

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Systems of Local Government.**—In all civilised nations, whatever the previous course of their constitutional history, the persistent and rapid growth of the functions of the central Government, with repeated assumptions of new and onerous duties and responsibilities, have rendered some attempts at decentralisation and some form of local government essential. Without such a relief national administration could be carried on with success only with great difficulty, if at all. Experience, ancient and modern alike, has demonstrated that a completely centralised bureaucracy—that is, a body of officials working from a single centre and responsible only to itself—cannot carry on indefinitely the administration of a large country; such a body tends to ignore the varieties of local conditions, to become stereotyped in its ideas and methods, and sooner or later breakdown is inevitable. There are two possible policies which a Legislature may adopt towards local authorities apart from the imposition of compulsory duties upon them. There is first (a) the grant of general power to all local bodies of a particular class—that is, the Legislature may establish a set of authorities and empower them to do anything which in their judgment will tend to promote the satisfactory administration and general well-being of the areas under their control, so long as any particular powers which they propose to use are not expressly prohibited or reserved to other authorities. But as this liberty might easily in some cases be abused, there is necessarily the restriction, of greater or less extent according to the country and the nature of the authorities in question, that the actual exercise of these general powers shall be subject to the approval of an administrative department of the central Government. Or, on the other hand, the Legislature may (b) grant only specific powers to local bodies—that is, may give them permission to do all or any of a number of enumerated things, with or without the approval of the central departments, and in this case nothing further can be done by the local body unless permitted by fresh legislative enactments. In a general way it may be said that legislation on the continent of Europe has ordinarily followed the first of these two methods, and has given to the local self-governing communities power to do anything for which they can get administrative approval; while in the Commonwealth, as well as in Great Britain and in the United States, the practice has been the opposite one—local authorities are empowered to do only specified things; but in order, in spite of this, to allow free play to local initiative and enterprise, parliamentary procedure permits of local authorities being able to obtain additional powers for particular works or undertakings by means of special Acts. This difference between the Australian or British and continental systems has two important results.

(i.) *Difference between Australian and Continental Systems.* (a) The first important result of this difference is that in Australia, England and the United States the enterprise and activity of local authorities depend upon the temper and ideas of Parliament—that is to say, upon the elected representatives of the nation; whilst throughout a large part of the continent of Europe the controlling influence is ordinarily exercised by a bureaucracy whose opinion upon the matters in question may or may not be coincident with the majority of the electorate. The result is that in Australia it is the business of

the State Parliaments to determine what powers are to be conferred upon local authorities, while, ordinarily, under the continental systems the administrative bodies have to regulate what the local authorities may or may not do. The efficiency of such continental systems depends almost entirely upon the character of the controlling bureaucracy, although it is true that the legal powers of a municipality under that system might be very much wider than those of a municipal council in Australia. If the bureaucracy is enterprising and ready to encourage and aid in every way the growth of local action and experiment—as it is in Prussia—then there is the largest scope for municipal development; but if, as in France, the bureaucracy is conservative in its ideas and slow to move, the action of local authorities remains cramped and limited.

(b) The second important result of the difference between the Australian and continental systems is that in all matters entrusted to them local authorities in Australia consider that their duty is to carry out the law according to the will of, and in the manner desired by the ratepayers of their local areas, subject generally to the supervision of the central Government, whereas on the continent of Europe local authorities regard themselves normally as bodies appointed to carry out, within their respective localities, the will of the central Government, even in such matters as are of purely local importance. Local authorities under the continental systems are responsible to the central Government and are subject to administrative control, whilst in Australia municipal councils, so long as they do not infringe the Acts under which they are constituted, or which they have to administer, are responsible only to the ratepayers of their respective localities.

(ii.) *Various Systems in the Several States of the Commonwealth.* In all the States of the Commonwealth Acts have now been passed providing for comprehensive schemes for the decentralisation of power by the constitution of various forms of local authorities to deal with a large variety of subjects and matters. The general policy of the Legislatures towards local authorities in Australia has already been pointed out. Generally speaking, these authorities exercise their powers under enactments of two kinds. (a) There are, first, what may be called constituent Acts, which create the various classes of local bodies and arm them with the powers necessary for the fulfilment of the duties intended to be discharged by them, and there are, secondly (b) general Acts dealing with one subject, or group of subjects, of administration—such as the Public Health Acts—and giving power to the local authorities for that particular service. Although the Acts controlling local government in the several States vary considerably in detail, especially as regards the election of councillors and presiding officers, method of valuation, and rating powers, there is a great similarity between the powers and duties conferred and imposed upon local authorities in the various States; these powers and duties are many and varied. As a rule the municipal council is the highway authority, being responsible for all the roads within its area and the up-keep of all bridges; it is a public health authority; it supervises the sanitary work, the water supply, and the lighting of its area, and for these and for other purposes may appoint officers; it administers the Acts relating to the sale of foods and drugs, the slaughter and diseases of animals, weights and measures, and river pollution; it may establish hospitals, public recreation grounds, libraries, and museums, and may provide asylums and support charitable institutions; it may make provision for preventing fires and floods; it administers the municipal property, makes by-laws with regard to a large variety of things and matters, and may acquire other powers by petition to the Governor. The councils are elected by the ratepayers, and seek only to carry out the wishes of the electorate, subject to the general supervision of the central Governments.

(iii.) *Systems on the Continent of Europe.* On the continent of Europe a careful distinction is generally drawn between those internal affairs in which the central Government is thought to be directly concerned and those which are held to be primarily of only local interest. In Prussia, for instance, the former includes, besides the army, State taxes and domains, ecclesiastical affairs, police, and the general supervision of local

authorities, while to the localities are left roads, poor relief, and a number of miscellaneous matters. The work of the central Government is deconcentrated, that is to say, the country is divided into districts, in each of which there is a delegation of the central authority, doing its work and thereby decreasing the pressure upon the head offices. The executive agents in each locality are elected by the inhabitants, but they are also the representatives of the central Government, and as such they are members of the bureaucracy and are under its control, with the consequence that they look to the central Government for guidance and direction in regard to local affairs. Local government is in fact weak; it is not so much the exercise of the will of a locality by the central power, as the exercise of the will of the latter by the locality. The system of deconcentrated centralised control as carried out in Prussia has, however, some distinct advantages.

- (a) In the first place the duties of supervising the actions of a large number of local authorities do not rest only upon a comparatively small number of officials at the seat of Government, but are carried out by delegations in all parts of the country, which are able to acquire a more intimate knowledge of local requirements and conditions.
- (b) Secondly, the supervision is not only by Government officials, but by responsible and experienced persons elected by the inhabitants and who command local confidence. The general results are that, firstly, the staff at the central offices is relieved of much detailed work, and, secondly, that the control of the localities is rendered much less bureaucratic.

2. Early History of Local Government in Australia.—Before the more comprehensive systems of self-government were first provided for in the several States various enactments had from time to time been passed and amended in order to satisfy the growing demand for local government which asserted itself as one of the primary results of the spread of education and increase of population. In the latter part of the year 1839 the first municipal law was passed in South Australia, which was thus the birth-place of local government in the Commonwealth. On 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council. In 1842 the Sydney City Incorporation Act was passed by the New South Wales Government; under this Act the city was divided into six wards, and resident occupiers or owners of houses, warehouses, or shops within a radius of seven miles were duly enrolled as citizens and entitled to vote at the elections of councillors, the number of which was fixed at twenty-four. A city fund was established and rates levied. The duties of the council were to construct and maintain streets, sewers, and waterworks, to light the streets, and to make by-laws for the general good rule and government of the city. In the same year, 1842, Melbourne was incorporated as a town by special Act, and as a city in 1847, while Geelong was incorporated in 1849. The Acts by which Sydney and Melbourne were incorporated contained no provision for the extension of the municipal principle to other localities, but in 1842 an Imperial Act was passed under which the Governor of New South Wales was empowered to incorporate by Letters Patent every county or any part of a county to form districts for the purpose of local government. In the following year the districts of Appin, Campbelltown, Camden, Narellan, and Picton, in New South Wales, were incorporated under one county district council, while later in the same year Appin and Campbelltown were constituted as a separate district under the control of six councillors. In 1844 the Sydney City Incorporation Act was amended; by this time the number of county district councils had increased to eight, and these, in conjunction with the municipal council of Sydney and the Road Trusts, which were generally created by special Acts, constituted the whole of the local government system in New South Wales prior to 1858. The Imperial Act of 1850, under which the State of Victoria was granted responsible government, provided for the division of the State into districts under the government of local councils. In all the States of the Commonwealth systems of local government have been provided for; in some of the States, such as Victoria, practically the whole area of the State has for some

years been divided into districts for the purposes of self-government, while in others, more especially in New South Wales, a general system of extending the advantages of local government throughout the more settled parts of the country has only recently been provided. In other States systems of local government which have been in force for some years have, as is only to be expected, made comparatively slow progress owing to the small population scattered over such large areas. Taking, however, into consideration the benefits which must accrue, especially in a country of great distances, from the establishment of suitable systems of local government, and judging by the success of similar institutions in other countries, there is every reason to expect that, as population increases and settlement progresses, the people of Australia will take fuller advantage of the systems provided.

§ 2. New South Wales.

1. Development of Local Government Systems.—In the year 1858 the Municipalities Act, the first important measure with regard to general local government in New South Wales, was passed. Under this Act provision was made for the incorporation of any town or rural district as a municipality upon presentation to the Governor of a petition signed by at least fifty of the respective ratepayers, and containing a larger number of signatures than those attached to any counter petition. The members of the council were elected by the ratepayers, and the chairman was chosen by the councillors from their own number. The duties of the council were to abate and remove nuisances; to make by-laws for the regulation of their own proceedings and for the general good government of the town; to control all roads, bridges, ferries, and wharves; to establish hospitals, asylums, libraries, and gardens; and to establish tolls and rents for the use of markets, bridges, wharves, and jetties within and belonging to the municipality. The general rate was not to exceed one shilling in the pound, but a special rate for water supply, sewerage, and street lighting could be levied. Government endowment was provided for, by way of subsidies on the amount collected from rates, over a period of fifteen years. In all thirty-five districts were incorporated under this Act, and these districts, with the exception of Cook, which was united to Camperdown in 1870, and East St. Leonards, subsequently joined to St. Leonards, still exist, though the boundaries of most of them have since been changed.

(i.) *The Municipalities Act 1867.* The Act of 1858 was repealed in 1867 by the Municipalities Act of that year. Under the provisions of the latter Act the thirty-five existing municipalities were to continue their existence under the designation of boroughs, and all municipalities created in the future were to be classified either as (a) boroughs, or (b) municipal districts.

(a) *Boroughs* could consist of any city, town, or suburb of the metropolis, or of any populous country district, but every borough had to have a population of not less than 1000 and had to contain an area of not more than nine square miles, of which no part was more than six miles distant from any other part.

(b) *Municipal Districts* could comprise any part of the colony not containing a borough, but had to include an area of not more than fifty square miles, with a population of not less than 500 souls.

The duties and powers of the councils were extended and defined, while the maximum rate remained as before. This Act still left it optional for any district to become constituted as a municipality, with the consequence that only a small proportion of the State was incorporated under its provisions.

(ii.) *Division of the State into Shires, 1905.* The Act of 1867 was amended from time to time during the succeeding thirty years until the whole of the Acts—sixteen in number—were repealed by the consolidating Act of 1897. This Act did not alter the

chief features of previous Acts, and still retained the voluntary principle of incorporation, which was not conducive to the adoption of a general system of local government. because so long as the central Government continued to construct and pay for local works, it was natural that the inhabitants benefited would be willing to deny themselves the advantages of self-government. The law on the subject remained in an admittedly unsatisfactory condition for several years, and, though various measures were introduced into Parliament for its amendment, it was not until the year 1905, when the Shires Act was passed, that a comprehensive scheme of local government was extended to the greater part of the State.

- (a) *The Shires Act 1905* divides the whole State, with the exception of existing municipalities, the western division, Lord Howe Island, the islands in Port Jackson, and the Quarantine Station of Port Jackson, into shires, which were themselves subdivided into ridings, each riding having equal representation in the council, and were classified according to their extent and probable revenue and expenditure. A sum of not less than £150,000 was made payable annually out of the consolidated revenue for the endowment of the shires, the amount payable to each shire being apportioned according to the class to which it belonged and to the proceeds of the general rates received during the next preceding year. An important feature of the Act was that the rates were to be charged on the unimproved value of the land, instead of on the annual rental; the rate to be levied was not to be less than one penny, nor more than twopence in the pound, and the minimum rate in respect of any portion of land was fixed at two shillings and sixpence. Another important provision of the Act was that as soon as a rate was imposed by a council, the operation of the Land Tax Act was suspended. The councils were vested with wide general powers and could acquire additional powers by resolution of a majority of the council followed by an application by the President on behalf of the council to the Governor.
- (b) *The Local Government Extension Act 1906* amended and consolidated the law relating to municipalities and extended the principles of the Shires Act to municipalities. Provision was also made whereby the Governor was authorised to proclaim as a city any municipality which had, during the previous five years, a population of at least 20,000 persons and a revenue of at least £20,000, and which formed an independent centre of population.
- (c) *The Local Government Act 1906*. Towards the close of the year 1906 the Local Government Act, which deals comprehensively with both shires and municipalities, was passed; by this Act both the Shires Act 1905 and the Local Government Extension Act 1906 are repealed, and their provisions are amended and consolidated.
- (d) *The Local Government (Loans) Act 1907*. In 1907 the Local Government (Loans) Act was passed in order to overcome certain difficulties at the inception of the new system, authorising the Governor to approve of municipal loans in special cases, without going through the procedure required by the Local Government Act.

2. Local Government Systems now in Operation.—The law relating to local government in New South Wales is now contained in the Act of 1906 referred to above. The Local Government Commissioners issued an *interim* report in July, 1905, proposing to divide the State into 132 shires, the unimproved value of which was £67,131,466; by the final report, issued in January, 1906, the establishment of 134 shires was recommended. This recommendation has since been carried into effect.

(i.) *Areas Incorporated*. Prior to the year 1907 the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement:—

AREAS INCORPORATED IN NEW SOUTH WALES, 1860 to 1906.

Year	...	...	...	1860.	1870.	1880.	1890.	1900.	1906.
Area incorporated—Sq. miles	...	409	649	1,482	2,387	2,763	2,830		

Total area of State (exclusive of Lord Howe Island), 310,367 square miles.

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows :

DISTRIBUTION OF INCORPORATED AREAS, 1906.

Division.				Incorporated Area.	Unincorporated Area.	Total Area.
Eastern	...	...	Sq. miles	1,977	93,742	95,719
Central	...	...	"	571	88,579	89,150
Western	...	...	"	282	125,216	125,498
Total	...	...		2,830	307,537	*310,367

* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

Under the Shires Act 1905 and the Local Government Extension Act 1906 the whole of the eastern and central divisions, amounting in all to 184,869 square miles, were incorporated, either as shires or as municipalities, which are now administered under the Local Government Act of 1906. The provision of the Shires Act as to the incorporation of cities is retained, and under this provision the municipality of Broken Hill was proclaimed a city in 1907.

(i.) *General.* This Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or of a majority of the ratepayers to the Governor. The councils consist in the case of shires of either six or nine councillors, and in the case of municipalities of from six to twelve aldermen, except in the case of the union of two or more municipalities, when the Governor may determine that the council of the united areas shall consist of any number from twelve to eighteen aldermen. All occupiers of ratable property of a yearly value of at least £5 who have been in occupation for at least three months, of either sex, who are either natural-born or naturalised British subjects, of the age of twenty-one years and upwards, are entitled to be registered on the electors' roll, and any male person so enrolled is qualified to be elected as a councillor or alderman, unless he is otherwise ineligible.

(ii.) *Functions of Councils.* The general scheme of the Act was that councils, on their constitution, should start with a limited number of powers of a primary nature, and that, as their needs develop, they should from time to time acquire additional powers on following the prescribed procedure. On the constitution of a shire or municipality the councils may exercise any of the following powers :—The construction and maintenance of all public places, except those vested in the Railway Commissioners or other public bodies or trustees, and except national works; lighting of, and controlling the traffic in streets and roads; prevention of fires and floods; the administration of the Public Watering Places Act 1900 and the Impounding Act 1898, and certain parts of the Police Offences Act 1901, the Public Health Act 1902, and the Cattle Slaughtering and Diseased Animals and Meat Act 1902. Other powers and duties, such as the construction of drainage and water supply systems without reticulation, the care and management of parks and

commons, and the licensing of hawkers and public vehicles, are conferred and imposed upon municipal councils, while these same powers and duties may be acquired by shire councils by resolution of the council followed by application to the Governor.

(a) *Acquisition of Further Powers.* Further powers may also be acquired either by shires or by municipalities if the council decide that they are necessary for the good government of the locality; these are the administration of the Public Gates Act 1901, and the Native Dog Destruction Act 1901; water supply by reticulation; the maintenance of passenger ferries, of fire brigades, of municipal buildings, of cattle-yards and abattoirs, of markets, parks, and recreation grounds, of refuse destructors, of cemeteries and public baths; the manufacture and supply of gas, electricity, and hydraulic or other power; the regulation and control of theatres, public halls, and lodging houses; the establishment and management of public libraries, art galleries, museums, and public bands; the regulation and supervision of buildings and balconies; of the sale of fish and meat, and the suppression of nuisances caused by the emission of smoke or vapour. These powers may be acquired by a resolution passed by an absolute majority of the council followed by an application in the prescribed form to the Governor. On receipt of a petition signed by not less than fifty, or if there be less than 300 ratepayers on the roll, by one-sixth of the ratepayers, the Governor may direct that a poll be taken as to whether all or any of the powers applied for shall be conferred on the council.

(b) *Appointment of Executive Officers.* Provision is made in the Act for the appointment of officers and servants, such as shire engineers, municipal clerks, and sanitary inspectors, and also for the acquisition by councils of land or buildings either by agreement or compulsorily, for which purpose the provisions of the Public Works Act 1900 are incorporated.

(iii.) *Rates and Ratable Property.* All land is ratable except the following:—Commons, public parks, and public reserves not held under lease or license; cemeteries, public hospitals, benevolent institutions, and buildings used exclusively for public charitable purposes; churches and free public libraries; unoccupied Crown lands; lands vested in the University of Sydney occupied and used solely for the purposes of education; and vested in the Chief Commissioner for Railways and Tramways and actually used for the purposes of the Government railways or tramways. Rates levied by a council may be of four kinds, namely, general, special, local, or loan rates.

(a) *General Rates* are levied on the unimproved value at a rate of not less than one penny nor more than twopence per pound, but if the minimum rate be more than sufficient to meet the requirements of the council, it may be further reduced at the discretion of the Governor. A council of a municipality which has levied a general rate of not less than one penny on the unimproved value may impose such additional rate as may be required either on the improved or the unimproved value.

(b) *Special, Local, and Loan Rates* may also be imposed either on the improved or the unimproved value at the option of the council, but in the case of special and local rates a poll may be demanded by the ratepayers as to whether the rate shall be imposed or not. Rates on the unimproved value of land may also be levied for the purposes of the Country Towns Water Supply and Sewerage Acts 1880-1905, which provide for the construction by the Government of waterworks and sewerage systems in municipalities which are outside the areas served by the Metropolitan and Hunter River Boards. The cost becomes a charge against the municipality, carrying interest at a rate of 4 per cent., and repayable by annual instalments over a period of not more than 100 years.

(iv.) *Endowment.* The amount of and the conditions as to the endowment of shires are similar to those of the Shires Act. (See para. 1. ii. (a) above). It is also enacted that all municipalities not receiving statutory endowment under any Act thereby repealed shall, upon the result of investigations made into their administration and financial necessities, be entitled to a sum not exceeding three shillings and fourpence in the pound on the general rate collected; but if the revenues are sufficient to meet the reasonable requirements of the corporations under proper management no endowment will be paid.

