 3 inch diameter mains being laid to cope with developments. Full supplies of water were maintained at Merbein and Red Cliffs Townships.

WATERWORKS DISTRICTS.

WIMMERA-MALLEE WATER SUPPLY.

An area of 11,000 square miles is served from this scheme and the distribution system comprises 6,322 miles of Commission's channels as well as more than 3,000 miles of farmers' private connecting channels. Supplies of water are drawn chiefly from the Grampians Headworks Reservoirs which are filled from the Wimmera and Glenelg Rivers, and supplementary supplies, when available, are received from the Loddon and Goulburn systems through the Waranga Western Extension Channel.

A fair season was experienced during the year under review and full supplies of water were distributed, the annual run in all channels being carried out without serious trouble from sand drift. However, the cost of cleaning sand from channels was much greater than it would have been if it had been possible to exercise control of clearing, fallowing, cultivation, and burning off within a reasonable distance of channels in places liable to drift.

The 1937 watering has, however, opened under very adverse conditions owing to the abnormally dry winter, and expenditure on clearing drift sand from channels has been greatly increased.

The removal of sand drift presents a particularly difficult financial problem in that the expenditure that may be required for this work and water distribution cannot be forecast with any degree of accuracy, such expenditure having varied from £57,932 in 1932, when conditions were favorable, to as much as £163,182 in 1929, when drift was particularly severe. The establishment of a "Sand Drift Equalization Fund" would enable the savings in good years to be conserved to meet excess costs when conditions were bad.

All townships with pipe reticulations connected to the system received continuous supplies of water throughout the year. In addition to five towns controlled by the **Charlton, Donald, Horsham, Murtoa, and Warracknabeal** Waterworks Trusts, the following 37 Urban Districts with pipe supply systems operated by the Commission are connected to this scheme, viz. :—

Antwerp	Dimboola	Marnoo	Quambatook	Waitchie
Berriwillock	Dooen	Minyip	Rainbow	Walpeup
Beulah	Hopetoun	Nandaly	Rupanyup	Watchem
Birchip	Jeparit	Natimuk	Sea Lake	Woomelang
Brim	Jung Jung	Nullawil	Speed	Woorinen
Chillingollah	Lalbert	Ouyen	Tempy	Wycheproof
Chinkapook	Lascelles	Patchewollock	Ultima	Yaapeet
Culgoa	Manangatang			

As the last two months of the year proved extremely dry, no run off from the catchments occurred, and consequently no water was added to the volumes in the headworks reservoirs of the scheme. However, as there are sufficient volumes stored in the reservoirs to complete the watering now in progress, and to commence the next season's run of water, the position must be considered as satisfactory.

A prolonged watering season involving running channels in the Mallee in the late spring or early summer is most undesirable, and causes undue waste of water, and additional expenditure in channel cleaning and water distribution to the extent of as much as £40,000 when the season is prolonged in very dry years.

To enable the whole watering to be completed in the winter and early spring months a proposal is under consideration for the enlargement of the main channels of the system from Taylor's Lake and Pine Lake Reservoirs to the Waranga Western Channel near Wycheproof. If this were done the time taken for the annual watering of the Wimmera Mallee system would

be shortened and confined to the more favorable period of the year, and it would also be practicable for the whole Wimmera Mallee area to be watered from the Grampians storages at times of drought when supplementary supplies from the Waranga Western Channel might not be available. The continually increasing demands for water on holdings throughout the area can at present be met only by running main channels at dangerous levels, with consequent seepage troubles and possible delays through breaks ; this aspect alone justifies some enlargement.

In the newer Mallee, vacated closer settlement holdings, previously used for agricultural purposes, have been let in large areas for grazing, and, in consequence, a number of channels was not run ; where required, water is, however, supplied to graziers on a sales basis.

WESTERN WIMMERA, UPPER WESTERN WIMMERA, WIMMERA UNITED, UPPER WIMMERA
UNITED, KARKAROOC, AND HINDMARSH DISTRICTS.

In the Urban District of Minyip, extensive remodelling of the pipe reticulation system was carried out, resulting in an improved distribution of water to certain parts of the town. To cope with developments, many short extensions of mains were laid in various other towns within these districts.

Three miles of channels were constructed to the south of Horsham to provide a more direct route for irrigation supplies and to command additional areas.

Further progress has been made in the extension of pasture irrigation in the vicinities of Horsham and Murtoa where water is made available to limited areas by the Commission under strict conditions as to use. The total area now irrigated is 2,079 acres, compared with 1,890 acres in 1935-36, and 1,259 acres in 1932-33.

In all there are 1,278 acres of orchards, vineyards, and market gardens, and 801 acres of lucerne, pastures, and annual fodder crops, in these localities supplied with water for irrigation.

The Natimuk and Arapiles channels, on which little maintenance work had been done for 50 years, have been partially remodelled and new structures provided where necessary. A number of new escape structures for delivery of surplus water into natural watercourses has been provided to dispose of flood waters.

In the Karkarooc District various sections of the Dennyning and Yallum Channels, where the waterway was too restricted to cope with the increased flows now necessary, have been enlarged.

BIRCHIP, DERING, EUREKA, LONG LAKE, SEA LAKE, TYNTYNDER, TYRRELL,
TYRRELL WEST, WALPEUP CENTRAL, AND WYCHEPROOF DISTRICTS.

During the year the Tyrrell West Main Channel has been remodelled in a number of places, and some new concrete bridges have been constructed to replace old structures which were too small to carry the increased volumes required. On this channel considerable work has also been carried out, by core trenching, to minimize seepage which was becoming increasingly troublesome ; much additional work of this nature is, however, necessary.

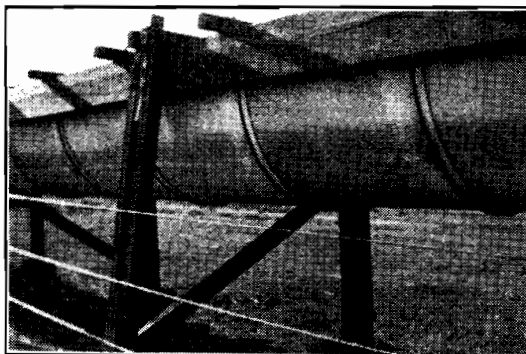
In the Tyntynder District the three Burra flumes, having a total length of 59½ chains, were reconstructed, the galvanized corrugated iron forming the flume having become so pitted as to be unfit for further service.

When the question of renewal was investigated, the possibility of using a material other than corrugated iron was considered and a number of experiments then carried out resulted in the adoption of an asbestos-cement flume formed by sheets 4 feet long and $\frac{3}{8}$ of an inch in thickness, the joint being made by lapping the sheets with an intervening strip of tarred hemp. This joint is held in position with a $\frac{5}{8}$ inch diameter "U" bolt, and is tightened on the cross bearers from which the flume section hangs. The assembly of this type of flume involves only a fraction of the work required for a corrugated iron flume and its advantages are many. Should leaks in the lap joints occur they can easily be staunched ; the absence of corrugations in the asbestos-cement section increases the capacity by almost 100 per cent. ; and the maintenance cost of the flume portion of the structure is reduced to practically nil. The asbestos-cement flume cost little more than one of iron, but the water carrying capacity provided and required could only have been obtained by duplicating the whole structure if corrugated iron had been used.

The reconstructed flume has been in use for the present watering, now almost completed in this area, and has functioned most satisfactorily. Some photographs of this new flume are shown hereunder :—



A view of the Flume while under construction.



A close view showing the finished Flume. (Note method of jointing).



A general view of No. 3 Flume.

In the Long Lake District, the rising main from the Cannie Ridge Pumping Station has been renewed by the installation of 30 chains of 18 inch diameter electrically welded concrete lined mild steel pipe, the original unlined thin mild steel pipe having become unfit for further use.

Extensive remodelling of the pipe reticulation systems has been carried out in the Urban Districts of Chillingollah, Chinkapook, Manangatang, Ouyen, Quambatook, Woomelang, and Woorinen, and, in addition, short extensions of mains to cope with developments have been made in various towns.

Additional water storages have been constructed at Lalbert, Woorinen, and Quambatook, while at Woorinen a floating arm was installed in order to give a more satisfactory supply by drawing the water for the town use from the top of the storage instead of at the bottom as previously.

A new administrative office for Tyrrell West, Walpeup West, and portion of Tyrrell Districts has been erected at Ouyen and is now occupied by the staff.

(Waterworks Districts not Part of the Wimmera-Mallee System.)

WALPEUP WEST DISTRICT. .

Supplies to the settled portion of this District, approximately 900 square miles, are given by bores, 109 of which, equipped with windmills and elevated tanks, provide water for public purposes. Most of the holdings in the western portion of the District have private bores installed for their water supply, and, when a holding has been so equipped, it has been included in a lower rating classification, the total revenue derived from the District being consequently reduced. The rates collected are, therefore, now barely sufficient for the maintenance of the public bores. These, however, were kept in reasonably efficient working order during the year.

CARWARP, CARWARP CENTRAL, COREENA, AND YELTA DISTRICTS.

The Carwarp and Carwarp Central Districts comprising 230 and 23 square miles respectively are watered from the Red Cliffs Pumping Plant on the River Murray, the supplies for Carwarp Central District being re-pumped from the channel near Carwarp Township. All settled holdings were supplied during the year. About 125 square miles in these Districts are now leased in large areas for grazing and consequently the channels in such areas were not run.

The pipe reticulated system to the Carwarp Urban District, which does not, however, provide for a continuous supply, functioned as in previous years.

In the Coreena District of 208 square miles about 50 square miles have now reverted to grazing. Water is pumped from the River Murray at Coreena Bend and full supplies were provided during the year to all agricultural holdings in the District.

The Yelta District of 80 square miles is supplied with water pumped from the River Murray by the Merbein pumps. During the past season a considerable length of channel was not run in an area of about 25 square miles which has reverted to grazing.

MILLEWA AND MILLEWA CENTRAL DISTRICTS.

These Districts with an area of 500 and 324 square miles respectively receive their supplies from the River Murray at Lock 9. Water is pumped to a height of 145 feet for Millewa District, and an additional 135 feet for Millewa Central District, four separate pumping plants, with an approximate total horse power of 2,000, being used for this purpose.

In these Districts, which were reduced in extent last year to exclude two parishes wholly leased for grazing, further large areas have been vacated by wheat growers and are now leased for grazing. Practically all the grazing lands, including those now outside the Districts, were supplied with water on a sales basis, payment being made in advance by the graziers for their supplies.

During the year continuous supplies of water were maintained in the pipe reticulation systems of the Urban Districts of Werrimull and Meringur, where auxiliary engines are provided for pumping during periods of calm, when the windmills, which do the main pumping, are unable to function.

In the Wimmera-Mallee Division, exclusive of officers of the Commission on the Division staff, the average number of men employed throughout the year on new works and maintenance was 889, the maximum number during the period being 1,537.

TOWN SUPPLIES.

MAIN URBAN SUPPLIES DIVISION.

(W. F. Nevill, B.C.E., Divisional Engineer.)

COLIBAN SYSTEM.

In the Coliban System there are two main storage reservoirs on the Coliban River, the Upper Coliban with a capacity of 25,700 acre feet, and Malmsbury with a capacity of 12,300 acre feet, together with 29 subsidiary reservoirs with a total capacity of 6,970 acre feet. The main and distributary channels have a total length of 389 miles, while a supply of water for the City of Bendigo, the important towns of Castlemaine, Eaglehawk, and Maldon, and eighteen other townships is provided through some 300 miles of urban pipe reticulation. In addition, water is supplied for irrigating some 9,300 acres of orchards, market gardens, permanent pastures, and other crops, and for the requirements of the mining industry throughout the district.

On the recommendation of the Public Works Committee, the Government has approved of the provision of £200,000 from Unemployment Relief Funds, over a period of three years, commencing with 1936-37, for the purpose of lining sections of the main and branch channels (£50,000), and for remodelling the reticulation systems of Bendigo and Castlemaine (£150,000).

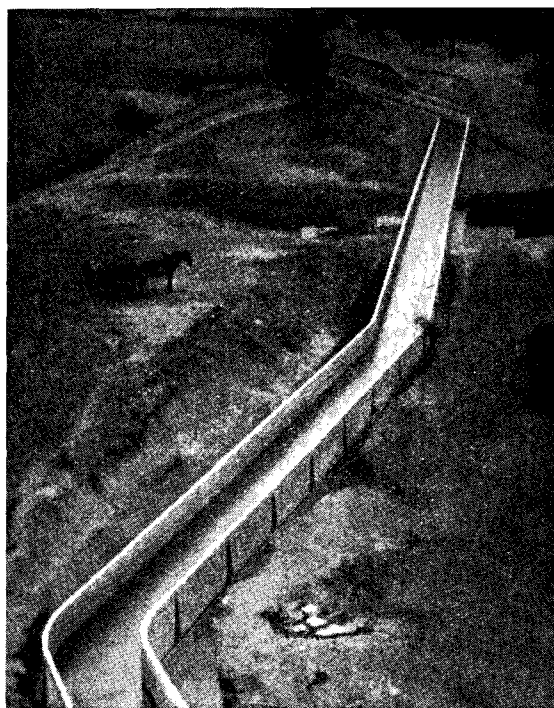
During the year, further lengths totalling $5\frac{1}{2}$ miles of main and branch channels have been either lined or replaced by concrete ground fluming. The total length of main channel now lined is approximately 14 miles, and that of branch channels 21 miles. The latter includes an important section of the Main Harcourt Channel where a continuous length of $2\frac{1}{4}$ miles has been reconditioned, and on which new structures in reinforced concrete were constructed to replace old timber structures beyond repair. In addition to the lining of channels, $1\frac{1}{4}$ miles of 10 inch and 12 inch diameter steel pipes were taken up from the Jackass Flat Pipe System and relaid after being lined with cement mortar.

The proposed improvements to the reticulation systems of Bendigo and Castlemaine provide for the laying of additional supply mains to these towns, the replacement of a large portion of the existing mains with new pipes of larger diameters, and the enlargement of the high level basin at Golden Point. During the year, this work was entered upon and partly carried out. At Bendigo, 8 miles of new 6 inch and 4 inch diameter pipes have been laid, and at Castlemaine pipes of similar sizes were installed over a length of $3\frac{1}{2}$ miles.

In order to meet the increasing demand for water, mainly as a result of new subdivisions and further activity in building, extensions of the existing reticulation systems in Bendigo and Castlemaine involving the laying of 62 chains of 3 inch diameter pipe were also carried out in the year.

The new supply main recently laid from Specimen Hill Reservoir to Eaglehawk was thoroughly tested during the year and proved satisfactory under summer conditions. Replacement of some of the smaller mains has yet to be undertaken to complete these works which will be of great benefit to consumers generally.

During the year, the urban supply to the township of Raywood was improved, with beneficial results to consumers, by scraping the reticulation pipes. Improvements were also effected to the Maldon water supply system. These works, which included the installation of a 3 inch centrifugal pump and electric motor at Lawson Basin, and the laying of new 6 inch diameter pipes to replace the 4 inch main in Adair Street, will be effective during the ensuing year.



Concrete Ground Fluming, Malmsbury.

Supplies of water for sluicing were made available during the periods August to December, 1936, and February to April, 1937, when, owing to the limited quantity of water in the storages such supplies were discontinued in order to safeguard the requirements for domestic purposes.

MORNINGTON PENINSULA DISTRICT.

The Mornington Peninsula District is being extended to include the bayside towns from Dromana to Sorrento and Portsea, which are to be supplied with water by an extension of the Commission's existing works. Construction work on the Bittern Reservoir, the main storage for the proposed Dromana-Portsea water supply, progressed satisfactorily throughout the year, and is now almost completed.

Owing to the regrading of Point Nepean Road, between Mordialloc and Carrum, several sections of the 12 inch diameter wood main supplying these foreshore towns had to be lowered, and, in some cases, moved from under the new formation. This pipe line, which had been in the ground nearly seventeen years, was found to be in excellent condition.

A very great improvement has been effected in the water supply to the Springvale Urban District by the laying of 2 miles of 15 inch and 12 inch diameter steel mains in Heatherton Road from Chandlers Road to Springvale Road. The whole of the existing reticulation was reconnected to this new pipe line, and considerable pipe extensions, made possible by this work, were carried out.

Many important extensions to the reticulation systems were also carried out in various towns throughout the Mornington Peninsula District.

Difficulty in maintaining full supplies in the Dandenong Reservoir has been experienced in recent years owing to increasing demands for water. To overcome this the 12 inch diameter syphon across the Dandenong Creek was replaced with an 18 inch diameter wood pipe, thus enabling the full discharge of the Berwick-Dandenong Line to be utilized and an adequate supply to consumers maintained.

The supply to Mount Martha, at the end of a long main from Mornington Reservoir, will be much improved by the service basin now in course of construction. This storage was commenced recently and should be completed in time for use during the coming summer.

Considerable damage to concrete pipe lines occurred as a result of some severe frosts, necessitating urgent repairs throughout the District. Many water meters also suffered severely from the same cause.

WONTHAGGI DISTRICT.

The auxiliary pumping unit and new low-level service basin, constructed during last year, were in operation for the first time. The new works proved very satisfactory, an ample supply of water being maintained throughout the summer.

The Lance Creek Reservoir 12 inch diameter supply line was brushed out and cleaned generally. A new road bridge having been constructed over the Powlett River, the main pipe line was transferred to this structure.

Improvements to the reticulation, including replacement of some old mains, were carried out.

BELLARINE PENINSULA DISTRICT.

The supply to towns in the Bellarine Peninsula District was satisfactorily maintained throughout the year. The Geelong Waterworks and Sewerage Trust received a total of 544,420,000 gallons of water from the Commission's system, this quantity being the largest yet taken by the Trust in one year.

Although the Wurdee Boluc Reservoir was not quite full at the commencement of the season, about 6,400 acre feet remained in storage at the end of June, being 600 acre feet more than the carry-over from the previous year.

Unemployment Relief Funds were provided for repairs to the 54 inch diameter syphons in the main inlet line, which were found to require immediate attention to prevent serious deterioration of the pipes. These syphons are being scraped, cleaned, and repainted with tar compound. The Yan Yan Gurt Syphon has been completed and work is in progress on the Retreat Creek and Wormbete Syphons.

The construction of an auxiliary basin at Wauru Ponds has been approved, and an early commencement will be made with the work. The provision of this additional storage will enable an improved supply of water of better quality to be given.

Several extensions have been made to the existing urban reticulation systems throughout the District.

OTWAY DISTRICT.

The Otway Waterworks District was constituted as from 12th January, 1937. The District, which extends from the Arkins Creek in the Otway Ranges to the eastern boundary of the City of Warrnambool, includes the important towns of Camperdown, Cobden, and Terang.

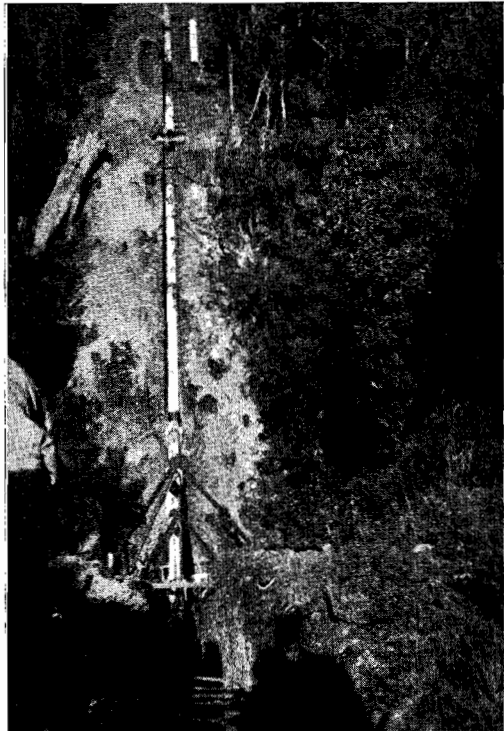
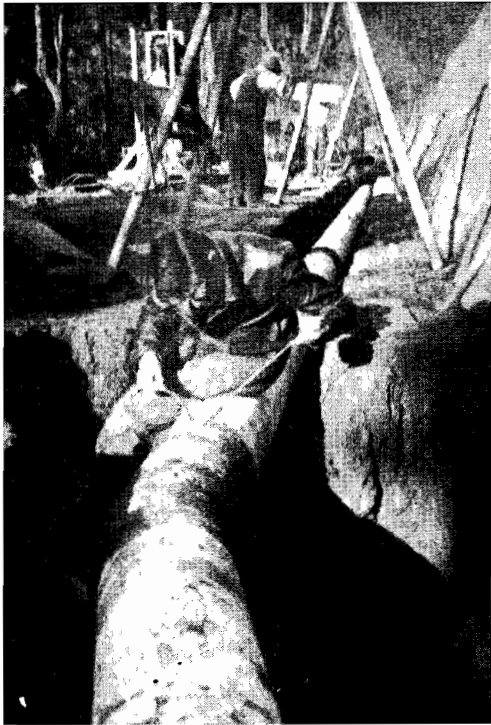
Construction of the extensive works required to supply water from Arkins Creek to these towns and the City of Warrnambool was commenced during the previous year. The diversion works on Arkins Creek have been completed, and a contract, involving the sum of £82,025, for the supply of over 28 miles of 17 inch diameter cement lined steel pipes for the main lines was entered into with Hume Steel Limited, who established a special factory at Colac. Although considerable delay occurred in delivery of pipes owing to the difficulty of obtaining steel plates, some 18 miles of pipes have now been manufactured. About 5 miles of the main pipe line have been completed, and, with more satisfactory deliveries of pipes, this portion of the work is now being expedited.

Reticulation of the town of Camperdown, which was undertaken early in the year so that consumers can be supplied immediately the water is available, is approaching completion, and steps are being taken for the construction of the Camperdown Service Basin.

Plans for the reticulation of Cobden, which town has been included in the scheme, and of Terang are in course of preparation. A proposal for a supply to the township of Allansford also is being investigated.

The Warrnambool (Tank Hill) Storage, 56 miles from the source of supply, and the largest in the scheme, has been commenced. Satisfactory progress is being made with the construction of this reservoir, which will have a capacity of 136,000,000 gallons.

During the year the number of men employed on the works has increased steadily from between 30 and 40 to well over 200.



Pipe Laying in Mountainous Country, Otway District.

Accompanying this Report is a plan of the Otway Waterworks District. This plan shows the location of the diversion weirs in the Otway Ranges, the route of the main and branch pipe lines, and the sites of the storages and service basins to supply Camperdown, Cobden, Terang, and Warrnambool.

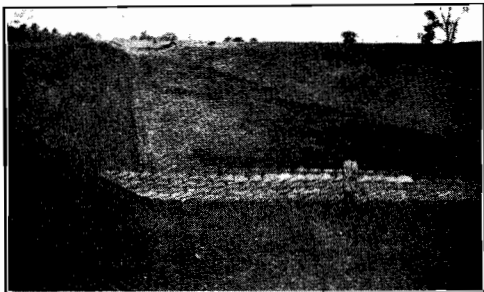
INVESTIGATION OF NEW IRRIGATION AND WATER SUPPLY PROPOSALS.

(R. G. Knight, M.C.E., M.Inst.C.E., Chief Designing Engineer (Acting)).

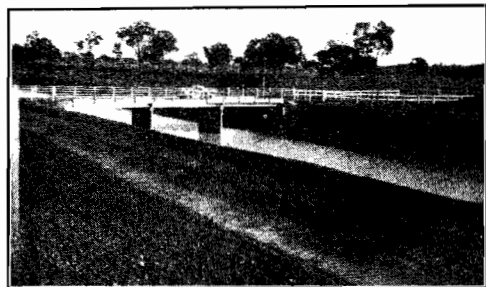
PROPOSED MURRAY VALLEY IRRIGATION DISTRICT.

Substantial progress has been made in the location and design of channels and structures to distribute water made available from the Hume Reservoir on to lands in the Murray Valley below the diversion weir under construction at Yarrawonga.

Work on the Yarrawonga Main Canal and Murray Valley Main Channel has proceeded steadily throughout the year, and the Main Canal from the Yarrawonga Weir has been completed for a length of 5 miles. This canal has a bedwidth of 61 feet and its capacity, when flowing full with water 7 feet deep, will be 1,000 cusecs, equivalent to about 2,000 acre feet per day. Provision has been made for the enlargement of the canal at a later date to 84 feet bedwidth when its capacity will be 1,350 cusecs. The Murray Valley Main Channel, which is a continuation of the Yarrawonga Main Canal, has a bedwidth of 47 feet and a



Yarrawonga Main Canal.



Yarrawonga Main Canal. (Typical Road Bridge).

capacity of 800 cusecs. Of this channel $1\frac{1}{4}$ miles have been completed and an additional $1\frac{1}{2}$ miles are in course of construction. To date, approximately 1,000,000 cubic yards of earth have been excavated, eight large bridges, and numerous drainage works have been completed, and a combined regulator and bridge of reinforced concrete is under construction. Fencing of the main canal and channel reserves to $8\frac{1}{2}$ miles has been completed.

Surveys for main and distributary channels in the Cobram and Strathmerton areas have been completed, and plans of channels and structures are in course of preparation.

Surveys of channels in other parts of the District are proceeding, and estimates for the work are being prepared in conjunction with soil surveys and analyses which are being made in co-operation with the Department of Agriculture.

PROPOSED PIANGIL IRRIGATION SCHEME.

Following further representations, an investigation was again made into the question of providing a scheme of works to supply water for the irrigation of lands in the Piangil Area near Swan Hill. Various proposals submitted were found to be impracticable, and the further investigation carried out during this year showed that it would not be possible to carry out works to supply water for the irrigation of lands at Piangil on a basis that would be payable to the landholders and the Commission.

IRRIGATION DISTRICTS DRAINAGE.

In many Irrigation Districts, the main drainage works, which have been proceeding for some time with Unemployment Relief Funds made available by the Government, are either completed or well advanced. Steps are therefore being taken to constitute the Cohuna, Kerang East, Maffra-Sale, Merbein, Red Cliffs, Rochester, Rodney, Shepparton, Tongala-Stanhope, Werribee and Woorinen Drainage Districts. Drainage rates will be levied to provide funds for the effective maintenance of these drainage works on which £853,190 has been expended to 30th June, 1937, benefiting an area exceeding 400,000 acres.

A scheme for the drainage of approximately 7,692 acres of land at Woorinen in the Swan Hill District was prepared by the Commission and submitted to the landholders concerned, who unanimously agreed to the carrying out of the works. The estimated cost of this proposal, which is now under consideration by the Government, is £37,000. Of this amount the landholders would contribute £9,500, spread over a period of five years.

In the Nyah District, surveys and investigations have been put in hand with a view to preparing a scheme for the remodelling of the existing drainage system.

ENLARGEMENT AND EXTENSION OF THE WARANGA WESTERN CHANNEL.