(v.) *Borrowing Powers and other Provisions.* A council of a municipality is authorised to borrow up to 10 per cent. of the unimproved capital value, and all money so borrowed is a charge upon the revenue of the council. If a council desire that any proposed loan should be guaranteed by the Government application must be made to the Treasurer, who may either refuse or recommend the guarantee. Both shires and municipalities may temporarily borrow in any year an amount not exceeding one-third of the estimated revenue to be received from rates if the consent of the Minister shall have been first obtained. Auditors are appointed by the councils, and Government examiners are appointed to inspect the accounts of the councils. A defaulting area is defined to be an area in which a sufficient number of councillors have not been elected to form a quorum, or in which the requirements of the Act as to the levying of a general rate have not been carried out, or in which the council has ceased for six months to exercise its functions. The Governor is authorised to appoint an administrator for a defaulting area.

3. Shires, 1907.—The total area of the 134 shires constituted under the new system was 179,130 square miles, and the approximate population at the end of the year 1907 was 542,800. During the year ended the 31st December, 1907, the total revenue of these shires, excluding £76,572 received for temporary loans and £11,864 for trust account, was £535,659, of which the general rates amounted to £287,635, and Government endowment and other grants to £235,794. During the same year the total expenditure, exclusive of repayments and temporary loans (£59,078) and trust account (£6783), amounted to £385,605, of which £100,435 was spent on administrative expenses, and £249,868 on public works (roads, streets, bridges, ferries, etc.). The unimproved capital value for the year ended 31st December 1907, was £81,526,814.

4. Annual and Capital Improved Value of Ratable Property, 1901 to 1908.—The following table shews the annual and capital improved values of ratable property in municipalities for each year from 1901 to 1908, inclusive:—

**NEW SOUTH WALES—RATABLE PROPERTY IN MUNICIPALITIES, ANNUAL
AND CAPITAL IMPROVED VALUES, 1901 to 1908.**

Year ended February.*	Sydney and Suburbs.		Country.		Total.	
	Annual Value.	Capital Value.	Annual Value.	Capital Value.	Annual Value.	Capital Value.
	£	£	£	£	£	£
1901 ...	5,069,630	88,116,600	2,836,130	36,429,600	7,905,760	124,546,200
1902 ...	5,188,700	90,060,600	2,920,500	37,936,300	8,109,200	127,996,900
1903 ...	5,455,270	93,413,300	2,624,890	36,606,500	8,080,160	130,019,800
1904 ...	5,669,670	96,171,600	2,681,750	38,046,700	8,351,420	134,218,300
1905 ...	5,866,860	98,857,900	2,675,200	38,355,800	8,542,060	137,213,700
1906 ...	5,974,970	101,090,900	2,741,390	39,223,700	8,716,360	140,314,600
1907 ...	6,081,690	102,037,900	2,770,620	39,417,000	8,852,310	141,454,900
1908 ...	6,310,420	103,328,200	2,961,570	41,668,300	9,271,990	144,996,500

* The municipal year of the City of Sydney begins on the 1st January; the returns for this city are, therefore, included as up to the 31st December in the preceding year. In other municipalities the financial year begins on the first Tuesday in February.

5. **Capital Value, Area, Population, and Rates Levied, 1901 to 1908.**—The following table shews the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for each year from 1901 to 1908, inclusive:—

NEW SOUTH WALES—IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED IN MUNICIPALITIES, 1901 to 1908.

Year ended February.*	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Population.	Number of Buildings.	Total Rates Levied.	Improved Capital Value.	Area.	Population.	Number of Buildings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901 ...	88,118,600	91,320	†487,900	†94,907	277,457	36,429,600	1,732,302	371,330	73,862	127,564
1902 ...	90,060,600	†	†487,900	†94,907	333,065	37,936,300	†1,711,312	†372,218	74,012	131,570
1903 ...	93,413,300	†	516,180	99,125	377,016	36,606,500	1,711,312	379,430	79,141	174,900
1904 ...	96,171,600	†	514,750	102,061	382,509	38,016,700	1,719,612	386,610	79,712	178,249
1905 ...	98,857,900	†	512,500	105,336	396,268	38,355,800	1,719,612	391,370	81,506	188,929
1906 ...	101,090,900	†	523,530	107,922	404,332	39,223,700	1,719,692	396,820	83,075	191,480
1907 ...	102,037,900	†	550,760	110,430	412,093	39,417,000	1,719,692	401,140	84,094	194,754
1908 ...	103,328,200	95,259	577,180	117,955	426,792	41,668,300	1,824,638	433,470	83,511	208,631

* See footnote to preceding table. † Census, March, 1901. ‡ Not available.

The following table gives particulars, for the years 1907 and 1908, of the improved and unimproved capital values in Sydney, in the suburbs, and in the country:—

NEW SOUTH WALES—IMPROVED AND UNIMPROVED CAPITAL VALUES, 1907 AND 1908.

Particulars.	1907.		1908.	
	* Improved.	Unimproved.	Improved.	Unimproved.
METROPOLITAN—	£	£	£	£
*City of Sydney ...	45,749,800	20,207,812	45,749,800	20,207,812
Suburban Municipalities ...	56,288,100	19,583,598	£7,578,400	†23,835,688
Total Metropolitan ...	102,037,900	39,791,410	103,328,200	44,043,500
COUNTRY MUNICIPALITIES ...	89,417,000	14,875,612	41,668,300	21,583,928
Grand Total ...	141,454,900	54,667,022	144,996,500	65,627,428

* For year ended the 31st December, 1907. † As per valuation notices, subject to reduction on appeal.

The unimproved capital value for shires at the end of the year 1907 was £81,526,814 (see para. 3). The total unimproved capital value of districts under the operation of the Act of 1906 was therefore £147,154,242.

6. **Revenue and Expenditure, Assets and Liabilities of Municipalities, 1901 to 1908.**—The subjoined table shews the total revenue and disbursements, and also the total assets and liabilities of the municipalities for the years 1901 to 1908, inclusive. As regards revenue and expenditure, the figures given are exclusive of proceeds and repayments of loans:—

**NEW SOUTH WALES.—REVENUE AND EXPENDITURE AND ASSETS AND LIABILITIES
OF MUNICIPALITIES, 1901 to 1908.**

Year ended Feb.*	Sydney and Suburbs.				Country.			
	Revenue.	Exp'ndit're.	Assets.	Liabilities	Revenue.	Exp'ndit're.	Assets.	Liabilities.
	£	£	£	£	£	£	£	£
1901	513,734	510,240	2,476,354	2,417,642	296,875	291,700	1,326,432	674,673
1902	489,838	474,921	2,464,662	2,401,643	328,369	309,609	1,393,353	672,641
1903	518,839	496,740	2,489,917	2,427,873	315,335	331,031	1,378,472	694,560
1904	503,571	696,590	2,437,589	2,428,732	332,204	327,454	1,436,278	678,491
1905	525,859	628,417	2,421,023	2,555,732	329,549	339,139	1,508,237	693,667
1906	569,255	591,166	2,539,920	2,637,930	340,482	356,067	1,528,915	711,001
1907	602,327	607,080	2,548,727	2,653,486	400,909	383,002	1,665,050	703,028
1908	660,609	725,482	2,687,164	2,878,228	435,241	446,674	1,709,459	734,704

* See footnote to preceding table but one.

7. **Expenditure by General Government on Local Works, 1860 to 1907.**—Since the year 1860 the Government of New South Wales has expended £41,068,700 on works of a purely local character, not including the amount spent on school buildings and on works of national importance. The new arrangements introduced by the Local Government Act 1906 will not necessarily put an end to the direct expenditure on works of local interest by the central Government. The subjoined table shews the total amount so expended and the amount per head of population during each financial year from 1901 to 1907, inclusive, as well as the total amount up to the 30th June, 1900 :—

EXPENDITURE BY CENTRAL GOVERNMENT ON LOCAL WORKS, 1860 to 1907.

Year ended 30th June—	Country Districts.		Metropolitan District.		Total.	
	Expenditure.	Per Head of Estimated Population.	Expenditure.	Per Head of Estimated Population.	Expenditure.	Per Head of Estimated Population.
	£	£ s. d.	£	£ s. d.	£	£ s. d.
1860 to 1900	22,245,400	...	11,184,000	...	33,429,400	...
1901	1,061,600	1 4 6	604,400	1 4 9	1,666,000	1 4 7
1902	1,135,800	1 5 6	535,600	1 1 4	1,671,400	1 4 0
1903	839,700	1 0 0	509,400	0 18 8	1,349,100	0 19 2
1904	579,400	0 12 7	189,000	0 7 5	768,400	0 10 9
1905	456,800	0 9 8	184,500	0 7 1	641,300	0 8 9
1906	487,800	0 10 1	167,600	0 6 4	655,400	0 8 9
1907*	...	...	...	...	†887,700	0 11 7
Total ...	†26,806,500	...	†13,374,500	...	41,068,700	...

* Separate returns for metropolitan and country districts are not available. † Including expenditure from Public Works Fund. ‡ To the 30th June, 1906.

Out of the total expenditure £9,821,000 was spent on tramways, water supply, and sewerage works, which are sources of revenue.

8. **Sydney Metropolitan Board of Water Supply and Sewerage.**—Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems. For some years, however, it had been recognised that owing to the great increase in the population and size of the metropolitan area the water supply was inadequate and the sewerage system antiquated and inefficient. In 1867 a Royal Commission had been appointed to enquire into and report upon various schemes for supplying water to the city and suburbs, and in 1869 a report was sent in recommending the adoption of what is known as the "Upper Nepean Scheme." Another commission was appointed in 1875 to investigate different proposed sewerage systems, and two years later a report was presented containing certain recommendations which form the basis of the present system. After considerable discussion and further investigation an Act was passed in 1880 autho-

rising the schemes recommended by the two commissions being carried out. In the year 1888 the works had so far progressed that the Government, with the object of placing the administration of both water supply and sewerage systems throughout the county of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the county of Cumberland. The Board is under the general supervision of the Minister for Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

9. Metropolitan Water Supply.—In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly £1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded by the "Upper Nepean Scheme" referred to above, the management of which was transferred to the Metropolitan Board of Water Supply and Sewerage in May, 1888.

(i.) *The Cataract and Prospect Dams.* A work of great importance and magnitude in connection with the Sydney water supply—the Cataract Dam—was completed in 1907. Prior to the construction of this dam, the system had been weak in the matter of storage, the only reservoir of any importance being that at Prospect, which was formed by the construction of an earthen dam completed in 1890, and which contains a supply available by gravitation of 5,446,000,000 gallons of water. The Prospect reservoir is supplied from the unstored waters of the Nepean, Cataract, and Cordeaux rivers by means of tunnels and conduits capable of carrying 150,000,000 gallons a day; the combined catchment area of the three rivers extends to an area of 354 square miles, and is favourably situated with regard to the coastal rainfall. The whole of this area has been acquired by the Crown, and every precaution is exercised to guard against pollution of the supply. It was found, however, in 1902—almost the driest year on record—that the Prospect reservoir was insufficient for the needs of the increasing population of Sydney and suburbs during a dry period. The Government, therefore, decided to construct additional reservoirs on the rivers forming the sources of supply, in which would be stored as much of the flood water from the available catchment area of 345 square miles as would be necessary to meet the constantly increasing requirements of the metropolis.

The first of this series of reservoirs is the Cataract dam, which was completed in 1907, and of which the catchment area above the impounding dam is about fifty-four square miles. The water released from this reservoir flows down the bed of the Cataract River to a diversion weir at Broughton's Pass, where it enters the previously existing tunnel, and is conveyed thence by a system of open canals to the Prospect reservoir. In traversing the steep and rocky bed of Cataract River the water is thoroughly aerated. The total distance travelled by the water from Cataract to Sydney *via* Prospect is 66½ miles, of which 21½ miles represents the distance from Prospect to Sydney.

The principal dimensions of the Cataract and Prospect dams are given below:—

CATARACT AND PROSPECT DAMS.

Dam.	Height above Foundation.	Width at Top.	Thickness at Bottom.	Length.	Area of Reservoir.	Capacity of Reservoir.
	Feet.	Feet.	Feet.	Feet.	Acres.	Gallons.
Cataract ...	192	16½	150	811	2,400	21,411,500,000
Prospect ...	85½	30	*	7,300	1,266½	11,029,200,000†

* Not available. † Of which 5,527,000,000 gallons are available by gravitation.

The present population of Sydney and suburbs supplied with water from these works is estimated at 620,400. The winter consumption of water ranges from twenty to twenty

two million gallons a day, while the summer consumption and evaporation together approximate to thirty million gallons a day. As the combined available capacity of the Cataract and Prospect reservoirs amounts to nearly 32,500,000,000 gallons, the storage available represents a supply for about 1000 days without rainfall.

(ii.) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir through a valve tower by cast-iron pipes and thence proceeds by canal, five miles in length, to the Pipe Head Basin, situated $16\frac{1}{2}$ miles from Sydney. It is then conveyed for a further distance of five miles by two wrought-iron pipes, each six feet in diameter, to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. A by-pass is laid along the floor of the reservoir to enable both six-foot mains to deliver water to Sydney direct. At Potts' Hill the water passes through a screening tank constructed of copper-gauze screens, and thence proceeds towards the city in two 48-inch cast-iron mains. The first laid main is 48-inch as far as Petersham, whence it bifurcates, one branch (48-inch) leading to Petersham reservoir, the other (42-inch) to Crown Street reservoir, where the main pumping station is situated. The new 48-inch main, completed in 1893, continues of the same diameter direct to Crown Street. The main pumping plant consists of three pairs of compound high-duty pumping engines. The first set is capable of raising 400,000 gallons per hour to the Centennial Park reservoir, a height of 104 feet above the pumps, at which place a new covered reservoir, of a capacity of 17,000,000 gallons, has been constructed for the purpose of ensuring a larger bulk of water within the city limits; the second set is capable of raising 210,000 gallons per hour to the Woollahra reservoir, a height of 140 feet, and also of raising 200,000 gallons per hour to Waverley, a height of 220 feet above the pumps; while the third set is capable of raising 100,000 gallons per hour to the Waverley tanks.

(iii.) *Storage Reservoirs.* In connection with the water supply there are in all twenty-nine service reservoirs, with a total maximum capacity of 47,216,000 gallons. An auxiliary pumping station at Ryde has been erected for the supply of North Sydney. The station receives its supply either from Potts' Hill reservoir, through a 24-inch diameter pipe, or through a new 32-inch steel main from the Pipe Head Basin. Both these mains discharge into a reservoir, from which the water is pumped to a 1,000-gallon tank at Ryde, 234 feet above high-water mark, and by a continuation of the same main into two other tanks at Chatswood, at an elevation of 370 feet above high-water mark, and having a joint capacity of 3,000,000 gallons. A 9-inch main extends over the Parramatta and Iron Cove bridges to supply the heights of Balmain.

(iv.) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for each financial year from 1901 to 1908 :—

SYDNEY WATERWORKS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 to 1908.

Year Ended 30th June.	Revenue.	Working Expenses.	Total Capital Cost.	Capital Cost exclusive of Items on which Interest is not charged.	Percentage of Working Expenses to Revenue.	Percentage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after paying Working Expenses and Interest.
	£	£	£	£	%	%	£	£
1901	203,348	49,270	4,676,479	4,300,552	24.22	4.72	152,333	1,745
1902	223,201	57,360	4,800,585	4,423,203	25.69	5.04	162,262	3,579
1903	220,745	71,139	4,866,942	4,489,560	32.22	4.91	159,773	—10,167†
1904	222,827	58,929	4,922,038	4,544,656	26.44	4.90	163,314	584
1905	251,503	66,015	4,608,581	4,434,991	26.24	5.67	156,372	29,116
1906	270,263	64,487	4,847,978*	4,674,341	23.86	5.78	164,216	41,560
1907	275,591	67,593	5,059,559	4,902,463	24.52	5.62	176,170	31,828
1908	283,410	75,016	†	5,009,012	26.47	5.66	183,033	25,361

* As adjusted by the Committee appointed to investigate the capital accounts of the Board in May, 1904. † Represents a loss. ‡ Not available.

(v.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1908.* The following table gives various particulars shewing the increase in the supply of water in Sydney and suburbs from 1901 to 1908:—

**SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES AND POPULATION
SUPPLIED, 1901 to 1908.**

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Aver. Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Populat' n.	
	No.	No.	1000 Gallons.	1000 Gallons.	Gallons.	Gallons.	Miles.
1901	98,298	491,000	21,583	7,877,677	219	43.95	40
1902	101,966	509,000	21,906	7,995,822	205	43.03	44
1903	104,681	523,000	16,896	6,166,991	162	32.30	30
1904	109,191	546,000	18,690	6,840,549	171	34.23	14
1905	112,343	561,715	21,713	7,925,184	195	38.65	36
1906	116,202	581,010	22,393	8,173,555	192	38.54	60
1907	120,782	603,910	22,913	8,263,104	189	37.92	56
1908	124,083	620,400	24,500	8,967,135	197	39.50	*

* Not available.

Graphs relating to the water supply of Sydney for the past ten years may be found on page 999 hereinafter.

(vi.) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are certain other systems within the County of Cumberland managed by the Metropolitan Board. (a) The Richmond waterworks are entirely unconnected with the Sydney supply. The system consists of a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean, a 6-inch supply main, four miles in length, and five and one-eighth miles of 3-inch and 4-inch reticulation mains. (b) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles. The town, of which the population is about 3700, is well reticulated with 4-inch and 3-inch pipes. (c) The Manly waterworks are supplied by a special catchment area of about 1300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman, crossing Middle Harbour, with ball and socket pipes. There are two horizontal compound duplex pumps, each having a capacity of 1,000,000 gallons in seventeen hours. (d) The water-supply for the districts of Campbelltown, Camden and Narellan, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at Prospect.

10. Metropolitan Sewerage System.—The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage comprises the old and new systems. The old system was initiated by the City Commissioners in 1853, and continued by their successors, the present City Council, since their incorporation in 1857. The old system was designed on the principles of what is known as the "combined system," and comprises four main outfalls, with subsidiary sewers along the principal streets; these, in turn, receive the reticulation sewers of the minor thoroughfares. The four main outfalls discharged directly into the harbour, and the consequent pollution of the water and menace to public health led to the appointment of a commission to enquire into the best means of diverting the sewage from the harbour, and of disposing of it when thus diverted. The new intercepting system is the outcome of the labours of that commission. At the time of the transfer, in 1889, of the original sewerage works to the Metropolitan Board there were 70½ miles of old city sewers in existence. The new system

adopted is on the lines of the partially "separate system," and intercepts all sewage from the gravitation zone—i.e., from above a contour line about forty feet above high-water mark; while the sewage from the low level areas—i.e., from below that contour line, is eventually pumped into the gravitation sewers. The new scheme provides for two main outfalls, (a) the northern, and (b) the southern.

(i.) *The Northern System* discharges into the Pacific Ocean, and will, when the low-level systems are complete, take all sewage previously discharged into the harbour. The discharge is near Bondi, and at this place a large chamber has been constructed in the sandstone rock. From this chamber two channels bifurcate, so as to ensure a free discharge during either northerly, easterly, or southerly gales, while above the chamber a shaft has been erected for ventilation and escape of air when the sea breaks into the discharge tunnels. The northern system receives sewage from the City, Waverley, Bondi, Woollahra, Paddington, Elizabeth Bay, Double Bay, Darling Point, Rushcutters' Bay, the Glebe, and portions of Annandale, Leichhardt, and Balmain. Stormwater channels have also been constructed at various points to carry off the superfluous water after heavy rainfalls. The work in connection with the whole of the northern system was carried through varying formations; in some instances the stratum was indurated sandstone, in others shale, clay, and water-charged driftsand. Concrete enters largely into the constructional works, the lining of rock tunnels being principally bluestone concrete rendered with cement mortar, and wherever the outfall sewer crossed natural creeks or water-courses offlet and scour valves have been provided.

(iii.) *The Southern System* has its discharge into the sewage farm near Botany Bay, and passes from the main outfall into the screening chambers of the inlet house. The chambers, which intercept all extraneous matter before the sewage passes to the syphon-well, are in duplicate and controlled by valves, so that when one series is in use the other is being cleared out. The silt caught on the screens is forced through a pipe by means of compressed air into a wrought-iron silt tank, from which it is distributed over the farm in trucks drawn by a small locomotive, while the sewage flows from the syphon-well along a main carrier, and is distributed by means of valves over the irrigation beds and settling tanks. A portion of the area of the sewage farm has been cultivated, and fair crops have been grown, but it is stated that some course of treatment is necessary for this particular class of sewage, which contains a large amount of grease from the boiling-down establishments, before it can be utilised for agricultural purposes. The southern main outfall receives the drainage from Alexandria, Waterloo, Erskineville, Newtown, and parts of the Surry Hills district.

(iii.) *The Western System.* In addition to the two main outfalls already mentioned a subsidiary outfall called the western outfall has recently been constructed to deal with the sewage of the western suburbs. This starts at a receiving chamber at one end of the sewage farm, and runs in an open channel across portion of the sewage farm to another receiving chamber. From this chamber it continues in 6 ft. circular triplicate sewers to a penstock chamber in Premier-street, Marrickville, being carried on aqueducts over low-lying ground. The latter chamber receives the sewage from the eastern, northern, and western branch sewers, and drains part of Marrickville, Petersham, Stanmore, Newtown, Leichhardt, Annandale, Camperdown, Summer Hill, Ashfield, Enfield, Burwood, Five Dock, and Concord.

(iv.) *Other Systems.* Another branch outfall has been constructed at Coogee, which discharges into the ocean and serves the districts of Randwick, Kensington, and Coogee. On the northern side of the city extensive works have been completed, and in the borough of North Sydney septic tanks were built in 1899 to deal with the sewage, while at Middle Harbour, Mosman, and Manly ample provision has been made for the sanitation of the districts.

(v.) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems during each year from 1901 to 1908:—

**SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST,
1901 TO 1908.**

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost.	Capital Cost, exclusive of Items on which Interest is not Charged.	Percentage of Expenditure to Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	£	%	%	£	£
1901	125,290	45,395	3,280,427	3,066,147	36.23	4.05	106,475	*—26,580
1902	135,441	45,884	3,396,582	3,182,302	33.87	4.25	111,035	*—21,478
1903	145,666	46,747	3,591,155	3,365,155	32.09	4.32	117,496	*—18,577
1904	156,274	44,458	3,763,234	3,562,741	28.44	4.38	124,819	*—13,003
1905	213,937	54,313	4,265,424	3,774,264	25.38	5.66	134,568	25,061
1906	220,629	55,368	4,330,397	3,828,495	25.09	5.76	134,527	30,734
1907	217,864	62,141	4,414,822	3,922,514	28.52	5.55	140,980	14,743
1908	216,258	64,020	†	4,053,591	29.60	5.33	148,142	4,096

* Represents a loss. † Not available.

(vi.) *Number of Houses Drained, Population, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for each year from 1901 to 1908:—

**SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION,
AND LENGTH OF SEWERS, 1901 to 1908.**

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1901 ...	75,416	370,000	515.62	25.91	194,667	450.0
1902 ...	82,644	413,000	550.40	27.37	236,855	552.0
1903 ...	78,620	400,000	588.38	37.27	239,767	595.0
1904 ...	82,215	410,000	610.73	38.76	252,977	614.0
1905 ...	85,958	430,000	630.42	44.71	256,535	621.7
1906 ...	88,881	444,405	656.84	44.82	264,255	636.0
1907 ...	91,940	456,670	684.38	46.15	281,885	654.0
1908 ...	94,735	470,000	724.37	46.94	286,000	684.0

11. The Hunter District Water Supply.—The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the works. This Board consists of seven members, of whom three are nominated by the Governor, one elected by the Newcastle Municipal Council, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following municipalities and incorporated areas are within the area of the Board's jurisdiction:—

Newcastle Division.—Adamstown, Argenton, Ash Island, Boolaroo, Carrington, Hamilton, Hexham, Holmesville, Lambton, Merewether, Minmi, Newcastle, Plattsburg, Wallsend, Waratah, and Wickham.

Maitland Division.—Abermain, Bolwarra, East Greta, Heddon Greta, Hinton, Homeville, Kurri Kurri, Lorn, East and West Maitland, Morpeth, Oakhampton, Pelaw Main, Rutherford, Stanford Merthyr, Telarah, and Weston.

(i.) *Description of Waterworks.* The water supply is pumped up from the Hunter River about a mile and a half from West Maitland, the engines being situated above

flood level on a hill about forty-four chains from the river. At the pumping station there is a settling tank of 1,390,500 gallons capacity, four filter beds, a clear water tank holding 589,500 gallons, and a storage reservoir of 172,408,100 gallons capacity. The filtered water is pumped from the clear water tank into two summit reservoirs, one of which is connected by a 10-inch cast-iron main $4\frac{1}{2}$ miles in length, and supplies East and West Maitland, Morpeth, and Maitland, while the other is fed by two rising mains, one riveted steel pipe 20 $\frac{3}{4}$ in. diameter, and a 15-inch cast-iron main, $5\frac{1}{2}$ miles long, and supplies the other districts under the control of the Board. In seven of these districts reservoirs having a total capacity of nearly 4,000,000 gallons are supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine on the roof of the Newcastle reservoir.

(ii.) *Capital Cost, Revenue, and Expenditure, 1901 to 1907.* By the Act of 1892 referred to, above and an Amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at 3 $\frac{1}{2}$ per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. In the subjoined table particulars are given as to the capital cost, revenue, and expenditure, and also as to the number of houses and population supplied for each financial year from 1901 to 1907, inclusive:—

THE HUNTER DISTRICT WATER SUPPLY BOARD, CAPITAL COST, REVENUE, EXPENDITURE, NUMBER OF HOUSES, AND POPULATION SERVED, 1901 to 1907.

Year ended 30th June.	Revenue.	Working Expenses (including Interest).	Capital Cost.	Houses Supplied.	Estimated Population Served.	Supply.	
						Daily Average.	Total.
	£	£	£	No.	No.	1000 Gallons.	1000 Gallons.
1901 ...	27,405	30,948	485,835	9,086	45,400	1,005	366,889
1902 ...	29,558	32,109	494,644	9,875	49,400	1,119	408,508
1903 ...	31,102	32,217	500,784	10,522	52,600	1,113	406,172
1904 ...	31,360	32,361	515,565	11,100	55,500	1,093	399,954
1905 ...	34,486	33,714	533,270	12,167	60,800	1,266	461,936
1906 ...	40,801	34,801	544,798	12,968	64,800	1,479	539,655
1907 ...	41,776	²	544,798	13,569	67,845	1,479	539,965

1. Based upon statement referred by the Minister for Works to the Board for report. The debt has not yet been finally determined. 2. Not available.

The average daily consumption of water for all purposes per inhabitant was 21.80 gallons during the year 1907, as against 22.80 gallons during the previous year.

The operations of the Hunter District Board are at present entirely confined to water supply, but a sewerage scheme is in course of construction by the Public Works Department, and when completed will be handed over to the Board.

12. Water Supply and Sewerage in Country Towns.—With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed. Under this Act the amount for carrying out the works is advanced by the State, and the municipality has the option of undertaking the construction of the works, failing which the Government undertakes the duty. Municipalities which avail themselves of the provisions of the Act are empowered to levy a rate for each service not exceeding a maximum of 5 per cent. on the assessed value of land and tenements, in addition to the ordinary municipal rates. The original Act, as amended in 1894 and in 1905, provides that the sum advanced, with interest at 4 per cent. per annum, must be repaid by a maximum number of 100 yearly repayments, and also provides for the issue of licenses to workmen, for the recovery of rates and for making by-laws for the assessment of lands and other purposes.

(i.) *Waterworks.* Up to the 30th June, 1908, forty country municipalities had availed themselves of the privileges of the Act as regards waterworks, all of which at that date had been completed and handed over by the Government. The total amount expended on these works was £726,898, and the total of the sums payable annually for a period of 100 years was £26,637, including interest at the rate of $3\frac{1}{2}$ per cent., the first repayments having become due at various dates ranging from the end of the year 1893 to the end of 1904. In the calculation of these repayments the interest on the expenditure has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted.

(a) Fifteen municipalities have constructed works out of their own resources, and of these seven have also new works constructed by the Government. The estimated values of the works constructed by the municipalities on the 6th February, 1908, were £73,712.

(b) The waterworks at Broken Hill and Silverton were constructed by a private company under a Special Act of Parliament passed in 1888, but a scheme for the supply of Broken Hill is now being carried out by the Government.

(ii.) *Sewerage Works.* Up to February, 1908, twenty-three municipalities had constructed sewerage works. Two of these municipal works (Ashfield and Strathfield) are now under the control of the Metropolitan Board; the value of the remaining twenty-one works was £54,169 in February, 1908.

13. Gas and Electric Lighting Works.—Under the old Municipalities Acts municipal councils were authorised to construct works for public lighting, and were empowered to provide private consumers with gas, but electric lighting schemes could not be carried out excepting under the authority of a special Act. Under the Local Government Act 1906 the duty of lighting streets, roads, and public places is imposed on the councils, who may, if they desire, acquire power to construct and maintain works for the supply of electricity. In February, 1908, there were twenty-eight municipal gas-works in New South Wales, the value of the plant being £197,344; of these three were acetylene gas plants valued at £480. At the same date seven municipalities—Sydney, Redfern, Broken Hill, Newcastle, Penrith, Tamworth, and Young—had erected electric-lighting plants, the total value of which was £499,402. Of this sum £421,702 had been spent on the city of Sydney electric-light plant, further particulars of which are given below.

(i.) *Gas Lighting.* There are three private companies which supply gas for public and private lighting within the metropolitan area of Sydney, viz., the Australian Gas Light Company, the North Shore Gas Company, and the Manly Gas, Light, and Coal Company. Returns for the North Shore Company are not available. Gas was first used for public lighting in Sydney in 1841.

The following statement gives particulars of the supply of gas for lighting purposes (exclusive of the North Shore Company) for the year 1907:—

SYDNEY.—PUBLIC LIGHTING, GAS, 1907.

Coal used* ...	... Tons	206,319	<i>Capital Cost</i> —		
Gas manufactured	cub. ft.	2,319,498,000	Land and buildings	... £321,871	
Gas sold	cub. ft.	2,130,946,000	Plant and machinery	... £1,199,184	
Number of customers	...	81,266	Total	... £1,521,055	
Number of employés	...	1,384	<i>Revenue</i> —		
			From sale of gas	... £427,535	
			From sale of bye-products	... 53,433	
			From other sources	... 14,154	
			Total	... £495,122	
			<i>Expenditure</i>	... £372,370	

* Including shale-oil equivalent to tons of coal.

(ii. *Electric Lighting.* In Sydney there are a number of electric light and power undertakings under the control of various authorities, viz., the Commissioners for Railways and Tramways, local authorities, and private companies.

(a) *Railways and Tramways Electric Power and Lighting Plants.* There are three central stations under the control of the Commissioners. The supply of current for public and private lighting is, however, only on a comparatively small scale, and is incidental to the business of the Railway Department or the maintenance of its buildings. The supply of current for motive power purposes is on a large scale, but is confined to public departments, of which the largest consumer is the Board of Water Supply and Sewerage, to whom current has been supplied since 1898. Among the services for which current is generated and supplied by the Commissioners are the following:—Tramways and tramway buildings, railway and tramway workshop motors, lighting Sydney station and yard, coal and grain elevators, sewerage pumping, operating swing bridges, lighting coaling wharves and other places. *The Ultimo Power House* is used chiefly for the supply of power to the city and to portion of the suburban tramway systems (see pp. 742-4 *ante*). The direct current plant consists of four generators of 850-kilowatt capacity, supplying current at 600 volts; the alternating current plant consists of four 1500-kilowatt generators and one 1500-kilowatt turbo-alternator, 3-phase system, 25 cycles, 6600 volts. The high-tension current is transformed to 375 volts 3-phase alternating current, which is converted to direct current at 600 volts by means of rotary converters. Current was first supplied in December, 1898. *The Bullock Island Electric Light Plant* has a capacity of 40 kilowatts (125 volt) direct current, and 150 kilowatts (3-phase, 50 cycles, 2000 volts) alternating current. *The Clyde Railway Yards Plant* has a capacity of 36 kilowatts direct current.

(b) *The City of Sydney Electricity Supply Undertaking* is under the control of the City Council. The central power house is in Pyrmont and the plant installed generates 3-phase alternating current, which is transmitted at 5000 volts to sub-stations. The total capacity of the generators is 3500 kilowatts. The current for lighting the centre portion of the city is converted at two sub-stations to continuous current at 240 and 480 volts on a three-wire network, and for lighting the outlying districts is transformed at other sub-stations for distribution on a four-wire 3-phase alternating current network of 240 and 415 volts, the periodicity being 50 complete cycles per second. The districts served comprise the city, Paddington, Oxford-street area, Glenmore-road area, Camperdown, Missenden-road and Bridge-road areas. There are altogether nearly 86 miles of feeders and distributors. Current was first supplied in July, 1904, since which time great progress has been made and electric lights have been installed in all the public parks and the more important streets and roads.

(c) *The Redfern Electrical Works* are operated by the Municipal Council of Redfern. The total capacity of the plant is 550 kilowatts (single phase, alternating current) at 1100 volts, which is transformed to 110 volts for lighting. Current was first supplied in 1892 for lighting, and in 1905 for motive purposes.

(d) *The Sydney Harbour Trust* run electric light stations at Circular Quay, Napoleon-street, and Cowper Wharf. The total capacity of the generators is 80 kilowatts; there are about eleven miles of overhead direct current cable and two miles of submarine cable. The district supplied comprises the Circular Quay, Darling Harbour, and Woolloomooloo. Current was first supplied in February, 1901.

- (e) *The Oxford Street Electric Lighting Station* is worked by a private company and has a capacity of 320 kilowatts. Direct current is generated and was first supplied in 1898.

The subjoined statement gives particulars, so far as available, for the year 1907. Particulars of works under the control of the Railway and Tramway Commissioners are not included in this statement.

SYDNEY ELECTRIC LIGHT STATIONS, 1907.*

Units sold ° 4,317,600†	Revenue—		
Arc lamps connected ... 947‡	From sale of current	£43,588	
Incandescent lamps connected 65,000	Other 	5,825	
Capital cost £277,439			£49,413
	Expenditure 		£34,074

* Exclusive of works under the control of the Commissioners for Railways and Tramways.

† Exclusive of units supplied by the Redfern works. ‡ Exclusive of private lamps connected with City Council's supply.

14. **Fire Brigade Boards.**—Under the provisions of the Fire Brigades Act of 1902, which repealed the Act of 1884, a Metropolitan Fire Brigade Board and forty-one country boards have been established. The expense incurred in maintaining the metropolitan brigade is shared equally by the Government, the municipalities within the metropolitan area, and the various fire insurance companies. The country boards also are subsidised by the Government, the municipalities interested, and the insurance companies.

(i.) *The Metropolitan Fire Brigade Board* consists of six members, viz.—the chairman, appointed by the Government, and five elected members, one of whom is appointed by the Municipal Council of Sydney, one by the other municipalities within the proclaimed area, two by the fire insurance companies, and one by the volunteer fire companies. The municipalities contribute *pro rata* to the assessed value of ratable property in their respective districts, and the fire insurance companies proportionately to the net risks held on properties within the metropolitan district. During the year 1907 the marine insurance companies were for the first time required to contribute on account of the risks in connection with their marine policies. Sydney Harbour is outside the jurisdiction of the Board, but by an agreement entered into in October, 1905, between the Harbour Trust and the Fire Brigades Board it is provided that in all cases of fire occurring on board any vessel in the port, the Trust's brigade shall work under the direction of the superintendent of fire brigades. The Trust possesses two vessels fitted with fire-fighting appliances; these vessels are always under steam, and in readiness for any emergency. There are nineteen stations belonging to the metropolitan brigade, employing in all 192 firemen; telephones connected with these stations are placed in fire-alarm boxes in the important localities of the city and suburbs. At the end of the year 1907 there were 309 telephone fire alarms. There are also twenty-one volunteer fire companies within the metropolitan area, having 196 firemen on their rolls; these companies are registered at the offices of the Board and subject to the inspection and orders of the superintendent of the metropolitan brigade. During the year 1907 there were 757 fire alarms recorded by the Metropolitan Brigade; false alarms accounted for 108 calls, chimney fires 13, and other fires 636.

(ii.) *Receipts and Disbursements of Metropolitan Board with Total Amounts at Risk, 1902 to 1907.* The subjoined table shews the actual receipts and disbursements of the Metropolitan Board, and also the total amounts of risks held by the insurance companies within the metropolitan area for each year from 1902 to 1907, inclusive :—

SYDNEY METROPOLITAN FIRE BRIGADES BOARD.—RECEIPTS AND DISBURSEMENTS, ALSO TOTAL AMOUNTS AT RISK, 1902 to 1907.

Year.	Receipts.					Disbursements.	Net Risks.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From other Sources.	Total.		
	£	£	£	£	£	£	£
1902 ...	10,200	10,281	10,235	1,981	32,697	37,128	71,750,461
1903 ...	15,150	15,323	15,150	2,498	48,121	42,055	73,083,028
1904 ...	14,000	13,942	14,000	3,293	45,235	45,235	75,147,807
1905 ...	14,300	14,147	14,300	6,395	49,142	49,142	78,108,749
1906 ...	14,700	15,145	14,700	6,959	51,504	51,504	81,364,129
1907 ...	15,650	15,646	15,700	2,722	49,718	50,193	86,563,300

(iii.) *Country Fire Brigade Boards.* Forty-one country Boards have been established under the Act. These Boards are entitled to receive subsidies from the Government. Owing to an ambiguous clause in the statute the insurance companies and municipalities do not always consider themselves called upon to contribute to the expense of maintenance of the brigades as defined by the Act. In addition to the Boards constituted under the Act there were at the end of the year 1906 seventy-six country fire brigades in existence, towards the support of which the several municipalities generally contribute. In many country districts volunteer fire brigades have been established for the purpose of dealing with bush fires.