The question of the enlargement and extension of the Waranga Western Main Channel was referred by the Government to the Public Works Committee for investigation and report. A comprehensive report on the matter was prepared by the Commission, which submitted to the Public Works Committee a proposal, estimated to cost £130,000, providing for the enlargement of this Channel to meet the peak demands of existing districts when the ultimate development of existing storages has been reached. The inquiry is proceeding.

PROPOSED EXTENSION OF MORNINGTON PENINSULA DISTRICT.

In connexion with the scheme providing for an extension from the existing Mornington Peninsula District to supply water to the towns of Dromana, Rosebud, Rye, Sorrento, and Portsea, surveys have been well advanced, and construction work is proceeding. The line from Cranbourne to Bittern Reservoir has been finally located, and several trial surveys have been run from Bittern Reservoir to Dromana to determine the most economical route. Plans based on the completed surveys have been prepared and contracts for materials are being arranged to enable construction work along the line to proceed. Investigations in connexion with the selection of a reservoir site near the town of Dromana, and of service basin sites at Sorrento and Portsea, are proceeding.

PROPOSED SUPPLY TO PIMPINIO HIGH LANDS.

A proposal to provide a domestic and stock water supply to an area of some 30 square miles of high land, situated to the west of Pimpinio between Horsham and Dimboola, now classified in the third rating division of the Western Wimmera Waterworks District, has been investigated. The supply to this area would be obtained from the system now supplying lands south from Horsham, and would be carried across the Wimmera River by syphon to a pumping plant to be installed in the parish of Walmer, where the water would be raised to the higher

levels to be distributed by a system of channels. In addition to supplying the above lands, this scheme would provide gravitation water to lands in the parish of Walmer now served by the Jung Pumping Plant. The proposal, which is estimated to cost £11,090, has been referred to the Government for consideration.

PROPOSED NORMANVILLE WATERWORKS DISTRICT.

Further investigation has been made into the proposal for the supply of domestic and stock water to portions of the lands near Quambatook, Oakvale, and Normanville, which are commandable by gravitation from the Waranga Western Channel. In making this investigation provision was made for a southerly extension of the proposed district as far as the Waranga Western Channel. Plans have now been prepared for the supply to an area of about 170 square miles, the estimated cost of the works being £13,882. The Commission proposes to put this work in hand as soon as funds can be made available.

LITTLE RIVER WATER SUPPLY SCHEME.

As pointed out in the last Report the proposal that works be carried out for the supply of water for the irrigation of lands at Lara, Little River, and the western portion of Werribee was, after investigation, found to be impracticable on account of the high cost of water to landholders. In connexion with the suggestion for the construction of weirs to conserve water in the Little River for the use of local landholders, investigations showed that there is only one site suitable for the construction of a storage of any value. The estimated cost of this weir is £4,500 towards which the landowners are prepared to make a contribution. The proposal has been submitted to the Government for consideration.

MURRAY AND MAJOR WORKS DIVISION.

(E. D. Shaw, M.C.E., M.Inst.C.E., M.I.E.Aust., Senior Divisional Engineer.)

RIVER MURRAY WATERS AGREEMENT WORKS.

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, comprised 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 Murrumbidgee. The Acts also provide that, for purposes of construction, the Minister of Public Works of New South Wales shall be the Constructing Authority for that State; that for 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.

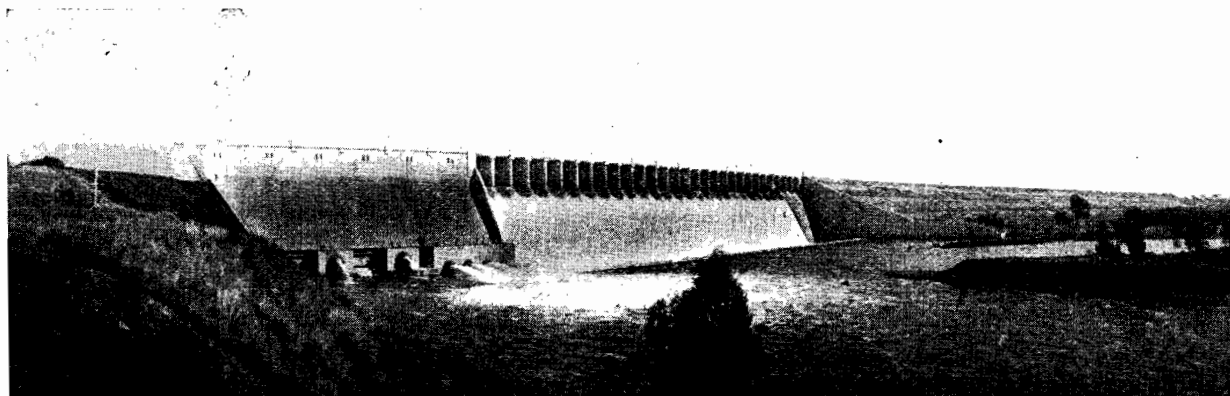
A further amending agreement was entered into in 1934 by the Commonwealth of Australia and the States of New South Wales, Victoria, and South Australia, to provide for the construction, in accordance with the general provisions of the original Agreement, of (a) the Upper Murray Storage (Hume Reservoir) to a capacity of approximately 1,250,000 acre feet of water only, (b) a roadway over the Hume Dam, (c) a diversion weir at Yarrawonga, (d) two weirs on the River Murrumbidgee, and (e) barrages across the five channels in the vicinity of the mouth of the River Murray. This further amending Agreement also provides for (1) the extension of the construction of the Upper Murray Storage to a capacity of not more than approximately 2,000,000 acre feet of water, if and when so desired by the States of New South Wales, Victoria, and South Australia, (2) the release of the Commonwealth Government from liability to contribute towards the cost of the maintenance, operation, and control of completed works and gauging stations, such cost to be borne in equal shares by the three State Contracting Governments, and (3) the deletion from the Agreement of the thirteen weirs and locks on the River Murray, and the nine weirs and locks on the River Murrumbidgee, the construction of which has not been commenced.

Up to the present the South Australian Constructing Authority has completed the Lake Victoria Storage and the nine weirs and locks between Lake Alexandrina and Wentworth, and is now engaged on works in connexion with the construction of the five barrages in the vicinity of the Murray mouth.

The New South Wales Constructing Authority has completed Weir and Lock No. 10 at Wentworth and has continued work on Weir and Lock No. 15, Euston, and on Murrumbidgee Weirs Nos. 5 and 7.

The State Rivers and Water Supply Commission, the Constructing Authority for Victoria, has completed the weirs and locks at Torrumbarry and Mildura, and is making progress with the construction of the diversion weir at Yarrawonga.

HUME RESERVOIR.



As mentioned in the last Report, the Hume Reservoir was completed, and has been functioning successfully during the year. The reservoir was filled to full supply level, 1,250,000 acre feet, on 8th August, 1936, and remained at or above that level to 16th February, 1937. The highest level reached during the year was R.L. 612.4 feet on 29th August, 1936, and the lowest R.L. 586.5 feet on 30th June, 1937. No trouble was experienced with algal growths in the reservoir during the year.

On the 21st November, 1936, the Reservoir was officially opened by His Excellency the Governor-General of the Commonwealth of Australia, Lord Gowrie, who, after an address, operated two of the needle valves by electrical remote control. The Honorable T. Paterson, M.H.R., Minister of Interior of the Commonwealth of Australia, the Honorable A. A. Dunstan, M.L.A., Premier of Victoria, the Honorable E. S. Spooner, M.L.A., Minister of Works and Local Government, New South Wales, and the Honorable M. McIntosh, M.P., Commissioner of Public Works of South Australia, represented their respective Governments and took part in the ceremony.

The embankments were satisfactorily maintained during the year, special attention being given to the downstream face of the main embankment where scours due to rain had occurred.

The roadway from the Bonegilla Road to and across the main embankment was sealed with bitumen and kept in good order.

Two cottages for the maintenance staff were re-erected in their permanent positions.

The area around the works was cleaned up after the auction sale of surplus plant and material held in June, 1936.

Arrangements have been made for the establishment of a recreation and watering reserve, downstream of the dam, under the control of the Wodonga Shire Council.

YARRAWONGA WEIR.

This Weir, which is required to divert from the River Murray for irrigation purposes water released from Hume Reservoir, was included in the Amended River Murray Agreement.

The structure will consist of three sections; a concrete weir 380 feet in length across the River Murray itself; an earthen dam 1,125 feet across the river flats; and a regulator 99 feet long across the flood channel on the New South Wales side of the river—a total length of 1,604 feet. In the weir across the river there will be eight movable flood gates, each 40 feet long by 20 feet high, operated by electric winches, and a further two gates of similar construction in the regulator on the New South Wales side. The average height of the weir across the river will be approximately 60 feet from the foundations to the crest of the flood gates and 90 feet to the platform for operating the flood gates. The earthen dam over the flats will be approximately 20 feet high with a crest width of 24 feet 6 inches.

A roadway will be provided across the structure for traffic between the two States. The construction of this roadway was agreed to by the Governments of New South Wales and Victoria, and the extra cost is being borne by the Road Authorities of those States.

The weir will raise the level of the water some 20 feet above the ordinary summer level of the river, and will supply water for irrigation and domestic and stock requirements for 400,000 acres on the Victorian side in the Murray Valley District, extending from Numurkah and Nathalia northwards to the River Murray near Cobram, and 1,100,000 acres on the New South Wales side in the Riverina, west of Berrigan.

The construction of this work was continued throughout the year. In the No. 1 Coffey Dam area on the New South Wales side, the excavations of the foundations of the spillway and north wing wall were completed and concreting was commenced in December, 1936. By the end of June, 1937, the work in this area was nearing completion.

Good progress was also made on the building of the embankment across the flats and the construction of the concrete structure across the flood channel on the north side.

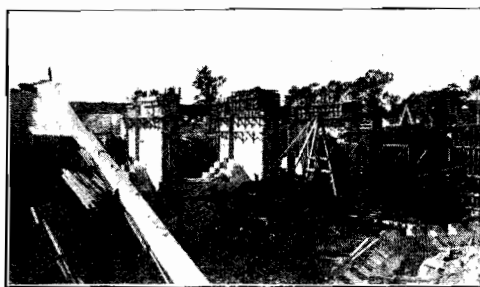
During the year, 31,000 cubic yards of overburden and rock were excavated, 26,000 cubic yards of concrete and 74,000 cubic yards of earthwork were placed and 52,000 square feet of steel sheet piling driven.

The building of No. 2 Coffey Dam has been commenced.

The number of men employed on 30th June, 1937, was 454.

During the year 50,000 cubic yards of stone, gravel, and sand, 1,000 tons of steel, and 8,000 lineal feet of timber piles were received on the works.

For guidance in design and to study the possible effect on the river bed and banks of the altered flow conditions which will be brought about by the construction of the Weir, a series of model experiments has been carried out. This procedure is in accordance with the practice now being adopted in Europe and America, and has been of great assistance in selecting the most suitable form of energy dissipator and the profile for the downstream apron. The first series was conducted on a small scale model in the laboratory of the Melbourne University made available by the authorities of that institution. Subsequently for the verification of the results on the small scale model, a larger model was tested at Bacchus Marsh where greater volumes of water were available from the irrigation channels. As a result of these experiments certain modifications in the design were effected.



Portion of Spillway under Construction in No. 1 Coffey Dam, Yarrowonga Weir.

WEIRS AND LOCKS, TORRUMBARRY AND MILDURA.

Both of these works which were constructed by the State Rivers and Water Supply Commission under the River Murray Agreement, operated successfully during the year and have proved most beneficial in connexion with the water supply of important Irrigation Districts along the River Murray.

The works have been carefully maintained and a progressive scheme of tree planting has been instituted. The weir trestles at Mildura were removed from the river on 22nd July, 1936, when the natural flow was increasing, and replaced on 13th November, 1936. At Torrumbarry the weir trestles were removed from the river on 29th July, 1936, and replaced on 19th October, 1936.

STORAGES.

GOULBURN STORAGES.

These works comprise the Eildon Reservoir, 306,000 acre feet capacity, on the Goulburn River about 18 miles above Alexandra; Goulburn Weir, on the Goulburn River near Wahring, capacity, 20,700 acre feet, and the Waranga Reservoir near Rushworth, 333,400 acre feet capacity.

EILDON RESERVOIR.

During the year the designed section of the bank was maintained by adding rockfill where necessary.

The painting of the spillway gates and outlet pipes with anti-corrosive paint was completed. All work in the outlet tower and tunnel was finalised and the control system is now in a satisfactory condition.

Weekly measurements taken of the deflections of the corewall and drainage flows from the bank have shown that there have been only minor alterations in these measurements during the year.

A considerable amount of plant and materials was transferred to Yarrawonga Weir and other Commission works. All surplus stores, plant, and buildings were sold by public auction in November, 1936, the total receipts from the sale being £3,577.

The works area has been cleaned up and a progressive scheme of improvement has been commenced.

The reservoir was at full supply level, R.L. 823 feet, representing 306,000 acre feet, from 1st November, 1936, to 6th January, 1937, and its lowest level was R.L. 760 feet or 25,900 acre feet on 30th June, 1937.

GOULBURN WEIR.

The Goulburn Weir was maintained in satisfactory order during the year. The central straps on the main gates were encased in concrete, and painting of the gates was carried out where necessary.

Minor repairs were done to the hydraulic turbines and overhead gearing, and further tree planting and minor improvements have been carried out.

WARANGA RESERVOIR.

Strong winds during the early part of the year caused minor breaks in the stone face pitching of the reservoir embankment, which were repaired by stone filling grouted with cement concrete. The stone face pitching of this large embankment is now in good condition and the manner in which it has withstood wave action has been very satisfactory.

During the year a further length of about 1 mile of the tramline along the crest of the embankment was re-laid with heavier rails and new sleepers.

The stone wall along the crest of embankment, used as a reserve for stone for repairs in cases of emergency, has been kept to full requirements and the quarry has been put in order.

A meteorological station was established at the reservoir during the year, the instruments being set up in the vicinity of the caretaker's residence.

The reservoir was at full supply level, R.L. 398 feet, 333,400 acre feet, from 9th September, 1936, to 30th December, 1936, the lowest level being R.L. 386.3 feet, 181,000 acre feet, on 1st July, 1936.

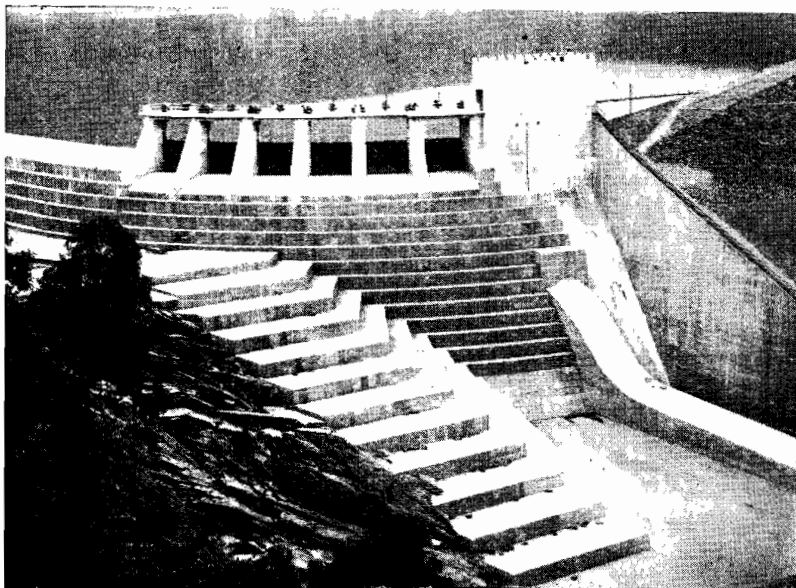
GLENMAGGIE RESERVOIR.

This reservoir, 104,500 acre feet capacity, is on the Macalister River near Glenmaggie township.

During the year filling was placed behind the wing walls to replace that washed out during the floods of June, 1936. The operating gearing of the outlet valves was raised to a more convenient level near the crest of the dam, and the handrailing across the crest of the dam was painted. In addition further tree planting was carried out on the northern side of the dam.

The concrete protection placed last year on the river bed below the dam to prevent scouring has proved most successful.

The reservoir was at full supply level, R.L. 244 feet, 104,500 acre feet, from 1st July, 1936, to 11th October, 1936, the lowest level being R.L. 216.6 feet, 27,440 acre feet, on 30th June, 1937.



Eildon Reservoir—Spillway, showing Gates.

LAANECOORIE RESERVOIR.

This work consists of an earthen embankment, with clay core and a regulating weir on the Loddon River, about half a mile upstream from the township of Laanecoorie, with a storage capacity of 6,650 acre feet, and is the headworks of the Loddon River system.

The work of raising the levee bank along the eastern side of the reservoir has been completed. On the bywash, on the western side of the reservoir embankment, the concrete lining, which had been considerably damaged by floods, has been renewed and strengthened. Two of the main outlet valves were repaired, and new valve-spindle supporting girders have been placed in outlet wells. All of the four outlet valves are now in good working order. In addition, the decking of the valve operating platform has been renewed; and the handrailing, piers, and overhead footbridge have all been painted.



Laanecoorie Reservoir.

On the embankment a layer of gravel has been placed along the crest, and the downstream face was planted with couch grass.

The works generally are now in a very satisfactory condition.

WIMMERA STORAGES.

The principal storages in this system are Wartook Reservoir 23,800 acre feet, Lake Lonsdale 53,300 acre feet, Fyans Lake 17,100 acre feet, Taylors Lake 30,000 acre feet, and Pine Lake 52,000 acre feet.

WARTOOK RESERVOIR.

All timber and scrub were cleared from the embankment and from the downstream toe, and repairs were carried out to the outlet tower, a new cast iron gate and gate guides being placed in position. A drainage system to carry away seepage water is being installed.

LAKE LONSDALE.

The embankment and the downstream toe were cleaned of all timber and scrub. A drain has been placed along the downstream toe to carry off all seepage water. In the bywash, the toe of the spillway wall was concreted and part of the bywash channel regraded to provide a better waterway for flood waters.

FYANS LAKE.

All scrub on the embankment has been cleared. Resoiling of the downstream face has been carried out where necessary.

PINE LAKE AND TAYLORS LAKE.

At Pine Lake about 60 chains of the back of the bank was resoiled, a bankquette was placed at the toe and a drainage system was installed to carry away seepage water from the bank. It is hoped to extend this work during the coming year.

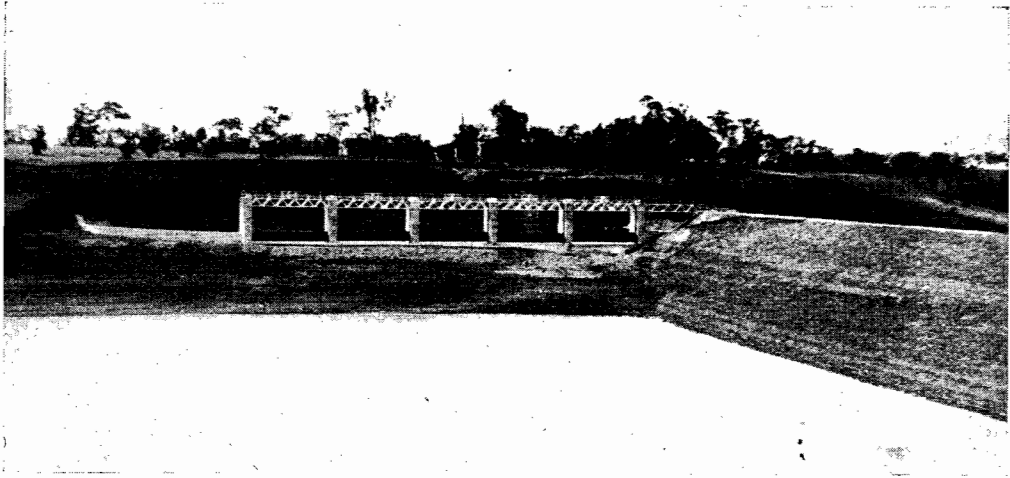
No work was done at Taylors Lake during the year.

WERRIBEE AND BACCHUS MARSH STORAGES.

These storages comprise Melton Reservoir, 19,100 acre feet on the Werribee River near Melton, and the Pykes Creek Reservoir 21,000 acre feet, on Pykes Creek near Ballan, the latter storage being supplemented by the Pykes Creek tunnel diverting water from Werribee River into the Reservoir.

MELTON RESERVOIR.

The Melton Reservoir was originally constructed to store 17,000 acre feet. This has now been increased to 19,100 acre feet by raising the full supply level by 3 feet.



Melton Reservoir—New Gates.

The reconstruction work consisted of raising the main bank by 3 feet, the installation on the spillway of five mechanically operated steel flood gates each 40 feet long by 5 feet high, and the raising of the remainder of the spillway wall by 3 feet. To prevent seepage under the spillway, a concrete cut off wall to suitable foundations was placed from the concrete corewall in the embankment around the upstream edge of the spillway wall. The outlet system was also reconstructed by the installation of a cast iron pipe 2 feet 6 inches in diameter in the existing 5 feet diameter concrete outlet tunnel. This cast iron pipe was attached to the existing cast iron valve system and extended to the downstream end of the original concrete outlet tunnel, where a regulating valve of the sector type was installed.

All the above works have been completed and are operating successfully.

All plant and building material used on the reconstruction works have been removed. The works and buildings have been satisfactorily maintained during the year, and a number of trees was planted. The number of men employed during the year was 21.

The reservoir was at the original full supply level, R.L. 270 feet, 17,000 acre feet, from 8th July, 1936, to 5th October, 1936, the lowest level being R.L. 228 feet, 2,240 acre feet, on 8th May, 1937.

PYKES CREEK RESERVOIR AND TUNNEL.

The Pykes Creek Reservoir was maintained in a satisfactory condition throughout the year. Some repairs were done to the upstream beaching which had been displaced by storms. Resoiling of the back of the dam was commenced during the year and this work will be continued. Additional planting of pine trees was done in the reserves in the vicinity of the dam.

The reservoir was at full supply level R.L. 1,306 feet, 21,000 acre feet, from 2nd September, 1936, to 7th October, 1936, its lowest level being R.L. 1,280 feet, 9,860 acre feet, on 26th June, 1937.

Some reconstruction work was carried out at Pykes Creek Tunnel to improve its carrying capacity. At the inlet the portal was concreted and about one chain of concrete lining placed in the tunnel. At the outlet the bed level was regraded to improve the flow, the portal was remodelled and about one chain of new concrete lining placed in position.

The number of men employed at the tunnel was 25.

LITTLE MURRAY WEIR.

The Little Murray Weir is situated on the Little Murray River about 4 miles from Swan Hill. It is the diversion weir for the supply of water to the Swan Hill and Woorinen irrigation areas.

During the year the steel gates and timber work were overhauled and painted. Some beaching was done on the river banks downstream of the structure where scouring had occurred.

RIVERS AND RECLAMATION DIVISION.

(*H. G. Strom, B.C.E., A.M.I.E.Aust., Divisional Engineer.*)

DRAINAGE AND FLOOD PROTECTION SCHEMES.

KOOWEERUP AND CARDINIA.

During the year the carrying out of major works for the alleviation of flooding in the Cardinia and western portion of the Kooweerup Districts has continued.

The construction of the large Toomuc-Deep Creek Outfall, Catch Drain, and appurtenant works, including bridges, on the east side of the Cardinia-Toomuc Main Drain, has been practically completed for a distance of $6\frac{1}{4}$ miles from Western Port Bay. The proposed Deep Creek Outfall, an extension of the above work, has been constructed for a further distance of $1\frac{1}{4}$ miles, being about one-third of the total length to the offtake at Deep Creek. It is expected that the whole of the Toomuc-Deep Creek works will be finally completed in six to eight months time, when a very large area of reclaimed swamp country will be afforded much greater security against the risk of flooding.

The work of enlarging and reconditioning the McDonalds and Western Boundary Outfall, near the west boundary of the Kooweerup District, was completed early in the year for its full length of 6 miles. This outfall now has a much improved carrying capacity for flood discharges from the Ararat and Deep Creek Catchments.

The construction of the large Cardinia Outfall on the west side of the Cardinia-Toomuc Main Drain was commenced during the year and to date has been completed for a distance of about 50 chains from the Bay. In connection with this outfall large bridges have been erected at the Main Coast Road and at the South Gippsland Railway.

During the year seven mechanical excavators have been in operation on the above works and have removed approximately 425,000 cubic yards of earthwork, often under very adverse working conditions. In addition, timber and steel bridges totalling 450 lineal feet have been constructed; fencing has been erected for a distance of 6 miles; and other appurtenant work including clearing and roadwork has been carried out.

Maintenance work has comprised the renewal of six timber bridges totalling 360 feet in length; general repairs to 40 bridges having a total length of approximately 2,000 feet; the treatment of noxious weeds and vermin along some 145 miles of drainage reserves; and minor repairs to structures.

Privately owned suction plants, operating under an arrangement with the Commission, have removed 20,000 tons of coarse clean sand from the Kooweerup Main Canal during the year for commercial purposes. The total output of sand to date is approximately 328,000 tons.

Following a suggestion made by the Commission and a recommendation by the Royal Commission, the Government appointed Mr. E. G. Ritchie, M.Inst.C.E., to enquire into and report on extensive additional improvement works proposed by the State Rivers and Water Supply Commission for the alleviation of flooding in the Yallock and eastern portion of the Kooweerup District. Mr. Ritchie's report is now receiving the consideration of the Government.

CARRUM.

Early in the year the Commission completed improvements to the Eel Race Outfall for a length of $1\frac{1}{2}$ miles, including considerable enlargement of the cut for 60 chains immediately above the junction with the Kananook Creek at Seaford.

Flood Causeways constructed of crushed rock, sealed with bitumen and flanked by concrete kerbing and stone beaching, have been constructed for traffic crossings over the Main Dandenong-Eumemmerring Outfall at Wells Road and at Pillars Crossing.

Maintenance work has comprised the cleaning of drains totalling about 30 miles in length and the treatment of noxious weeds along some 8 miles of main drainage reserves.

LOCH GARRY.

The seasonal conditions were such that no floods calling for the regulation of the Loch were necessary. General maintenance works were carried out and repairs to the banks undertaken where minor scours had been caused by the rains. The sections loamed last year are now well coated with grass.

KANYAPELLA.

During the year operations were confined to minor repairs and maintenance. The works are in a satisfactory condition.

ECHUCA.

The works of this scheme are in good order, no high floods being experienced during the year.

RIVERS.

RIVER IMPROVEMENT.

During the year the increased activity in river improvement works noted in last year's Report has been maintained. Seventy grants from the Rivers and Streams Fund, amounting to a total of £13,371, were recommended, after investigation, to the Honorable the Commissioner for Public Works, and subsequently approved by him. This brings the total number of grants made since the commencement of the Fund in 1930 to 311 and the total amount granted to £50,422. Grants from the Fund have now practically overtaken the accumulation of funds brought forward from previous years, so that in future the annual total of grants will have to be restricted to the revenue which comprises rentals received by the Crown for river frontages, and at present averages about £8,000 per year.