15. **Sydney Harbour Trust.**—The establishment of this Trust was the direct outcome of the outbreak of bubonic plague in the port of Sydney in the early part of the year 1900. It was proved that this disease was due to the introduction of plague-stricken rats in vessels arriving from ports in which the disease had made its appearance. As a consequence the whole of the foreshores of the harbour, together with certain adjoining wharves, stores, dwelling houses, and other properties, were vested in a body of trustees. The Trust was established by an Act which came into force on the 11th February, 1901. Under this Act an independent body of three Commissioners was created for the purpose of administering the affairs of the harbour and of fostering its interests, each commissioner being entitled to hold office for seven years, subject to certain conditions. This Board of Commissioners is invested with the exclusive control of the port and shipping, lighthouses, beacons, buoys, wharves, and docks (with the exception of wharves and docks constructed on land which has been alienated from the Crown), in Sydney Harbour, and is empowered to levy certain tolls, dues, rates, rents, and charges, and to resume or purchase lands and buildings. Prior to the establishment of the Trust, the extensive foreshores of the port offered opportunities to private individuals of acquiring water frontages, which enabled them to participate in the revenue to be derived from the wharfage and tonnage rates as prescribed by the various Acts. This alienation of the water frontages was in return for comparatively small payments. In effect this deprived the Crown of an annual revenue which, under other circumstances, might have been applied to the maintenance of the port. One of the greatest changes made by the Sydney Harbour Trust Act was the alteration of the basis upon which wharfage is charged, so that goods which do not use the wharf, but are lightered overside, are subject to wharfage. The Act embodied the wharfage schedule appended to the Wharfage and Tonnage Rates Act of 1880, by which the inward rates were fixed at one shilling and eightpence per ton, and the outward at tenpence; but it did not provide for any reduced rate for transhipment goods arriving from overseas as had previously been allowed,

although it gave the Commissioners power to make or to recommend certain exemptions and to increase the inward wharfrage to three shillings per ton measurement, or to four shillings per ton dead-weight. During the year 1901 the Commissioners recommended the Government to increase the inward rates to two shillings and sixpence per ton and to abolish outward wharfrage, and these recommendations were duly endorsed by the Executive Council. Liberal concessions were also made with regard to transhipment goods arriving from overseas. All goods produced or manufactured within the State of New South Wales were exempt from wharfrage rates until the Sydney Harbour Rates Act 1904 was passed. Under this Act a schedule of wharfrage charges was provided for, a small charge of fivepence per ton being imposed on all goods transhipped; important amendments were also made in the old tonnage rates charges (which had been in existence since 1880), with the result that many vessels which previously escaped payment have now to pay a fair charge for the use made of the wharfrage accommodation provided by the Trust. Considerable improvements have been made by the Commissioners in the wharfrage accommodation of the port and in the sanitary condition of the area vested in the Trust by the construction of new jetties, sheds, offices, and waiting rooms; by dredging and by preventing the pollution of the waters of the port; by opening up new roads; and by taking means to prevent rats and other vermin from finding a harbourage in the produce stores and in the vicinity of the wharves.

(i.) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shews the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries.

SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST, AND BALANCE, 1901 to 1908.

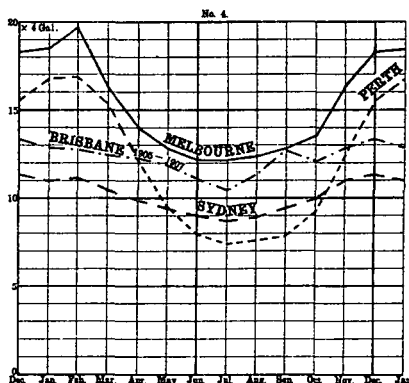
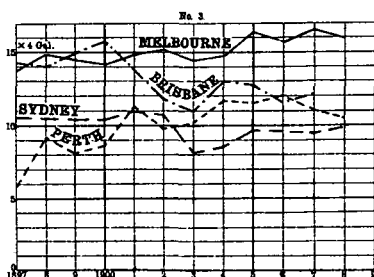
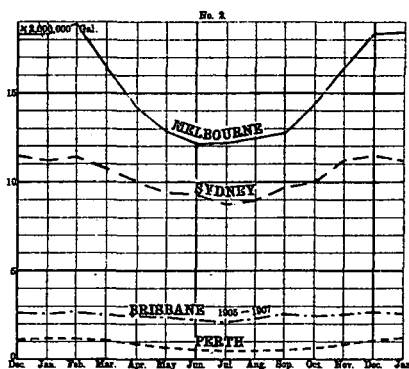
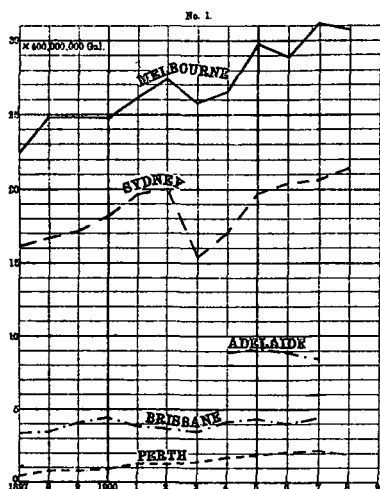
Year ended the 30th June—	Revenue.				Expenditure.	Total Capital Debt.†	Interest.‡	Balance.§
	Wharfrage Rates.	Tonnage Rates.	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901* ...	42,841	3,208	12,326	58,375	9,983	...	...	...
1902 ...	127,197	9,824	82,626	219,647	75,692	...	...	...
1903 ...	147,718	3,762	104,665	256,145	82,185	...	...	...
1904 ...	117,214	5,715	138,748	261,677	80,032	5,091,372	180,257	||—2,612
1905 ...	111,891	7,076	134,614	253,581	73,845	5,112,194	182,962	||—7,226
1906 ...	143,625	6,935	120,129	270,689	76,304	5,155,289	180,951	9,434
1907 ...	163,896	11,364	122,682	297,942	78,714	5,137,646	181,531	33,697
1908 ...	183,371	12,610	131,544	327,525	87,034	5,227,360	187,907	48,584

* For the period from 11th February to the 30th June, 1901. † Not determined until the year 1904. ‡ The amount of interest has been computed by taking the rate of interest on the total capital debt of the State. § After deducting expenditure, interest, and also £4000 per annum for Commissioners' salaries. || Represents a loss.

The revenue for the year 1907-8 shews an increase of £29,583, equal to 9.95 per cent., and is the highest attained since the formation of the Trust. After allowing for Commissioners' salaries, etc., the net revenue was £236,491, which is equivalent to a return of £4 12s. per cent. on the interest-bearing portion of the capital debt, namely, £5,145,324.

(ii.) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the five dredges and the six tug boats owned by the Trust:—

GRAPHS SHEWING CONSUMPTION OF WATER IN METROPOLITAN AREAS.—
MELBOURNE, SYDNEY, BRISBANE, AND PERTH, 1897 TO 1908.



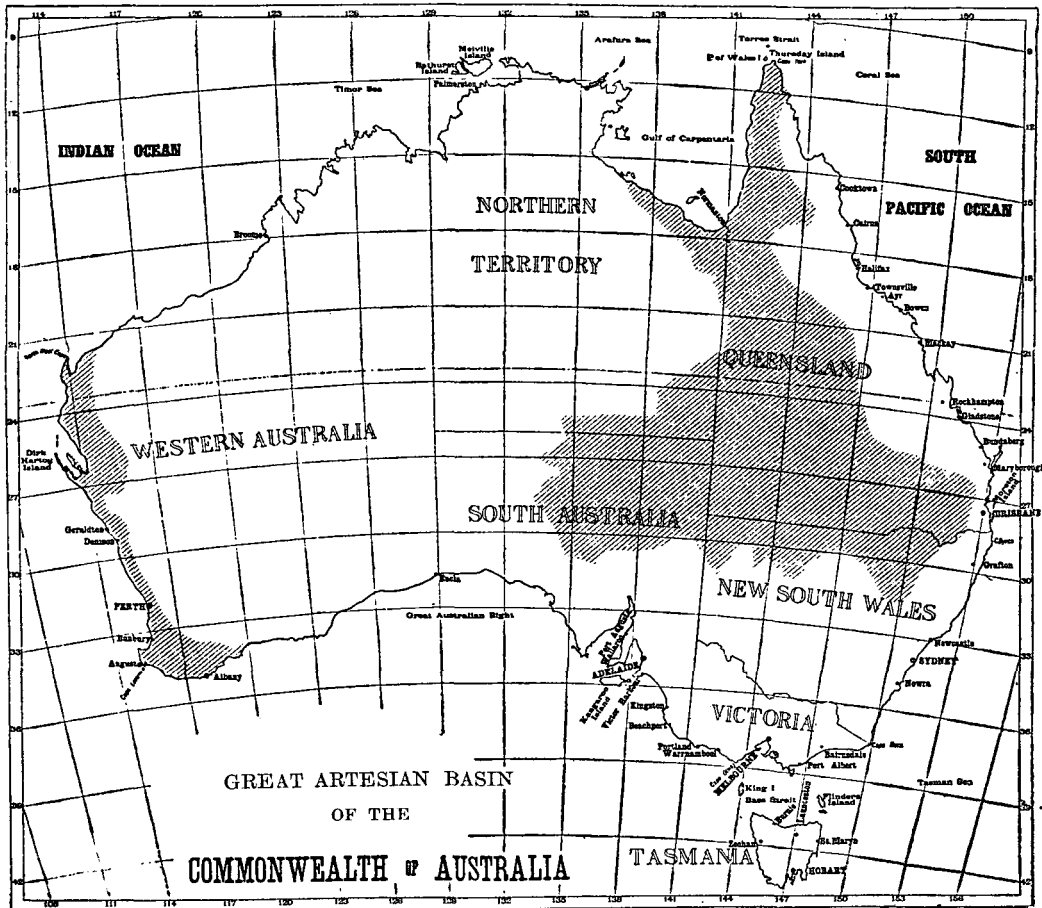
EXPLANATION OF GRAPHS.—No. 1.—Total annual consumption of water in metropolitan area, 1897 to periods shown on graph. In the Adelaide water districts there are no governing meters; the quantities shown are as recorded by gaugings taken at the reservoirs and include evaporation and absorption. The base of each small rectangle represents an interval of one year, and the vertical height represents 400,000,000 gallons.

No. 2.—Average daily consumption of water in metropolitan area during each month of the year. (Mean of period 1897 to 1908.) The base of each small rectangle represents an interval of one month, and the vertical height represents 2,000,000 gallons.

No. 3.—Average daily consumption of water per head of population in metropolitan area, 1897 to 1908. The base of each small rectangle represents an interval of one year, and the vertical height represents 4 gallons.

No. 4.—Average daily consumption of water per head of population in metropolitan area during each month of the year. (Mean of period 1897 to 1908.) The base of each small rectangle represents an interval of one month, and the vertical height represents 4 gallons.

MAP SHEWING THE POSITION AND EXTENT OF THE "GREAT AUSTRALIAN
ARTESIAN BASIN."



The area occupied by this basin, coloured chocolate on map, is approximately 644,000 square miles, of which 376,000 square miles are in Queensland, 110,000 square miles in South Australia, 83,000 square miles in New South Wales, and 75,000 square miles in Western Australia.

SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING,

1901 TO 1908.

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1901* ...	317,500	3,696	2.79	29,277	2,849	23.35
1902† ...	320,740	5,112	3.75	25,993	2,825	26.08
1903 ...	783,374	12,486	3.82	65,444	8,037	29.47
1904 ...	629,792	11,829	4.50	55,216	7,404	32.18
1905 ...	490,045	8,808	4.31	46,542	5,378	27.73
1906 ...	489,610	8,311	4.08	39,301	5,207	31.78
1907 ...	482,474	8,087	4.02	45,617	5,392	28.37
1908 ...	504,760	8,915	4.24	45,485	6,940	36.62

* From the 11th February to the 31st December, 1901. † For the six months ended 30th June, 1902.

§ 3. Victoria.

1. **Development of Types of Local Authorities.**—In Victoria there are now two types of municipal institutions, (a) boroughs, including cities and towns, and (b) shires, and although they are now dealt with by the same Act their origin was distinct, and in the early days of their development they were provided for by independent enactments. Melbourne and Geelong, the latter of which was for many years the second largest town in the State, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local Government Acts except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1847; Geelong was incorporated as a town in 1849.

(i.) *Institution of Road Districts.* The Imperial Act of 1842, under which the Governor of New South Wales was authorised to form districts for the purpose of self-government, has already been referred to. This Act was succeeded by the Act of 1850, under which the district of Port Phillip was separated from New South Wales, and which provided that the proclamation of districts (under the Act of 1842) which had not been followed by an election of councillors should be void, and where councillors had been elected the Letters Patent forming such districts could be revoked by petition. For the future such districts were only to be incorporated upon petition of the inhabitants to the Governor, who was authorised to establish elective district councils, with power to frame by-laws for making and maintaining roads and bridges, establishing schools, and levying local tolls and rates. The necessity for a more comprehensive scheme of local government soon became apparent, owing to the increase of settlement on the land which followed the excitement of the gold rush, and in 1852 two committees of the Legislative Council were appointed, one to enquire into the operations of district councils which had been established, the other to report generally upon the condition of the roads and bridges in the State, and as to how the funds for their construction and maintenance could be best expended. The report of the latter committee was of considerable value, because it formed the basis of the first Victorian Act which provided a scheme for the local government of country districts, namely the Roads Act of 1853. Under this Act a distinction was made between main roads and parish or cross roads. The Governor was authorised to declare any part of the colony to be a road district; main roads were placed under the

care of a central Road Board with an Inspector-General and staff, while parish roads were to be made and maintained by the district councils, who were empowered to levy rates for the purpose.

(ii.) *Establishment of Shires and Extinction of Road Districts.* The Act of 1853 continued in force for ten years, when it was repealed, and its provisions amended and consolidated in the Road Districts and Shires Act 1863. By this Act the central Road Board was abolished, and the establishment of shires and shire councils was authorised. Any district having an area of not less than 100 square miles and a revenue from general rates of not less than £1000 might be incorporated as a shire, the duties and powers of which were the same as those of the districts, but additional privileges, such as power to raise loans and to grant licenses, were conferred upon the shires. Provision was also made for the regulation of the proceedings of shire councils, the preparation of voters' lists, elections, accounts, revenue, rates, auditors, and other matters, and these provisions have been substantially continued in later Acts. The result of the Act of 1863 was that the road districts were gradually developed into or were absorbed by the shires, and the next important measure which was passed, the Shires Statute Act of 1869, recognised only the latter, and with respect to shires retained the principal features of the preceding Act.

(iii.) *Constitution of Urban Municipal Districts and Boroughs.* In the meantime suburban districts and country towns were growing up, and in the year 1854 an Act was passed for the establishment of municipal boroughs in Victoria. Provision was made whereby any district having an area of not more than nine square miles, no part of which was more than six miles from any other part, and having a population of not less than 300, might, on petition, be constituted a municipal district. This Act, which thus originated those municipalities now known as boroughs (including cities and towns), was amended and repealed by the Municipal Institutions Consolidating and Amendment Act 1863, which re-enacted the principal features of the previous Act. These features are practically the same as those which now prevail with regard to boroughs. The Act of 1863 was in turn amended from time to time, and the law relating to boroughs was consolidated in 1869 by the Boroughs Statute Act.

(iv.) *Legislation applying to all Types of Municipalities.* Both the Shires Statute Act and the Boroughs Statute Act of 1869 were repealed and their provisions amended and consolidated by the Local Government Act 1874, which, after further improvements and extensions, was in turn consolidated by the Local Government Act 1890, which was itself amended from time to time. In 1899 a select committee of the Legislative Assembly was appointed to enquire into and to report upon the working of the Act of 1890 and to suggest amendments required in the law relating to local government. This committee was subsequently constituted a Royal Commission, and in 1902 issued a report to which was appended the draft bill which became the Local Government Act 1903, the provisions of which now regulate the working of municipalities in the State.

2. Local Government Systems now in Operation.—Local government is now administered under the Act of 1903 throughout the whole of the State, with the exception of about 600 square miles in the mountainous parts of the county of Wonnangatta, and the whole of French Island.

(i.) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

(a) *Shires.* Any part of the State containing ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £1500 may be constituted a shire upon petition of at least fifty inhabitants.

(b) *Boroughs.* Any part of the State, not exceeding in area nine square miles, and having no point distant more than six miles from any other point, and containing a population of not less than 500 and ratable property yielding, upon

a rate not exceeding one shilling in the pound, a sum of £300, may be constituted a borough upon petition of at least 250 resident householders. Any borough having during the preceding financial year a revenue of £10,000 may be declared a town, or having a revenue of £20,000 may be declared a city upon petition under the common seal of such borough. Provision is also made for severing any part of a municipality and annexing the same to an adjoining municipality; for dividing municipalities into any number of subdivisions not exceeding eight; and for uniting two or more boroughs which form one continuous area so as to form one borough.

- (c) *Townships.* Upon petition signed by not less than twenty-five ratepayers resident in any portion not exceeding three square miles in extent of any shire and distant more than ten miles from the boundaries of the city of Melbourne, the Governor may with the consent of the municipal council proclaim such portion a township.

(ii.) *The Municipal Council.* It is provided by the Act of 1903 that, in the case of existing municipalities, the council shall consist of the number of members assigned to it at the commencement of the Act, but, when the number of members is determined under the Act, such number shall be, in case the district is not subdivided, some multiple of three, not less than six nor more than twenty-four, and, in case such district is subdivided, the number produced by the return of three councillors for every subdivision. Every person liable to be rated in respect of property in the municipal district of the ratable value of £20 at the least is qualified to hold the office of councillor in any municipality, provided that no female, nor any undischarged bankrupt, nor a person attainted of treason or convicted of felony shall be so qualified. Other persons may also be disqualified on the ground of interest. Provision is made for the retirement of one-third of the councillors annually in rotation, and for the election and privileges of the chairman, who is styled the mayor of a borough and the president of a shire.

(ii.) *The Municipal Electorate.* Every person who on the 10th June in any year has attained the age of twenty-one years, and is liable to be rated in respect of property within a municipal district, in respect of which all rates made before the 10th March of the year have been paid, is entitled to be enrolled as a voter, but no person may be enrolled in respect of property rated under £5 a year, unless there is a house on the property, and he resides there. The occupier and the owner of any ratable property may not be both enrolled in respect thereof, the former having the right to be enrolled instead of the latter. Corporations liable to be rated may appoint not more than three persons to be enrolled in their place. Joint occupiers and owners, not exceeding three, are each entitled to be enrolled, and in case more than three persons are rated in respect of any property, those whose names stand first in order upon the rate last made or upon the last valuation and return are so entitled. All persons who are not entitled to be enrolled by reason solely of non-payment of rates may be placed on a separate voters' list, and for the purpose of enabling them to vote at elections of members for the State Parliament they may be included in the rolls of ratepaying electors therefor if duly qualified in other respects. Plurality of votes is allowed on the scale shewn in the following statement:—

VICTORIA.—PROPERTY QUALIFICATIONS FOR ENROLMENT AS MUNICIPAL VOTER.

Number of Votes.	Annual Ratable Value of Property.	
	Boroughs (including Cities and Towns).	Shires.
1	Under £50.	Under £25.
2	From £50 to £100.	From £25 to £75.
3	£100 and upwards.	£75 and upwards.

Voters' lists are prepared annually by collectors appointed for the purpose; provision is made for the revision of the lists, for the time and place of holding elections, for the nomination of candidates, for the application of the Voting by Post Act 1900; for the appointment of officers, and for the meetings and proceedings of councils.

(iv.) *Powers and Functions of Councils.* Municipal councils are empowered to make by-laws for a great number and variety of purposes, of which the most important are as follow:—The control and regulation of roads and streets, buildings, wharves, and public places, of nuisances, passenger vehicles, carters, boatmen, and porters; the regulation and maintenance of water-supply, sewerage, drainage, and lighting; the establishment and control of fairs and public sales, labour marts and offices; the preservation and management of commons and public reserves; the regulation of traffic and hoardings; the public health and the prevention of contagious or infectious diseases, and generally for maintaining the good rule and government of the municipality. Councils are authorised to undertake the supply of light, heat, or motive power for public or private purposes; they may construct and maintain tanks, dams, and reservoirs, and may provide public baths, markets, weigh-bridges, pounds, abattoirs, places of public recreation, and charitable institutions. One of the principal functions of the councils is to construct and maintain public highways, streets, bridges, ferries, and jetties within their respective localities. At the request of the council the provisions of the Act as to the maximum weight which it is permissible to carry on vehicles on any public road within the municipality may be made to apply by proclamation.

(v.) *Ratable Property.* All land, including buildings and improvements thereon, within a municipality, is ratable property, except the following:—Crown lands unoccupied or used for public purposes; land used exclusively for commons, mines, public worship, mechanics' institutes, public libraries, cemeteries, free primary schools, and charitable purposes; land vested in, in the occupation of, held in trust for, or under the control of any municipality, local governing body, or commissioners under the Rates Act; land vested in the Railway Commissioners, in the Minister of Public Instruction, in the Board of Land and Works, in the Commissioners of the Melbourne Harbour Trust, and in the Melbourne and Metropolitan Board of Works. The valuation of all property is computed at its net annual value, that is to say, at the rent at which the same might reasonably be expected to let from year to year, free of all usual tenants' rates, taxes, and cost of insurance, but no ratable property may be computed as of an annual value of less than 5 per cent. upon the fair capital value of the fee-simple thereof.

(vi.) *Rates.* The municipal councils are empowered to levy rates, which, together with grants and subsidies received from the Government, license fees, market dues, rents, tolls, and sanitary charges, form their chief sources of income. The rates which may be levied are of three kinds, namely—general, extra and separate rates.

(a) *General Rates* are levied at least once in every year, and must not exceed two shillings and sixpence in the pound of the net annual value, nor be less than sixpence in the pound of such value. Every general rate must be made for one year or half a year or such other period less than a year, but not less than three months, as the council thinks fit, and must be levied on the occupier of the property rated, or if there be no occupier, or if the occupier be the Crown or the Minister of Public Instruction, or a public or local body, then upon the owner of the property.

(b) *Extra Rates* may be levied in any municipal district which is subdivided equally in respect of all the ratable property within any one or more of the subdivisions, but cannot be levied except in accordance with the requisition of not less than two-thirds of the councillors returned by such sub-division. The amount of general and extra rates levied in any year must not exceed two shillings and sixpence in the pound of the net annual value.

- c) *Separate Rates* may be levied where it appears to the council that any works or undertakings authorised by the Act are for the special benefit of any particular portion of the municipal district, but may be made only upon petition signed by a majority of the occupiers and by at least one-third of the owners of the properties affected, and must be confirmed by order of the Governor-in-Council. Separate rates may be levied equally on all properties affected, or may be differential according to the benefits to be received by different properties, and the amount of the rate must be such as will, in the opinion of the council, suffice to provide for the payment of interest and periodical repayments of, or sinking fund for, the money borrowed on the security of such rate.

(vii.) *Borrowing Powers.* The council of every municipality may borrow money upon the credit of such municipality by the sale of debentures, either for the purpose of liquidating previous loans or for the purpose of constructing certain specified permanent works or undertakings, such as the construction, alteration, or enlargement of streets, roads, bridges, ferries, sewers, and drains; the construction and purchase of waterworks, electric light or gas works, abattoirs, markets, baths, pleasure grounds, libraries, museums, and places of public resort and recreation; the establishment of hospitals, asylums, and other buildings for charitable purposes; the destruction and disposal of refuse, and the purchase of land or any easement, term, right, or privilege in, over, or affecting land. The amount of money so borrowed at any time for permanent works must not exceed ten times the average income of the municipality for the three preceding years, and the amount borrowed in the case of any municipality already indebted must not exceed the difference obtained by subtracting from ten times such average income the balance remaining unpaid of any previous loans. The question as to whether any loan for the purpose of permanent works shall be incurred must be submitted to a poll of the ratepayers upon demand signed by any twenty persons whose names are inscribed on the municipal roll. The council of any municipality may, in addition to the borrowing powers mentioned above, borrow money for permanent works or undertakings on the security of its income, but not upon the credit of the municipality, by the issue of debentures or by a mortgage over such income. The amount of money so borrowed must not at any time exceed five times the average income of the municipality for the three preceding years. The income referred to does not include moneys derived from general, separate, or extra rates, special improvement charges, publicans' licenses, or endowment from the consolidated revenue fund. Temporary advances by way of overdraft of the current account may also be obtained, but must not at any time exceed one-half the prior year's revenue.

(viii.) *Endowment.* Under the Local Government Act 1874 an annual endowment of £310,000 was provided for the municipalities. This amount ceased to be payable in 1879, but a subsidy, amounting to £310,000, was voted by Parliament annually, and was increased year by year, until £450,000 was granted in 1889-90 and 1890-91. The Local Government Act 1891 authorised the payment of an annual endowment of £450,000, but this amount was reduced year by year to £50,000 in 1902, but was increased to £75,000 for the year 1906-7, and to £100,000 from the 1st July, 1907. For the purpose of distributing the endowment the shires are classified. Under the Municipal Endowment and Reclassification of Shires Act 1907, a new classification was adopted under which the amount of the endowment is to be allocated. In addition to the endowment of £75,000 (increased to £100,000 from the 1st July, 1907) the municipalities received from the Government during the financial year 1906-7 a sum of £87,804 out of the Licensing Act Fund as the equivalent for (a) fees for licenses, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the Licensing Act 1876. Under the Act of 1907 the endowment of £100,000 is payable in equal moieties in March and September of each year. No city or town is entitled to receive any part of the endowment. The distribution

amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ending on the preceding 30th September according to the following scale:—

VICTORIA.—ENDOWMENT OF BOROUGHS AND SHIRES, 1907-8.

To every Borough or 1st Class Shire, 3s. in the £	To every 4th Class Shire, 8s. in the £
„ „ 2nd Class Shire 5s. „ „	„ 5th „ 10s. „ „
„ „ 3rd „ „ 6s. „ „	„ 6th „ 12s. „ „

3. Boroughs and Shires.—Number, Population, and Value of Ratable Property, 1901 to 1908.—The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 to 1908, inclusive:—

VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 to 1908.

Financial Year.	Number of Municipalities.	Estimated Population.	Number of Ratepayers, (both sexes).	Estimated Number of Dwellings.	Estimated Value of Real Property.	
					Total.	Annual.

CITIES, TOWNS, AND BOROUGHS.

					£	£
1901	58	627,237	153,783	130,358	67,302,423	4,765,632
1902	60	*647,397	157,820	*134,465	77,289,493	5,223,282
1903	60	632,607	155,262	140,248	92,099,451	5,308,546
1904	60	652,658	158,691	142,352	93,376,880	5,366,477
1905	60	657,815	159,953	143,667	94,583,732	5,498,471
1906	†60	684,358	169,536	149,649	99,354,665	5,664,425
1907	60	695,192	171,909	151,833	100,801,295	5,779,231
1908	60	708,672	176,420	153,629	103,666,178	5,944,691

SHIRES.

					£	£
1901	150	571,683	159,128	122,645	106,839,331	5,771,865
1902	†148	*551,523	147,671	*118,538	107,812,500	5,661,805
1903	148	557,285	150,724	118,996	111,803,468	5,880,386
1904	148	556,350	152,204	121,643	115,766,850	6,071,353
1905	148	552,414	153,908	121,335	116,836,442	6,244,799
1906	†146	541,242	149,350	118,339	117,260,959	6,130,718
1907	146	565,739	151,869	120,114	121,797,646	6,395,094
1908	146	573,715	152,973	121,465	129,059,488	6,694,209

* Census figures. † The shires of Caulfield and Malvern were constituted boroughs in 1901. ‡ The shires of Coburg and Camberwell were constituted boroughs, and North Melbourne and Flemington were joined to City of Melbourne in 1905.

4. Municipal Assets and Liabilities, 1901 to 1907.—The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shews the amount of municipal assets for each financial year from 1901 to 1907, inclusive:—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 to 1907.

Items.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
ASSETS.							
	£	£	£	£	£	£	£
MUNICIPAL FUND—							
Uncollected rates ...	187,205	141,482	130,203	119,013	119,028	124,174	112,435
Other assets ...	122,581	153,490	166,753	168,107	168,737	184,380	196,048
LOAN FUND—							
(a) Sinking funds							
Amount at credit ...	675,310	697,019	654,281	680,989	701,503	740,382	772,662
Arrears due ...	1,391	1,175	2,033	4,352	4,459	1,341	3,616
(b) Unexpended balances	394,136	282,229	223,624	160,321	112,643	302,400	325,901
PROPERTY—							
Buildings, markets, etc.	2,507,441	2,470,460	2,449,762	2,495,101	2,530,858	2,573,017	2,697,701
Waterworks ...	197,675	210,367	226,220	226,084	234,461	221,548	223,687
Gasworks ...	63,732	61,592	60,820	68,744	65,760	60,510	66,269
Total ...	4,149,471	4,017,814	3,913,696	3,922,711	3,937,449	4,207,752	4,398,319
LIABILITIES.							
	£	£	£	£	£	£	£
MUNICIPAL FUND—							
Arrears due sink'g f'nds	1,021	1,175	2,033	4,352	4,459	1,341	3,616
Overdue interest ...	9,413	13,044	17,616	17,875	16,637	16,951	17,060
Bank overdrafts ...	157,046	143,236	107,090	89,825	90,660	89,370	94,825
Temp'y Govt. advances	20,901	17,604	13,310	8,058	4,018	694	...
Other liabilities ...	142,530	147,888	126,671	132,058	139,717	175,964	179,342
LOAN FUNDS—							
Loans outstanding	4,253,304	4,254,061	4,212,051	4,205,886	4,186,602	4,375,116	4,442,713
Due on loan contracts...	52,826	33,455	30,092	29,947	27,438	2,256	39,726
Total ...	4,637,041	4,615,463	4,508,863	4,488,081	4,469,531	4,661,692	4,777,282

5. Revenue and Expenditure of Municipalities, 1901 to 1907.—The following table shews the revenue from various sources, and the expenditure under various heads, of municipalities during each year from 1901 to 1907, inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1901 to 1907.

Items.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
SOURCES OF REVENUE.							
	£	£	£	£	£	£	£
Taxation							
Rates ...	722,346	784,810	765,910	808,082	802,253	836,024	887,580
Licenses ...	104,499	105,871	91,977	105,123	112,475	106,621	106,742
Dog fees ...	14,965	15,446	14,971	15,435	16,022	16,257	17,455
Market & weighbridge dues ...	49,623	58,113	52,522	52,772	55,259	56,939	57,190
Govt. endowments and grants	175,972	99,304	98,609	80,681	90,572	95,090	117,304
Contributions for streets, etc.	24,999	21,901	21,577	20,485	22,755	18,597	30,816
Sanitary charges ...	48,253	48,332	44,718	50,097	55,731	56,052	56,918
Rents ...	54,117	56,494	58,081	59,956	60,344	63,242	66,601
Other sources ...	89,210	110,263	130,697	117,759	129,810	139,470	163,825
Total ...	1,233,984	1,300,534	1,279,062	1,310,300	1,345,221	1,388,292	1,504,431
HEADS OF EXPENDITURE.							
	£	£	£	£	£	£	£
Salaries, etc. ...	139,270	139,174	135,730	138,884	136,066	141,438	147,933
Sanit'y w'k streetcleaning, etc.	132,542	131,847	125,535	126,219	131,378	135,466	134,632
Lighting ...	68,059	97,414	68,665	69,877	69,915	72,571	76,217
Fire brigades' contributions...	16,769	15,884	16,530	16,668	16,061	17,431	17,144
Public works (Construction	244,315	195,487	131,508	167,919	198,375	217,346	266,658
Formation of priv. streets, etc.	345,334	340,791	330,897	360,831	378,839	403,791	441,335
Redemption of loans ...	23,350	22,197	19,307	19,504	23,676	19,627	28,296
Interest on loans ...	27,745	32,015	50,146	43,959	55,866	49,483	54,936
Charities ...	197,810	195,186	193,638	191,310	186,439	188,111	196,967
Other expenditure ...	13,407	13,277	12,431	13,117	13,185	13,637	13,401
Total ...	1,330,004	1,295,726	1,198,229	1,290,748	1,343,743	1,377,649	1,534,473

6. **Number and Assessment of Properties Rated, 1905-6.**—The number of properties rated and the annual assessment thereon in cities, towns, boroughs, and shires, in the financial year 1905-6, were as follows :—

VICTORIA.—NUMBER AND ASSESSMENT OF PROPERTIES RATED, 1905-6.

Ratable Values.	Number of Properties Rated.			Assessment of Properties.		
	In Cities, Towns, and Boroughs.	In Shires.	Total.	In Cities, Towns, and Boroughs.	In Shires.	Total.
	No.	No.	No.	£	£	£
Under £25 ...	148,373	125,806	274,179	3,028,065	2,486,591	5,514,656
£25 to £50 ...	36,677	40,172	76,849			
£50 to £75 ...	8,428	12,151	20,579	766,858	1,231,471	1,998,329
£75 to £100 ...	3,585	6,745	10,330			
£100 to £200 ...	4,078	7,028	11,106	539,909	922,449	1,462,358
£200 to £300 ...	1,086	1,424	2,510			
£300 to £400 ...	470	510	980	1,329,593	1,490,207	2,819,800
£400 to £500 ...	242	288	530			
£500 and upwards	679	718	1,397			
Total ...	203,618	194,842	398,460	5,664,425	6,130,718	11,795,143

7. **The Melbourne and Metropolitan Board of Works.**—This Board was established by an Act passed at the end of the year 1890, and entered upon its duties in June, 1891. The Board consists of forty members, one of whom is a chairman elected every four years by the other members, the retiring chairman being eligible for re-election. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, and one each by the other suburban municipal councils. The district over which the Board exercises control consists of twenty cities, towns, and boroughs, and four shires, comprising a total area of 90,821 acres, and containing an estimated population on the 31st December, 1908, of 527,000. The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but was to supply the long called for and pressing want of a sewerage system for the metropolis. The plans and estimates of the cost of the metropolitan sewerage were originally prepared by an expert civil engineer from England, and were furnished to the Board on its creation. The plan recommended by the designer and selected by the Board's engineer-in-chief was estimated to cost £5,030,000, but this plan was modified by the engineer-in-chief, with the concurrence and assistance of the Board, so as to reduce the estimated cost to £3,451,000, and plans were made and the work carried out accordingly. The original plan and estimate contemplated only the construction of the main sewers, but this was altered by Parliament, which added the duty of constructing branch sewers and of treating right-of-ways as streets and sewerage them likewise, an obligation which added considerably to the original estimate. To carry out its work the Board is authorised to borrow £8,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1908, was £1,688,663, and for loans raised by the Board was £8,251,000. The Board is still empowered to borrow £1,000,271 before reaching the limit of its borrowing powers.

(i.) *Total Cost of Water Supply and Sewerage, 1853 to 1907-8.* The subjoined table shews the total expenditure on construction and maintenance of water supply and sewerage from 1853 to 1908. The figures given include proportion of salaries, law costs, advertising, travelling expenses, etc.:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 to 1908.

Period.	Water Supply.		Sewerage.			Total.
	Con- struction.	Main- tenance.	Con- struction.	Main- tenance.	Working Expenses.	
	£	£	£	£	£	£
1853 to 1890-1 ...	3,378,246	149,622	...	...	...	3,527,868
1890-1 to 1899-1900	322,627	146,678	3,026,162	*20,411	*21,286	3,537,164
1900-1 ...	14,330	18,445	280,973	13,287	11,240	338,275
1901-2 ...	16,053	20,786	302,460	10,906	13,430	363,635
1902-3 ...	10,412	21,480	311,615	12,047	14,495	370,049
1903-4 ...	8,649	20,765	293,602	12,696	13,860	349,572
1904-5 ...	1,391	16,105	425,137	4,750	21,929	469,312
1905-6 ...	16,562	15,539	340,386	5,242	23,338	401,067
1906-7 ...	25,119	17,731	277,820	4,652	21,180	346,502
1907-8 ...	33,058	23,004	262,148	4,075	31,149	353,434
Total	3,826,447	450,155	5,520,303	88,066	171,907	10,056,878

* From the 30th June, 1897, to the 30th June, 1900.

(ii.) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.* The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during each year from 1901 to 1908, inclusive:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 to 1907-8.

Particulars.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.
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ORDINARY RECEIPTS.

	£	£	£	£	£	£	£	£
Water supply	164,271	171,956	179,885	167,036	181,890	186,179	214,834	229,674
Sewerage	115,058	124,696	148,641	161,030	171,448	192,518	216,236	226,609
Live stock—Metropolitan farm	13,464	19,929	35,568	28,970	38,559	42,078	47,343	39,132
Interest ... { Water supply	82	17	17	19				129
{ Sewerage ...	15,512	17,448	18,605	25,037	26,988	23,785	20,635	16,562
Total	308,387	334,029	382,716	382,092	418,885	444,560	499,074	512,106

ORDINARY EXPENDITURE.

General management	35,225	33,621	33,993	32,513	31,081	31,484	31,095	33,267
Livestock—Metropolitan farm	19,415	16,702	25,718	23,345	23,985	29,050	47,376	41,536
Maintenance {	10,411	12,205	22,980	21,900	20,095	20,079	21,523	25,018
{ Sewerage	24,582	24,396	26,590	26,655	26,833	25,765	33,214	35,588
Interest ... {	104,069	102,670	102,959	104,114	101,909	102,081	101,628	101,044
{ New offices					932	932	932	
{ Sewerage	179,720	192,952	206,964	226,861	239,929	257,059	263,410	270,180
Total ...	373,952	392,546	419,144	435,478	444,854	469,450	490,078	506,583

LOAN RECEIPTS.

Water supply	...	2,636	1,636	2,855	2,103	1,583	1,937	2,492	6,725
Sewerage	...	76,964	88,425	87,664	88,164	96,588	84,020	79,088	72,415
Proceeds of loans	...	645,148	396,238	722,641	950,927	189,696	346,519	395,085	307,500
Miscellaneous	...	...	...	215	152	3,508	16,204	12,332	14,865
Total	...	724,748	486,209	813,375	1,041,346	291,375	448,680	488,997	401,505

Particulars.	1900-1.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.
LOAN EXPENDITURE.								
Water supply construction ...	16,332	17,058	12,925	10,457	8,990	16,045	26,023	40,183
Sewerage construction ...	394,774	410,760	409,232	395,104	472,384	414,310	336,799	309,194
Expenses in floating and redemption of loans ...	280,457	5,200	25,773	528,561	7,360	67,533	160,163	34
Miscellaneous ...	3,533	*4,293	19,060	20,116	3,417	12,780	8,670	16,655
Total ...	695,096	428,725	466,980	954,238	492,151	510,668	531,655	368,066

* Excess of Stock Distribution over Purchases.

8. Melbourne Metropolitan Water Supply.—From the year 1835 to 1857 the inhabitants of Melbourne depended for their water supply entirely upon rainwater caught in tanks, or upon water carts filled from the River Yarra above the falls. In 1848 the city council appointed a committee to enquire into and report generally upon the water supply and sewerage of the city; this committee recommended that a comprehensive system of sewerage should be carried out, and a rate levied for that purpose; the stringent enforcement of provisions as to slaughtering stock and as to the removal of refuse; that the space between Melbourne and the beach be cleared so as to allow the free access of pure sea air; that a Building Act should be passed and that the streets should henceforth be formed of a uniform width. Most of these recommendations were carried out. A Building Act was passed in 1849, and the filthy lanes in the city were formed and drained. In 1845 the first proposal was made to supply the city with water, by means of a water-wheel to be worked by the Yarra Falls. Five years later a small steam engine was erected to pump water into a tank situated in Flinders Street, from which water was drawn by carts, and in 1851 an elaborate report was issued by the city surveyor, recommending a plan for the city water supply which was soon afterwards adopted. The source from which it was proposed to conserve the water for the supply of Melbourne consisted of several creeks and springs which flow from Mount Disappointment, about thirty-two miles north of the metropolis, and which when united form the Plenty River; this scheme was adopted and has resulted in the Yan Yean Reservoir scheme. In 1853 the duty of supplying water to the metropolis was transferred from the city council to the Commissioners of Sewers and Water Supply, and towards the end of the same year the work of construction of the Yan Yean system was commenced. On the 31st December, 1857, the first water was turned on by Major-General McArthur, acting for the Governor, Sir Henry Barkly, K.C.B.

(i.) *Development of System, 1857 to 1908.* The following statement shews the development which has taken place in the water supply system of Melbourne during the first fifty years since its inception:—

MELBOURNE WATER SUPPLY SYSTEM, 1857 to 1908.