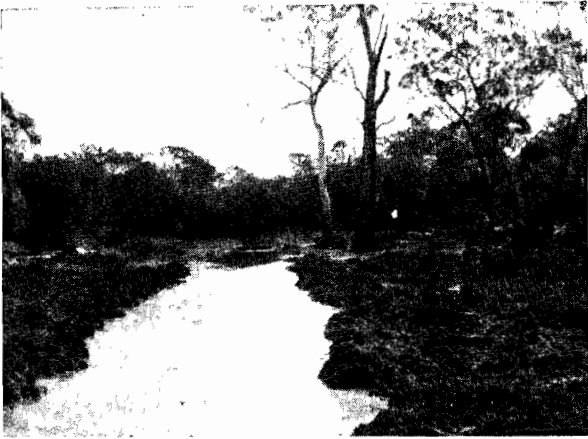
The Public Works Committee has investigated and reported favorably upon proposals for the amelioration of flooding conditions on the Latrobe and Snowy Rivers. As a consequence of this the Government has decided to adopt the Committee's recommendation that £46,000 be expended in snagging and bend cutting on the Latrobe River, and £23,000 in river improvement works on the Snowy River. Preparations are in hand for the commencement of these works.

The systematic snagging of rivers throughout the State, which was commenced early in 1935 as an Unemployment Relief work, was continued. A total amount of £46,500 has been expended on this necessary work. This amount has, with the co-operation of the Municipal Councils concerned, been expended on the Avoca, West Barwon, Broken, Fitzroy, Gellibrand, Goulburn, King, Kiewa, Latrobe, Loddon, Macalister, Mitchell, Ovens, Powlett, Rubicon, Snowy, Tambo, Tarra, Tarwin, Thomson, and Yarra Rivers, and the Gunbower and Woori Yallock Creeks. Numerous expressions of appreciation of the effect of the work so far completed have been received by the Commission from landowners and Municipal Councils. If further grants are made available for the purpose, this work will be continued during the coming year.

Further surveys have been made of rivers requiring improvement. The surveys of the eroding portion of the Avon River through Boisdale and Stratford, and of the Mitchell River from Glenaladale to Eagle Point, have been completed, as well as that of the Wodonga Creek, and a small survey at the Gulf on the River Murray at Barmah Forest. A survey of the Mitta River has been commenced.

An experiment was made in the use of explosives for the construction of a cut in sodden ground across a bend of the lower Latrobe River. The experiment showed that this method has definite possibilities where the ground is too wet for horses and where the extent of the work does not justify the use of excavating machinery.

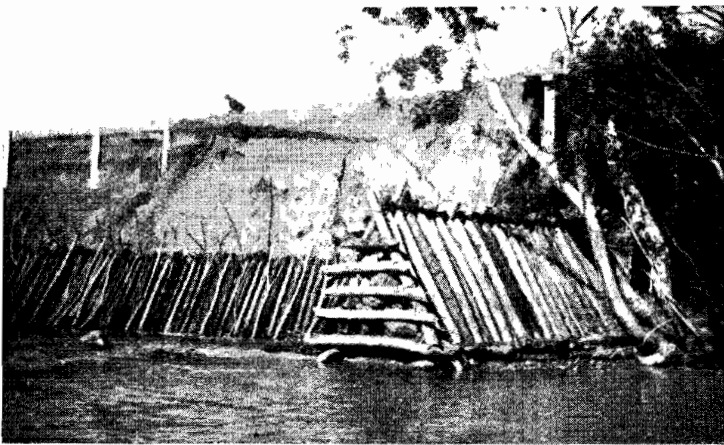
Examples of types of works for the prevention of erosion are shown in the accompanying illustrations.



Cut across Bend on Lower Latrobe River, Excavated with Explosives. Six feet deep.

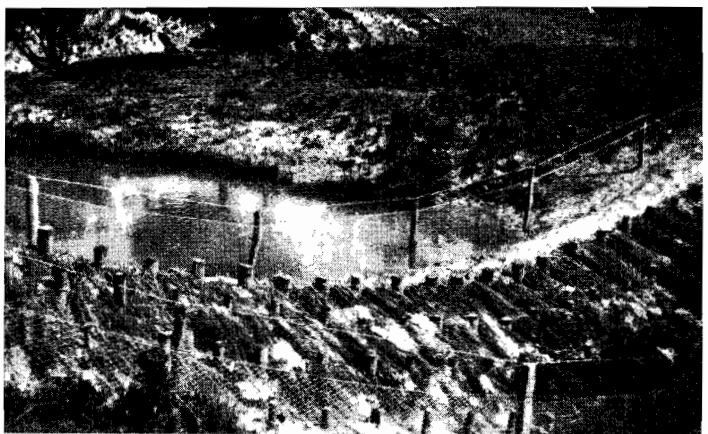


Wire Mesh Bound Shingle Groynes on Lerderderg River, Bacchus Marsh.



Stone Filled Timber Crib on Lerderderg River, Bacchus Marsh.

Post and Brush Check Dam to Arrest Silt carried from an Erosion on Skull Creek, Lindenow.



SOIL EROSION AND SILTATION.

Throughout the year investigations were carried on into the question of soil erosion, with its resultant and equally serious problem of pollution and siltation of streams and reservoirs. Numerous inspections were made to ascertain the probable effects on streams and storages of proposed mining operations and settlement of lands. The Commission was represented at several conferences held in various country and metropolitan centres, at which soil erosion and allied problems were discussed. It is more than ever obvious that the twin problem of erosion and siltation is causing heavy loss and expense, not only to landowners, but to Municipal Councils and other authorities dealing with road, railway, water supply, and drainage facilities.

The Government has indicated that it proposes to appoint a Committee, representative of the Departments concerned, to investigate and report on the erosion problems in this State.

MURRAY LEVEES.

Applications received during the year for permission to carry out works to protect lands from the effects of floods in the River Murray were dealt with by the Interstate Committee appointed for the purpose. These included the consideration of the re-location of a mile and a half of levee to be constructed by this Commission at Beverford, north of Swan Hill, which has since been approved.

DIVERSION OF WATER.

The right of the State to the use and flow, and to the control of water in rivers, creeks, streams and watercourses, lakes, lagoons, swamps and marshes, has been strictly exercised. The seasonal conditions during the latter part of last summer were favorable to the use of water for irrigation, and resulted in an increased demand by landowners outside irrigation districts for authority to divert water from streams and other natural sources of water supply.

The authorized diversions in force are 1,969 compared with 1,659 for the previous year.

WATER DISTRIBUTION.

The total area of land in Victoria supplied with water for domestic and stock purposes or for irrigation, excluding the Metropolitan areas, amounted to 15,065,000 acres.

The supply of gravitation water was commenced in early October, at which time the storages, including Victoria's half share of Hume Reservoir storage, contained 1,769,941 acre feet, and was terminated in the first week of June when the volume remaining in the storages amounted to 1,035,055 acre feet.

During the year a total of 511,985 acre feet of water, including 53,056 acre feet by pumping, was delivered from the Commission's channels to landholders in Irrigation Districts. This amount was exceeded only in the record season of 1929-30, when irrigation deliveries commenced during July and did not terminate until the end of May, 651,400 acre feet of water, inclusive of 50,556 acre feet by pumping, having been delivered to users. Actually the year under review shows a greater delivery than the preceding year by 4,555 acre feet.

The Irrigation Districts of Red Cliffs, Merbein, and Nyah, received 53,056 acre feet pumped direct from the River Murray, while the high level Waterworks Districts of Millewa, Coreena, Carwarp, and Yelta, also involving pumping, received 19,887 acre feet for domestic and stock supplies.

Although the delivery of water for irrigation this season did not commence as early as usual due to late spring rainfall, the demand extended to an exceptionally late period and resulted in about 87 per cent. of the water rights apportioned throughout the gravitation systems being used, while in the three districts dependent upon pumped supplies, 93½ per cent. of water rights was taken.

The Wimmera-Mallee Waterworks Districts also received some 22,080 acre feet from the Loddon and Goulburn systems in addition to its usual supplies from the Wimmera-Mallee storages in the vicinity of the Grampians.

OCCUPATION OF COMMISSION'S LANDS.

In many instances the Commission has been enabled to secure tenants for lands not required in connexion with works and has issued 1,058 permits to occupy such lands. Of this number 887 permits are actually in force. Included in the number of existing permits are 100 in respect of River Murray Commission lands administered by this Commission, also five in the Carrum Trust area. In addition, twenty permits have been granted for the right to remove sand and gravel from canalized waterways.

The matter of controlling boating on reservoirs and main channels throughout the State has been made uniform by the Commission, and, in the exercise of such control, 140 permits were issued.

CROWN LANDS.

Numerous applications for alienation or occupation of Crown Lands were referred by the Lands Department to this Commission for report as to whether such applications could be granted without injury to water supply interests. Among those dealt with during the year there were 50 applications affecting water reserves and creek frontages, totalling 757 acres, to the alienation of which the Commission could raise no objection in the interests of water supply.

RIVER GAUGING.

As provided by section 32 of the *Water Act* 1928, the work of gauging and recording the flows of the principal rivers and streams of the State was continued. Weekly returns showing the volumes of water stored in reservoirs were made available for publication.

Normal stream flow was experienced during the first half of the year, but owing to the failure of the autumn and early winter rains the discharge of most of the principal streams during April, May, and June approximated to that recorded for the corresponding period of the drought year 1914.

The only flooding of consequence occurred in the Goulburn River during August, when the river reached a level of 1 foot 2½ inches above the critical stage at Shepparton. Minor floods were also experienced in the Upper Murray River and adjacent streams.

During the year gauging stations were re-established on the Avon River at Valencia Creek, Broken River at Lima South, Lang Lang River at Heath Hill, Latrobe River at Rosedale, and Tambo River at Bruthen; and new stations were established on the Mitchell River at Glenaladale and the Cardinia Creek at Beaconsfield. Automatic recorders were installed on the main stream and principal anabranch at the existing gauging station on the Kiewa River at Kiewa. The number of gauging stations now in operation is 49.

The Commission has continued its co-operation with the Commonwealth Meteorological Bureau in the issuing of flood warnings, and on behalf of the Bureau has undertaken the establishment and maintenance of flood warning stations. During the year three new flood warning stations were established, and provision was made for readings from eleven of the Commission's existing gauging stations to be reported to the Bureau for publication in the daily press, and for flood warning purposes.

The following statement shows the streams on which gaugings have been carried out, the sites of the gauging stations, and the periods for which gauging records are available. These records up to the year 1924 have been made available in separate reports, and the Commission proposes to publish in the near future the records of gaugings from 1924 until the end of 1936 :—

STATEMENT SHOWING STREAMS, GAUGING SITES, AND PERIODS
FOR WHICH GAUGING RECORDS ARE AVAILABLE.

Stations where gaugings are now being taken shown in heavy type and by *.

Stream.	Site of Gauging Station	Gaugings Commenced.	Date to which Gaugings Continued.	Stream.	Site of Gauging Station.	Gaugings Commenced.	Date to which Gaugings Continued.
Avoca River ..	Coonooer Weir ..	Month. Year	Month. Year.	Macalister River ..	Glenmaggie Weir	Month. Year.	Month. Year
Avon River ..	Valencia Creek	June 1889	Dec. 1931	Macalister River	Maffra ..	Jan. 1923	*
Armstrong Creek	Reefton ..	Mar. 1918	Dec. 1933	Mackenzie River	Wartook Reservoir	Jan. 1901	Dec. 1909
Back Creek ..	Nillahcootie	Oct. 1936	*	Maribyrnong River	Keilor ..	Jan. 1887	*
Barwon River ..	Pollocksford	Jan. 1901	Dec. 1901	Mathers Creek ..	Balmoral ..	Jan. 1908	Dec. 1933
Barwon River ..	Winchelsea ..	Ang. 1902	Dec. 1915	Mitchell River ..	Bairnsdale ..	June 1889	Dec. 1893
Bemm River ..	Club Terrace	July 1906	Dec. 1921	Mitchell River ..	Bairnsdale ..	Jan. 1890	June 1922
Brodrigg River ..	Sardine Creek	Jan. 1922	Dec. 1933	Mitta River ..	Waterford ..	June 1937	*
Broken River ..	Goorambat ..	May 1922	June 1929	Mitta River ..	Tallandoon	April 1922	Dec. 1933
Broken River ..	Nillahcootie	May 1922	Sept. 1931	Moorarbool River	Batesford ..	July 1934	*
Broken River ..	Lima South	June 1886	*	Mount Emu Creek	Skipton ..	Aug. 1885	*
Buckland River ..	Buckland Bridge	Aug. 1902	Dec. 1925	River Murray ..	Jingellic ..	Jan. 1908	Dec. 1921
Buffalo River ..	McGuffies Bridge	Jan. 1926	Dec. 1933	River Murray ..	Albury ..	June 1920	Dec. 1933
Bullarook Creek ..	Clunes Weir ..	July 1936	*	River Murray ..	Albury ..	May 1890	*
Bunyip River ..	Bunyip ..	Dec. 1924	Dec. 1933	River Murray ..	Albury ..	Jan. 1877	Dec. 1905
Burrowye Creek ..	Burrowye	Dec. 1924	Dec. 1933	River Murray ..	Tocumwal	Jan. 1898	*
Callaghans Creek	Barwon Downs ..	April 1930	Dec. 1933	River Murray ..	Echuca ..	Sept. 1865	Dec. 1908
Campaspe River	Rochester	June 1907	*	River Murray ..	Torrumbarry ..	Jan. 1906	*
Campaspe River ..	Rochester Weir	Nov. 1935	*	River Murray ..	Swan Hill ..	Jan. 1909	*
Cann River ..	Ashbourne ..	Oct. 1929	June 1931	River Murray ..	Wakool Junction	July 1929	*
Cardinia Creek ..	Beaconsfield	April 1885	Dec. 1908	River Murray ..	Lock 15, Euston	Jan. 1930	*
Carlisle River ..	Carlisle Bridge	Jan. 1909	*	River Murray ..	Mildura ..	Jan. 1865	Dec. 1929
Coliban River ..	Malmsbury Resr.	Mar. 1933	*	Ovens River ..	Bright ..	Dec. 1924	Dec. 1933
Creswick Creek ..	Tourello ..	May 1922	June 1929	Ovens River ..	Wangaratta ..	June 1887	*
Dandenong Creek	Dandenong	Oct. 1936	*	O'Shannessy Creek	Warburton ..	Jan. 1901	Dec. 1914
Dargo River ..	Dargo ..	Mar. 1930	*	Pykes Creek ..	Pykes Creek {	Nov. 1908	June 1922
Deep Creek ..	Bulla ..	May 1889	*	Riddells Creek ..	Riddell {	July 1926	*
Dewings Creek ..	Barwon Downs ..	April 1930	Dec. 1933	Snowy River ..	Riddell ..	Sept. 1933	*
Eastern Barwon River	Forrest ..	Nov. 1924	*	Snowy River ..	Orbost ..	Jan. 1907	June 1922
Eastern Moorarbool River	Bolwarrah Weir ..	April 1922	Dec. 1933	Tallangatta Creek	Jarrahmond	May 1922	*
Emu Creek ..	Sunbury ..	Feb. 1908	June 1933	Tambo River ..	Tallangatta	Sept. 1935	*
Eumemmerring Creek	Abbotts Road, Dandenong	Feb. 1931	*	Tambo River ..	Bruthen.. {	Jan. 1906	Dec. 1924
Fiery Creek ..	Streatham ..	June 1920	Dec. 1933	Tanjil River ..	Ensay ..	June 1937	*
Genoa River ..	Wangrabelle	May 1922	Dec. 1924	Tarago River ..	Willow Grove	Jan. 1925	Oct. 1931
Glenelg River ..	Balmoral ..	Oct. 1927	June 1929	Thomson River ..	Drouin West ..	June 1907	Dec. 1933
Glenelg River ..	Moora Moora ..	April 1889	Dec. 1933	Thomson River ..	Heyfield ..	Jan. 1901	June 1922
Glenelg River ..	Sandford ..	Feb. 1889	Dec. 1890	Thomson River ..	Cowwarr ..	Mar. 1922	*
Goulburn River ..	Eildon Weir	Jan. 1900	June 1920	Thomson River ..	Coopers Creek	Jan. 1928	*
Goulburn River ..	Murchison ..	Jan. 1916	*	Toolern Creek ..	Melton ..	May. 1922	Dec. 1933
Goulburn River ..	Shepparton ..	June 1881	*	Tyers River ..	Gould ..	Oct. 1921	*
Goulburn River ..	Trawool..	June 1921	*	Wannon River ..	Dunkeld ..	June 1920	Dec. 1933
Goodmans Creek..	Darley ..	Jan. 1908	May 1909	Werribee River ..	Bacchus Marsh ..	Jan. 1907	Dec. 1921
Goslings Creek ..	Murroon ..	Jan. 1926	*	Werribee River ..	Werribee ..	Feb. 1911	Dec. 1915
Hopkins River ..	Allansford ..	June 1927	Dec. 1933	Werribee River ..	Cobbledicks Ford	Mar. 1930	Dec. 1933
Hopkins River ..	Wickliffe ..	June 1929	Dec. 1933	Werribee River ..	Melton Reservoir	Sept. 1936	*
Jacksons Creek ..	Sunbury ..	Feb. 1908	Feb. 1933	Western Barwon River	Forrest ..	Oct. 1926	*
Jim Crow Creek	Franklinford ..	May 1930	Dec. 1933	Western Moorarbool River	Bennetts Bridge	Jan. 1909	Dec. 1921
King River ..	Wangaratta ..	June 1886	Dec. 1900	Wimmera River ..	Eversley ..	Oct. 1902	Dec. 1933
King River ..	Whitfield ..	Dec. 1924	*	Wimmera River ..	Glenorchy Weir ..	May 1884	Dec. 1914
Kiewa River ..	Kiewa ..	July 1885	*	Woody Yallock River	Horsham ..	Jan. 1889	*
Lang Lang River	Heath Hill	Jan. 1925	Dec. 1930	Yarra River ..	Pitfield ..	Aug. 1917	Dec. 1933
Latrobe River ..	Rosedale	Oct. 1936	*	Yarra River ..	McVeighs ..	April 1908	Dec. 1914
Latrobe River ..	Willow Grove	Jan. 1901	Dec. 1919	Yarra River ..	Reefton ..	Jan. 1901	Dec. 1901
Latrobe River ..	Yallourn ..	Dec. 1936	*	Yarra River ..	Warrandyte ..	Jan. 1891	Dec. 1933
Lerderderg River	Darley ..	Jan. 1925	*				
Little Wimmera River	Lake Lonsdale Reservoir	June 1919	Dec. 1924				
Loddon River ..	Bridgewater ..	June 1907	Dec. 1916				
Loddon River ..	Laanecoorie ..	Mar. 1923	*				
Loddon River ..	Vaughan ..	Sept. 1903	*				
Macalister River	Grogans Bridge ..	May 1881	Dec. 1890				
		Jan. 1891	*				
		July 1926	Dec. 1933				
		April 1919	Dec. 1922				

TOTAL STORAGES IN STATE.

In 1902 the total capacity of storages in the State was 172,000 acre feet. The present capacity is 1,891,350 acre feet. The Hume Reservoir, designed to contain 2,000,000 acre feet (half of which can. subject to the provisions of the River Murray Agreement, be credited to the State of Victoria) now has a capacity of 1,250,000 acre feet. When the final stage of this work has been constructed (involving a further approval of the interested State Governments), and the Yarrawonga Weir, Euston Lock Weir, Glenmaggie, and Bittern Reservoirs are completed, the combined capacities of Victoria's storages will be 2,349,330 acre feet.

EXISTING STORAGES.

								Capacities in Acre Feet.	
<i>Goulburn System—</i>									
Goulburn Weir	..	..	..	..	..	..	..	20,700	
Waranga	..	..	..	..	..	..	..	333,400	
Eildon	..	..	..	..	..	..	..	306,000	
<i>Murray-Loddon System—</i>									660,100
Hume Reservoir (part of 2,000,000 acre feet—half share)	..	..	..	..	..	..	..	625,000	
Torrumbarry (half share of 26,000 acre feet)	..	..	..	..	..	..	..	13,000	
Mildura (half share of 34,000 acre feet)	..	..	..	..	..	..	..	17,000	
Wentworth (half share of 20,000 acre feet)	..	..	..	..	..	..	..	10,000	
Kow Swamp	..	..	..	..	..	..	..	40,860	
Laanecoorie	..	..	..	..	..	..	..	6,650	
Kerang North-West Lakes	..	..	..	..	..	..	..	69,400	
Lake Boga	..	..	..	..	..	..	..	29,650	
Long Lake	..	..	..	..	..	..	..	3,820	
<i>Wimmera-Mallee System—</i>									815,380
Fyans Lake	..	..	..	..	..	..	..	17,100	
Lake Lonsdale	..	..	..	..	..	..	..	53,300	
Wartook	..	..	..	..	..	..	..	23,800	
Taylor's Lake	..	..	..	..	..	..	..	30,000	
Pine Lake	..	..	..	..	..	..	..	52,000	
Green Lake	..	..	..	..	..	..	..	6,600	
Dock Lake	..	..	..	..	..	..	..	4,800	
Moora	..	..	..	..	..	..	..	5,100	
Lower Wimmera Weirs	..	..	..	..	..	..	..	2,870	
Batyo Catyo (Avon Regulator)	..	..	..	..	..	..	..	5,000	
Lake Whetton	..	..	..	..	..	..	..	1,300	
Earthen Storages, Township Reservoirs, and Mallee Tanks	..	..	..	..	..	..	..	5,760	
<i>Maffra-Sale System—</i>									207,630
Glenmaggie (part of 150,000 acre feet)	..	..	..	..	..	..	..	..	104,500
<i>Coliban System—</i>									
Upper Coliban	..	..	..	..	..	..	..	25,700	
Malmsbury	..	..	..	..	..	..	..	12,300	
Spring Gully	..	..	..	..	..	..	..	2,000	
Subsidiary Reservoirs	..	..	..	..	..	..	..	4,970	
<i>Werribee System—</i>									44,970
Pykes Creek	..	..	..	..	..	..	..	21,000	
Melton	..	..	..	..	..	..	..	19,100	
<i>Bellarine Peninsula System—</i>									40,100
Wurdee Boluc	..	..	..	..	..	..	..	10,000	
Service Basins	..	..	..	..	..	..	..	660	
<i>Mornington Peninsula System—</i>									10,660
Lysterfield	..	..	..	..	..	..	..	3,400	
Beaconsfield, Frankston, and Mornington	..	..	..	..	..	..	..	1,660	
Service Basins	..	..	..	..	..	..	..	200	
<i>Miscellaneous—</i>									5,260
Eppalock	..	..	..	..	..	..	..	1,200	
Wonthaggi	..	..	..	..	..	..	..	1,550	
									2,750
Total capacity of existing Storages									1,891,350

ADDITIONAL STORAGE BEING PROVIDED BY WORKS IN COURSE OF CONSTRUCTION.

<i>Mornington System—</i>									
Bittern	..	..	..	..	..	..	..	480	
<i>Murray System—</i>									
Yarrawonga Weir (half share of 50,000 acre feet)	..	..	..	..	..	..	..	25,000	
Euston Lock Weir (half share of 24,000 acre feet)	..	..	..	..	..	..	..	12,000	
									37,480

FURTHER STORAGE WHICH COULD BE PROVIDED BY COMPLETION OF EXISTING WORKS.

<i>Maffra-Sale System—</i>									
Glenmaggie (balance of 150,000 acre feet)	..	..	..	..	..	..	..	45,500	
<i>Murray System—</i>									
Hume Reservoir, at junction with Mitta River (half-share of balance of 2,000,000 acre feet)	..	..	..	..	..	..	..	375,000	
									420,500

Total capacity of Storages when works are completed **2,349,330**

WATERWORKS TRUSTS AND SEWERAGE AUTHORITIES.

(*H. W. McCay, B.C.E., Engineer in Charge.*)

Water supply systems and sewerage works in many country towns are controlled by local Authorities under the general supervision of the Commission. There are 151 such Authorities operating in this way, particulars of which are as follow, viz. :—

COUNTRY WATER SUPPLIES.

Many important works were carried out by Waterworks Trusts and Local Governing Bodies of which there are now 114 and 17 respectively as set out in accompanying schedules.

The **First Mildura** Irrigation Trust continued its programme of lining with concrete considerable lengths of its main channels to reduce losses by leakage and consequent damage to lands.

The **Mildura Urban** Water Trust again extended its supply works to serve areas, taken over from the Irrigation Trust, where township settlement had taken place.

The **Beechworth** Shire Council constructed a new service basin and installed new pipe mains to enable an improved supply to be given to the higher levels of the town and to the Asylum.

The **Broadford** Waterworks Trust is enlarging a section of its main pipe line and lining the service basin to improve the town supply.

The main works of the **Drouin** Waterworks Trust were completed and water is now supplied to the township.

The **Kerang** Waterworks Trust is undertaking extensive improvements to the town reticulation.

The Shire of **Numurkah** Waterworks Trust installed a rapid sand filtration plant to improve the quality of the Numurkah town supply.

The **Rutherglen** Waterworks Trust is engaged in the replacement of the final section of the rising main.

The **Stawell** Borough Council replaced a further section of its main pipe line.

The **Sunbury** Waterworks Trust is enlarging its main storage basin to enable the increasing demands for water for the town and the Asylum to be adequately met.

The **Swan Hill** Waterworks Trust is constructing a new elevated concrete tank to improve the pressure in the higher portions of the town.

The **Trafalgar** Waterworks Trust has accepted tenders for the construction of a filter plant to safeguard the quality of the town water supply.

The **Wangaratta** Waterworks Trust, in furtherance of a scheme of supply from underground sources, has commenced the installation of bore-hole pumping units and iron-removal plant for treating the bore-water.

The **Yarra Junction** Waterworks Trust completed the construction of a new service basin and pipe mains to provide a more adequate supply for the towns of **Yarra Junction** and **Wesburn**.

The **Yarram** Waterworks Trust is constructing a new weir and is extending and enlarging its main pipe line to improve the supply during the summer seasons.

Pipe extensions and other works were carried out at **Carisbrook, Coleraine and Casterton, Dunolly, Lawloit, Lorne, Lowan, Maffra, Mansfield, Murtoa, Romsey, Rosedale, Seymour, Tongala, Tungamah, Upper Macedon, Wedderburn, and Yarrawonga.**

Investigations were made into proposals for town water supplies at **Cowes, Lismore, Malmsbury, and Port Fairy**, and for improvements to works at **Alexandra, Apollo Bay, Colac, Corryong, Kilmore, Lancefield, Nathalia, Shepparton, Rushworth, Tarnagulla, Trentham, Warragul, Werribee, and Wodonga.**

WATERWORKS TRUSTS.