Year.	Served Population.	Capital Cost.	1000 Gallons, Charge per—	Rate in £	Mains & Pipes, Mileage of—	Supply in Gallons, Average daily
		£				
1857 ...	95,442	748,974	10/- and 6/-	1/-	104	3,250,000
1908 ...	527,000	3,826,447	1/-	7d.	1,305	31,559,830

(ii.) *Proposed Extensions.* The water supply committee of the Metropolitan Board of Works has also recommended the augmentation of the catchment area by permanently reserving two areas amounting in all to 140 square miles—the one comprising the Upper Yarra watershed, eighty-one square miles in area; the other comprising the O'Shanassy River district, fifty-nine square miles in extent. A second service reservoir—having a capacity of 25,000,000 gallons—was completed at Preston in March, 1909, at a cost of £29,000.

(iv.) *Description of Water Supply Systems.* The water supply of Melbourne consists of two main systems—the Yan Yean and the Maroondah.

(a) *The Yan Yean System* is the main source of supply. It commences by collecting the water from the Silvery and Wallaby Creek valleys, to the north of Mount Disappointment, 2700 feet high, which forms one of the prominent heights of the main Dividing Range in Victoria. The waters of the Silvery Creek are brought by means of an aqueduct a little over eight miles long, constructed at a cost of £55,000, to a weir at the head of the Wallaby Creek aqueduct, which carries the combined waters of the two creeks for a distance of five and a quarter miles, and discharges over the crest of the Dividing Range at a height of 1694 feet above sea level, and then drops a height of 133 feet in 683 feet into Jack's Creek, one of the branches of the Plenty River. The Wallaby Creek aqueduct was constructed at a cost of £54,000. Its carrying capacity is 33,000,000 gallons a day, while the average daily flow of the combined Silvery and Wallaby Creeks is 12,000,000 gallons. From its drop into Jack's Creek the water follows the natural bed of the stream for about three miles to the Tourourrong reservoir, which is a small reservoir of about thirty-six acres in extent, and having a capacity of 60,000,000 gallons. From Tourourrong the clear water channel carries the water for a distance of four and three-quarter miles to the old Plenty inlet channel of the Yan Yean reservoir. This channel is 13 feet 6 inches wide and 4 feet 6 inches deep, the section being a quadrant of a circle of 4 feet 9 inches radius, with one to one side slopes. The fall of this channel is 7 feet 6 inches to the mile, with a carrying capacity of 12,000,000 gallons per day, constructed at a cost of £68,000. In it there are waterfalls, the heaviest of which is 17 feet. The water from the old Plenty channel enters the Yan Yean reservoir through a spur, forming its western bank, by means of a tunnel 1000 feet long. The Yan Yean reservoir, which is twenty-two miles from the city, is formed by the construction of an earthen bank 49 chains long, 30 feet high, 20 feet wide on top, with a slope next the water of three to one, and an outside slope of two to one. The bywash is five feet below the top of the embankment, at a level of 602 feet above low-water mark in Hobson's Bay. The reservoir, when full, covers an area of 1360 acres, with a maximum depth of 26 feet, and an average depth of 18 feet. Its total capacity is 6,400,000,000 gallons, of which 5,400,000,000 gallons are available for consumption. From the Yan Yean reservoir to the Pipe Head dam at Morang, a distance of seven miles, an open aqueduct capable of delivering 33,000,000 gallons a day has been constructed. From the Morang reservoir, the bywash of which is 485 feet above sea level, a 30-inch cast-iron main, 27-inch cast-iron and a 30-inch wrought-iron main carry the water a distance of seven miles to the storage reservoir within the metropolitan area, at Preston. The No. 1 Preston reservoir is constructed partly in excavation and partly in bank; it is 20 feet deep, and holds 16,000,000 gallons. The by-wash is 328 feet above the sea level, and the cost was £11,000. This is the main distributing reservoir of the central city supply.

(b) *Maroondah System.* The water for this system is obtained from the Maroondah River, a tributary of the Yarra. The waters of the Graceburn are picked up by a small weir 686 feet above sea level, and carried for a distance of three-quarters of a mile in a concrete-lined channel to a well near the main road leading from Healesville to Marysville. From this well an 18-inch wrought-iron pipe, one and a-quarter miles long, leads the water to the main Maroondah aqueduct. The completed Maroondah scheme involves a storage reservoir with a dam 105 feet high, calculated to store 2,000,000,000 gallons of water. This dam has not yet been constructed, as the natural flow of

the creeks, together with the storage in Yan Yean reservoir, has proved quite capable of providing all the water at present required for the metropolis. A temporary weir of Portland cement concrete has been constructed across the Maroondah River, from which point the water is led in an aqueduct forty-one miles long to the Preston reservoir, where it joins the water from the Yan Yean system. The channel, owing to recent improvements, is now capable of delivering 32,000,000 gallons daily, the cross section being a quadrant of three feet ten inches radius with one to one slopes and a fall of one foot to the mile. The valleys are crossed by wrought-iron syphons, and with the exception of the Plenty River, which is crossed on a wrought-iron girder bridge, all the syphons are laid under the beds of streams. Each syphon is provided with a scour pipe large enough to take the full flow of the aqueduct, enabling the water to be directed down any of the natural water courses when it becomes necessary to empty any length of the aqueduct for cleansing purposes. A scour main from the Preston reservoir was completed early in 1909 at a cost of £5000.

- (c) *High Level System.* Besides the Yan Yean and Maroondah systems, the high levels of the eastern suburbs of Melbourne are provided for by a direct main from the Yan Yean reservoir. This main is thirty-two inches in diameter, constructed of wrought-iron plates from $\frac{1}{4}$ inch to $\frac{7}{8}$ inch thick, $20\frac{1}{2}$ miles long, and cost £190,000. The discharge is about 9,000,000 gallons per day. There is a storage reservoir of 9,000,000 gallons capacity at Surrey Hills, the by-wash of which is 430 feet above sea-level.

(v.) *Catchment Areas, Reservoirs, and Aqueducts.* (a) *Drainage Areas.* The whole of the catchment areas are absolutely free from population or cultivation. The Government pursued the policy of gradually purchasing all private rights over the various watersheds, which policy the Board has carried on and completed; the original owners have been bought out, while the township of Fernshaw, in the Maroondah system, was entirely purchased and obliterated. The present drainage areas from which the water is delivered cover the following areas:—

MELBOURNE WATER SUPPLY.—CATCHMENT AREAS, 1908.

	Silver and Wallaby Creeks.	Plenty River and Jack's Ck.	Yan Yean Reservoir Catchment.	Maroondah Catchment.	Total.
Area in acres	12,000	12,000	5,000	40,000	69,000

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

- (b) *Storage Reservoirs.* Within the metropolitan area there are seven service reservoirs having a total capacity of 48,000,000 gallons. From the Preston reservoir a number of service mains lead into the reticulation system of the metropolis. The total daily quantity of water which can be sent into Melbourne is as follows:—

MELBOURNE WATER SUPPLY.—MAXIMUM DAILY SUPPLY WHICH CAN BE DELIVERED.

System.	Yan Yean.	Maroondah.	High Level Main.	Total Supply.
Gallons per day	... 33,000,000	32,000,000	9,000,000	74,000,000

- (c) *Aqueducts.* Up to the 31st December, 1908, about 190 miles of 12 inch to 48 inch mains and 1035 miles of reticulation mains, below 12 inch, had been laid, in addition to which there were eighty miles of aqueducts and syphons, or a total length of aqueducts, mains, and reticulation pipes of 1305 miles.

(vi.) *Quantity of Water, Number of Houses, and Population Supplied, 1901 to 1908.* The following table gives various particulars shewing the increase in the supply of water in Melbourne and suburbs from 1901 to 1908, inclusive:—

MELBOURNE WATERWORKS—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 to 1908.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Average Daily Supply.		Rate Levied.	Assessments of Tenements Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population.		
	No.	No.	,000 Gallons.	,000 Gallons.	Gallons.	Gallons.		£
1901 ...	103,818	483,220	28,722	10,483,680	59.44	276.66	6d. in the £	3,479,721
1902 ...	103,951	492,230	30,038	10,963,945	61.02	288.96		3,650,573
1903 ...	104,885	492,990	28,469	10,391,163	57.74	271.42		3,830,872
1904 ...	107,701	491,570	28,997	10,612,330	58.98	269.23		4,004,543
1905 ...	109,393	498,290	32,657	11,919,937	65.54	298.53		4,061,258
1906 ...	111,494	504,920	31,680	11,563,244	62.74	284.14	7d. in the £	4,030,890
1907 ...	114,049	515,700	34,157	12,467,383	66.23	299.49		4,309,278
1908 ...	116,781	527,000	33,626	12,307,201	63.51	287.94		4,484,568

(vii.) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1854 to 1908.* The following table shews the total cost of construction, the revenue, expenditure, and net profits up to the 30th June, 1900, and for each financial year from 1901 to 1908, inclusive:—

MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE, AND NET PROFITS, 1854 to 1908.

Year Ended the 30th June.	Capital Cost. ¹	Annual Revenue. ²	Annual Expenditure on Maintenance and Management. ³	Percentage of Expenditure to Revenue.	Interest. ⁴	Net Profit after Payment of Expenditure and Interest.
	£	£	£	%	£	£
Total to 1900	3,700,873	4,672,030	749,798	...	1,938,868	1,983,364
1901 ...	14,330	163,212	38,548	23.61	103,988	20,676
1902 ...	16,053	171,889	40,156	23.36	102,670	29,063
1903 ...	10,412	169,295	40,257	23.78	102,942	26,096
1904 ...	8,649	165,457	37,374	22.59	104,096	23,987
1905 ...	1,391	184,529	31,761	17.21	102,465	50,303
1906 ...	16,562	182,926	28,016	15.31	102,548	52,362
1907 ...	25,119	211,059	30,573	14.49	102,075	78,411
1908 ...	33,058	233,549	41,656	17.83	100,915	90,978
Total ...	3,826,447	6,153,946	1,038,139	...	2,760,567	2,355,240

1. Works commenced in 1853. 2. Revenue commences in 1854. 3. Returns for expenditure commence in 1859. 4. First interest paid in 1856.

Graphs relating to the water supply of Melbourne may be found on page 999 hereinafore.

9. **Melbourne Sewerage.**—As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. Old Melbourne used to be a city of cesspits, and it was not until the latter sixties that these were abolished, filled up, and the movable pan system gradually adopted throughout the whole metropolitan area with night removal. The cost of removal in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This objectionable system has been displaced by the water carriage system throughout a large portion of the metropolis,

and in other parts the work of reticulation is now proceeding. A considerable part of central Melbourne is below the 10 foot contour and was originally full of swamps, which were sources of danger to the public health. All these swamps have now been filled up, and the abolition of the accumulations of stagnant water has effected a very great improvement in the health of the city and suburbs. The sewerage system is designed to carry off all water used in water closets, lavatories, baths, and urinals, together with all chamber slops and water used in cooking, washing clothes and floors, and from sinks in kitchens and sculleries, drainage from stables and cow houses, together with all liquid refuse, which in the opinion of the Board will not prejudicially affect the sewers, the machinery, or the sewage farm. Rainfall from the streets flows into the river and is not taken into the sewers, which are designed to provide for 30 cubic feet per head per day from the assumed future population, calculated on the basis of a population of 1,000,000 people ultimately settled on the areas now capable of being connected with the pumping station.

(i.) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal main sewers leading to the pumping station at Spotswood. The first house was connected in August, 1897, and on the 31st December, 1908, a total number of 96,930 tenements had been connected, while at the same date 1156 tenements were in process of connection. The 4-inch and 6-inch reticulation sewers in the rights-of-way join the 9-inch street reticulation pipes, which are gradually collected into 12-inch, 15-inch, and 18-inch stoneware pipes, and then again into brick and concrete branch sewers which join the mains and sub-mains. On the 31st December, 1908, the sewerage system, including mains, had been laid in the following districts:—Port Melbourne, South Melbourne, Melbourne, Richmond, Prahran, and Fitzroy, and nearly the whole of Footscray, St. Kilda, and Collingwood. A large portion of Essendon, Caulfield, Malvern, Kew, Camberwell, Hawthorn, Brunswick, Williamstown, and Brighton has been dealt with. Work is now proceeding in Caulfield, Malvern, and Northcote, and a considerable portion still remains to be done in Williamstown, Essendon, Northcote, Brunswick, Camberwell, Kew, Hawthorn, Malvern, Caulfield, and Brighton. A small portion has also to be done in Collingwood and Fitzroy. The two main systems are:—

- (a) *The South Yarra System*, which provides for Brighton, Caulfield, St. Kilda, Malvern, Prahran, Hawthorn, Kew, Richmond, Collingwood, South Melbourne, and Melbourne, except Carlton; and
- (b) *The North Yarra System*, which provides for Heidelberg, Preston, Northcote, Coburg, Brunswick, Fitzroy, Carlton, North Melbourne, Essendon, and Footscray.

When collected at Spotswood the two systems are dealt with in separate buildings, and are arranged to be worked either separately or unitedly. The sewage enters the pumping station through straining wells, one of which is established on each system; the wells are 22 feet internal diameter, and each contains two straining cages, one of which is always in position. The solid matter caught in them is transferred to a drier in the building over the wells, where it is subject to steam pressure and consequently to a high temperature, which renders the material innocuous. The material from the drier is of no manurial value and is destroyed in a furnace. The sewage is raised by the pumps about 125 feet to the head of the outfall sewer, through about two and three-quarter miles of 6-feet and 4-feet wrought-iron rising mains, whence it gravitates to the Werribee sewage farm, a distance of $15\frac{3}{4}$ miles, through a partly-open and partly-closed channel eleven feet in diameter, with a fall of about two feet to the mile. The full capacity of this outfall sewer is 18,000 cubic feet a minute.

(ii.) *Metropolitan Sewage Farm.* The farm contains 8847 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre. About £282,000 has been spent on the property in perfecting the arrangements for the distribution of sewage. The cost of the farm to the 30th June, 1908, was £437,443. About

22,000,000 gallons of sewage have to be disposed of every twenty-four hours in irrigating the fields. It is spread over properly-prepared blocks of land by a series of mains and lateral carriers. The effluent, after filtering through the land, is discharged into Port Phillip Bay in a clear and transparent condition, all the sewage held in suspension being left in the soil. The main supply channels for carrying the sewage on to the fields are about ten chains apart, and a good system of open drains to carry off the surplus water is provided. Many of these drainage channels are ten feet to twelve feet wide at the top and seven feet deep, and through them the water drained off from the subsoil is constantly flowing to the bay. The prepared blocks on the farm are laid down with prairie grass and lucerne, on which sheep are depastured. During the financial year 1907-8, 56,573 sheep were bought, at a cost of £35,063, other expenses amounting to £6473. During the same period the total receipts from the sale of wool, skins, and 60,054 sheep amounted to £39,132. The loss on sheep for the year amounted to £6247.

(iii.) *House Connections.* The work of house connections with the sewerage system is carried out under a carefully prepared by-law. Under the Amending Act of 1897, after a property has been declared to be a sewered property, the owner has several options.

a) He may submit a plan of his house connections for approval, and on approval being given, may agree to carry out the work within one month. (b) He may submit a plan, which, if approved of, he may ask for an estimate of the cost of carrying out. This the Board is bound to supply, and then the owner may either carry out the work himself or ask the Board to carry out the work, which it must do for the estimated price, whether the work costs less or more. (c) On default of the owner the Board may carry out the work, and at the request of the owner accept payment by forty quarterly instalments, bearing interest on such portion as from time to time remains unpaid at the rate of 5 per cent.

(iv.) *Number of Houses Connected, Capital Cost, Revenue and Expenditure, 1901 to 1908.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during each year from 1901 to 1908, inclusive:—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, RECEIPTS AND DISBURSEMENTS, 1901 to 1908.

Year ended the 30th June.	Number of Houses Connected.	Capital Cost.	Receipts.			Maintenance and Working Expenses.
			From Rates.	From other Sources *	Total.	
	No.	£	£	£	£	£
1901 ...	38,696	3,307,135	109,790	5,268	115,058	24,582
1902 ...	47,029	3,609,596	119,222	5,474	124,696	24,396
1903 ...	55,727	3,921,208	141,994	6,647	148,641	26,590
1904 ...	64,487	4,214,812	154,857	6,174	161,031	26,696
1905 ...	71,689	4,639,949	165,500	5,948	171,448	26,906
1906 ...	79,597	4,980,335	185,803	6,715	192,518	28,828
1907 ...	87,853	5,258,156	209,805	6,431	216,236	33,296
1908 ...	94,067	5,520,303	221,953	4,656	226,609	35,939

* Excluding revenue from sale of sheep and from interest.

10. *Water Supply in Country Towns.*—By the Water Act 1905, which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission, to whom many of the duties of the Water Supply Department were also handed over. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Irrigation and Water Supply. There are, however, in different parts of Victoria a number of other waterworks which

are concerned chiefly with domestic supply, and which are controlled by local authorities, *i.e.*, by Waterworks Trusts or by municipal corporations. These works are constructed out of moneys either granted or lent by the general Government. The following gives particulars as to the waterworks under the control of Trusts and municipal corporations for each year from 1901 to 1907, inclusive :—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1901 to 1907.

Year.	Waterworks Trusts.						Municipal Corporations.*			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Receipts.	Expenditure.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.
	No.	£	£	£	£	£	No.	£	£	£
1901...	76	823,418	748,089	†	†	†	24	†	470,041	†
1902...	76	935,286	754,447	†	†	†	24	687,317	476,952	†
1903†	...	...	...	...	...	...	...	...	...	...
1904...	73	1,051,424	775,701	18,520	...	...	24	675,161	479,815	2,133
1905...	74	1,068,985	786,505	19,520	71,654	71,876	23	669,438	471,998	8,107
1906...	78	1,367,565	905,336	17,029	89,083	86,764	23	669,684	466,395	2,586
1907...	84	1,406,510	933,033	22,351	93,247	88,671	23	674,366	468,462	9,786

* Particulars as to the receipts and expenditure in respect of waterworks under the control of municipal corporations are not available. † Returns not available.

Under the provisions of the Local Government Act 1903 municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owners of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the rate must not exceed in any year the sum of two shillings in the pound, provided that a minimum sum of ten shillings may be fixed by the council to be paid in respect of any property at which water is supplied.

(i.) *Geelong Waterworks Trust.* The Geelong Municipal Waterworks Act 1907 provided for the constitution of a Municipal Waterworks Trust for the supply of water to Geelong and district. In January, 1908, the works were transferred to the Trust from the control of the State Rivers and Water Supply Commission, the amount paid by the Trust to the State being £265,000, which was raised by loan. The capital cost of the works at the date of transfer was £442,322. The available storage capacity of the reservoir is 642,207,000 gallons. The Trust is authorised to supply water to (a) the town of Geelong, (b) the suburbs thereof, including all places within five miles of the Geelong Post Office, and (c) any place within ten miles on either side of the main pipe from Stoney Creek to Geelong.

11. *Fire Brigades.*—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i.) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of ten miles from the Melbourne General Post Office, but this area has since been extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are

appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 31st December, 1907, the Board had under its control 50 stations, 176 permanent men, 166 auxiliary firemen, 10 steam fire engines, 2 gasolene engines, 2 chemical engines (1 motor), 1 petrol motor fire engine, 95,128 feet of hose, and 114 fire-alarm circuits having 139 fire-alarm points and 413 fire-alarm and telephone points. The total length of wire in use outside stations for fire alarms and telephones is about 290 miles. During the year 1907, 1590 calls were received; of these, 674 were accounted for by false alarms.

(ii.) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1907 there were eighty-nine municipal councils and fifty-five insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were about 99 registered brigades and 1991 firemen at the end of the year 1907. At the same date the plant consisted chiefly of 5 steam engines, 62 manual engines, 10 horse brakes, 61 apparatus carriages, 3 fire escapes, and about 145,000 feet of canvas hose.

(iii.) *Financial Operations of both Boards.* The following table gives particulars as to the financial operations of both Boards during each year from 1901 to 1907, inclusive :—

**VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN AND COUNTRY
FIRE BRIGADES BOARDS, 1901 to 1907.**

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
ORDINARY RECEIPTS.							
	£	£	£	£	£	£	£
Contributions ...	48,494	49,280	49,002	48,874	49,083	50,937	51,934
Receipts for services ...	1,344	2,062	727	692	754	551	1,336
Interest and sundries ...	2,324	1,954	4,626	2,814	3,442	3,080	3,116
Total ...	52,162	53,296	54,355	52,380	53,279	54,568	56,386
ORDINARY EXPENDITURE.							
Salaries ...	22,000	22,865	23,112	23,103	24,793	25,316	27,411
Fire expenses ...	2,917	3,027	2,873	2,936	2,990	3,041	3,201
Horses, quarters, etc. ...	13,654	13,009	12,002	9,207	10,930	9,596	9,986
Plant—Purchase and repairs...	4,403	2,866	4,862	4,305	4,589	6,560	5,783
Interest ...	6,087	6,080	6,073	6,057	6,103	5,752	5,803
Sinking fund ...	2,000	1,971	2,028	2,250	2,250	2,250	2,895
Miscellaneous ...	1,001	1,087	2,221	4,332	2,108	4,310	2,884
Total ...	52,062	50,905	53,171	52,190	53,763	56,825	57,963
LOAN EXPENDITURE—							
Sewerage connections ...	...	...	...	...	405	3,250	2,623

12. The Melbourne Harbour Trust.—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of thirty-four years, to the effect that the cost of landing goods should be reduced, and the

delays in receiving goods should be abolished. Both demands arose from the fact that vessels of a draught greater than twelve feet had to discharge in the bay into lighters.

(i.) *Constitution of the Trust.* The Harbour Trust Act was drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board, and the Clyde Trust. Under the Act of 1876, as amended in 1883, the number of Commissioners is fixed at seventeen, nominated or elected as follows:—Five were nominated by the Governor-in-Council, three elected by merchants, three by ship-owners, two were elected by the City Council, and one each by the ratepayers of South Melbourne, Port Melbourne, Williamstown, and Footscray. The sum of £1700 per annum was set aside for the remuneration of the Commissioners.

(ii.) *Works Undertaken by Trust in the River and in the Port.* In 1879 a report dealing with various propositions for the improvement of the port and harbour was issued by Sir John Coode, an English engineer, who had been engaged by the Commissioners for the purpose. This report, which recommended (i.) the cutting of a new channel through the flats to the south of Fishermen's Bend, (ii.) the construction of a dock, and (iii.) the widening and deepening of the channel in the river, was adopted by the Commissioners, who were empowered in 1883 to borrow the amount of £1,000,000 for the purpose of carrying out the necessary works. In 1890 a consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000. The river was widened from Queen's Bridge to the bay from about 140 to about 300 feet, while the depth has been gradually increased until at the present time it is twenty-six feet at low water.

(a) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2602 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three-quarter miles, and the navigation being greatly facilitated. At the present time this channel, which is called the Coode Canal, is being widened 100 feet, which will make its total width 408 feet, and its width at low water 366 feet.

(b) *The Victoria Dock.* This dock, opened in 1892, has an area of ninety-six acres and a depth of twenty-six feet at low water. There are 9000 feet of wharfage, and the total cost, including wharfs, sheds, and approaches thereto, was £416,038. The sheds have a total length of 12,000 feet, and cover an area of 568,070 square feet.

(iii.) *Works in the Bay.* Prior to 1889 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of twenty-eight feet. The cost of this work was £218,379.

(iv.) *Dredging.* The total amount of material raised by the dredging and excavation done in the improvement of the river and bay and the method in which the material has been disposed of are as follows:—

Material Dredged.	Cubic Yards.	Material Disposed of.	Cubic Yards.
From river and Victoria dock	23,379,572	Landed for reclamation ...	10,491,849
From bay	13,426,985	Deposited in deep water ...	26,314,708
Total	36,806,557	Total	36,806,557

During the past ten years the average cost of dredging per cubic yard was 2.11 pence, and the cost of towing and depositing 3.17 pence, not allowing for depreciation of plant. The Trust has expended £224,970 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 1,200,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1901 to 1907, inclusive :—

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1901 to 1907.

Particulars.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
REVENUE.							
	£	£	£	£	£	£	£
Rates and rents ...	196,294	198,497	227,856	226,041	227,282	254,142	257,787
Interest ...	2,658	2,597	2,535	2,351	2,489	2,987	2,949
Recoups ...	1,344	1,690	1,188	2,549	2,174	2,535	5,542
Total ...	200,296	202,784	231,079	230,941	231,945	259,664	266,278
EXPENDITURE.							
Wharfage refunds ...	4,106	1,859	1,568	1,502	1,054	796	783
Consol. rev. of Victoria	38,419	38,798	45,607	44,145	45,164	51,204	51,565
Wharfage drawback ...	6,576	6,162	6,296	8,627	1,175	...	...
Maintenance and man- agement ...	46,713	47,131	36,076	46,011	51,714	52,519	53,741
Interest on loans ...	88,135	88,235	87,982	86,869	86,630	86,530	86,375
Dredging (constructn.)	10,106	11,926	17,496	10,219	6,630	7,182	8,163
Wharf "	13,709	16,071	9,123	2,149	1,012	1,021	12,345
Harbour improvements	...	...	...	...	...	...	4,999
Plant account ...	...	...	...	...	...	...	11,310
Total ...	207,764	210,182	204,148	199,522	193,379	199,252	229,281
PROFIT OR LOSS.							
Profit ...	...	...	26,931	31,419	38,566	60,412	36,997
Loss ...	7,468	7,398	...	...	...	...	...

13. *Public Lighting in Melbourne.*—In Melbourne the public lighting is partly carried on by local authorities and partly by private companies. As far as records are available, it would appear that gas was first in use amongst private consumers in Melbourne in the early part of January, 1856, and that the streets of the city were first illuminated by gas on the 10th August, 1857.

(i.) *Gas Lighting.* In the metropolitan area there are four private companies which supply gas for public and private lighting. These are the Metropolitan, Brighton, Footscray, and Williamstown Companies. The Heidelberg Gasworks are owned and worked by the Heidelberg Shire Council.

(a) *The Metropolitan Gas Company* was formed in 1878 by the amalgamation of three companies under the Metropolitan Gas Company's Act 1878. The company is authorised to supply gas to all places within a radius of eight

miles of the Melbourne Post Office, exclusive of the municipal districts of Brighton, Footscray, and Williamstown. The gas supplied by the company is manufactured and stored at three stations at West Melbourne, South Melbourne, and Fitzroy, and in addition there are holder stations at North Melbourne, Richmond, St. Kilda, and Malvern. There are about 800 miles of mains, varying in diameter from 3 inches to 36 inches.

- (b) *The Footscray Gas Company* first supplied gas for both public and private purposes in 1878. The works were enlarged in 1888, and towards the end of the year 1908 were again in process of being enlarged and extended. The district over which the operations of the company extend is about four square miles.
- (c) *The Williamstown Gas Company* supplies the districts of Williamstown, Newport, and Spotswood. The holders have a storage capacity of 300,000 cubic feet, and there are about fifty miles of mains. Gas was first supplied in the year 1866, and in February, 1909, there were about 1500 consumers.
- (d) *The Heidelberg Gasworks*, owned and worked by the shire council, supply the Fairfield, Ivanhoe, and Heidelberg ridings, having an area of about eight square miles. Gas was first supplied in the year 1900. The mains have a total length of about twelve miles.

The subjoined statement gives particulars of gas lighting in Melbourne for the year 1907, exclusive of the Williamstown and Brighton gas works, for which particulars are not available :—

MELBOURNE.—PUBLIC LIGHTING, GAS WORKS, 1907.

Coal used* ...	Tons	159,257	<i>Receipts—</i>		
Gas manufactured	Cub. ft.	1,669,035,000	From sale of gas	...	£358,242
„ sold	„	1,508,267,000	„ „ by-products	...	86,069
No. of consumers		70,053	„ other sources	...	1,122
„ employes		1,085			
Capital cost		£2,192,166	Total	...	£445,433
			<i>Working Expenses</i>	...	£315,946

* Including shale-oil equivalent in tons of coal.

(ii.) *Electric Lighting.* In Melbourne there are three central stations for the supply of current for electric light and power purposes. One of these, viz., the City of Melbourne Electric Supply Undertaking, is owned and worked by the City Council; the other two, viz., the Electric Lighting and Traction Company's works at Richmond and the North Melbourne Electric Tramways and Lighting Company's works at Ascot Vale, are run by private companies.

- (a) *The City Council's Electric Supply Undertaking* supplies an approximate area of eleven and three-quarter square miles, including the City of Melbourne, North Melbourne, West Melbourne, Carlton, East Melbourne, and South Yarra. The supply for public lighting was commenced in 1894 and for private lighting and power purposes in 1897. The generation is divided into two systems, viz., direct current 460-520 volts, 3-wire system of distribution to the central portion of the city, and alternating current, 4000-4400 volts, single phase 50 cycles, to supply the outlying districts. The total capacity of the direct current plant is 3850 kilowatts, and of the alternating

current generators is 1650 kilowatts; the latter include two 750-kilowatt British-Westinghouse turbo-alternators, which have recently been installed. The alternating current feeders terminate in seventeen brick sub-stations, in which are transformers for private light and power and also constant potential transformers for the street arc lighting. The system comprises forty-two miles of direct current cables underground, seventeen miles of alternating high tension cables underground, and about 200 miles of overhead cables. The number of customers has increased during the years 1901 to 1907 from 964 to 2512; during the same period the number of units sold per annum has increased from 3,508,000 to 6,260,000, and the total load connected (16 candle-power lamp equivalent) has increased from 51,526 to 121,028.

(b) *The Electric Lighting and Traction Company of Australia Ltd.* This company commenced operations in 1901, having amalgamated two existing undertakings. Alternating current, single phase system of 50 periods, is generated, the total capacity of the generators being 3675 kilowatts, including a Curtis turbo-alternator of 1000 kilowatts, and a Brush-Parsons turbo-alternator of 1500 kilowatts. The high tension distributors (4000 volts) deliver into about eighty sub-stations, and the secondary distributing system is carried out on the 3-wire system. The district supplied covers about forty-one square miles and comprises parts of Fitzroy, Collingwood, Kew, Richmond, Prahran, Malvern, Caulfield, St. Kilda, South Melbourne, and the Harbour Trust territory south of the Yarra. The supply is available in about eighty-four miles of streets.

(c) *The North Melbourne Electric Tramways and Lighting Company.* This company supplies current for lighting purposes in connection with the North Melbourne tramway undertaking. Direct current is generated at 460 and 230 volts, and is distributed on the 3-wire system. The total capacity of the generators is 750 kilowatts; there are six miles of mains and thirty-four miles of distributing line.

The following statement gives particulars for the year 1907 of the three undertakings referred to:—

MELBOURNE.—ELECTRIC LIGHT STATIONS, 1907.

Total load connected— (16 c.p. lamp equivalent) ...	*184,015	Total capital cost ...	£681,663
Total motors con- nected { Horse power ...	4,482	Revenue { From sale of current ...	£114,894
{ Number ...	1,454	{ From other sources... †	£20,459
Total arc lamps { Public ...	1,029	{ Total ...	†£135,353
connected { Private ...	1,934	Expenditure ...	†£69,887
Total glow lamps { Public ...	4,166	Total number of employés ...	†358
connected { Private ...	89,775		
Units sold during year	*8,080,784		

* Excluding North Melbourne Co., for which particulars are not available. † Including operations of the tramway undertaking of the North Melbourne Co., separate particulars not being available.

§ 4. Queensland.

1. Development of Local Government Systems.—The first step in the direction of local government in Queensland was the incorporation of Brisbane as a municipality by proclamation on the 6th September, 1859, about three months prior to the separation of that State from New South Wales. The provisions of the Municipalities Act, which was passed in the mother colony in 1858, and which has already been referred to, applied to settlement in the Moreton Bay district, and were amended by an Act of the Queensland Government in 1861. Three years later the provisions of these two Acts were amended and consolidated, and authority was given for the incorporation as a municipality of any city or town, or of any rural district, on petition to the Governor signed by at least 100 resident householders. The duties and powers of the councils were extended and additional privileges were conferred under this Act.

(i.) *Inauguration of General System of Local Government.* Various amendments were made in the law from time to time, without, however, altering the main features of the Act of 1864, until the year 1878, when the Local Government Act was passed, amplifying the powers of municipalities, and providing for the incorporation of rural areas as shires. The provisions of this Act, which was adopted from the then new Local Government Act of Victoria, were found to be unsuited to the requirements of a large and sparsely populated country like Queensland, and were not applied to any new area. The Act was therefore only of practical value to a few of the existing municipalities. In 1879 the Divisional Boards Act was passed. This Act was intended to provide for local government outside the boundaries of municipalities, and was applied simultaneously by the Executive to about 660,000 square miles of territory; which was divided, by proclamation, into seventy-two divisions, some of them of immense area and carrying only a very small population. The Act provided for a free grant to any division equal to one shilling in the pound of the annual value, and also for endowment to the amount of £2 for every £1 of rates collected for a period of five years. In case of the failure of the people of any division to elect the first members of their Board, the appointments were made by the Governor-in-Council. On the 30th April, 1880, a Gazette was issued first announcing the names of the elected Boards, and then appointing the members of the nominated Boards.

In 1881 and 1887 the Divisional Boards Act was amended, and by a further amending Act, passed in 1890, the rates thenceforward were to be charged on the unimproved capital value of the land, and this system has since been retained. In 1896 a commission was appointed to enquire into the working of the Local Government Acts and to recommend amendments which might be considered desirable; a report subsequently sent in by this commission recommended that increased powers of local government should be granted in certain matters, and to the report was appended a draft bill which, with certain alterations and curtailments, became the Local Authorities Act of 1902, the provisions of which, together with the amendments in 1903 and 1905, now regulate generally the working of local areas within the State.

(ii.) *The Local Authorities Act 1902.* Considered generally this Act comprises the Local Government Act 1878, and amending Acts, together with the Divisional Boards Act of 1887, the Valuation and Rating Act of 1890, and the Local Authorities (Joint Action) Act of 1886. It does not, however, comprise all the statutes relating to the powers and duties of local authorities, for certain Acts, such as the Tramways Acts and the Health Acts, while conferring powers upon these bodies, deal also with other subjects,

and are in the nature of general Acts upon these subjects. The Act of 1902 contains a number of provisions enlarging the powers of local bodies and rendering their duties more explicit; thus the jurisdiction of councils with respect to roads, bridges, wharves, ferries, and reserves is amplified, and provision is inserted for putting under their control, when circumstances warrant it, such public lands as cemeteries, commons, foreshores, and the like. They have enlarged powers as to traffic, the eradication of noxious weeds, the reclamation of lands, the destruction and prevention of pests, the construction of buildings, the prevention of fires, and the control of places of public resort and amusement. They are empowered to establish works for lighting, etc., and to construct tramways in districts and under circumstances to which the existing Tramways Acts are not readily applicable. The proper execution of all these matters requires additional rating, and provision is made therefor in the Act.

2. Systems of Local Government now in Operation.—The principal features of previous enactments as to the division of the State into local areas are retained in the Act of 1902, but such areas in the future are to be of two classes—(a) towns and (b) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town a city.

(i.) *The Municipal Council.* All local areas are governed by councils, the members of which are called aldermen in the case of towns and councillors in the case of shires. *Town councils* are composed of either seven, nine, or eleven members, as declared by Order-in-Council, but, if the town has wards, three members are assigned to each ward. *Shire councils* are composed of five, seven, or nine members, as declared by Order-in-Council, but, if the shire is divided, the number cannot be more than three for each division, and need not be the same for every division.

(ii.) *Qualification of Aldermen and Councillors.* Every male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is qualified to be elected as a member of a council, unless he is an uncertificated insolvent, is undergoing imprisonment, is financially interested in any contract with the council, or is insane. Provision is made for the election of the mayor or chairman, and for the retirement of members by rotation. The first council of a newly constituted town is elected, but that of a newly constituted shire is appointed by the Governor-in-Council, unless otherwise directed by the order constituting the shire.

(iii.) *Qualification of Voters.* Generally every person of either sex of the age of twenty-one, who is a natural-born or a naturalised subject, and is rated as an occupier or owner of ratable land, is entitled to vote. The number of votes depends upon the value of the land in the following scale :—

MUNICIPALITIES.—PLURALITY OF VOTES.

Value of land	...	Less than £500.	From £500 to £1000.	£1000 and upwards.
Number of votes	...	1	2	3

In case of joint owners or occupiers, each is to be considered the owner or occupier of land of a value equal to that of the whole divided by the number of owners or occupiers not exceeding three. If more than three persons are joint owners or occupiers, those whose names stand first on the rate book or valuation or return are to be taken. Companies may nominate their secretaries, managers, or directors for the purpose of voting.

(iv.) *Powers and Duties of Councils.* Generally the council is charged with the construction, maintenance, and management of all roads, streets, bridges, culverts, ferries, wharves, jetties, and other necessary public works, and is invested with powers to acquire land and buildings in connection with a variety of public works and for a number of public purposes. The council also has general power to make by-laws with a view to the good government of the local area under its management. Authority is given to the councils to establish markets and weighbridges and to fix dues for the use of the same; to undertake the manufacture or supply of light or hydraulic or other power; to destroy noxious weeds; and to control the erection of new buildings and the repair of dangerous or neglected ones. The council may also make by-laws with respect to a multitude of matters mentioned with great particularity in a schedule to the Act, and may also exercise various powers conferred by a number of Acts, set forth in the second schedule, such as the Tramways Act 1882, the Water Authorities Act 1891, the Electric Light and Power Act 1896, and the Health Act 1900.

(v.) *Valuation.* All land is ratable except the following:—Crown land unoccupied or used for public purposes; land in the occupation of the Crown, but this does not include lands rented in towns by the Crown; land used for public purposes; commons; cemeteries; and land not exceeding in area fifty acres and used exclusively for public worship, educational purposes, an orphanage, or library. Generally the value is estimated at the fair average value of unimproved land of the same quality held in fee-simple in the same neighbourhood. In the case of land held under gold-mining lease, or under lease from the Crown, the value is deemed to be a sum equal to twenty times the annual rent.

(vi.) *Rates* are levied on the unimproved capital value, and are of two kinds, general and special. *The general rate* must not be greater than threepence in the pound, nor less than a halfpenny, while *special rates* must not exceed threepence in the pound, but this provision does not include separate rates, special water rates, loan rates, cleansing rates, or tramway rates. Special rates may be levied for the purpose of constructing and maintaining permanent works, while separate rates may be declared for defraying expenses incurred in the execution of a work for the special benefit of any particular part of the area. A special rate may also be levied for the administration of the Health Acts.

(vii.) *Loans.* Money may be borrowed by local authorities either from the central Government, from outside sources by means of debentures, or by way of overdraft of current account. (a) *Government Loans.* The total amount that may be advanced by the Treasury, inclusive of sums owing, may not exceed a sum equal to five times the then ordinary annual revenue of the local authority, except in the case of loans for reproductive undertakings, for which special arrangements may be made by application to the Governor-in-Council. Notice of a proposed loan must be published, and, if demand be made by any ratepayers, having in the aggregate twenty votes, a poll must be taken to decide whether the money shall be borrowed or not. (b) *Debentures.* A local authority may apply to the Governor-in-Council for permission to borrow money by the sale of debentures, but application must only be made after a resolution for borrowing the money has been adopted and confirmed, and after an opportunity has been given for the taking of a poll on the question, and (if a poll has been taken) when the result is in favour of the loan. (c) *Temporary loans* from banks may be made by way of overdraft of the current account, but no such overdraft may exceed the ordinary revenue of the local authority in the year then last past.