Capital Liability to the State as at 30th June, 1937.

Name.	Capital Liability.		Name.	Capital Liability.	
	£	s. d.		£	s. d.
Alexandra	4,461	8 11	Brought forward ..	668,328	11 2
Apollo Bay	5,103	14 2	Mansfield	9,783	2 7
Avenel	4,614	4 11	Maryborough	86,476	18 0
Avoca Township	13,618	4 8	Marysville	2,243	14 1
Bairnsdale	27,207	0 8	Merrigum	1,907	17 4
Ballan	117	16 4	Moe	10,056	12 3
Bealiba	1,190	6 4	Mooroopna	9,060	15 5
Benalla	10,900	19 11	Mortlake	4,002	2 7
Bet Bet Shire .. .. .	..	..	Morwell	14,195	0 1
Boort	4,477	15 8	Murchison	4,700	8 2
Bridgewater	2,379	17 1	Murtoa	4,193	1 3
Bright	4,562	1 0	Myrtleford	11,719	3 0
Broadford	10,784	8 8	Nagambie	4,739	17 5
Bruthen .. .. .	..	..	Nhill	20,463	0 9
Carisbrook	4,550	1 10	Numurkah Shire	13,078	3 7
Carrum	24,937	6 0	Omeo	3,701	9 5
Charlton	7,722	12 2	Orbost	16,807	8 7
Cobram	8,647	3 11	Portland	23,486	2 8
Colac	58,330	6 5	Riddells Creek	2,722	11 3
Colbinabbin	873	11 11	Rochester	10,904	11 1
Coleraine and Casterton	60,955	18 9	Romsey	3,316	3 2
Corryong	12,910	0 8	Rosedale	3,107	12 8
Daylesford Borough	16,557	17 7	Rushworth	8,645	12 9
Devenish	2,297	7 3	Rutherglen	22,347	17 0
Donald	10,533	7 6	Seymour	24,236	9 11
Drouin	13,694	3 7	Shepparton Shire	1,118	6 6
Echuca Borough	23,554	15 5	Shepparton Urban	24,896	8 1
Elmore	3,762	5 11	St. Arnaud Borough	46,981	15 2
Euroa	22,986	15 4	Stawell Shire .. .. .	..	..
Geelong .. .. .	..	..	Stratford	3,471	17 2
Gisborne	5,036	6 8	Sunbury	17,014	4 11
Glenrowan	1,767	16 4	Swan Hill	22,026	13 10
Hamilton	58,579	12 1	Tallangatta	3,320	11 9
Healesville	21,157	9 3	Tatura	5,856	7 11
Heathcote	10,875	18 8	Tongala	2,690	3 4
Hepburn	6,915	2 3	Toora	13,923	17 6
Horsham Borough	11,489	7 4	Trafalgar	13,642	7 6
Kara Kara Shire	2,832	8 0	Traralgon	37,666	5 0
Keilor-St. Albans .. .. .	..	..	Trentham	4,179	4 11
Kerang	9,803	18 6	Tungamah Shire	11,484	4 5
Kerang Shire	849	14 8	Upper Macedon	5,588	6 3
Kilmore	17,626	0 10	Violet Town	7,537	16 11
Kooweerup	8,398	10 0	Wahgunyah	2,739	0 5
Koroit	2,124	13 9	Wangaratta	22,201	15 0
Korumburra	19,286	15 6	Warburton	2,146	11 6
Kyabram	14,374	10 6	Warracknabeal	14,717	0 9
Kyneton Shire	12,272	11 7	Warragul	20,106	13 6
Lancefield	7,382	3 10	Winchelsea	3,590	6 3
Lawloit	15,718	2 6	Wodonga	24,446	15 3
Leongatha	23,773	19 2	Woodend	15,275	13 7
Lilydale	5,253	17 9	Yackandandah	4,098	7 6
Loddon United	7,389	4 4	Yarra Junction	11,453	5 11
Longwood	1,988	19 5	Yarram	12,963	1 3
Lorne	9,791	8 8	Yarrowonga Urban	8,297	17 1
Lowan Shire	9,220	13 2	Yatchaw	3,746	9 1
Macedon	9,543	19 6	Yea	5,831	15 4
Maffra	13,143	14 4	First Mildura	40,039	3 3
			Mildura Urban	10,826	12 10
Carried forward ..	668,328	11 2	Total	1,408,103	5 10

In addition, the First Mildura Trust has borrowed further amounts and the Geelong Waterworks and Sewerage Trust has borrowed the whole of its funds from other than Governmental sources.

The Bet Bet Shire and Stawell Shire Waterworks Trusts have liquidated their liabilities, and the Bruthen and Keilor-St. Albans Waterworks Trusts have not yet incurred any Capital Liability.

LOCAL GOVERNING BODIES.

Capital Liability to the State as at 30th June, 1937.

Name.	Capital Liability.	Name.	Capital Liability.
	£ s. d.		£ s. d.
Arapiles Shire	166 3 0	Brought forward ..	428,587 4 3
Ararat Borough	88,769 16 9	Korong Shire	12,761 5 1
Ballarat Water Commissioners ..	289,356 3 8	Ripon (Beaufort) Shire	16,845 12 10
Beechworth Shire	20,034 15 5	Stawell Borough	61,844 8 1
Bet Bet (Dunolly Borough) Shire ..	2,172 14 8	Talbot Borough	1,877 4 9
Bet Bet (Tarnagulla Borough) Shire ..	1,399 5 10	Warrnambool City	29,073 10 6
Chiltern Shire	2,807 17 0	Werribee Shire	14,674 1 9
Clunes Borough	9,859 17 6	Wimmera Shire	1,983 18 9
Creswick Borough	926 2 8		
Inglewood Borough	13,094 7 9		
Carried forward ..	428,587 4 3	Total	567,647 6 0

SEWERAGE IN COUNTRY DISTRICTS.

There are now twenty Sewerage Authorities in country centres, comprising **Ballarat**, **Bendigo**, **Bairnsdale**, **Colac**, **Echuca**, **Horsham**, **Mildura**, **Swan Hill**, **Wangaratta**, **Warrnambool**, **Ararat**, **Benalla**, **Castlemaine**, **Dandenong**, **Hamilton**, **Kerang**, **Kyneton**, **Sale**, **Shepparton**, and **Warragul**, and schemes are in operation in the sewerage districts of the ten first-named authorities.

The past year has been marked by considerable activity in sewerage construction. The three schemes under construction at the beginning of the year are nearing completion, one being advanced sufficiently to enable house drains to be connected, and works to serve four new centres were commenced.

The **Ballarat** and **Bendigo** Sewerage Authorities continued to extend the reticulation sewers to serve the outer areas.

The **Warrnambool** Sewerage District was further extended and sewers were laid to serve additional areas, and at **Swan Hill** a new pumping station and sewers were constructed to serve a recently developed portion of the town.

The **Wangaratta** Sewerage Authority has completed the connection of houses to the sewers, while at **Horsham** the majority of the houses have now been connected.

The **Bairnsdale**, **Benalla**, and **Kerang** Sewerage Authorities continued the construction of works which are nearing completion, and houses are now being connected at **Bairnsdale**.

The **Castlemaine**, **Dandenong**, **Hamilton**, and **Shepparton** Authorities commenced construction and in each case considerable progress has been made with the installation of the respective schemes.

The **Ararat** Sewerage Authority completed its detail survey and prepared plans and specifications for the construction of works, and these are now being reviewed.

The **Warragul** Sewerage Authority is carrying out the detail survey of its district and it is anticipated that the **Kyneton** Sewerage Authority will shortly proceed with a detail survey.

Applications for the constitution of Sewerage Authorities at **Maryborough** and **Portland** were examined and the schemes generally approved.

Proposals for the constitution of sewerage authorities at **Chelsea** and **Warracknabeal** were also examined.

LANDS UNDER IRRIGATED CULTURE.

The two Statements hereunder show the extent of Areas Irrigated—(A) during last year in detail, and (B) during the last five years totalled for purposes of comparison.

(A) STATEMENT OF THE EXTENT OF IRRIGATION AND OF AREAS OF DIFFERENT KINDS OF CROPS WATERED
—YEAR 1936-37.

Name of District.	Area Irrigated (Acres).								
	Cereals.	Lucerne grown for Pasture and Hay.	Sorghum and other Annual Fodder Crops.	Pastures, Native and Sown.	Vineyards.	Orchards or Gardens.	Fallow.	Miscellaneous.	Total.
<i>Supplied from Goulburn State Works.</i>									
Katandra	81	2,862	126	1,576	..	52	..	..	4,697
North Shepparton	103	2,817	206	4,330	..	47	9	43	7,555
Shepparton	166	882	209	3,945	..	6,802	36	1,078	13,118
South Shepparton	40	1,288	39	2,770	..	32	..	141	4,310
Rodney	2,826	23,618	1,683	32,197	255	7,884	1,091	1	69,555
Stanhope	798	5,070	427	5,786	..	450	32	..	12,563
Tongala	926	6,140	468	10,185	50	1,321	422	6	19,518
Rochester	1,667	13,689	710	33,602	81	1,484	485	141	51,859
Echuca North	215	982	150	3,020	..	136	89	90	4,682
Dingee	58	150	..	3,372	..	21	12	10	3,623
Calivil	625	2,272	118	3,690	..	58	109	32	6,904
Tragowel Plains	7,139	2,080	3,281	38,268	..	23	148	122	51,061
Deakin	207	1,658	72	1,764	..	4	29	..	3,734
Boort	2,434	684	1,262	8,783	..	..	1,488	..	14,651
Totals	17,285	64,192	8,751	153,288	386	18,314	3,950	1,664	267,830
<i>Supplied from River Murray State Works.</i>									
<i>(a) Torrumbarry Weir.</i>									
Leitchville	361	832	69	5,109	..	25	15	3	6,414
Cohuna	3,342	3,592	822	31,208	..	93	973	3,727	43,757
Koondrook	4,153	1,589	1,243	20,156	44	720	246	304	28,455
Swan Hill	4,074	4,931	891	9,274	2,918	428	767	303	23,586
Third Lake	316	93	72	1,517	..	6	..	..	2,004
Mystic Park	850	362	50	3,344	..	..	..	..	4,606
Tresco	10	29	..	4	577	262	..	2	884
Fish Point	432	227	42	1,588	..	..	80	..	2,369
Kerang	3,517	527	1,866	24,034	6	12	406	..	30,368
Dry Lake	30	..	10	220	..	2	..	..	262
Kerang North-West Lakes	536	130	88	2,030	70	400	..	..	3,254
Lands supplied direct (outside Districts)	973	1,393	291	6,163	..	12	73	105	9,010
Totals	18,594	13,705	5,444	104,647	3,615	1,960	2,560	4,444	154,969
<i>(b) Direct from River.</i>									
Nyah	87	166	60	..	2,409	188	10	10	2,930
Red Cliffs .. .. .	..	120	..	10	10,330	577	..	..	11,037
Merbein .. .. .	..	53	..	..	6,710	581	..	90	7,434
Totals	87	339	60	10	19,449	1,346	10	100	21,401
Totals (River Murray State Works)	18,681	14,044	5,504	104,657	23,064	3,306	2,570	4,544	176,370
<i>Supplied from Loddon and Other Northern State Works.</i>									
Boort	487	137	252	1,756	..	..	298	..	2,930
Coliban	112	545	427	2,474	21	5,556	123	..	9,258
Campaspe	98	195	..	111	..	..	..	..	404
Western Wimmera	70	229	58	388	66	1,212	..	13	2,036
Wimmera United .. .. .	..	7	36	..	..	..	..	..	43
Totals	767	1,113	773	4,729	87	6,768	421	13	14,671
<i>Supplied from Southern State Works.</i>									
Bacchus Marsh	4	1,280	175	1,712	..	230	92	..	3,493
Werribee	425	1,243	293	4,281	..	2,137	406	..	8,779
Narre Warren .. .. .	..	..	..	..	..	..	..	105	105
Maffra-Sale	71	1,227	1,194	12,574	..	1	560	1,039	16,666
Totals	500	3,750	1,662	18,567	..	2,368	1,052	1,144	29,043
<i>Supplied from Other Works.</i>									
First Mildura District .. .. .	..	461	123	..	10,109	974	..	188	11,855
Private Diversions—Kerang (outside Districts)	95	8	90	1,120	..	..	..	5	1,318
Other Private Diversions throughout the State	1,000	3,000	2,850	9,640	201	949	100	..	17,740
Totals	1,095	3,469	3,063	10,760	10,310	1,923	100	193	30,913
Grand Totals 1936-37	38,328	86,568	19,753	292,001	33,847	32,679	8,093	7,558	518,827
Grand Totals 1935-36	39,835	91,267	20,776	252,345	33,665	33,654	6,275	18,018	495,835

(B) COMPARATIVE STATEMENT OF THE EXTENT OF IRRIGATION 1932-33 TO 1936-37.

Source of Supply.	Area under Irrigation (Acres).				
	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
Goulburn State Works	243,378	217,105	266,331	256,184	267,830
River Murray State Works	158,223	151,714	163,547	172,037	176,370
Loddon and other Northern State Works	11,621	14,496	18,844	14,707	14,671
Southern State Works	31,042	23,687	18,294	24,060	29,043
Mildura and Private Diversions	30,452	28,322	27,210	28,847	30,913
Totals	474,716	435,324	494,226	495,835	518,827

PROGRESS IN IRRIGATION DISTRICTS.

A considerable advance was made in the Australian Canning industry during 1936-37, and the Victorian production of canned apricots, peaches, and pears was again largely responsible for this progress. The Australian production reached the record figure of 2,330,000 cases, which represented an increase of 107,000 cases on the previous highest production in 1935-36. Notwithstanding that the Victorian apricot crop, owing to seasonal conditions, was the lowest for ten years past, the total Victorian output of canned apricots, peaches, and pears comprised 1,722,000 cases, an advance of 13 per cent. on the highest quantity previously packed in this State. This output represented 74 per cent. of the total Australian production and comprised apricots 65,000 cases, peaches 996,000 cases, and pears 661,000 cases. The Shepparton, Ardmona, and Kyabram Co-operative Canneries again processed the major portion of the Victorian pack, their output representing 65 per cent. of the total production for this State. During the past season mechanical means for the peeling of pears were introduced for the first time by the Goulburn Valley Companies and operated satisfactorily.

The irrigated fruit-growing areas of the Goulburn Valley, in addition to supplying the local canneries, provided the great bulk of the fruit processed by metropolitan canners and jam manufacturers, and in addition large quantities of fresh fruits were forwarded to Melbourne and Interstate Markets.

Exports of Australian canned apricots, peaches, and pears to overseas markets for the first eight months of the present season comprised the record figure of 1,345,000 cases, or more than the previous highest export of 1,328,000 cases for a complete year (1934). The heavy demand in the United Kingdom for Australian canned fruits has effected a very satisfactory clearance of stocks, and prospects for the coming season appear to be bright.

The processing of 10,000 tons of canning fruits at the Shepparton Fruit Preserving Company's plant constitutes a record output, and the conversion of orchards from dessert to canning varieties and the planting of new areas have necessitated extensions to the factory plant and cold storage facilities costing some £60,000. The planting of additional areas of canning fruits in other portions of the Goulburn Valley has also necessitated additions to the Ardmona and Kyabram canneries, and further extensions in this direction will be necessary to cope with the increasing quantities of fruit which will be produced in the irrigation areas in the near future.

The development of sown or introduced pastures in the place of lucerne is again most pronounced in the Tongala, Stanhope, and Deakin Districts, the increase in the area of pastures for the year being 3,055 acres whilst the decrease in the area under lucerne was 2,248 acres.

A very marked increase has occurred in the growing of tomatoes, peas, beans and other vegetables in the Shepparton District, and developments in this direction indicate the establishment of a further important industry in that centre. A tomato sauce factory is in operation there and a pulp factory is being erected to cope with further production during the canning season. The area devoted to vegetable growing now totals 1,500 acres.

The production of dried vine fruits in Victoria for 1937 season comprised approximately 44,000 tons which represented an increase of some 5,000 tons on the average output for the past three seasons. The Australian output was the highest for some years past, and amounted to approximately 72,000 tons, thus the Victorian crop represented 61 per cent. of the total Commonwealth production.

The disposal of the export proportion of the pack has proceeded rapidly and the demand continues to be steady. During this season the prices realized for sultanans on the London market reached the highest figure (£50 16s. 7d. per ton) which has been recorded for some years past. As the further quantities available for shipment to the United Kingdom are very limited, it is expected that Australia will have disposed of the whole of its export surplus at an early date. The shipments to Canada (17,500 tons) and to New Zealand (4,300 tons) represent record sales in those markets.

The production of citrus fruits in irrigation districts during the 1936-37 season amounted to 669,000 bushels, which represented a decrease of 52,000 bushels as compared with the previous year. However the total production of these fruits throughout the State, comprising 762,000 bushels, also showed a decrease of approximately the same quantity during the year, thus the proportionate production in irrigation districts was maintained at the previous figure of 87 per cent.

In the Standard Herd Test conducted by the Department of Agriculture for 1936-37 prominent positions were again obtained by herds grazed on irrigated pastures. The position of Reserve Champion for herds of between 15 and 24 cows was secured by a herd from an

irrigation farm in the Tongala District. This farm has supplied the champion herd on three occasions, and this is also the third time in which the herd has held the Reserve Championship. In this section of the test also, four of the leading eleven herds were grazed on irrigated farms. First place in the section for herds of between 10 and 14 cows was obtained by a herd from the Stanhope Irrigation District, whilst second place was secured by a herd from irrigated lands at Maffra. Three of the first five positions in this section of the test were filled by herds grazed on irrigated pastures.

It is noteworthy that in the Dairy Farm Competition, which is conducted by the Victorian Cow Test Association, first prize was awarded to Zone No. 4, comprising farms in the Rochester, Cohuna, Kerang, Pyramid Hill, Calivil, Swan Hill, and Leitchville Irrigation Districts. The position of runner up in this competition was secured by farms in Zone No. 3, covering the Tongala, Shepparton, Murchison, Undera, and Stanhope irrigation areas. The first, second, and third prizes for the champion individual farms were also awarded to settlers in irrigation districts.

An outstanding success was secured by the Kyabram Dairy Co. Ltd. at the dairy show held early in the year in the Royal Agricultural Hall, Islington, England. In the competition for salted butter a gold medal was awarded as first prize to the Kyabram Dairy Company against 37 other entries from most of the Australian States, New Zealand, and South Africa. The winning entry from Kyabram was awarded 96 points out of a possible 100.

PART III.—ADMINISTRATION AND FINANCE.

ROYAL COMMISSION ON WATER SUPPLY.

As mentioned in the last Annual Report a Royal Commission to inquire into the Expediency of Amending the *Water Act* 1928 and other matters was appointed by the Government on 24th January, 1936. In dealing with the matters referred to it, the Royal Commission, after making inspections and obtaining information required, issued three Progress Reports, and, on completion of its inquiry, submitted a Fourth and Final Report.

These Reports together with the recommendations contained therein are receiving consideration by the Government.

ADMINISTRATION.

Mr. L. R. East, M.C.E., M.Inst.C.E., M.Am.Soc.C.E., M.I.E. Aust., Chairman of this Commission, was appointed as Victorian Representative on the River Murray Commission as from 1st November, 1936, vice Mr. R. H. Horsfield, M.Inst.C.E., deceased.

In January last Mr. Commissioner W. Trevean retired owing to ill health, the vacancy being filled by the appointment of Mr. P. J. O'Malley, who was formerly Secretary to the Commission.

On the Board of Examiners of Engineers of Water Supply, of which the late Mr. Horsfield was Chairman, Mr. W. A. Robertson, M.C.E., M.Inst.C.E., M.I.E. Aust., Commissioner of this Commission, was appointed on 9th November, 1936, as a Member and Chairman of the Board; and, following the resignation of Mr. A. M. Grant, M.C.E., from membership of the Board, Mr. E. F. Borrie, M.C., M.C.E., A.M.I.E. Aust., of the Melbourne and Metropolitan Board of Works was appointed on 23rd November, 1936, to fill the vacancy. The Secretary of this Board is now Mr. W. J. Ingram, Head Office.

STAFF.

The Commission desires to again place on record its appreciation of the services rendered by the members of the staff. In addition to the usual duties in administering the numerous important districts and works under the Commission's control, additional work of an arduous nature was imposed on the staff by the inquiry of the Royal Commission on Water Supply, involving the compilation of much information of a technical nature. The willing and efficient manner in which this extra work was undertaken was most gratifying to the Commission.

During the year the Commission completed a comprehensive re-organization and classification of its staff of 604 members comprising 152 professional officers (122 permanent, 30 temporary), 129 clerical officers (94 permanent, 35 temporary), and 323 officers employed on work of a general nature (146 permanent, 177 temporary), and will give effect to such organization and classification as from 1st July, 1937.

The Commission wishes to draw attention to the fact that very few qualified draftsmen and engineers are available for employment. Many qualified officers employed by the Commission have resigned in recent years to accept positions in other States or with other bodies, and, in addition, a number of engineers employed on important works have retired. This dearth of persons qualified to carry out the technical work required in connection with the Commission's operations has resulted in some delay in the preparation of necessary plans for important water supply proposals now under construction.

Mr. H. G. Strom, B.C.E., A.M.I.E. Aust., Divisional Engineer, has succeeded Mr. L. R. East, M.C.E., M.Inst.C.E., M.Am.Soc.C.E., M.I.E. Aust., as the Victorian Representative on the Interstate Committee, appointed by the States of New South Wales and Victoria to consider all River Murray frontage or internal reclamation proposals, and also as the Commission's representative on the Rivers and Streams Committee, which deals with all applications for grants from the Rivers and Streams Fund. Mr. Strom has also been appointed by the Government as the Commission's representative on the recently formed Soil Erosion Committee.

Mr. O. C. Brown, Chief Clerk, who had been in the service of the Commission since its inception in 1906, prior to which date he was an officer of the Water Supply Department, retired during the year after 50 years valuable service in the Government. To fill the vacancy so caused, Mr. P. J. Describes, was transferred from his position as Assistant Accountant, and Mr. L. A. King, A.I.C.A., previously with the State Treasury Department, was appointed Assistant Accountant. During the year Mr. Describes was appointed Acting Secretary of the Commission and Mr. L. J. Duggan, Acting Chief Clerk.

Mr. R. G. Knight, M.C.E., M.Inst.C.E., was transferred from the position of Executive Engineer, Yarrawonga Weir, to Head Office, as Acting Chief Designing Engineer. The vacant position at Yarrawonga Weir was filled by the transfer of Mr. H. H. C. Williams, B.M.E., Assoc. M.Inst.C.E., A.M.I.E. Aust., from the Mildura Drainage Works, which were continued under the supervision of Mr. A. R. McConchie, A.M.I.E. Aust., District Engineer at Red Cliffs.

Owing to the death of Mr. K. E. Nicholson, District Officer, Mr. H. L. Credlin, C.E., was transferred from Bendigo to the position of District Engineer, Secretary, and Collector of the Bellarine Peninsula District.

The Commission records with deep regret the deaths of Mr. C. H. Mansfield and Mr. W. J. Crowder as well as Mr. Nicholson.

In addition to Mr. O. C. Brown, Chief Clerk, the following officers have retired since the publication of the last Report :—G. C. Ferguson, Works Superintendent ; G. D. Hastie, Clerk ; G. Wheeler, Head Water Bailiff ; and J. McKenzie, T. H. Old, S. R. Purton, A. W. R. Sims, J. Woodall, and T. J. Yates, Water Bailiffs.

EXTENSIONS AND EXCISIONS OF DISTRICTS.

The boundaries of the North Shepparton Irrigation District were extended to include an area of about 4,200 acres excised from the Tungamah Waterworks Trust District at the request of the Trust. For some years this area has received domestic and stock supplies from the Commission's works.

Small areas totalling 100 acres of irrigable lands were excised from the Kyabram Waterworks Trust District and added to the Rodney Irrigation District.

Following requests for irrigation supplies from owners of about 1,760 acres of suitable lands, the boundaries of the Maffra-Sale Irrigation District were extended to include these lands, and an area of 28 acres of land unsuitable for irrigation was excised from the District.

An area of 532 acres supplied from the works of the Kerang Irrigation District was excised from the Boort Irrigation District and added to the former District.

The Koondrook Irrigation District was extended to include an area of 220 acres, and 75 acres of land, not commanded by the Commission's works, were excised from this District.

An allotment containing 25 acres of irrigable land was added to the Leitchville Irrigation District.

The boundaries of the Pyramid Hill and Mornington Urban Districts and the Cohuna Urban Division were amended to include Urban lands served by extensions of the respective reticulation systems.

The Long Lake and Quambatook Waterworks Districts were united to form the Long Lake Waterworks District.

The boundaries of the Mornington Peninsula Waterworks District were extended to include the bayside towns of Dromana, Rosebud, Rye, Sorrento, and Portsea.

An area of 1,010 acres which had been served for some years by the Commission's channels was added to the Werribee Waterworks District.

Two allotments were excised from the Tyrrell West Waterworks District and added to Walpeup Central Waterworks District from which system they receive water supplies.

NEW DISTRICT.

The Otway Waterworks District has been constituted as from 12th January, 1937. This District embraces the Western district towns of Camperdown, Cobden, Terang, and the City of Warrnambool, the works for the supply of which are now under construction.

FIRE INSURANCE.

The Commission has continued its policy of carrying the fire risk on its own buildings. The premiums thus saved now amount to £13,746.

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 such Districts, and the rates, flood protection charges, and compulsory irrigation charges made in all Districts. An estimate of the number of persons dwelling in such Districts is also appended.

In 39 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, Cardinia, and Kanyapella Flood Protection Districts, where the charging is on an acreage basis, were similarly divided into divisions. As heretofore in the Urban portion of the Coliban system, a minimum and tapering rate has 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 62 of the *Water Act* 1928, a minimum annual rate on the basis of £9 12s. per 640 acres was fixed by the Commission on the first division lands of the Birchip, Carwarp, Karkarooc, Long Lake, Sea Lake, Tyntynder, Tyrrell, Tyrrell West, Upper Western Wimmera, Upper Wimmera United, Wimmera United, Wycheproof, and Yelta Waterworks Districts, while in the Carwarp Central District the minimum was fixed at £14 8s. per 640 acres, in the Coreena, Dering, Eureka, Hindmarsh, Millewa, Millewa Central, and Walpeup Central Districts at £16 16s. per 640 acres, and in the Walpeup West Bore District at £4 16s. per 640 acres.

In 22 Districts the Commission made and levied compulsory irrigation charges, in five Flood Protection Districts a rate or charge was made, and in three Waterworks Trusts Districts, taken over by the Commission, rates were also made.

By direction of the Government the reduction by 10 per cent. in all rates in respect to domestic and stock supplies in Irrigation and Water Supply and Waterworks Districts, which operated during the previous year, was continued.

Details of all rates and charges made 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, 1937, as reduced 10 per cent.	Period of Rate.	Estimated Number of Persons dwelling in District.		
IRRIGATION AND WATER SUPPLY DISTRICTS.						
	Valuation by Commission.	Divisions.				
	£	1st.	2nd.	3rd.		
		s. d.	s. d.	s. d.		
1. BACCHUS MARSH ..	14,696	0 11	0 5½	..	1st July, 1936, to 30th June, 1937	630
2. BOORT ..	14,687	1 9½	0 10¾	..	" " "	587
3. CALIVIL ..	14,498	0 11	..	..	" " "	610
4. CAMPASPE ..	8,193	1 9½	0 10¾	0 5¾	" " "	576
5. COHUNA ..	32,482	1 9½	0 10¾	0 5¾	" " "	1,459
6. DEAKIN ..	45,238	1 6	0 9	0 4½	" " "	1,570
7. DINGEE ..	3,070	0 11	..	..	" " "	260
8. DRY LAKE ..	250	(No rate made)			" " "	12
9. ECHUCA NORTH ..	5,171	0 11	0 5½	..	1st July, 1936, to 30th June, 1937	568
10. FISH POINT..	1,364	0 11	..	..	" " "	53
11. KATANDRA ..	8,070	0 11	..	..	" " "	470
12. KERANG ..	16,041	2 1	1 0½	0 6¼	" " "	820
13. KOONDROOK ..	22,823	1 9½	0 10¾	..	" " "	1,151
14. LEITCHVILLE ..	7,718	1 9½	0 10¾	..	" " "	226
15. MAFFRA-SALE ..	49,976	0 11	0 5½	..	" " "	2,156
16. MERBEIN ..	31,044	0 11	..	..	" " "	3,000
17. MYSTIC PARK ..	3,177	0 11	..	..	" " "	110
18. NORTH SHEPPARTON ..	44,500	0 11	0 5½	..	" " "	1,280
Totals (carried forward)	322,998					15,538

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, 1937, as reduced 10 per cent.	Period of Rate.	Estimated Number of Persons dwelling in District.
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IRRIGATION AND WATER SUPPLY DISTRICTS—*continued*.

	Valuation by Commission.	Divisions.				
		1st.	2nd.	3rd.		
	£	s. d.	s. d.	s. d.		
Brought forward ..	322,998					15,538
19. NYAH ..	7,221	0 11	..	..	1st July, 1936, to 30th June, 1937	1,000
20. RED CLIFFS ..	23,749	0 11	..	..	" " "	2,850
21. ROCHESTER ..	59,809	0 11	0 5½	0 2¾	" " "	4,190
22. RODNEY ..	132,834	0 11	0 5½	0 2¾	" " "	5,320
23. SHEPPARTON ..	34,707	0 11	..	..	" " "	2,420
24. SOUTH SHEPPARTON ..	14,675	0 11	0 5½	..	" " "	445
25. STANHOPE ..	15,902	0 11	..	..	" " "	770
26. SWAN HILL ..	22,136	0 11	..	..	" " "	1,893
27. THIRD LAKE ..	2,184	1 9½	..	..	" " "	96
28. TONGALA ..	27,484	0 11	..	..	" " "	1,730
29. TRAGOWEL PLAINS ..	40,626	0 11	0 5½	0 2¾	" " "	1,380
30. TRESKO ..	1,797	2 3	1 1½	..	" " "	243
31. WERRIBEE ..	17,840	0 11	..	..	" " "	1,385
Totals ..	723,962					39,260

WATERWORKS DISTRICTS.

32. AXE CREEK ..	1,659	1 9½	..	..	1st July, 1936, to 30th June, 1937	260
33. BIRCHIP ..	38,000	2 1	1 0½	0 6¼	" " "	2,676
34. CARWARP ..	8,767	3 5	1 8½	0 10¼	" " "	520
35. CARWARP CENTRAL ..	1,100	4 6	2 3	..	" " "	180
36. COREENA ..	9,688	4 6	2 3	1 1½	" " "	255
37. DERING ..	2,361	5 5	2 8½	1 4¼	" " "	225
38. EUREKA ..	1,706	3 7	1 9½	0 10¾	" " "	110
39. HARCOURT ..	8,657	1 4	..	..	" " "	600
40. HINDMARSH ..	8,485	3 2	1 7	0 9½	" " "	236
41. KARKAROOC ..	126,815	1 11	0 11½	0 5¾	" " "	4,750
42. KERANG N.W. LAKES	7,597	0 5	..	..	" " "	370
43. LONG LAKE ..	67,007	2 6½	1 3¼	0 7½	" " "	2,287
44. MILEWA ..	23,823	4 6	2 3	1 1½	" " "	1,400
45. MILEWA CENTRAL ..	13,286	6 9	3 4½	1 8¼	" " "	780
46. NARRE WARREN ..	2,744	0 11	..	..	" " "	110
47. SEA LAKE ..	61,208	2 5	1 2½	0 7¼	" " "	2,437
48. TYNTYNDER ..	51,878	3 0	1 6	0 9	" " "	2,400
49. TYRRELL ..	45,124	3 0	1 6	0 9	" " "	2,730
50. TYRRELL WEST ..	62,123	3 0	1 6	0 9	" " "	2,983
51. UPPER WEST'N WIMMERA	61,882	1 4	0 8	0 4	" " "	1,708
52. UPPER WIMMERA UNITED	100,073	1 4	0 8	0 4	" " "	2,750
53. WALPEUP CENTRAL ..	8,425	4 11	2 5½	1 2¾	" " "	307
54. WALPEUP WEST ..	55,665	0 8	0 4	..	" " "	2,119
55. WERRIBEE ..	6,725	1 9½	..	..	" " "	156
56. WESTERN WIMMERA	265,487	1 0½	0 6¼	0 3½	" " "	8,830
57. WIMMERA UNITED ..	302,063	1 0½	0 6¼	0 3½	" " "	7,800
58. WYCHEPROOF ..	72,537	2 1	1 0½	0 6¼	" " "	2,964
59. YELTA ..	3,033	3 0	..	..	" " "	50
Totals ..	1,417,918					51,993

WATERWORKS TRUSTS.

60. LODDON UNITED ..	68,983	0 8	0 4	0 2	1st January, 1937, to 31st December, 1937	3,300
	Municipal Valuation.					
	£			s. d.		
61. CARRUM ..	21,771	1st Division		3 8	" " "	1,463
		2nd Division		1 10		
		3rd Division		1 0		
		4th Division		0 10		
		5th Division		0 3		
62. MITIAMO (Urban) ..	915			4 0	" "	190
Totals ..	91,669					4,953

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, 1937.	Period of Rate.	Estimated Number of Persons dwelling in District.
URBAN DIVISIONS AND DISTRICTS.				
	Municipal Valuation. £	s. d.		
63. ANGLESEA	2,826	.. .. 2 6	1st July, 1936, to 30th June, 1937	250
64. ANTWERP	197	.. .. 5 0	" " "	74
65. BACCHUS MARSH ..	15,888	.. .. 1 6	" " "	1,775
66. BARWON HEADS AND OCEAN GROVE	10,021	.. .. 2 6	" " "	1,148
67. BERRIWILLOCK ..	1,332	.. .. 3 6	" " "	150
68. BERWICK	5,797	.. .. 2 1	" " "	950
69. BEULAH	2,859	.. .. 3 0	" " "	440
70. BIRCHIP	6,032	.. .. 1 8	" " "	1,037
71. BITTERN	656	.. .. 3 1	" " "	90
72. BRIM	1,048	.. .. 4 6	" " "	180
73. BUNYIP	2,896	.. .. 2 4	" " "	430
74. CARRUM	76,261	.. .. 1 5	" " "	6,500
75. CARWARP	191	.. .. 5 0	" " "	45
76. CHILLINGOLLAH ..	404	.. .. 5 0	" " "	110
77. CHINKAPOOK	584	.. .. 5 0	" " "	120
78. COHUNA	8,871	.. .. 2 0	" " "	1,000
79. COROP	190	.. .. 2 0	" " "	85
80. CRANBOURNE	3,051	.. .. 2 0	" " "	250
81. CRIB POINT	3,332	.. .. 3 1	" " "	557
82. CULGOA	1,065	.. .. 3 6	" " "	150
83. DANDENONG	59,928	.. .. 1 3	" " "	4,900
84. DIMBOOLA	13,399	.. .. 1 11	" " "	1,690
85. DINGEE	366	.. .. 4 0	" " "	90
86. DOOEN	169	.. .. 2 0	" " "	30
87. DRYSDALE	2,665	.. .. 2 6	" " "	336
88. FRANKSTON	56,062	.. .. 1 4	" " "	5,430
89. GARFIELD	2,506	.. .. 2 4	" " "	300
90. HASTINGS	2,049	.. .. 3 0	" " "	460
91. HEYFIELD	4,433	.. .. 2 6	" " "	525
92. HICKSBOROUGH ..	453	.. .. 3 9	" " "	100
93. HOPETOUN	5,119	.. .. 3 0	" " "	750
94. JEPARIT	7,570	.. .. 2 2	" " "	870
95. JUNG JUNG	918	.. .. 3 0	" " "	174
96. KOONDROOK	3,199	.. .. 2 9	" " "	475
97. LAKE BOGA	2,193	.. .. 3 0	" " "	386
98. LALBERT	867	.. .. 5 0	" " "	148
99. LASCELLES	704	.. .. 5 0	" " "	130
100. LEITCHVILLE ..	1,925	.. .. 3 7	" " "	250
101. LOCKINGTON	1,756	.. .. 3 3	" " "	240
102. LONGWARRY	1,696	.. .. 2 9	" " "	220
103. MANANGATANG ..	2,221	.. .. 3 6	" " "	310
104. MARNOO	1,149	.. .. 5 0	" " "	250
105. MARONG	888	.. .. 3 0	" " "	300
106. MERBEIN	10,225	.. .. 2 9	" " "	1,050
107. MERINGUR	292	.. .. 5 0	" " "	80
108. MINYIP	6,061	.. .. 2 10	" " "	750
109. MORNINGTON	35,691	.. .. 1 6	" " "	2,260
110. MOUNT MARTHA ..	6,469	.. .. 2 1	" " "	210
111. MURRABIT	231	.. .. 5 0	" " "	51
112. NANDALY	326	.. .. 5 0	" " "	114
113. NATIMUK	3,257	.. .. 1 6	" " "	580
114. NEWSTEAD	3,065	.. .. 3 0	" " "	400
115. NORTH WONTHAGGI ..	3,840	.. .. 2 0	" " "	1,000
116. NULLAWIL	814	.. .. 5 0	" " "	115
117. NYAH	687	.. .. 2 6	" " "	170
118. NYAH WEST	3,891	.. .. 2 9	" " "	340
119. OUYEN	9,412	.. .. 3 0	" " "	1,075
120. PAKENHAM	5,260	.. .. 2 1	" " "	700
121. PATCHEWOLLOCK ..	430	.. .. 5 0	" " "	165
122. PIANGIL	1,279	.. .. 3 6	" " "	260
123. PORTARLINGTON ..	3,346	.. .. 2 6	" " "	550
124. PYRAMID HILL ..	3,533	.. .. 3 0	" " "	520
125. QUAMBATOOK	3,201	.. .. 2 10	" " "	387
126. QUEENSLIFF AND POINT LONSDALE	21,771	.. .. 2 7	" " "	3,100
Totals (carried forward)	438,817			47,582

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, 1937.	Period of Rate.	Estimated Number of Persons dwelling in District.
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URBAN DIVISIONS AND DISTRICTS—*continued.*

	Municipal Valuation. £	s.	d.		
Brought forward ..	438,817	47,582
127. RAINBOW ..	7,910	..	2 2	1st July, 1936, to 30th June, 1937	998
128. RED CLIFFS ..	14,619	..	2 3	.. ..	1,100
129. RUPANYUP ..	5,635	..	2 10	.. ..	650
130. SEA LAKE ..	7,000	..	2 0	.. ..	650
131. SOMERVILLE ..	1,888	..	2 6	.. ..	250
132. SOUTH FRANKSTON ..	13,225	..	2 6	.. ..	800
133. SPEED ..	324	..	5 0	.. ..	90
134. SPRING VALE ..	31,178	..	1 6	.. ..	2,850
135. STANHOPE ..	1,145	..	4 0	.. ..	320
136. TEMPY ..	292	..	5 0	.. ..	130
137. TORQUAY ..	5,657	..	2 6	.. ..	820
138. ULTIMA ..	2,444	..	3 0	.. ..	356
139. WAITCHIE ..	343	..	5 0	.. ..	110
140. WALPEUP ..	896	..	4 6	.. ..	165
141. WATCHEM ..	1,742	..	3 3	.. ..	220
142. WERRIMULL ..	693	..	5 0	.. ..	145
143. WONTHAGGI ..	32,591	..	1 6	.. ..	8,000
144. WOOMELANG ..	1,746	..	3 6	.. ..	410
145. WOORINEN ..	564	..	4 0	.. ..	78
146. WYCHEPROOF ..	7,512	..	2 0	.. ..	810
147. YAAPEET ..	241	..	5 0	.. ..	106
Totals ..	576,462	..	..	.. ..	66,640

COLIBAN SYSTEM.

	£		s.	d.		
148. COLIBAN	389,808	On Valuations			1st July, 1936, to 30th June, 1937	60,500
		up to £300 ..	1	6		
		(Minimum 20s.)				
		From £301 up				
		to £700 ..	1	3		
		From £701 on..	1	0		
		Vacant lands ..	1	6		
	£					
Grand Totals ..	3,199,819	.. ..			.. ..	223,346

FLOOD PROTECTION DISTRICTS.

	Valuation by Commission. £	s.	d.		
149. ECHUCA (HIGH-ST.) ..	1,466	..	1 0	1st July, 1936, to 30th June, 1937	80
150. CARDINIA ..	35,137	1st Div. (p. ac.)	3 0	.. ..	860
		2nd Div. (p. ac.)	1 6	.. ..
		3rd Div. (p. ac.)	0 9	.. ..
151. LOWER KOOWEERUP ..	56,458	1st Div. (p. ac.)	2 0	.. ..	2,830
		2nd Div. (p. ac.)	1 0	.. ..
		3rd Div. (p. ac.)	0 6	.. ..
152. KANYAPELLA ..	14,494	1st Div. (p. ac.)	0 7	.. ..	50
		2nd Div. (p. ac.)	0 3½	.. ..
153. LOCH GARRY ..	40,886	Per acre ..	0 6	.. ..	200
Totals ..	146,975	.. ..	.. ..	.. ..	4,020

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 ..	6,677	3,355	3,355	22s. 6d.	1st October, 1936, to 30th April, 1937
2. COHUNA ..	71,938	35,807	35,951	6s.	15th August, 1936, to 15th May, 1937
3. DINGEE ..	8,844	4,455	4,455	7s.	" " " "
4. ECHUCA NORTH ..	13,793	5,382	5,441	7s. 6d.	" " " "
5. FISH POINT ..	6,327	3,834	1,884	8s.	" " " "
6. KOONDROOK ..	81,365	23,947	23,997	6s.	" " " "
7. LEITCHVILLE ..	13,831	11,979	4,181	7s.	" " " "
8. MAFFRA-SALE ..	42,381	18,583	18,491	10s.	1st September, 1936, to 30th April, 1937
9. MERBEIN ..	8,496	7,700	19,249	22s.	1st August, 1936, to 30th April, 1937
10. MYSTIC PARK ..	20,260	8,793	2,976	Min. 55s. per acre 6s.	15th August, 1936, to 15th May, 1937
11. NYAH ..	3,748	3,058	7,590	20s.	1st August, 1936, to 30th April, 1937
12. RED CLIFFS ..	30,952	11,169	27,923	Min. 50s. per acre 28s.	" " " "
13. ROCHESTER ..	172,047	54,265	54,616	Min. 70s. per acre 6s.	15th August, 1936, to 15th May, 1937
14. RODNEY ..	267,901	191,215	61,383	6s.	" " " "
15. SHEPPARTON ..	24,583	21,477	21,477	6s.	" " " "
16. SOUTH SHEPPARTON	33,717	18,201	4,504	8s.	" " " "
17. STANHOPE ..	26,064	18,024	17,805	6s.	" " " "
18. SWAN HILL ..	36,431	22,005	22,005	6s.	" " " "
19. THIRD LAKE ..	11,488	3,882	2,587	7s.	" " " "
20. TONGALA ..	45,471	27,373	27,598	6s.	" " " "
21. TRAGOWEL PLAINS	216,954	148,428	31,189	7s.	" " " "
22. WERRIBEE ..	10,156	8,163	8,164	12s.	1st October, 1936, to 30th April, 1937
Totals.	1,153,424	651,095	406,821		

C.—SALES OF WATER CHARGES.

Irrigation and Water Supply District.	Area of District in Acres.	Unit Charge per Acre foot for Water Supplied as Sales.	Period of Charge.
1. BOORT	79,486	7s.	1st July, 1936, to 30th June, 1937
2. CALIVIL	60,409	10s.	" " " "
3. DEAKIN	163,970	6s.	" " " "
4. KATANDRA	14,265	10s.	" " " "
5. KERANG	85,372	4s.	" " " "
6. NORTH SHEPPARTON	120,946	10s.	" " " "
7. TRESKO	3,482	20s.	" " " "
8. CAMPASPE	19,767	Charge per acre per watering } Lucerne 1s. when supplies } Grass 1s. available, with } Crop 2s. minimum 10s. } Orchard 2s. per watering } Fodder 2s. (Half rates 1st June to 30th August)	" " " "
Total.	547,697		

FINANCE.

The Revenue Collections for the financial year 1936-37 attained the record high level of £549,785, as against £525,340 for 1935-36, and was the largest amount collected by the Commission in any one year.

The expenditure for the year on maintenance, repairs, water distribution and management, and the comparative figures for 1935-36 are set out hereunder :—

	1936-37	1935-36
	£	£
From Annual Vote Appropriation	359,704	308,579
From Unemployment Relief Funds	44,863	79,050
	404,567	387,629

The amount, therefore, available from the Commission's Revenue towards interest and exchange was £190,081. The payments to the Treasury as interest on loans for Water Supply purposes by Waterworks Trusts and Local Water Authorities were £81,198, bringing the total amount available from all sources towards interest and exchange to £271,279.

The net Loan Liability of the State for Works of Water Supply at 30th June, 1937, was £25,159,373, involving an interest payment, including exchange payment on overseas interest, of £1,137,208.

The amount of interest charges borne by the State was, therefore, £865,929. The whole of the deficiency in interest is not a charge against present water users, as the Capital Liability of the State for Country Water Supply Works includes large capital sums which many years ago were either written off, or declared Free Head Works, or otherwise are not chargeable to the water users. An analysis of the Capital Liability is presented in the summary of the financial position, included in the following pages of this Report.

The amount available for Vote expenditure for the financial year 1937-38 is £340,316. This appropriation has been supplemented by a grant of £30,000 from Unemployment Relief (Taxation) Funds for the purpose of sand removal and delivery of water in the Wimmera Mallee Districts for the period 1st July, 1937, until the completion of the watering towards the end of October, 1937. The watering of this area will commence again during March, 1938, and to meet similar expenditure until the end of the financial year 1937-38 a further grant of £20,000 from Unemployment Relief Funds will be required. The total amount for the essential cost of administration, revenue collection and water distribution only, would then be £390,316. If adequate provision were to be made for the maintenance of all works at full efficiency, it is estimated that the sum required for all purposes for the year 1937-38 would be in the vicinity of £446,000, in addition to a payment of approximately £50,000 to an interest bearing Depreciation Fund to provide for essential renewals of perishable works.

The need for the provision of adequate depreciation for the Commission's perishable assets is particularly stressed. A nominal sum of £500 only was placed to the credit of the Water Supply Works Depreciation Fund during 1936-37, whereas an amount of £1,702 was expended on renewals. The net amount at the credit of this Fund at 30th June, 1937, was only £11,680. This amount is totally inadequate to provide for the extensive renewals of old pipe lines and machinery which will be necessary in the near future in order to maintain essential services. With only a small sum available in the Depreciation Fund, the cost of such renewals must be met either from Consolidated Revenue or from loan moneys. The former course would result in substantial amounts being required at irregular intervals, thus causing serious disturbances to the financial equilibrium of the State. On the other hand, the latter course would involve a continuous increase in Capital Liability without any increase in the revenue-earning capacity of the works.

A mechanized accounting and costing system has been introduced as from 1st July, 1937. The mechanized work, at present, is confined to expenditure work only, but during the year 1937-38 preparation will be made to mechanize the revenue work to commence as from 1st July, 1938.

In this Report, the practice of setting out the District Accounts on a cash basis has been followed; however, in future reports it is proposed to publish the District statements on a revenue basis as suggested by the Royal Commission on Water Supply.

FINANCIAL POSITION.

Revenue, 1936-37—

Total of Commission's Revenue for year	£ 549,785
Total paid to Treasury as Interest on Loans by Waterworks Trusts and Local Water Authorities	81,198
	<u>630,983</u>

Expenditure, 1936-37—

Expended for year on Maintenance, Repairs, Water Distribution and Management—	
From Annual Votes and Special Appropriation	359,704
From Unemployment Relief Funds:—	
Irrigation Districts	£27,450
Waterworks and Other Districts	£17,413
	<u>44,863</u>
	<u>404,567</u>

RESULT OF OPERATIONS IN DISTRICTS UNDER CONTROL OF COMMISSION.

(Based on Capital Allotted only.)

	Working Expenses.	Interest on Capital Allotted.	Total Expenditure.	Revenue.	Deficiency.
	£	£	£	£	£
Irrigation Districts	156,920	210,014	366,934	261,919	105,015
Waterworks Districts	135,139	136,269	271,408	132,578	138,830
Urban Districts and Divisions	24,570	60,923	85,493	81,683	3,810
Coliban System	18,400	66,300	84,700	50,911	33,789
Flood Protection Districts	1,261	6,364	7,625	6,736	889
	<u>336,290</u>	<u>479,870</u>	<u>816,160</u>	<u>533,827</u>	<u>282,333</u>
Other Expenditure not charged to Districts ..	23,414	..	..	..	..
Miscellaneous Revenue .. .. .	..	..	..	15,958	..
	<u>359,704</u>			<u>549,785</u>	

SUMMARY OF OPERATIONS FOR YEAR 1936-37.

REVENUE, 1936-37—	£	EXPENDITURE, 1936-37—	£	£	£
From Districts and other activities under the control of the Commission	549,785	Vote Appropriation .. .. .	..	356,136	
		Special Appropriations—			
		Administration	3,068		
		Depreciation Fund	500		
				<u>3,568</u>	
		Surplus carried down .. .. .	..	..	359,704
	<u>549,785</u>				<u>190,081</u>
					549,785
Surplus brought down	190,081	Amount debited by Treasury for Pensions ..	..	12,841	
Interest on Loans paid to Treasury by Waterworks Trusts and Local Bodies	81,198	Balance available towards payment of interest and exchange, carried down ..	..	258,438	
	<u>271,279</u>				<u>271,279</u>
Balance available towards payment of interest and exchange, brought down	258,438	Interest on total Loan Liability .. .. .	..	1,036,303	
Deficiency, being amount of interest and exchange borne by Treasury, carried down ..	878,770	Exchange on Interest Payments .. .. .	..	100,905	
	<u>1,137,208</u>				<u>1,137,208</u>

ANALYSIS OF DEFICIENCY, 1936-37.

	£		£
Interest and Exchange on Free Headworks, Amounts Written Off, River Murray Agreement Works, and Loan Floatation Charges ..	266,594	Deficiency, being amount of Interest and Exchange borne by Treasury, brought down ..	878,770
Loss on Coliban System due to limited statutory rate	33,789		
Services to State, non-revenue producing ..	17,714		
Difference between Rate of Interest charged by Treasury and Statutory Rate chargeable to Districts	39,617		
*Net Deficiency on Commission's activities ..	521,056		
	<u>878,770</u>		<u>878,770</u>

* Included in the Net Deficiency of £521,056 is an amount of £269,333 which represents Interest on cost of main supply works not at present allotted to districts.

	£	£
Capital Expenditure, 1936-37—		
Expenditure for Year on Capital Works of the Commission—		
From Loan Funds		326,239
From Unemployment Relief Funds		350,993
		<hr/> 677,232
Loan Liability—		
Net Loan Liability of State for Works of Water Supply at 30th June, 1937		25,159,373
<i>Represented by—</i>		
Works at debit of Authorities		13,782,415
Unallotted Main Supply Works		6,159,490
River Murray Waters Agreement Works		2,727,503
Amounts Written Off 38 years ago		1,261,606
Free Headworks declared free by Parliament over 30 years ago		1,368,713
Loan Flotation Expenses—discounts and commissions		753,895
Loan Moneys in hand		68,238
		<hr/> 26,121,860
Less net amount from National Debt Sinking Fund		962,487
		<hr/> 25,159,373
Interest and Exchange—		
The total interest due on the Loan Liability for 1936-37 is		1,036,303
To which is to be added exchange payable on overseas interest		100,905
		<hr/> 1,137,208
<i>Debitable to—</i>		
Works at debit of Authorities		601,281
Unallotted Main Supply Works		269,333
River Murray Agreement Works	118,938	
Amounts Written Off, including Geelong	55,095	
Free Headworks	59,686	
Loan Flotation Charges	32,875	
		<hr/> 266,594
		1,137,208
Amount available from Revenue to meet Interest—		
Commission	190,081	
Waterworks, Trusts, &c.	81,198	
		<hr/> 271,279
Balance Unpaid		865,929
Deficiency for Year—		
Balance of Interest unpaid as above		865,929
Add amount debited to Commission by Treasury for Pensions		12,841
Gross Deficiency on Water Supply Undertakings		878,770
<i>Included in this is—</i>		
Interest and Exchange on Free Headworks, Amounts Written Off, River Murray Agreement Works, and Loan Flotation Charges	266,594	
Loss on Coliban System where rate is limited in lieu of Writing Off	33,789	
General Services rendered by Commission chargeable to whole State	17,714	
Interest chargeable to Districts controlled by the Commission is fixed by the Water Act at 4 per cent. on practically all capital. The percentage charged by the Treasury, inclusive of exchange, is £4 7s. 3d., and this represents approximately a sum of	39,617	
		<hr/> 357,714
Net Deficiency on Commission's Activities		521,056

RECEIPTS AND DISBURSEMENTS.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1937.

Works.	Receipts.	Disbursements (exclusive of Interest, Redemption and Depreciation Charges) from Annual Votes and Special Appropriation.	Excess.	
			Receipts over Net Disbursements.	Disbursements over Receipts.
	£	£	£	£
Coliban Works	50,911	18,400	32,511	..
Other State Works—				
Broken River .. .. .	..	55	..	55
Goulburn	215	2,513	..	2,298
Kow Swamp .. .. .	..	663	..	663
Lake Lonsdale	700	285	415	..
Loddon River .. .. .	..	447	..	447
North-West Lakes .. .. .	..	153	..	153
Irrigation Districts	261,919	156,920	104,999	..
Waterworks Districts	132,578	135,139	..	2,561
Urban Districts and Divisions	81,683	24,570	57,113	..
Flood Protection Districts	6,736	1,261	5,475	..
Flood Protection Districts—Proportion of Loch Garry borne by the State .. .. .	..	85	..	85
Miscellaneous Collections (Diversions, Permits, Grazing Licences, Rents)	15,043	..	15,043	..
Rivers, Investigations and Reports .. .. .	..	5,200	..	5,200
Maintenance of River Murray Commission—State Contribution .. .. .	..	7,700	..	7,700
Projects not yet Revenue Producing—				
Murray Valley Districts .. .. .	..	487	..	487
Otway Waterworks District .. .. .	..	641	..	641
Waterworks Trusts and Sewerage Authorities .. .. .	..	1,617	..	1,617
Special Appropriation Act No. 3801—				
Sections 19, 20, Administration .. .. .	..	3,068	..	3,068
Section 69, Contribution to Water Supply Works Depreciation Fund .. .. .	..	500	..	500
Totals	549,785	359,704	215,556	25,475*

Amount available to meet Interest £190,081

*Included in the above figures is an amount of £17,714 not directly charged to water users. This sum is comprised of:—Administration charges under Special Appropriation (£3,068); Administration of Waterworks Trusts and Sewerage Authorities (£1,617); Maintenance of State Works (£3,616); Proportion of Maintenance of Loch Garry Flood Protection District borne by State under Agreement (£85); Projects not yet revenue producing (£1,128); Depreciation (£500); Contribution by State towards maintenance of River Murray Works (£7,700).

COLIBAN SYSTEM.

STATEMENT of Moneys received and disbursed during the year ended 30th June, 1937; and of interest charged at the rates of 4 and 4½ per cent. on Capital Debts.

District.	Capital Debt at 30th June, 1937.	Receipts.	Disbursements and Interest Charged.			Excess.	
			Disbursements.	Interest.	Total.	Receipts over Disbursements and Interest.	Disbursements and Interest over Receipts.
	£	£	£	£	£	£	£
Coliban	1,638,743	48,309	17,470	65,704	83,174	..	34,865
Axe Creek	1,750	579	199	70	269	310	..
Harcourt	11,040	1,856	702	442	1,144	712	..
Marong	2,100	167	29	84	113	54	..
Totals	1,653,633	50,911	18,400	66,300	84,700	1,076	34,865

FLOOD PROTECTION DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st July, 1920, to 30th June, 1937 ; and of Interest charged at the rates of 4 and 4½ per cent. on Capital Debits ; and also of Depreciation and Redemption charged as at 30th June, 1937.

RECEIPTS.

District.	1st July, 1920, to 30th June, 1936.	1936-37.			Grand Total at 30th June, 1937.
		Charge.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£
1. Cardinia	21,339	1,723	59	1,782	23,121
2. Echuca	1,744	71	..	71	1,815
3. Kanyapella	2,913	142	10	152	3,065
4. Loch Garry	9,603	1,194	79	1,273	10,876
5. Lower Kooweerup ..	50,325	3,345	113	3,458	53,783
Totals	85,924	6,475	261	6,736	92,660

DISBURSEMENTS, AND INTEREST, DEPRECIATION, AND REDEMPTION CHARGED.

District.	Disbursements.					Interest Charged.			(A) De- preciation. (B) Re- demption.	Grand Total at 30th June, 1937.
	1st July, 1920, to 30th June, 1936.	1936-37.			Total at 30th June, 1937.	1st July, 1920, to 30th June, 1936.	1st July, 1936, to 30th June, 1937.	Total at 30th June, 1937.		
		Repairs and Main- tenance.	Manage- ment.	Total.						
	£	£	£	£	£	£	£	£	£	£
1. Cardinia	5,403	331	133	464	5,867	23,728	1,800	25,528	..	31,395
2. Echuca	324	5	9	14	338	348	4	352	(B) 1,125	1,815
3. Kanyapella	1,096	55	17	72	1,168	1,644	160	1,804	..	2,972
4. Loch Garry	962	60	25	85	1,047	5,187	400	5,587	(B) 3,203	9,837
5. Lower Kooweerup ..	9,003	386	240	626	9,629	52,968	4,000	56,968	..	66,597
Totals	16,788	837	424	1,261	18,049	83,875	6,364	90,239	(B) 4,328	112,616

DISTRICTS HELD IN TRUST BY THE COMMISSION.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31ST DECEMBER, 1936.

Receipts.

Name of Trust.	Bank Balance at 1st January, 1936.	1936.				Grand Total for Year 1936.
		Rates.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
Carrum	Dr. 983	1,601	..	186	1,787	804
Loddon United	Dr. 804	1,874	129	68	2,071	1,267
Loddon United (Mitiamo, Urban)	Dr. 68	178	200	51	429	361
Totals	Dr. 1,855	3,653	329	305	4,287	2,432

Disbursements.

Name of Trust.	Capital Debit, 31st December, 1936.	1936.					Grand Total for Year 1936.	Bank Balance carried forward 1st January, 1937.
		Maintenance and Water Distribution.	Management.	Total.	Interest.	(A) Depreciation. (B) Redemption.		
	£	£	£	£	£	£	£	£
Carrum	24,937	368	174	542	844	(B) 154	1,540	Dr. 736
Loddon United	3,368	910	130	1,040	157	(B) 404	1,601	Dr. 334
Loddon United (Mitiamo, Urban)	4,858	142	17	159	207	(A) 28 (B) 25	419	Dr. 58
Totals	33,163	1,420	321	1,741	1,208	(A) 28 (B) 583	3,560	Dr. 1,128

IRRIGATION AND WATER SUPPLY DISTRICTS.

Statement of Moneys received and disbursed from 1st May, 1906, to 30th June, 1937; and of Interest charged at the rates of 4 and 4½ per cent. on Capital Debts; and also of Depreciation and Redemption charged as at 30th June, 1937. (Free Headworks excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1936.	1936-37.					Grand Total at 30th June, 1937.
		Rates.	Compulsory Irrigation Charge.	Water Sales.	Interest and Miscel- laneous.	Total.	
	£	£	£	£	£	£	£
1. Bacchus Marsh	122,501	675	3,729	1,078	36	5,518	128,019
2. Boort	93,628	1,356	..	4,374	41	5,771	99,399
3. Calivil	19,717	683	..	2,770	34	3,487	23,204
4. Campaspe	22,463	709	..	74	16	799	23,262
5. Cohuna	374,837	2,555	9,567	1,844	443	14,409	389,246
6. Deakin	124,296	2,877	..	955	40	3,872	128,168
7. Dingee	38,049	131	1,694	108	108	2,041	40,090
8. Echuca North	26,904	208	1,437	153	93	1,891	28,795
9. Fish Point	7,293	84	738	145	97	1,064	8,357
10. Katandra	9,952	371	..	1,823	21	2,215	12,167
11. Kerang	154,829	2,024	..	5,365	33	7,422	162,251
12. Koondrook	213,308	2,280	6,565	1,137	288	10,270	223,578
13. Leitchville	24,880	535	1,282	1,064	18	2,899	27,779
14. Maffra-Sale	83,769	2,389	7,963	1,406	407	12,165	95,934
15. Merbein	474,123	1,412	21,812	1,882	343	25,449	499,572
16. Mystic Park	13,606	255	1,002	245	98	1,600	15,206
17. North Shepparton	25,122	2,357	..	2,411	66	4,834	29,956
18. Nyah	143,499	306	7,402	316	262	8,286	151,785
19. Red Cliffs	425,413	1,069	36,647	1,905	341	39,962	465,375
20. Rochester	356,172	2,691	14,841	3,517	756	21,805	377,977
21. Rodney	665,270	6,041	18,231	3,658	260	28,190	693,460
22. Shepparton	161,592	1,599	5,841	330	284	8,054	169,646
23. South Shepparton	25,668	647	1,658	106	106	2,517	28,185
24. Stanhope	75,459	584	2,988	433	48	4,053	79,512
25. Swan Hill	182,914	1,051	6,153	2,431	501	10,136	193,050
26. Third Lake	10,131	213	807	30	32	1,082	11,213
27. Tongala	151,834	1,161	5,166	957	76	7,360	159,194
28. Tragowel Plains	305,972	1,787	10,590	1,835	587	14,799	320,771
29. Tresco	26,868	278	..	1,182	0	1,460	28,337
30. Werribee	120,115	873	5,113	2,415	99	8,500	128,615
Totals	4,480,184	39,201	171,226	45,949	5,543	261,919	4,742,103

DISBURSEMENTS, AND INTEREST, DEPRECIATION, AND REDEMPTION CHARGED.

District.	1st May, 1906, to 30th June, 1936.	DISBURSEMENTS.					INTEREST CHARGED.			(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1937.
		Repairs and Maintenance.	Distribution of Water.	Manage- ment.	Total.	Total at 30th June, 1937.	1st May, 1906, to 30th June, 1936.	1st July, 1936, to 30th June, 1937.	Total at 30th June, 1937.		
	£	£	£	£	£	£	£	£	£	£	£
1. Bacchus Marsh ..	28,677	1,255	1,089	368	2,712	31,389	110,597	6,119	116,716	..	148,105
2. Boort	45,156	1,031	1,479	648	3,158	48,314	51,170	4,047	55,217	(B) 1,400	104,931
3. Calivil	8,448	603	708	208	1,519	9,967	31,495	5,176	36,671	..	46,638
4. Campaspe	13,375	40	248	31	319	13,694	13,031	493	13,524	..	27,218
5. Cohuna	201,560	5,280	3,198	1,066	9,544	211,104	182,335	11,136	193,471	(A) 13,045	417,620
6. Deakin	46,048	628	784	178	1,590	47,638	85,523	3,310	88,833	..	136,471
7. Dingee	19,751	149	520	74	743	20,494	25,650	1,227	26,877	..	47,371
8. Echuca North ..	10,627	323	668	103	1,094	11,721	19,166	1,638	20,804	..	32,525
9. Fish Point	5,389	218	178	124	520	5,909	5,793	622	6,415	..	12,324
10. Katandra	5,986	536	847	130	1,513	7,499	31,391	5,488	36,879	..	44,378
11. Kerang	82,784	2,692	1,926	675	5,293	88,077	77,565	5,063	82,628	(B) 2,700 (A) 450	173,855
12. Koondrook	117,341	1,712	2,206	581	4,499	121,840	151,939	8,742	160,681	(A) 6,160	288,681
13. Leitchville	7,513	354	353	136	843	8,356	15,197	1,713	16,910	..	25,266
14. Maffra-Sale	38,281	4,801	2,560	1,040	8,401	46,682	55,470	7,900	63,370	..	110,052
15. Merbein	337,341	5,026	15,109	1,023	21,158	358,499	146,769	8,929	155,698	(A) 20,353	534,550
16. Mystic Park	9,465	271	378	163	812	10,277	7,997	695	8,692	..	18,969
17. North Shepparton ..	9,445	955	1,513	244	2,712	12,157	53,030	8,714	61,744	..	73,901
18. Nyah	110,090	523	4,741	570	5,834	115,924	68,696	4,219	72,915	(A) 5,272	194,111
19. Red Cliffs	253,199	3,905	23,479	1,326	28,710	281,909	181,133	18,425	199,558	(A) 24,426	505,893
20. Rochester	154,882	2,521	6,175	1,428	10,124	165,006	262,512	16,290	278,802	..	443,808
21. Rodney	273,611	5,822	6,440	1,559	13,821	287,432	481,078	27,951	509,029	..	796,461
22. Shepparton	61,667	1,689	2,552	858	5,099	66,766	156,346	10,195	166,541	..	233,307
23. South Shepparton ..	5,452	211	627	138	976	6,428	23,622	2,752	26,374	..	32,802
24. Stanhope	37,565	1,144	1,824	327	3,295	40,860	63,120	5,202	68,322	..	109,182
25. Swan Hill	95,235	2,053	2,889	933	5,875	101,110	97,969	6,872	104,841	(A) 4,768	210,719
26. Third Lake	3,226	77	240	84	401	3,627	10,708	1,007	11,715	..	15,342
27. Tongala	67,496	2,284	1,766	626	4,676	72,172	146,232	8,560	154,792	..	226,964
28. Tragowel Plains ..	121,122	2,647	3,287	719	6,653	127,775	233,554	14,284	247,838	..	375,613
29. Tresco	39,070	252	2,251	188	2,691	41,761	45,199	3,633	48,832	..	90,593
30. Werribee	21,349	766	1,126	443	2,335	23,684	113,838	9,612	123,450	..	147,134
Totals	2,231,151	49,768	91,161	15,991	156,920	2,388,071	2,948,125	210,014	3,158,139	78,574	5,624,784

WATERWORKS DISTRICTS.

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, 1937; and of Interest charged at the rates of 4 and 4½ per cent. on Capital Debts; and also of Depreciation and Redemption charged, as at 30th June, 1937. (Free Headworks excluded.)

RECEIPTS.

District.	1st May, 1906, to 30th June, 1936.	1936-37.				Grand Total at 30th June, 1937.
		Rates.	Water Sales.	Interest and Miscel- laneous.	Total.	
	£	£	£	£	£	£
1. Bellarine Peninsula	16,402	5,003	549	27	5,579	21,981
2. Birchip		5,186	79	330	5,595	
3. Sea Lake		8,289	37	608	8,934	
4. Tyrrell	600,969	7,340	84	908	8,332	639,393
5. Tyrrell West		6,670		608	7,278	
6. Wycheproof		7,707	104	474	8,285	
7. Carwarp	14,643	698		61	759	15,402
8. Carwarp Central	1,308	344		18	362	1,670
9. Coreena	2,144	312		62	374	2,518
10. Dering	5,519	476		57	533	6,052
11. Eureka	2,276	474		70	544	2,820
12. Hindmarsh	9,472	1,302		102	1,404	10,876
13. Karkaroo	245,994	12,852		336	13,188	259,182
14. Kerang North-West Lakes	3,760	188		3	191	3,951
15. Long Lake	192,940	10,006		381	10,387	203,327
16. Millewa	17,607	1,639	797	60	2,496	20,103
17. Millewa Central	9,388	1,026	22	9	1,057	10,445
18. Mornington Peninsula	55,254	3,090		79	3,079	58,333
19. Narre Warren	2,676	140	130	61	331	3,007
20. Tyntynder	108,534	4,477	62	310	4,849	113,383
21. Upper Western Wimmera	92,000	4,380		176	4,556	96,556
22. Upper Wimmera United	151,685	6,922		334	7,256	158,941
23. Walpeup Central	4,450	1,048	30	124	1,202	5,652
24. Walpeup West	32,214	1,250	25	179	1,454	33,668
25. Werribee	11,264	594		10	604	11,868
26. Western Wimmera	322,734	11,457	4,110	333	15,900	338,634
27. Wimmera United	362,689	16,053	1,001	591	17,645	380,334
28. Yelta	6,186	342	5	57	404	6,590
Totals	2,272,108	119,175	7,035	6,368	132,578	2,404,686

DISBURSEMENTS, AND INTEREST, DEPRECIATION, AND REDEMPTION CHARGED.

District.	1st May, 1906, to 30th June, 1936.	DISBURSEMENTS.				INTEREST CHARGED.				(A) DEPRECIATION. (B) REDEMPTION.	Grand Total at 30th June, 1937.
		1936-37.				Total at 30th June, 1937.	1st May, 1906, to 30th June, 1936.	1st July, 1936, to 30th June, 1937.	Total at 30th June, 1937.		
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.						
	£	£	£	£	£	£	£	£	£	£	£
1. Bellarine Peninsula	2,833	1,264	761	399	2,424	5,257	19,034	6,371	25,405	..	30,662
2. Birchip	352,226	1,741	831	304	2,876	392,820	457,530	5,260	502,595	..	895,415
3. Sea Lake		4,681	978	588	6,247			7,479			
4. Tyrrell		9,126	1,508	869	11,503			9,491			
5. Tyrrell West		13,326	2,245	846	16,417			13,953			
6. Wycheproof		2,075	1,148	328	3,551			8,873			
7. Carwarp	40,437	3,019	2,546	174	5,739	46,176	19,761	1,647	21,408	(A) 586	68,170
8. Carwarp Central	2,003	198	120	13	331	2,334	1,151	77	1,228	(A) 25	3,587
9. Coreena	10,818	491	875	70	1,436	12,254	13,989	1,837	15,826	..	28,080
10. Dering	3,328	733	132	49	914	4,242	4,586	524	5,110	..	9,352
11. Eureka	3,570	37	116	20	167	3,737	1,992	301	2,293	..	6,030
12. Hindmarsh	3,025	287	60	51	398	3,423	6,509	793	7,302	(A) 700	11,425
13. Karkaroo	105,498	8,175	1,846	698	10,719	116,217	182,036	11,551	193,587	..	309,804
14. Kerang N.W. Lakes	2,474	45	141	85	271	2,745	1,809	85	1,894	..	4,639
15. Long Lake	113,626	7,056	1,385	690	9,131	122,757	98,528	6,831	104,859	(A) 8,305	235,921
16. Millewa	66,378	4,980	7,916	574	13,470	79,848	27,072	5,512	32,584	..	112,432
17. Millewa Central	25,333	1,558	6,403	159	8,120	33,453	20,000	4,000	24,000	..	57,453
18. Mornington Peninsula	8,565	221	80	65	366	8,931	46,010	1,480	48,390	..	57,321
19. Narre Warren	468	74	27	25	126	594	8,690	499	4,189	..	4,783
20. Tyntynder	86,701	10,354	1,731	738	12,823	99,524	122,927	15,028	137,955	..	237,479
21. Upper Western Wimmera	34,878	1,789	741	234	2,714	37,592	53,237	3,206	56,443	(A) 606 (B) 1,500	96,141
22. Upper Wimmera United	46,559	2,105	764	306	3,235	49,794	102,544	4,490	107,043	(B) 2,390	150,227
23. Walpeup Central	3,974	276	594	101	971	4,945	6,472	1,729	8,201	..	13,146
24. Walpeup West	23,064	767	308	130	1,205	24,269	19,498	1,472	20,970	(A) 1,200	46,439
25. Werribee	3,402	46	314	68	428	3,830	10,177	612	10,789	..	14,619
26. Western Wimmera	140,149	6,057	2,966	935	10,858	151,007	181,892	12,993	194,885	(A) 2,422 (B) 5,400	353,714
27. Wimmera United	113,019	4,913	1,939	854	7,706	121,625	233,262	10,410	243,672	(B) 5,310	370,607
28. Yelta	6,253	416	540	37	993	7,246	3,529	247	3,776	..	11,022
Totals	1,199,481	86,660	39,009	9,470	135,139	1,334,620	1,638,135	130,269	1,774,404	28,444	3,137,468

URBAN DISTRICTS

STATEMENT of Moneys received and disbursed from 1st May, 1906, to 30th June, and also of Depreciation and Redemption charged

RECEIPTS.

District or Division.	1st May, 1906, to 30th June, 1906.	1906-37.				Grand Total at 30th June, 1937.
		Rates.	Water Sales.	Interest and Miscellaneous.	Total.	
	£	£	£	£	£	£
1. Anglesea	512	406	8	12	426	938
2. Antwerp	526	73	9	10	92	618
3. Bacchus Marsh	37,113	1,211	550	8	1,769	38,882
4. Barwon Heads and Ocean Grove ..	5,097	1,532	173	60	1,765	6,862
5. Berriwillock	5,088	243	17	18	278	5,366
6. Berwick	8,014	646	268	46	960	8,974
7. Beulah	12,379	399	120	34	553	12,932
8. Birchip	25,330	551	424	94	1,069	26,399
9. Bittern	1,736	109	52	3	164	1,900
10. Brim	3,555	280	36	20	336	3,891
11. Bunyip	1,900	460	24	24	508	2,408
12. Carrum	87,844	6,528	1,035	475	8,038	95,882
13. Carwarp	332	59	..	7	66	398
14. Chillingollah	1,388	75	49	26	150	1,538
15. Chinkapook	1,642	173	8	3	184	1,826
16. Cohuna	17,383	898	112	69	1,079	18,462
17. Corop	767	17	..	..	17	784
18. Cranbourne	7,700	333	72	23	428	8,128
19. Crib Point	3,130	583	49	12	644	3,774
20. Culgoa	5,516	274	128	14	416	5,932
21. Dandenong	68,740	4,324	1,330	334	5,988	74,728
22. Dimboola	45,705	1,314	460	144	1,918	47,623
23. Dingee	1,001	90	..	2	92	1,093
24. Doon	227	9	14	..	23	250
25. Drysdale	668	459	12	16	487	1,155
26. Frankston	57,081	4,151	1,243	255	5,649	62,730
27. Garfield	1,649	298	20	11	329	1,978
28. Hastings	3,183	367	17	5	389	3,572
29. Heyfield	2,687	652	..	19	671	3,358
30. Hicksborough	532	57	..	4	61	593
31. Hopetoun	16,435	766	219	77	1,062	17,497
32. Jeparit	18,427	869	129	35	1,033	19,460
33. Jung Jung	2,740	177	29	7	213	2,953
34. Koondrook	9,392	397	40	7	444	9,836
35. Lake Boga	8,211	288	27	30	345	8,556
36. Lalbert	4,010	288	82	11	381	4,391
37. Lascelles	3,519	202	29	21	252	3,771
38. Leitchville	4,087	441	..	31	472	4,559
39. Lockington	3,311	353	11	43	407	3,718
40. Longwarry	1,115	265	581	18	864	1,979
41. Manangatang	6,440	638	96	29	763	7,203
42. Marnoo	3,722	294	74	3	371	4,093
43. Merbein	19,272	1,439	209	129	1,777	21,049
44. Meringur	1,136	160	12	7	179	1,315
45. Minyip	19,190	876	77	73	1,026	20,216
46. Mornington	39,755	2,823	421	127	3,371	43,126
47. Mount Martha	5,315	745	66	26	837	6,152
48. Murrabit	415	68	..	2	70	485
49. Nandaly	1,450	109	6	9	124	1,574
50. Natimuk	13,157	260	185	63	508	13,665
51. Newstead	1,395	517	50	20	587	1,982
52. North Wonthaggi	3,705	375	..	10	385	4,090
53. Nullawil	2,256	259	8	19	286	2,542
54. Nyah	1,650	79	4	1	84	1,734
55. Nyah West	8,366	641	122	6	769	9,135
56. Ouyen	29,641	1,307	594	80	1,981	31,622
57. Pakenham	8,646	583	510	15	1,108	9,754
58. Patchewollock	1,427	160	..	10	170	1,597
59. Piangil	5,676	259	155	4	418	6,094
60. Portarlington	1,036	487	37	15	539	1,575
61. Pyramid Hill	6,100	610	34	48	692	6,792
62. Quambatook	1,406	438	20	33	491	1,897
63. Queenscliff and Point Lonsdale ..	11,893	3,098	499	53	3,650	15,543
64. Rainbow	23,633	945	281	78	1,304	24,937
65. Red Cliffs	18,529	1,678	245	149	2,072	20,601
66. Rupanyup	16,754	787	112	50	949	17,703
67. Sea Lake	20,015	732	268	90	1,090	21,105
68. Somerville	3,639	252	78	19	349	3,988
69. South Frankston	18,653	1,663	333	67	2,063	20,716
70. Speed	1,519	89	19	25	133	1,652
71. Spring Vale	25,730	2,743	1,747	248	4,738	30,468
72. Stanhope	2,298	249	..	5	254	2,552
73. Temy	1,361	122	16	8	146	1,507
74. Torquay	1,178	819	58	26	903	2,081
75. Ultima	9,460	382	28	40	450	9,910
76. Waitechie	842	125	1	6	132	974
77. Walpeup	157	184	..	12	196	353
78. Watchem	7,123	312	24	46	382	7,505
79. Werrimull	2,883	232	52	10	294	3,177
80. Wonthaggi	100,606	2,233	1,725	41	3,999	104,605
81. Woomeiang	15,889	348	257	54	659	16,548
82. Woorinen	1,261	150	10	8	168	1,419
83. Wycheproof	19,844	771	209	84	1,064	20,908
84. Yaapect	1,010	98	20	12	130	1,140
Totals	965,095	61,756	16,039	3,888	81,683	1,046,778

AND DIVISIONS.

1937; and of Interest charged at the rates of 4 and $4\frac{1}{2}$ per cent on Capital Debits; as at 30th June 1937. (Free Headworks excluded).

DISBURSEMENTS, AND INTEREST, DEPRECIATION, AND REDEMPTION CHARGED.

District or Division	1st May, 1906, to 30th June, 1936.	DISBURSEMENTS.					INTEREST CHARGED.				DEPRECIATION.		Grand Total at 30th June, 1937.
		1936-37.				Total at 30th June, 1937.	1st May, 1906 to 30th June, 1936.	1st July, 1936, to 30th June, 1937.	Total at 30th June, 1937.	(a) DEPRECIATION.	(b) REDEMPTION.		
		Repairs and Maintenance.	Distribution of Water.	Management.	Total.								
	£	£	£	£	£	£	£	£	£	£	£	£	
1. Anglesea ..	314	128	77	33	238	552	1,254	653	1,907	..	..	2,459
2. Antwerp ..	169	19	21	9	49	218	272	43	315	(a)	18	551	
3. Bacchus Marsh ..	8,389	137	219	123	479	8,868	28,781	1,603	30,384	(a)	686	39,938	
4. Barwon Heads and Ocean Grove ..	866	244	147	130	521	1,387	4,155	1,233	5,388	..	..	6,775
5. Berriwillock ..	2,350	85	60	25	170	2,520	2,769	263	3,032	(a)	113	5,665	
6. Berwick ..	1,328	129	47	57	233	1,561	6,937	863	7,800	..	..	9,361
7. Beulah ..	5,460	68	206	31	305	5,765	6,912	488	7,400	(a)	158	13,323	
8. Birchip ..	11,277	178	227	49	454	11,731	13,569	884	14,453	(a, b)	1,195	27,379	
9. Bittern ..	256	16	6	9	31	287	1,599	110	1,709	..	..	1,996
10. Brim ..	812	15	39	16	70	882	2,319	208	2,527	(a)	224	3,633	
11. Bunyip ..	450	66	24	28	118	568	2,038	442	2,480	..	..	3,048
12. Carrum ..	16,370	1,267	459	704	2,430	18,800	79,226	8,487	87,713	..	..	106,513
13. Carwarw ..	165	5	5	4	14	179	219	42	261	(a)	174	614	
14. Chillingollah ..	575	11	32	12	55	630	1,433	139	1,572	(a)	185	2,387	
15. Chinkapook ..	421	5	23	12	40	461	1,049	148	1,197	(a)	318	1,976	
16. Cohuna ..	4,769	43	166	57	266	5,035	11,629	722	12,351	(a, b)	894	18,280	
17. Corop ..	379	2	5	2	9	388	396	19	415	(a)	60	863	
18. Cranbourne ..	1,254	53	19	53	125	1,379	7,096	356	7,452	..	..	8,831
19. Crib Point ..	607	67	24	30	121	728	2,225	446	2,671	(a)	290	3,689	
20. Culgoa ..	2,071	79	66	24	169	2,240	3,385	229	3,614	(a)	102	5,956	
21. Dandenong ..	12,425	760	276	436	1,472	13,897	58,992	5,103	64,095	(a)	500	78,492	
22. Dimboola ..	24,844	671	220	96	987	25,831	17,583	1,342	18,925	(a, b)	3,026	47,782	
23. Dingee ..	407	12	7	6	25	432	651	64	715	(a)	126	1,273	
24. Doon ..	135	..	5	6	11	146	208	40	248	(a)	15	409	
25. Drysdale ..	182	79	48	35	162	344	787	399	1,186	..	..	1,530
26. Frankston ..	9,418	628	228	241	1,097	10,515	48,264	4,213	52,477	..	..	62,992
27. Garfield ..	394	51	19	24	94	488	1,725	342	2,067	..	..	2,555
28. Hastings ..	656	76	27	18	121	777	2,799	506	3,305	..	..	4,082
29. Heyfield ..	1,118	163	162	51	376	1,494	1,706	348	2,054	(a)	70	3,618	
30. Hicksborough ..	228	6	15	9	30	258	299	50	349	(a)	50	657	
31. Hopetoun ..	8,909	50	341	45	436	9,345	8,318	679	8,997	(a, b)	252	18,594	
32. Jeparit ..	3,394	120	108	39	267	3,661	13,752	868	14,620	(a, b)	908	19,189	
33. Jung Jung ..	1,704	43	76	14	133	1,837	1,378	198	1,576	(a)	114	3,527	
34. Koondrook ..	5,118	33	232	37	302	5,420	4,200	225	4,425	(a)	345	10,190	
35. Lake Boga ..	4,337	27	208	26	261	4,598	4,221	221	4,442	(a, b)	355	9,395	
36. Lalbert ..	796	43	24	14	81	877	2,810	237	3,047	(a)	657	4,581	
37. Lascelles ..	1,489	73	39	13	125	1,614	2,126	219	2,345	(a)	194	4,153	
38. Leitchville ..	2,062	8	57	39	104	2,166	1,905	160	2,065	(a)	252	4,483	
39. Lockington ..	667	10	27	10	47	714	2,176	132	2,308	(a)	405	3,427	
40. Longwarry ..	199	57	21	40	118	317	824	389	1,213	..	..	1,530
41. Manangatang ..	1,394	24	32	20	76	1,470	4,245	311	4,556	(a)	650	6,676	
42. Marnoo ..	531	17	37	22	76	607	2,564	258	2,822	(a)	567	3,996	
43. Merbein ..	9,196	337	263	75	675	9,871	10,304	1,124	11,428	(a)	650	21,949	
44. Meringur ..	389	12	10	6	28	417	738	103	841	(a)	150	1,408	
45. Minyip ..	5,713	78	217	45	340	6,053	12,207	682	12,889	(a, b)	1,085	20,027	
46. Mornington ..	6,437	349	126	168	643	7,080	32,988	2,341	35,329	(a)	500	42,909	
47. Mount Martha ..	912	73	26	40	139	1,051	4,286	504	4,790	..	..	5,841
48. Murrabit ..	236	7	25	11	43	279	271	46	317	..	..	596
49. Nandaly ..	461	21	9	10	40	501	858	111	969	(a)	216	1,686	
50. Natimuk ..	3,249	60	29	19	108	3,357	9,230	412	9,642	(a, b)	799	13,798	
51. Newstead ..	580	73	79	29	181	761	819	334	1,153	..	..	1,914
52. North Wonthaggi ..	1,317	27	51	31	109	1,426	2,429	287	2,716	(a)	320	4,462	
53. Nullawil ..	605	39	39	18	96	701	1,668	192	1,860	(a)	97	2,658	
54. Nyah ..	751	34	28	13	75	826	836	59	895	(a)	84	1,805	
55. Nyah West ..	2,235	68	188	37	293	2,528	5,557	428	5,985	(a)	780	9,293	
56. Ouyen ..	10,728	46	404	77	527	11,255	18,622	1,178	19,800	(a)	793	31,848	
57. Pakenham ..	1,100	110	40	71	221	1,321	6,842	738	7,580	(a)	794	9,695	
58. Patchewollock ..	327	12	6	7	25	352	1,103	204	1,307	(a)	276	1,935	
59. Piangil ..	1,710	8	121	19	148	1,858	3,164	243	3,407	(a)	680	5,945	
60. Portarlinton ..	329	163	98	46	307	636	1,638	828	2,466	..	..	3,102
61. Pyramid Hill ..	2,544	13	125	25	163	2,707	3,306	351	3,657	(a)	540	6,904	
62. Quambatook ..	594	163	164	57	384	978	767	305	1,072	(a)	90	2,140	
63. Queenscliff and Point Lonsdale ..	1,788	511	308	273	1,092	2,880	9,941	2,578	12,519	..	..	15,399
64. Rainbow ..	3,948	42	28	32	102	4,050	17,092	699	17,791	(a, b)	1,881	23,722	
65. Red Cliffs ..	7,770	234	306	117	657	8,427	8,891	1,034	9,925	(a)	820	19,172	
66. Rupanyup ..	5,266	194	226	50	470	5,736	10,438	668	11,106	(a, b)	1,029	17,871	
67. Sea Lake ..	9,116	54	239	64	357	9,473	8,991	530	9,521	(a)	1,424	20,418	
68. Somerville ..	585	29	11	13	53	638	3,177	198	3,375	..	..	4,013
69. South Frankston ..	2,954	149	54	81	284	3,238	14,539	1,001	15,540	(a)	500	19,278	
70. Speed ..	405	6	9	6	21	426	927	147	1,074	(a)	360	1,860	
71. Spring Vale ..	4,614	480	174	293	947	5,561	22,186	3,362	25,548	..	..	31,109
72. Stanhope ..	603	43	130	10	183	786	1,411	101	1,512	(a)	288	2,586	
73. Tempy ..	445	4	9	7	20	465	848	142	990	(a)	312	1,767	
74. Torquay ..	449	204	123	68	395	844	2,034	1,037	3,071	..	..	3,915
75. Ultima ..	3,027	36	80	20	136	3,163	6,283	394	6,677	(a)	275	10,115	
76. Waitebie ..	424	7	17	9	33	457	1,006	142	1,148	(a)	288	1,893	
77. Walpeup ..	33	23	32	15	70	103	125	140	265	..	..	368
78. Watchem ..	2,176	144	40	19	203	2,379	4,820	287	5,107	(a)	241	7,727	
79. Werrimull ..	944	68	37	13	118	1,062	1,977	235	2,212	(a)	365	3,639	
80. Wonthaggi ..	22,312	443	1,167	340	1,950	24,262	60,570	2,572	63,142	(a, b)	15,000	102,404	
81. Woomelang ..	5,192	60	70	24	154	5,346	10,847	530	11,377	(a, b)	713	17,436	
82. Woorinen ..	379	25	7	10	42	421	941	107	1,048	(a)	136	1,605	
83. Wycheproof ..	9,417	38	331	41	410	9,827	9,711	737	10,448	(a)	915	21,190	
84. Yaapeet ..	256	7	18	5	30	286	695	130	825	(a)	260	1,371	
Totals ..	270,205	10,062	9,545	4,963	24,570	294,775	673,879	60,923	734,802	45,564	..	1,075,141	

CAPITAL EXPENDITURE.

STATEMENT of Moneys Expended from Water Supply Loans and Unemployment Relief Funds for the year ended 30th June, 1937.

Works.	Unemployment Relief Funds.		Water Supply Loans Application Acts 4325 and 4457, and Treasurer's Advance.		Total.	
	£	s. d.	£	s. d.	£	s. d.
<i>Free Headworks.</i>						
1. Laanecoorie Weir	18	12 5	3,524	11 3	3,543	3 8
<i>River Murray Waters Acts—Works.</i>						
2. Storages, Weirs, and Locks .. .. .	..	..	90,000	0 0	90,000	0 0
<i>Reservoirs and Storages.</i>						
3. Goulburn Storages—						
Eildon Reservoir	502	14 3	6,563	9 2	7,066	3 5
Waranga Reservoir	1,093	18 7	18	13 9	1,112	12 4
Goulburn Weir	148	17 10	..	..	148	17 10
4. Campaspe Weir	488	14 11	..	..	488	14 11
5. Eppalock Reservoir .. .. .	..	..	1,152	10 9	1,152	10 9
6. Glenmaggie Reservoir .. .. .	..	..	1,559	14 11	1,559	14 11
7. Lysterfield Reservoir .. .. .	..	..	36	0 0	36	0 0
8. Pine Lake Reservoir	3,477	14 10	..	..	3,477	14 10
9. Pykes Creek and Melton Reservoirs	7	6 3	9,786	0 11	9,793	7 2
<i>Waterworks Districts.</i>						
10. Bellarine Peninsula	1,124	10 9	2,569	19 11	3,694	10 8
11. Birchip, Sea Lake, Tyrrell, and Wycheproof	7,566	16 8	2,197	0 5	9,763	17 1
12. Carwarp	96	10 6	..	..	96	10 6
13. Coreena .. .. .	..	..	69	0 0	69	0 0
14. Eureka .. .. .	..	..	9	0 0	9	0 0
15. Hindmarsh .. .. .	..	..	156	12 6	156	12 6
16. Karkaroc	767	9 2	141	6 6	908	15 8
17. Kerang North-West Lakes .. .. .	..	..	146	1 6	146	1 6
18. Long Lake	278	16 7	95	5 7	374	2 2
19. Millewa and Millewa Central	739	15 1	..	..	739	15 1
20. Mornington Peninsula	5,656	12 7	22,975	19 6	28,632	12 1
21. Tyntynder	1,449	4 10	306	5 4	1,755	10 2
22. Walpeup Central and Walpeup West	452	4 4	394	0 0	846	4 4
23. Western Wimmera	1,034	9 8	1,651	19 2	2,686	8 10
24. Wimmera United	231	19 5	460	12 6	692	11 11
25. Yelta .. .. .	..	..	5	14 0	5	14 0
26. Wimmera Mallee, Main and Distributary Channels	2,067	15 6	1,872	10 8	3,940	6 2
<i>Towns.</i>						
27. Bacchus Marsh, Cohuna, and Pyramid Hill .. .. .	..	..	626	7 3	626	7 3
28. Berriwillock, Beulah, Birchip, Culgoa, and Dimboola .. .. .	..	..	555	16 7	555	16 7
29. Camperdown, Cobden, Terang, and Warrnambool	28,124	17 3	72,027	19 3	100,152	16 6
30. Coliban	57,883	5 1	2,521	16 2	60,405	1 3
31. Heyfield, Leitchville, and Stanhope	161	17 7	1,060	0 9	1,221	18 4
32. Hopetoun, Jeparit, and Koondrook	13	18 4	87	9 4	101	7 8
33. Lake Boga, Lascelles, Manangatang, and Minyip	1,751	3 0	239	9 3	1,990	12 3
34. Merbein .. .. .	..	..	204	13 4	204	13 4
35. Nandaly, Natimuk, Newstead, and Nyah West .. .. .	..	..	105	9 8	105	9 8
36. Onyen	245	19 11	553	7 6	799	7 5
37. Patchewollock and Quambatook	781	9 8	718	1 2	1,499	10 10
38. Red Cliffs .. .. .	..	..	278	11 6	278	11 6
39. Rainbow, Rupanyup, Sea Lake, Speed, and Tempy	81	5 11	191	9 4	272	15 3
40. Walpeup, Werrimull, and Woomelang .. .. .	..	..	31	17 3	31	17 3
41. Woorinen, Lalbert, and Wycheproof	1,015	18 8	75	17 7	1,091	16 3
42. Wonthaggi	94	0 6	206	19 9	301	0 3
<i>Irrigation and Water Supply Districts.</i>						
43. Bacchus Marsh and Werribee	2,676	1 2	1,657	9 7	4,333	10 9
44. Boort	890	4 5	1,630	1 1	2,520	5 6
45. Calivil, Dingee, and Tragowel Plains	9,213	13 10	941	8 6	10,155	2 4
46. Campaspe	349	16 0	..	..	349	16 0
47. Cohuna and Leitchville	21,236	5 5	5,573	0 11	26,809	6 4
48. Deakin, Tongala, and Stanhope	11,817	12 11	1,136	14 7	12,954	7 6
49. First Mildura Trust (drainage works)	65,831	16 6	..	..	65,831	16 6
50. Katandra and Shepparton	11,268	2 3	745	4 10	12,013	7 1
51. Kerang	19,389	12 11	4,315	14 8	23,705	7 7
52. Koondrook .. .. .	..	..	1,031	5 7	1,031	5 7
53. Maffra-Sale	4,312	18 4	8,079	18 6	12,392	16 10
54. Merbein and Red Cliffs	55,667	1 3	24,489	2 11	80,156	4 2
55. Murray Valley (proposed) .. .. .	..	..	42,505	17 9	42,505	17 9
56. Mystic Park, Third Lake, and Tresco	22	0 4	15	9 6	37	9 10
57. Rochester and Echuca North	14,627	9 9	961	1 2	15,588	10 11
58. Rodney	15,133	10 1	2,563	19 11	17,697	10 0
59. Swan Hill and Nyah	4,254	3 11	4,062	5 8	8,316	9 7
60. Goulburn and Torumbarry Channels	237	8 5	743	19 7	981	8 0
<i>Flood Protection and Drainage Districts.</i>						
61. Carrum	2,081	1 9	..	..	2,081	1 9
62. Koowecerup, Cardinia, and Dandenong Creek	17,572	3 11	323	16 2	17,896	0 1
63. Other Districts and Works	2,657	7 7	155	9 4	2,812	16 11
<i>Miscellaneous.</i>						
64. Snagging Rivers	18,972	1 9	..	..	18,972	1 9
65. Investigations, Storages, and Works	287	14 9	129	15 3	417	10 0
Totals	395,856	7 4	326,239	9 6	722,095	16 10

CONTRACTS.

STATEMENT OF CONTRACTS ENTERED INTO DURING THE YEAR ENDED 30TH JUNE, 1937.

No.	Name of Contractor.	Work or Supply.	Amount (Loan and Vote.)
			£ s. d.
2989	W. A. Wiltshire	Channel Construction, Murray Valley	1,146 19 0
2990	W. Northansen	Channel Construction, Murray Valley	778 4 10
2991	Australian Iron and Steel Ltd.	Steel Sheet Piling, Yarrowonga Weir (River Murray Works)	5,794 17 6
2992	Australian General Electric Ltd.	Turbo-alternator, Red Cliffs Pumping Station	9,995 0 0
2993	Janetzki Bros.	Channel Construction, Murray Valley	535 16 10
2994	Jno. Campbell	Channel Construction, Murray Valley	496 4 1
2995	R. J. Craig	Channel Construction, Murray Valley	482 16 8
2996	R. J. Craig	Channel Construction, Murray Valley	476 11 8
2997	R. Eady	Channel Construction, Murray Valley	419 15 0
2998	Janetzki Bros.	Channel Construction, Murray Valley	380 0 11
2999	G. Mulcahy	Channel Construction, Murray Valley	325 4 3
3000	M. Roney	Channel Construction, Murray Valley	362 1 6
3001	P. Robertson	Channel Construction, Murray Valley	415 6 8
3002	J. T. Bowden	Channel Construction, Murray Valley	418 17 9
3003	Thompson's Engineering and Pipe Co. Ltd.	Pumping Unit, Merbein Pumping Station	3,250 0 0
3004	Geo. W. Kelly and Lewis Pty. Ltd.	Steel Guide Assemblies, Yarrowonga Weir (River Murray Works)	363 0 0
3005	James Hardie and Co. Ltd.	Fibrolite Pressure Pipes, Western (Otway) District Towns	5,093 19 2
3006	L. G. Buckland	Transmission Line, Merbein Pumping Station	5,712 0 0
3007	Hume Pipe Co. (Aust.) Ltd.	Reinforced Concrete Pipes, First Mildura Irrigation Trust (Drainage)	719 16 8
3008	Alfred Harman	One Diesel-driven Excavator, Cohuna and other Districts	2,355 0 0
3009	Martin Stoneware Pipe Ltd.	Salt Glazed Ware Pipes, Red Cliffs and Merbein (Drainage)	1,196 5 0
3010	Martin Stoneware Pipe Ltd.	Salt Glazed Ware Pipes, Red Cliffs and Merbein (Drainage)	1,506 0 10
3011	Rocla Ltd.	Reinforced Concrete Pipes, Red Cliffs and Merbein (Drainage)	1,187 5 10
3012	Hume Steel Ltd.	Concrete Lined Mild Steel Pipes, Western (Otway) District Towns	82,025 2 11
3013	Cornwell's Pottery	Salt Glazed Ware Pipes, First Mildura Irrigation Trust (Drainage)	790 12 6
3014	Martin Stoneware Pipe Ltd.	Salt Glazed Ware Pipes, First Mildura Irrigation Trust (Drainage)	1,247 10 0
3015	A. Challingsworth Pty. Ltd.	Erection Five Spillway Gates, Melton Reservoir	4,080 0 0
3016	Robison Bros. and Co. (1935) Pty. Ltd.	Sluice Gates and Gate Frames, Yarrowonga Weir (River Murray Works)	1,792 0 0
3017	Graham Campbell Ferrum Co. Pty. Ltd.	Trash Rack Bars, Yarrowonga Weir (River Murray Works)	378 0 0
3018	Aggregate Contracting Co. Pty. Ltd.	Stone Spalls and Crushed Stone, Yarrowonga Weir (River Murray Works)	7,694 7 3
3019	Australian General Electric Ltd.	Two 1,000 K.V.A., one 60 K.V.A. Transformers, Merbein Pumping Station	1,613 10 0
3020	Australian Cement Ltd.	5,000 Tons Portland Cement, Districts generally	20,208 6 8
3021	Malcolm Moore Ltd.	Two Light Locomotives, Yarrowonga Weir (River Murray Works)	990 0 0
3022	King and Latta	Beaching Stone at Bifforn Reservoir, Mornington Peninsula	1,260 0 0
3023	Hume Steel Ltd.	Concrete Lined Steel Pipes, Coliban (Bendigo and Castlemaine)	9,699 13 3
3024	James Hardie and Co. Ltd.	Fibrolite Pressure Pipes, Coliban (Bendigo and Castlemaine)	12,491 1 10
3025	Alfred Harman	One Diesel-driven Excavator, Rivers and Streams Fund	2,855 0 0
3026	M. B. John Pty. Ltd.	Gate Valves, Coliban (Bendigo and Castlemaine)	601 15 0
3027	Australian Wood Pipe Co. Ltd.	Wood Stave Pipes, Dandenong Creek Syphon, Mornington Peninsula	1,249 17 8
3028	Cornwell's Pottery	Glazed Stoneware Pipes, First Mildura Irrigation Trust (Drainage)	1,045 0 0
3029	Rocla Ltd.	Reinforced Concrete Pipes, First Mildura Irrigation Trust (Drainage)	1,657 2 11
3030	Cornwell's Pottery	Glazed Stoneware Pipes, First Mildura Irrigation Trust (Drainage)	591 5 0
3031	Rocla Ltd.	Reinforced Concrete Pipes, First Mildura Irrigation Trust (Drainage)	1,358 0 0
3032	Aggregate Contracting Co. Pty. Ltd.	Crushed Stone, Yarrowonga Weir (River Murray Works)	2,057 0 0
3033	Thos. R. Lefoe	Gravel, Yarrowonga Weir (River Murray Works)	880 9 2
3034	J. and T. Muir Pty. Ltd.	Iron Special Castings, Coliban (Bendigo and Castlemaine)	1,204 3 5
3035	Martin Stoneware Pipe Ltd.	Glazed Stoneware Pipes, First Mildura Irrigation Trust (Drainage)	962 8 11
3036	Martin Stoneware Pipe Ltd.	Glazed Stoneware Pipes, First Mildura Irrigation Trust (Drainage)	1,858 9 9
3037	Geo. W. Kelly and Lewis Pty. Ltd.	Structural Steel Guide Assemblies for Spillway Gates, Yarrowonga Weir (River Murray Works)	1,430 0 0
3038	Hume Steel Ltd.	Concrete Lined Mild Steel Pipes, Rising Main, Cannie Ridge Pumping Station	985 19 1
3039	Bennett and Newcombe	Stone Spalls and Crushed Stone, Warrnambool Reservoir, Otway	1,129 3 4
3040	R. A. J. Trotter	Cartage Steel Pipes to Main Pipe Line, Otway	720 8 0
3041	Black, K. E., and Palmer, E. D.	Cartage Steel Pipes to Main Pipe Line, Otway	598 4 0
3042	Australian Cement Ltd.	4,000 tons Portland Cement, Districts generally	16,166 13 4
3043	Aggregate Contracting Co. Pty. Ltd.	Stone Spalls and Crushed Stone, Yarrowonga Weir (River Murray Works)	2,420 0 0
3044	Wunderlich Ltd.	Asbestos Cement Sheets for Fluming, Tyntynder	843 11 6
3045	Rocla Ltd.	Reinforced Concrete Pipes, Merbein (Drainage)	1,187 6 4
3046	Hume Pipe Co. (Aust.) Ltd.	Reinforced Concrete Pipes, Merbein (Drainage)	753 18 1
3047	Rocla Ltd.	Reinforced Concrete Pipes, First Mildura Irrigation Trust (Drainage)	611 9 11
3048	Hume Pipe Co. (Aust.) Ltd.	Reinforced Concrete Pipes, First Mildura Irrigation Trust (Drainage)	572 2 9
3049	Martin Stoneware Pipe Ltd.	Glazed Stoneware Pipes, Merbein (Drainage)	393 13 10
3050	Martin Stoneware Pipe Ltd.	Glazed Stoneware Pipes, First Mildura Irrigation Trust (Drainage)	1,131 4 0
3051	G. D. Guthrie and Co. Pty. Ltd.	Glazed Stoneware Pipes, First Mildura Irrigation Trust (Drainage)	415 15 7
3052	Rocla Ltd.	Reinforced Concrete Pipes, Merbein (Drainage)	2,668 14 9
3053	G. D. Guthrie and Co. Pty. Ltd.	Glazed Stoneware Pipes, Merbein (Drainage)	1,676 15 3
3054	Hume Pipe Co. (Aust.) Ltd.	Reinforced Concrete Pipes, Merbein (Drainage)	733 12 9
	Small Contracts at Piecework Rates—		
	Loan Funds		2,583 0 0
	Unemployment Relief Funds		3,665 0 0
	Total		244,688 12 11

DIRECT LABOUR 1936-37.

The construction of the larger works is still being mainly carried out by "Direct Labour," and the Statement hereunder shows the Fund from which this expenditure has been met. The principal payments during the year were:—

Works.	Loan Funds.	Unemployment Relief Funds.
	£	£
River Murray Storages (Hume Reservoir and Yarrowonga Weir)	77,117	..
Eildon Weir	4,607	389
Wimmera-Mallee System	4,377	18,540
Murray Valley District (Yarrowonga Main Channel)	11,274	..
Western District Towns (Camperdown, Terang, Warrnambool, Cobden)	7,336	21,642
Deakin, Rochester, Rodney, Shepparton, Stanhope, and Tongala Districts	4,563	43,681
Mornington Peninsula District	9,850	3,274
Boort, Tragowel Plains, Nyah, and Swan Hill Districts	2,977	11,755
Merbein, Mildura, and Red Cliffs Districts	3,272	95,200
Maffra-Sale District (Glenmaggie Reservoir)	4,118	3,203
Bacchus Marsh and Werribee Districts	4,846	1,861
Cohuna, Kerang, Kerang Lakes, Koondrook, Mystic Park, and Tresco Districts	3,075	32,785
Coliban System	1,440	21,520
Bellarine Peninsula District	1,127	849
Goulburn Main Channels	438	1,097
Kooweerup, Cardinia, and other Flood Protection Districts	136	11,991
Other Districts	167	21,653
	140,720	289,440
Grand Total	£430,160	

SCHEDULE OF UNEMPLOYMENT RELIEF GRANTS TO 30TH JUNE, 1937.

Since the commencement of Relief Works in 1930, a total amount of £1,950,113 has been made available to this Commission from Unemployment Relief Funds for expenditure on works providing employment in country districts. Of this amount, £166,035 was allocated prior to the constitution of the Employment Council in July, 1932. Details are as follow :—

SCHEDULE OF GRANTS, 1ST JUNE, 1930, TO 11TH JULY, 1932.

Locality.	Works.	Grant.	
	HEADWORKS.	£	£
Goulburn Main Channels	East Goulburn	6,000	
	West Goulburn	5,000	
	East and West Goulburn	5,100	
Mornington Peninsula	Lysterfield Reservoir	12,400	
Campaspe River	Eppalock Weir	6,000	
Wimmera Mallee	Lake Lonsdale Reservoir	5,000	
			39,500
	IRRIGATION DISTRICTS.		
Maffra-Sale	Channel Lining	15,000	
Bacchus Marsh	Channel Lining	19,000	
Cohuna	Channel Construction	5,665	
Kerang	Channel Construction	4,575	
Tragowel Plains	Channel Construction	2,260	
			46,500
	WATERWORKS DISTRICTS.		
Coliban	Channel Lining	20,000	
Millewa	Channel Lining	10,000	
Northern Mallee	Channel Construction	14,000	
	Ironclad Catchments	5,000	
Bellarine Peninsula	Town Supplies	10,000	
			59,000
	FLOOD PROTECTION DISTRICTS.		
Kooweerup	Drains	15,000	
Carrum	Drains and Banks	2,000	
			17,000
	MISCELLANEOUS.		
Canned Fruits	Shepparton—Processing	4,035	
			4,035
	Total of Grants from 1.6.30 to 11.7.32	..	£166,035

SCHEDULE OF GRANTS, 12TH JULY, 1932, TO 30TH JUNE, 1937.

Locality.	Works.	Grant.	
	HEADWORKS.	£	£
Wimmera-Mallee	Lake Lonsdale—Increased Storage .. 1932-33	2,500	
	Mt. Zero Channel and Basin .. 1932-33	6,000	
	Fyans Lake—Tree planting .. 1932-33	350	
	Longerenong Weir .. 1933-34	700	
	Moora Reservoir—Construction .. 1934-35	4,750	
	Pine Lake, Taylors Lake, &c. .. 1936-37	5,000	
			19,300
Loddon River	Laanecoorie Weir .. 1933-34	1,250	
	Serpentine Weir—Reconstruction .. 1935-36	800	
			2,050
Goulburn River	Goulburn—Waranga Channel—Reconditioning .. 1934-35	5,000	
			5,000
Campaspe River	Eppalock Weir .. 1932-33	4,500	
			4,500
Werribee River	Melton Dam—Raising .. 1934-35	3,500	
			3,500
Kerang North-West Lakes	Main Channels, Swan Hill and Kerang 1932-33	14,500	
	Main Channels, Kerang and Kerang North-West Lakes .. 1933-34	10,350	
	Tutchewop Channel .. 1934-35	3,000	
			27,850
	Total (Headworks) .. ..	..	62,200

SCHEDULE OF GRANTS 12TH JULY, 1932, TO 30TH JUNE, 1937—*continued.*

Locality.	Works.							Grant.	
	IRRIGATION DISTRICTS—WATER SUPPLY.							£	£
Bacchus Marsh	Channel Lining	1932-33	8,000						
	Channel Lining	1933-34	14,700						
	Channel Lining	1934-35	8,650						31,350
Werribee	Channel Lining	1932-33	8,000						
	Channel Lining	1933-34	12,500						
	Channel Lining	1934-35	18,200						38,700
Mystic Park and Tresco	Channels (also £2,000 for Tresco drains, q.v.)	1933-34	2,500						2,500
Red Cliffs and Merbein	Channel Construction, Merbein	1932-33	5,000						
	Channel Construction, Red Cliffs and Merbein	1933-34	5,000						
	Channel Construction, Red Cliffs	1934-35	5,000						15,000
Maffra-Sale	Channel Construction	1932-33	5,000						
	Channel Construction	1933-34	2,850						7,850
Rodney	Channel Construction	1932-33	7,000						7,000
Cohuna	Channel Cleaning	1932-33	300						
	Channel Syphon	1933-34	1,000						
	Channel Construction	1933-34	1,500						2,800
Deakin	Channel Construction	1934-35	2,405						2,405
Nyah	Channel Lining	1934-35	540						540
Swan Hill	Channel Lining, Woorinen	1935-36	650						650
Districts Generally	Reconditioning Works	1934-35	25,000						
	Reconditioning Works	1935-36	25,000						
	Reconditioning Works	1936-37	30,000						80,000
	Total (Irrigation Supply Works) ..							188,795	
IRRIGATION DISTRICTS—DRAINAGE.									
Maffra-Sale	Drainage	1933-34	2,800						
	Drainage	1934-35	15,500						
	Drainage	1936-37	7,500						25,800
Cohuna	Drainage, Leitchville and Cohuna	1932-33	4,000						
	Drainage, Cohuna	1933-34	10,000						
	Drainage, Cohuna	1934-35	500						
	Drainage, Cohuna and Leitchville	1936-37	6,000						
	Drainage, Leitchville	1936-37	10,000						30,500
	Barr Creek, Enlargement	1932-33	8,000						
	Barr Creek, Enlargement	1933-34	5,280						
	Barr Creek, Enlargement	1935-36	7,000						
	Barr Creek, Enlargement	1936-37	4,000						24,280
Swan Hill	Drainage, Woorinen	1933-34	8,020						
	Drainage, Woorinen	1934-35	1,000						
	Drainage, Swan Hill	1935-36	1,075						10,095
Rodney	Drainage	1933-34	21,055						
	Drainage	1934-35	21,400						
	Drainage	1935-36	2,500						
	Drainage	1936-37	16,500						61,455
Deakin	Drainage	1934-35	5,060						5,060
Tongala-Stanhope	Drainage	1932-33	10,300						
	Drainage	1933-34	24,025						
	Drainage	1934-35	31,800						
	Drainage	1935-36	3,375						69,500
	Carried forward							226,690	

SCHEDULE OF GRANTS 12TH JULY, 1932, TO 30TH JUNE, 1937—*continued.*

Locality.	Works.				Grant.	
	IRRIGATION DISTRICTS—DRAINAGE— <i>continued.</i>				£	£
	Brought forward					226,690
Nyah	Drainage	1933-34		1,500		
						1,500
Shepparton	Drainage	1932-33		25,000		
	Drainage	1933-34		8,000		
	Drainage	1934-35		7,075		
	Drainage	1935-36		15,000		
	Drainage	1936-37		5,000		
						60,075
Werribee	Drainage	1933-34		3,000		
	Drainage	1936-37		750		
						3,750
Bacchus Marsh	Drainage	1936-37		1,250		
						1,250
Mildura	Subsurface Drainage	1934-35		81,750		
	Subsurface Drainage	1935-36		24,749		
	Subsurface Drainage	1936-37		62,917		
						169,416
Red Cliffs and Merbein	Subsurface Drainage, Red Cliffs, Merbein, and Mildura—Surveys, &c. ..		1933-34	10,000		
	Red Cliffs, Cardross	1933-34		5,000		
	Red Cliffs, South-West	1934-35		9,800		
	Red Cliffs, East	1934-35		16,000		
	Red Cliffs, South and East	1934-35		12,000		
	Red Cliffs and Merbein	1933-34		79,200		
	Red Cliffs and Merbein	1935-36		61,653		
	Red Cliffs and Merbein	1936-37		50,000		
	Red Cliffs, Main Drainage	1936-37		1,000		
						244,653
Tragowel Plains	Drainage	1933-34		1,500		
	Drainage	1936-37		6,000		
						7,500
Rochester	Drainage	1933-34		15,230		
	Drainage	1934-35		26,690		
	Drainage	1936-37		17,000		
						58,920
Kerang	Drainage, Kerang East	1933-34		12,436		
	Drainage, Kerang East	1934-35		40,000		
	Drainage, Kerang East	1935-36		25,000		
						77,436
Tresco	Drainage, see under Water Supply, £2,000 for drainage out of £4,500 ..		1933-34	2,000		
						2,000
	Total (Irrigation Drainage Works) ..					853,190
	WATERWORKS DISTRICTS.					
Wimmera-Mallee	Channel Construction	1932-33		15,000		
	Tanks and Bores	1932-33		3,000		
	Mt. Zero Channel Construction	1932-33		9,000		
	Channels and tanks	1932-33		1,250		
	Channels—Sand Drift	1933-34		20,000		
	Channels—Sand Drift	1935-36		42,000		
	Channels—Sand Drift	1936-37		30,000		
	Enlargement and Lining of Channels	1936-37		6,000		
	Urban Storages	1936-37		4,500		
						130,750
Millewa	Outlets, Clay Lining Channels	1932-33		4,000		
						4,000
Coreena	Clay Lining Channels	1932-33		800		
						800
Yelta	Watering	1933-34		500		
						500
	Carried forward					136,050

SCHEDULE OF GRANTS 12TH JULY, 1932, TO 30TH JUNE, 1937—*continued.*

Locality.				Works.		Grant.	
				WATERWORKS DISTRICTS— <i>continued.</i>		£	£
				Brought forward			136,050
Long Lake				Channel Construction	1934-35	1,230	1,230
Tyrrell West				Ironclad Catchments, Baring North and Patchewollock	1933-34	3,500	3,500
Tyrrell West				Road Construction, Patchewollock North	1933-34	300	300
Loddon United				Serpentine Weir	1933-34	765	765
				Total (Rural Works)			141,845
				WATERWORKS DISTRICTS—URBAN.			
Newstead				Channel Construction	1932-33	2,000	2,000
Walpeup				Water Tower	1933-34	1,250	1,250
Nyah				Reticulation Improvements	1933-34	1,000	1,000
Koondrook				Reticulation Improvements	1935-36	230	230
Leitchville				Storage and Reticulation	1935-36	1,000	1,000
Lake Boga				Improved Supply	1935-36	1,500	1,500
Jeparit				Reticulation Improvements	1935-36	2,500	2,500
Rainbow				Reticulation Improvements	1935-36	500	500
Mornington Peninsula				Channel (Dromana-Sorrento)	1932-33	10,000	
				Lysterfield Reservoir	1932-33	7,800	
				Service Basin, Garfield	1932-33	2,300	
				Cranbourne-Bittern Channel	1932-33	9,000	
				Beaching Mornington Reservoir	1932-33	2,080	
				Enlargement of Mornington Reservoir	1933-34	3,200	
				Lysterfield Reservoir, Raising	1934-35	4,000	
Dromana-Sorrento Extension				Instalment of £55,000	1935-36	5,000	38,380
Bellarine Peninsula				Urban Supplies	1932-33	26,000	5,000
				Urban Supplies	1934-35	3,050	
Western District Scheme				Instalment of £93,700	1935-36	22,750	29,050
				Instalment of £93,700	1936-37	18,000	
Coliban				Channel Lining	1932-33	6,318	40,750
				Channel Lining	1933-34	50,000	
				Channel Lining	1934-35	30,150	
				Channel Lining	1935-36	10,000	
				River Diversion (Ashbourne)	1934-35	7,950	
				Eaglehawk Main	1935-36	12,000	
				Bendigo and Castlemaine Reticulation Improvements and Channel Lining (Instalment, £200,000)	1936-37	66,000	182,418
				Total (Urban Works)			305,578
				FLOOD PROTECTION.			
Kooweerup and Cardinia				Drains and Levees	1932-33	22,000	
				Drains and Levees	1934-35	65,000	
				(Includes £25,000 from Commonwealth)			
				Cardinia Outfall	1936-37	10,000	
				Yallock Outfall	1936-37	5,000	
							102,000
				Carried forward			102,000

SCHEDULE OF GRANTS 12TH JULY, 1932, TO 30TH JUNE, 1937—*continued.*

Locality.	Works.	Grant.	
		£	£
		FLOOD PROTECTION— <i>continued.</i>	
	Brought forward		102,000
Lake Meering	Levees 1933-34	790	
			790
Various Districts	1934 Flood Damage—Repairs .. 1933-34	20,000	
			20,000
Carrum	Eastern Contour Drain 1932-33	8,000	
	Drains and Levees 1933-34	5,800	
	Drains and Levees 1934-35	5,400	
	Drains and Levees 1935-36	6,250	
	Pillars Bridge—Flooding 1936-37	2,000	
			27,450
Murray River	Pental Island 1932-33	170	
	Little Murray Levees, Fish Point .. 1933-34	6,430	
	Little Murray Levees, Benjeroop .. 1933-34	7,500	
	Murray River Levees, Swan Hill .. 1935-36	3,000	
			17,100
Dandenong	Levee Bank, Stud Road 1934-35	700	
			700
	Total (Flood Protection Works) ..		168,040
		RIVER IMPROVEMENTS.	
Mitchell River	Snagging—Bairnsdale 1932-33	350	
			350
Goulburn River	Cribwork—Acheron Breakaway .. 1932-33	500	
	Cribwork—Acheron Breakaway .. 1933-34	500	
			1,000
Rivers Generally	Snagging—		
	Avoca, West Barwon, Broken, .. 1934-35	20,000	
	Fitzroy, Gellibrand, Goulburn, .. 1935-36	10,000	
	King, Kiewa, Latrobe, Loddon, .. 1936-37	16,500	
	Macalister, Mitchell, Ovens,		
	Powlett, Rubicon, Snowy, Tambo, ..		
	Tarra, Tarwin, Thomson, and Yarra ..		
	Rivers; Gunbower and Woori ..		
	Yallock Creeks		
			46,500
Snowy River, Orboast	Improvements 1933-34	5,580	
			5,580
Latrobe River	Improvements 1936-37	10,000	
			10,000
	Total (River Improvements)		63,430
		GENERAL.	
Districts Generally	Noxious Weeds—Destruction .. 1936-37	1,000	
			1,000
	Total of Grants from 12.7.32 to 30.6.37 ..		£1,784,078
	GRAND TOTAL OF GRANTS FROM 1.6.30 TO 30.6.37		£1,950,118

NOTE.—The total expenditure of Unemployment Relief Funds as from 1st June, 1930, to 30th June, 1937, was £1,887,118, the total number of men to whom employment was provided being 33,710.

ESTIMATES.

PROPOSED DISBURSEMENTS.

As provided for in the Budget Statement.

1937-1938.

A.

Revenue Producing Works—

Coliban System	£16,682
Irrigation and Water Supply Districts	161,110
Waterworks Districts	89,887
Flood Protection Districts	3,623
Drainage Districts	15,092
Diversions from Streams and Land Leasing	872
General Expenditure and Salaries (Administration) to be apportioned to above Districts	33,301
Contributions by State of Victoria to the River Murray Commission	7,510
	<hr/> £328,077

B.

Non-Revenue Producing Works—

General Services—

River Gaugings, Surveys, Investigations, General Expenditure and Salaries (Administration)	£4,600
Loan Works and Unemployment Relief Works, Services on Account defrayed from Votes	2,000
Waterworks Trusts Administration	1,539
	<hr/> £8,139

C.

Non-Revenue Producing Works—

Free Headworks—

Broken River	£66
Goulburn-Waranga	2,681
Kow Swamp	600
Lake Lonsdale and Lower Wimmera	223
Loddon River	285
North-West Lakes	245
	<hr/> £4,100

£340,316*

* Provision for additional expenditure has been made from Unemployment Relief Funds.

ESTIMATED RECEIPTS.

1937-1938.

Coliban System	£45,000
Irrigation and Water Supply Districts	255,200
Waterworks Districts	201,500
Flood Protection Districts	6,000
Drainage Districts	23,300
Miscellaneous	14,000
	<hr/> £545,000

Estimated amount available from Revenue Producing Works to meet Interest	£216,923
Less expenditure as per "B" and "C" above on Non-Revenue Producing Works	12,239
	<hr/> £204,684

To which add Estimated Revenues from other Authorities—

Waterworks Trusts	£57,500
Local Bodies	24,000
	<hr/> £81,500

Total Estimated amount available from Revenues of all Authorities to meet Interest	£286,184
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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, 1937. 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)		739,522
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, Racecourse Lake, Cullen's Lake, Kangaroo Lake, and Lake Tutchewop, and to the Little Murray River, with water storage works at these lakes		26,620
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		187,944
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		172,353
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 Koorem; system of main distributary channels, about 85 miles in length		27,347
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		8,663
Total		1,226,356

B.—MAIN SUPPLY WORKS.

IRRIGATION AND WATER SUPPLY DISTRICTS, WATERWORKS DISTRICTS, AND FLOOD PROTECTION DISTRICTS.

Costs Apportioned and to be Apportioned to Districts benefited.

Name of Work.	Capital Debit at 30th June, 1937.	Tentative Debits to Districts, 1936-37.	
	£		
Goulburn Main Channels (Free Headworks excluded)—		Rodney £120,000	
1. East Goulburn Main	363,974	Tragowel Plains 100,000	
2. Waranga Reservoir to Campaspe	391,302	Rochester 74,000	
3. West of Campaspe	656,508	Tongala 58,000	
4. Goulburn Main Channel Distributaries	10,636	Shepparton 57,000	
	1,422,420	Katandra 30,000	
<i>Less transferred to Wimmera-Mallee</i>	100,000	Deakin 24,000	
	1,322,420	North Shepparton 21,000	
Goulburn Storages—		Boort 20,000	
5. Eildon Reservoir	1,902,238	Calivil 18,000	
6. Waranga Reservoir Enlargement	609,012	Echuca North 17,000	
	2,511,250	Dingee 15,000	
Bacchus Marsh and Werribee Schemes—		Stanhope 15,000	
7. Ballan Tunnel	21,678	South Shepparton 9,000	
8. Pykes Creek Reservoir	142,189		£578,000
9. Melton Reservoir	97,902		
	261,769		
10. Bellarine Peninsula	474,614		1,322,420
11. Mornington Peninsula	1,000,919		
12. Newstead Waterworks District	12,101		
Maffra-Sale Scheme—			
13. Glenmaggie Reservoir	667,449		
14. Main Channels and Distributary Works	598,714		
	1,266,163		
Red Cliffs Scheme—			
15. Main and Distributary Channels	792,741		
Millewa District—			
16. Main and Distributary Channels	519,263		
Flood Protection Districts—			
17. Kooweerup and Cardinia	386,899		
18. Goulburn Levees and other Districts	56,359		
	443,258		
Carried forward			

9,830,854

WORKS UNDER CONTROL OF COMMISSION—*continued.*

Capital Debit
at 30th June,
1937,
Exclusive
of Cost of Loan
Flotation.

Brought forward

£
9,830,854

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, 1937.
	£	£	£	£
1. Bacchus Marsh	119,672	8,906	535	110,231
2. Boort	118,153	35,259	1,814	81,080
3. Calivil	111,234	..	..	111,234
4. Campaspe	65,253	52,685	305	12,263
5. Cohuna	373,172	74,095	1,840	297,237
6. Deakin	95,965	34,748	2,144	59,073
7. Dingee	17,273	..	..	17,273
8. Dry Lake	1,704	686	299	719
9. Echuca North	23,895	..	..	23,895
10. Fish Point	15,533	..	..	15,533
11. Katandra	106,518	..	..	106,518
12. Kerang	165,144	35,338	2,471	127,335
13. Koondrook	265,984	39,153	1,752	225,079
14. Leitchville	46,413	..	..	46,413
15. Merbein	262,897	..	540	262,357
16. Mystic Park	17,340	..	..	17,340
17. North Shepparton	194,443	..	..	194,443
18. Nyah	111,435	..	30	111,405
19. Rochester	336,727	..	1,903	334,824
20. Rodney	735,126	149,949	9,055	576,122
21. Shepparton	197,136	..	1,300	195,836
22. South Shepparton	59,659	..	..	59,659
23. Stanhope	117,006	..	53	116,953
24. Swan Hill	193,431	19,799	459	173,173
25. Third Lake	25,153	..	..	25,153
26. Tongala	157,289	..	2,565	154,724
27. Tragowel Plains	385,839	124,534	638	260,667
28. Tresco	90,752	..	..	90,752
29. Werribee	126,708	..	10,242	116,466
	4,536,854	575,152	37,945	3,923,757

3,923,757

D.—WATERWORKS DISTRICTS.

Distributary Works within Districts under the control of the Commission.

Name of District. (Including Urban Districts.)	Total Capital Expenditure.	Capital Written Off by Acts 1625 and 1651.	Redemption Paid to Treasury.	Capital Debit at 30th June, 1937.
	£	£	£	£
1. Birchip	152,582	..	332	152,250
2. Sea Lake	224,140	..	600	223,540
3. Tyrrell	242,255	..	535	241,720
4. Tyrrell West	391,348	..	853	390,495
5. Wycheproof	243,659	700	548	242,411
6. Carwarp	43,991	..	..	43,991
7. Coliban	1,653,796	..	163	1,653,633
8. Coreena	45,849	..	..	45,849
9. Dering	13,077	..	2	13,075
10. Enreka	7,536	..	2	7,534
11. Hindmarsh	19,733	..	2	19,731
12. Karkaroc	344,464	..	2,958	341,506
13. Kerang North-West Lakes	2,181	..	..	2,181
14. Long Lake	190,639	..	1,888	188,751
15. Pyramid Hill	6,333	..	1,300	5,033
16. Tyntynder	399,621	..	186	399,435
17. Upper Western Wimmera	122,115	26,567	3,508	92,040
18. Upper Wimmera United	142,482	10,918	4,532	127,032
19. Walpeup Central	45,784	..	25	45,759
20. Walpeup West	36,445	..	..	36,445
21. Werribee	11,596	..	..	11,596
22. Western Wimmera	492,832	106,268	13,516	373,048
23. Wimmera United	330,401	25,474	10,305	294,622
24. Wonthaggi	81,815	..	9,071	72,744
25. Yelta	6,144	..	..	6,144
	5,250,818	169,927	50,326	5,030,565

5,030,565

Grand Total of Capital at Debit of Works under Control of Commission, including Free Headworks but excluding Local Authorities, River Murray Works, Works under Construction, and Loan Flotation Charges

£18,785,176

STATEMENT OF LOAN LIABILITY.

STATEMENT of the amount provided by the State to meet Interest and Exchange thereon 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 and Exchange for the year ended 30th June, 1937:—

	Loan Liability of State for Works of Water Supply at 30th June, 1937, exclusive of Melbourne Water Supply.				Net Capital Liability.		Total Interest of £1,036,303 and Exchange thereon of £100,905 debitable to—		Amount Received from Revenues of all Authorities to meet Interest		
	Total Capital Expenditure.	Deduct Redemption Paid.	Deduct Capital defrayed from (A) Revenue, (B) Treasurer's Advance, (C) Trust Funds.	Net Loan Liability.	Works at Debit of Authorities.	(A) Unallotted Works. (B) Amounts Written Off. (C) Free Headworks. (D) Loan Flotation Charges.	Works at Debit of Authorities.	(A) Unallotted Works. (B) Amounts Written Off. (C) Free Headworks. (D) Loan Flotation Charges.			
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Free Headworks	£ 1,226,806	£ 450	£ ..	£ 1,226,356	£ ..	(C) 1,226,356	£ ..	(C) 53,478	£ 53,478	190,081	
Goulburn Channel Works (Free Headworks excluded) ..	1,325,432	3,012	(A) 200	1,322,220	578,000	(A) 744,420	25,205	(A) 32,462	57,667		
Eildon Reservoir and Waranga Reservoir Enlargement ..	2,538,809	27,559	..	2,511,250	..	(A) 2,511,250	..	(A) 109,508	109,508		
Bailan Tunnel, Pykes Creek, and Melton Reservoirs ..	262,468	699	(B) 48	261,721	212,953	(A) 48,816	9,286	(A) 2,128	11,414		
Bellarine Peninsula Waterworks District ..	475,068	454	..	474,614	328,157	(A) 146,457	14,310	(A) 6,387	20,697		
Mornington Peninsula Waterworks District ..	1,010,824	4,777	..	1,006,047	789,144	(A) 211,775	34,412	(A) 9,235	43,647		
Newstead Waterworks District ..	12,111	10	..	12,101	7,465	(B) 5,128	224	(B) 224	224		
Maffra-Sale Irrigation and Water Supply District ..	1,267,079	916	..	1,266,163	206,245	(A) 4,636	326	(A) 202	528		
Red Cliffs Irrigation and Water Supply District ..	792,978	237	..	792,741	486,578	(A) 1,059,918	8,994	(A) 46,220	55,214		
Millewa Waterworks Districts ..	519,294	31	..	519,263	246,163	(A) 306,163	21,218	(A) 13,351	34,569		
Koo-weerup and Cardinia Flood Protection Districts ..	386,945	46	..	386,899	145,000	(A) 273,100	10,734	(A) 11,909	22,643		
Goulburn Levees and other Flood Protection Schemes ..	60,687	*4,328	..	56,359	13,115	(A) 241,899	6,323	(A) 10,548	16,871		
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Irrigation Districts	4,536,854	37,945	(B) 363	4,492,976	3,923,757	(B) 575,152	171,104	(B) 25,081	196,185	81,198	
Waterworks Districts	5,250,818	50,326	(A) 5,570	5,146,250	5,030,565	(B) 169,927	217,003	(B) 7,410	224,413		
CAPITAL EXPENDITURE NOT DETAILED ELSEWHERE.											
Campaspe and Loddon Rivers Storages	124,938	2,665	..	122,273	..	(A) 122,273	..	(A) 5,332	5,332		
Otway District (under construction)	87,949	..	..	87,949	..	(A) 87,949	..	(A) 3,835	3,835
Murray Valley Districts (proposed)	100,196	..	(B) 379	99,817	..	(A) 100,196	..	(A) 4,369	4,369		
Waterworks Trusts (including First Mildura)	1,918,338	405,194	(A) 35,367	1,477,777	1,359,896	(B) 153,248	57,759	(B) 6,683	64,442		
Local Bodies (Municipalities)	901,718	176,806	(A) 7,875	717,037	559,042	(B) 165,870	24,035	(B) 7,233	31,268		
Irrigation and Waterworks Trusts Abolished	31,710	30	..	31,680	..	(B) 31,680	..	(B) 1,381	1,381		
Free Grants to Local Authorities	142,357	..	..	142,357	..	(C) 142,357	..	(C) 6,208	6,208
River Murray Agreement Works	2,757,777	3,250	(C) 27,024	2,727,503	..	(A) 2,754,527	..	(A) 118,938	118,938		
Surveys, Exploratory and Preliminary Works	291,538	*17,254	(A) 16,511	257,773	..	(A) 274,284	..	(A) 11,961	11,961		
Loan Flotation Expenses—Discounts and Commissions ..	753,895	..	..	753,895	..	(D) 753,895	..	(D) 32,875	32,875
Geelong Works—Including Loan Flotation Expenses ..	460,836	300,235	..	160,601	..	(B) 160,601	..	(B) 7,083	7,083		
Totals	27,237,425	1,036,224	147,579	26,053,622	13,886,080	12,315,121	601,281	535,927	1,137,208	271,279	
Net Loan Liability											
Add Cash in Hand	£26,053,622	£1,137,208	
Deduct National Debt Sinking Fund	68,238	271,279	
Less Amount Included in Redemption above	1,133,742	12,841	
	171,255	258,438	
Net Loan Liability of State for Works of Water Supply											
	962,487	£878,770	
Deficiency being amount of Interest and Exchange borne by Treasury											
	£25,159,373	£878,770	

* Irrigation and Water Supply Sinking Fund—£21,582.

Dated at the Office of the State Rivers and Water Supply Commission, Treasury Gardens,
Melbourne, the 25th day of November, 1937.

L. R. EAST, Chairman.

W. A. ROBERTSON, Commissioner.

P. J. O'MALLEY, Commissioner.

P. J. DESCRIMES, Acting Secretary.

STATE RIVERS AND WATER SUPPLY COMMISSION.

WATER SUPPLY STATISTICS.

SUMMARY RELATING TO WATER SUPPLY IN VICTORIA.

Victoria—Area	56,000,000 acres
Rainfall	10 inches to 80 inches
Total Net Expenditure Country Water Supply to 30th June, 1937	£25,159,373
Channels—Length—	
Irrigation Supply	4,323 miles
Domestic and Stock Supply	7,946 miles
Drainage	1,798 miles
Total	14,067 miles
Area of lands in Victoria artificially supplied with water for domestic and stock purposes by channels, tanks, and bores	15,065,000 acres
This represents over one-quarter of the total area of the State—actually two-fifths of the agricultural lands	
Area commanded by irrigation channels	2,080,000 acres
Area Irrigated—1936-37	518,827 acres
Area benefited by Flood Protection Works	160,500 acres
Storages—	
Present capacity	1,891,350 acre feet
Additional storage being provided by works in course of construction	37,480 acre feet
Further storage which could be provided by completion of existing works	420,500 acre feet
Districts administered by Commission—	
Irrigated Districts—Water supplied for cultivation	31 districts
Domestic and Stock Districts—Water supplied to fill excavated storage tanks	31 districts
Flood Protection Districts	5 districts
Waterworks Trusts and Local Governing Bodies supervised by Commission	131 districts
Sewerage Authorities supervised by Commission	20 districts
Country Towns—Reticulated pipe supplies for domestic use—	
Administered by Commission	109 towns
,, ,, Waterworks Trusts	111 towns
,, ,, Local Governing Bodies	16 towns
Total Population in Country Towns supplied with water	415,100 persons