(viii.) *Tramways.* Any ratepayers, having not less than one-third of all the votes of the ratepayers within any particular area, may by petition request the local authority to apply to the Governor-in-Council for the constitution of such area as a "tramway area."

After an opportunity for taking a poll on the question has been given, and (if a poll has been taken) when the result is in favour of the tramway, the petition may be granted by the Governor, who may authorise the issue of a Government loan for the purpose of constructing or purchasing the tramway. The total amount advanced for the purpose must not exceed £3000 for every mile constructed. As regards the repayment of tramway loans, the local authority may levy a tramway rate, and the provisions of the Local Works Loans Acts 1880 to 1889 are incorporated. Up to the end of the year 1907 tramways had been constructed under these provisions in seven shires, their total length being 161 miles. In some cases these lines are run by the Queensland Railway Commissioner on behalf of the constructing authority. Particulars as to the working of tramways run by local authorities are given in the section in this book on "Roads and Railways." (See pp. 736, 738-9, and 740 hereinbefore.)

3. Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns, and Shires, 1903 to 1907.—The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns and of shires, for each year since the Act of 1902 came into operation:—

QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND OF SHIRES,

1903 TO 1907.

Year.	Municipality.	Area.	Population.	Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.		
							Government Loans.	Other.	Total.
		Square Miles.	No.	No.	£	£	£	£	£
1903	Cities and Towns	361	207,334	39,077	14,546,206	1,261,850	338,192	632,394	970,586
	Shires ...	667,891	290,009	66,224	29,603,766	280,607	152,862	35,058	188,920
	Total	668,252	497,343	105,301	44,149,974	1,542,457	491,054	668,452	1,159,506
1904	Cities and Towns	354	222,397	41,931	14,865,196	1,252,764	309,713	634,674	944,387
	Shires ...	667,898	271,529	63,687	28,786,043	229,843	108,753	32,728	141,481
	Total	668,252	493,926	105,618	43,651,241	1,482,607	418,466	667,402	1,085,868
1905	Cities and Towns	354	224,672	42,857	14,409,576	1,272,911	302,838	678,835	981,673
	Shires ...	667,898	290,576	64,844	27,948,597	250,052	134,894	53,798	168,692
	Total	668,252	515,248	107,701	42,358,173	1,522,963	437,732	712,633	1,150,365
1906	Cities and Towns	354	227,106	43,457	13,980,737	1,292,040	330,515	656,569	987,084
	Shires ...	669,901	306,212	68,211	29,197,808	254,363	113,550	45,199	158,749
	Total	670,255	533,318	111,668	43,178,545	1,546,403	444,065	701,768	1,145,833
1907	Cities and Towns	354	231,851	43,864	13,840,010	1,296,743	325,685	637,196	962,881
	Shires ...	669,901	318,336	66,984	29,977,860	259,519	100,951	44,525	145,476
	Total	670,255	550,197	110,848	43,817,870	1,556,262	426,636	681,721	1,108,357

4. Receipts and Expenditure of Cities, Towns, and Shires, 1903 to 1907.—The following table shews the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year since the Local Authorities Act 1902 came into operation:—

**QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES, TOWNS AND SHIRES,
1903 TO 1907.**

Year.	Municipality.	Receipts.				Expenditure.					
		From Govern- ment.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redem- tion.	Office Expenses and Salaries.	Other Ex- penses.	Total.	
		£	£	£	£	£	£	£	£	£	
1903...	Cities and Towns	29,971	191,975	60,582	282,528	184,397	30,863	24,120	65,065	304,445	
	Shires ...	30,042	148,127	16,559	194,728	132,135	18,470	32,861	24,304	207,770	
	Total ...	60,013	340,102	77,141	477,256	316,532	49,333	56,981	89,369	512,215	
1904...	Cities and Towns	11,766	216,133	65,304	293,203	164,099	31,897	27,173	69,021	292,190	
	Shires ...	2,131	160,759	18,294	181,184	109,393	22,349	31,838	21,760	185,340	
	Total ...	13,897	376,892	83,598	474,387	273,492	54,246	59,011	90,781	477,530	
1905...	Cities and Towns	5,071	216,283	91,156	312,510	175,279	62,988	24,906	58,473	321,646	
	Shires ...	10,028	161,198	19,612	190,838	107,934	18,778	32,753	20,992	180,457	
	Total ...	15,099	377,481	110,768	503,348	283,213	81,766	57,659	79,465	502,103	
1906...	Cities and Towns	4,699	217,168	62,571	284,438	161,149	28,143	24,006	72,541	285,839	
	Shires ...	6,915	170,617	20,818	198,350	131,571	23,211	33,359	27,580	215,721	
	Total ...	11,614	387,785	83,389	482,788	292,720	51,354	57,365	100,121	501,560	
1907...	Cities and Towns	10,824	226,948	52,037	289,809	173,887	13,651	24,303	73,198	285,039	
	Shires ...	5,813	187,397	26,249	219,459	141,252	12,594	34,311	31,500	219,657	
	Total ...	16,637	414,345	78,286	509,268	315,139	26,245	58,614	104,698	504,696	

5. Brisbane Water Supply.—The water supply of the city of Brisbane and suburbs is administered by a Board of five members, of whom the Secretary for Public Works for the time being is an *ex officio* member. The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold Creek reservoirs. For some years after the constitution of Brisbane as a municipality in 1859, the city supply was drawn from a chain of water-holes and sold to the residents. This scheme was later superseded by another under which water-carriers were licensed. Later, again, the Board of Water Supply was constituted, and the construction of the Enoggera reservoir by the damming of Ithaca Creek was commenced in 1864 and completed in August, 1866. This was followed in 1885 by the construction of the Gold Creek reservoir, which provided an improved service and better water. In April, 1892, the works at Mount Crosby, at the head of the Brisbane River, were completed. At these works the water is pumped to a reservoir 455 feet above Brisbane high-water mark, whence it is delivered to the city by gravitation. The water can also be diverted to Gold Creek, where the reservoir is kept filled, while a reservoir on Highgate Hill is also connected and fitted with aerating apparatus. The question of constructing an improved water supply system for Brisbane is now receiving attention.

(i.) *The Brisbane River Supply.* This is the principal source of supply, about 60 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is about 2,500,000 gallons. The outlet pipe is thirty-four inches in diameter, and leads through the valve-house to the gravitation main to

Brisbane, 17 $\frac{3}{4}$ miles long and twenty-four inches in diameter. At Kenmore, eleven miles from Mount Crosby, a junction is effected between this 24-inch main and the 16-inch main from Gold Creek.

(ii.) *The Enoggera Reservoir.* The Enoggera are the oldest works now in use, and are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam, holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2600 yards, and its greatest breadth 700 yards. There are three lines of pipes from the reservoir to Brisbane—sixteen inches, twelve inches, and eight inches in diameter. The total carrying capacity of these pipes is about 3,000,000 gallons a day.

(iii.) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available. The diameter of the service main is sixteen inches, the distance from the valve house to Brisbane being 12 $\frac{3}{4}$ miles. The greatest length of the reservoir is 1650 yards, and its greatest breadth 682 yards.

(iv.) *Highgate Hill Service Reservoir.* This reservoir was constructed in 1889 to supply parts of South Brisbane. Its capacity is 2,176,000 gallons. To fill this reservoir, and in order to ensure a good water supply to the south side generally, an inverted syphon, sixteen inches in diameter, was laid under the Brisbane River between Toowong and West End in 1889. The syphon is 800 feet long, and is connected both with the Mount Crosby and Gold Creek mains.

(v.) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest, 1901 to 1907.* The subjoined table gives particulars as to the cost, the revenue and expenditure, and the amount of interest and loan redemption during each year from 1901 to 1907, inclusive:—

**BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST AND
REDEMPTION OF LOANS, 1901 to 1907.**

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1901	694,973	60,120	17,462	7,535	42,426
1902	711,178	60,917	19,305	18,168	26,716
1903	727,311	62,435	18,917	17,429	26,716
1904	740,618	63,338	23,888	13,244	26,716
1905	751,477	65,584	25,606	10,860	26,716
1906	774,921	67,280	19,255	23,444	26,716
1907	792,264	69,709	20,025	17,343	26,716

* The book value of the works at the end of 1907 was £569,770, the difference being amounts written off for depreciation, losses through floods, or the removal of smaller mains.

(vi.) *Brisbane Waterworks: Length of Mains, Tenements and Population Served, and Water Consumption, 1901 to 1907.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during each year from 1901 to 1907, inclusive:—

BRISBANE WATERWORKS.—PARTICULARS, 1901 to 1907.

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimated Population.
	Miles.	No.	No.	'000 Gallons.	Gallons.	Gallons.
1901	198	15,652	78,260	1,536,260	4,208,931	55
1902	216 $\frac{3}{4}$	17,346	86,730	1,499,674	4,108,696	47
1903	229 $\frac{1}{4}$	17,435	87,175	1,413,722	3,873,211	44
1904	240 $\frac{1}{4}$	17,814	89,070	1,686,845	4,621,493	52
1905	250 $\frac{1}{2}$	18,855	94,275	1,749,820	4,794,028	51
1906	264	19,223	96,115	1,630,899	4,468,216	46 $\frac{1}{2}$
1907	280 $\frac{1}{4}$	*21,513	100,250	1,777,333	4,869,406	48 $\frac{1}{2}$

* Excluding 4904 blocks of unimproved land.

The total length of the trunk mains is 52 $\frac{1}{2}$ miles.

Graphs relating to the water supply of Brisbane may be found on page 999 hereof. Particulars relating to the sewerage system of Brisbane are not available.

6. **Country Towns Water Supply, 1907.**—In addition to the city of Brisbane there were at the end of the year 1907 twenty-two towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The sub-joined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1907 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1907.

£			£		
Cost of construction	...	616,564	Expenditure	Office and salaries	9,529
Government loans	...	5,218		Construction	17,890
Rates and sales of water	...	64,314		Maintenance	24,096
Other	...	2,671		Interest & redemption	24,877
Total	...	72,203		Total	76,392
Assets	...	533,591	Liabilities	...	433,738

7. **Fire Brigades.**—In the year 1907 there were twenty-six fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions. The following table gives particulars for the year 1907 for the seventeen fire brigades from which returns were received :—

QUEENSLAND.—FIRE BRIGADES, 1907.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government	4,305	Salaries and wages	6,755
„ Municipalities	4,307	Building, repairs, etc....	3,906
„ Insurance companies	4,255	Plant, stores, clothing, etc.	1,172
„ Other sources	840	Other	3,221
Total	13,707	Total	15,054

At the end of the year 1907 the fire brigades staffs comprised 38 permanent men, 321 partly paid, and 51 volunteers. The metropolitan brigade at Brisbane and the South Brisbane brigade protect an area of 9 $\frac{1}{2}$ square miles; their joint staffs comprise 41 men. They have three steam engines, seven hose carts, and about 15,250 feet of hose. There are 28 telephone fire alarms and 43 call points.

8. **Public Lighting in Brisbane.**—In the metropolitan area of Brisbane the supply of both gas and electricity for lighting purposes is in the hands of private companies.

(i.) *Gas Lighting.* There are two gas companies in the metropolitan area. (a) *The South Brisbane Gas and Light Company Limited.* The works belonging to this company are capable of an output of 500,000 cubic feet of gas per day. The company commenced operations in 1885, and in July, 1908, the length of mains was thirty-five miles and the number of customers 1826. The bye-products manufactured are coke, tar, and sulphate of ammonia. (b) *The Brisbane Gas Company Limited.* Particulars of this company (other than those included in the table below) are not available.

The following table gives particulars of the operations of the two companies specified for the year 1907:—

BRISBANE.—GAS WORKS, 1907.

Average No. of hands employed	158	<i>Capital Value—</i>	
Cubic feet made ...	242,209,000	Machinery and plant ...	£179,580
Cubic feet consumed ...	212,446,000	Land and buildings ...	66,711
Length of mains ... Miles	129½	Total ...	£246,291
Gasometer capacity Cub. ft.	2,286,000	<i>Revenue—</i>	
Coal used... Tons	24,074	From sale of gas ...	£57,440
Coke made ... Tons	14,464	From sale of by-products ...	5,792
		Other ...	2,302
		Total ...	£65,534
		<i>Expenditure...</i>	£34,887

(ii.) *Electric Lighting.* In Brisbane there are two private companies which supply electricity for public and private lighting. (a) *The City Electric Light Company's* station generates direct current (110-220 volts) which is distributed on the three-wire system. The generators have a total capacity of 750 kilowatts and include five Parsons' turbo-generators ranging from 50 to 200 kilowatts each. The area served comprises the business area of the city and the Valley area. Current was first supplied in 1887; there are about 26 miles of low tension cable. (b) *The Brisbane Tramways Company Limited* also supplies current from its power house in connection with its tramway system (see p. 747 ante). Both direct and alternating current are supplied, the capacity of the generators being 1400 kilowatts direct, and 75 kilowatts alternating. Inasmuch as the power is supplied directly from the tramway circuit, it is impossible to allocate capital cost to supply for lighting purposes only. The company supplies current in bulk to the Queensland Railway Commissioner to meet the requirements of the railways in the metropolitan area. Current was first supplied in 1900.

The following statement gives particulars, so far as available, of the supply of electricity for public and private lighting for the year 1907:—

BRISBANE.—ELECTRIC LIGHT STATIONS, 1907.

Units sold during year	1,568,500	<i>Revenue—</i>	
Total motors connected { H.P.	694	From sale of current ...	£22,810
	No. 201	Other ...	£2,826
Total arc lamps connected { Public	60	Total ...	£25,636
	Private 306		
Total incandescent connected { Public	—	<i>Expenditure</i>	£12,000
	Private 7,692	No. of employes ...	£667
Total number of customers	507		

† Approximate.

‡ Including tramways.

§ 5. South Australia.

1. Development of Local Government Systems.—In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council, consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

2. District Councils.—The first District Councils Act was passed in 1858, was amended in 1862, and was further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the council or over which the council had the control and management; fines and penalties enforced under the Act; fees for licenses; and general and special rates and loans. Provision was made for the election of councillors, their number, qualification, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment and rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the Act which is now in force, namely, the District Councils Act 1887, which has in turn been amended in the years 1890, 1893, 1897, and 1904.

(i.) *The District Councils Act 1887* provides for the continuation and amalgamation of existing districts and for the constitution as a new district of any part of the State containing ratable property capable of yielding upon a rate not exceeding one shilling in the pound the sum of £200. The Governor is authorised to alter the area or boundaries of any district by annexation or by subdivision. New districts are constituted upon petition to the Governor; every petition must be signed by fifty inhabitants of the part sought to be constituted, and if the proposed district comprises portion of a previously existing district, by a majority of the ratepayers of such portion.

(a) *Qualification of Councillors.* Every male ratepayer, if of full age, is qualified to be a councillor, unless he is a minister of religion, a stipendiary magistrate, an uncertificated insolvent, or is the treasurer or a paid official of the district council, or is interested in any contract, except for advertisements and printing, with the district council. The chairman is elected by the councillors from their own number.

(b) *Qualification of Electors.* Every person of either sex, if of the age of twenty-one years, whose name appears as a ratepayer in the assessment book is entitled to vote at the elections of councillors and auditors. In case of a joint tenancy or a tenancy in common, only one person is entitled to a vote for every £75 or part thereof at which the property is assessed.

(ii.) *Assessments and Rates.* Assessments are generally made at four-fifths of the gross annual rent at which the property would let for a term of seven years, or at 5 per cent. on the capital value, but in case of land within a township, not less than twenty acres in area, and not built on, used, or divided by roads, assessment is made at the rate of $2\frac{1}{2}$ per cent. on the value of the fee-simple. All other township land unbuilt on is assessed at 5 per cent. on the fee-simple value, and for lands held under mining lease from the Crown, the assessment may not exceed the annual rental. (a) *General Rates* may not be more than one shilling and sixpence nor less than threepence in the pound on the

assessed value. (b) *Special Rates* for the execution of permanent works may also be declared, provided that the general and special rates together do not exceed two shillings and sixpence in the pound. No special rate may be declared without the consent of the ratepayers to be obtained at a meeting called for the purpose, and any six ratepayers may demand a poll to be taken on the subject. The ratepayers of any portion of a district may memorialise the council for specific works for the benefit of such portion of the district, and if the council decide to comply with the memorial a *separate rate* may be levied in respect of property in the portion defined. Lighting rates may also be declared, but must not exceed fourpence in the pound.

(iii.) *Loans*. Any council may, for the execution of any works for which a special or separate rate has been declared, borrow on the security of such rate up to ten times the amount which at the time of borrowing would result from a rate of one shilling in the pound, but if demand be made by any twenty ratepayers, the question whether or not the proposed loan be incurred must be submitted to a poll of the ratepayers. The interest payable on any such loan must not exceed 6 per cent. By an amending Act passed in the year 1904, additional borrowing powers were conferred on the councils for the purpose of carrying out permanent works subject to the conditions that the total amount borrowed must not at any time exceed three times the amount which would result from a rate of one shilling in the pound, and that the principal sum and interest must be repaid by means of a sinking fund within forty-two years.

(iv.) *Revenue and Expenditure*. The revenue of the councils consists of rents, profits and income from property vested in the council or over which the council has control; the proceeds from the sale of such property; fines and penalties imposed under the Act; fees for licenses; rates; and main road subsidies. Under the District Councils and Corporation Subsidy Act 1890 provision is made for grants out of the general revenue to district councils and corporations in lieu of fees received under the Auctioneers Act 1862 and the Licensed Victuallers Act 1880. The amount of such grant is a sum equal to five shillings in the pound on the amount collected from general rates not exceeding one shilling in the pound declared during any one year. Revenue may be expended in carrying out any authorised works; in payment of salaries and professional fees; in subscriptions to charities; in payment of councillors' travelling expenses; in promoting bills before Parliament, and generally in carrying out the purposes of the Act.

(v.) *Powers and Duties of Councils*. A council may carry out certain permanent works which are defined in the Act, and which comprise the following:—The construction of new streets and roads, sewers, and drains; the construction or purchase of water-works, district offices, pounds, abattoirs, markets, baths, hospitals, and other charitable institutions; the providing of libraries, museums, and places of public recreation; and the construction of tramways and machinery for the treatment of refuse. The councils are invested with wide powers to make by-laws for the more effective exercise and discharge of their powers, duties, and liabilities, particularly in respect of the following matters:—The compulsory purchase of land; manufacturing districts; the public health; the sale of food and drugs; the management of unoccupied waste lands of the Crown; drainage; piers, jetties, and wharves; weights and measures; vermin destruction; game and fisheries; streets, roads, and public places; fire brigades; impounding; and for fixing penalties for breaches of such by-laws. Upon the district councils also is imposed the duty of administering the Health Acts, the Sale of Food and Drugs Acts, the Game and Fisheries Acts, the Vermin Acts, the Bush Fires Act, the Impounding Act, the Weights and Measures Act, and the Slaughter House Act.

3. *Municipalities* were first established under the Municipal Corporations Act of 1861, which, after providing for the extensions of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to incorporate any town, district, or place within the province, a municipality. This Act and its amendments were consolidated

in the Municipal Corporations Act of 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Act of 1890, which was in turn amended in 1903.

(i.) *The Municipal Corporations Act 1890.* After making provision for continuing existing corporations and by-laws the Act authorises the Governor to constitute new municipalities, or to alter the boundaries of existing ones, on petition of not less than two-fifths of the ratepayers or owners of ratable property within the land proposed to be incorporated, separated, or added; and also to rearrange, increase, or diminish the number of wards of a municipality on petition of not less than one-fifth of the ratepayers. Each council consists of a mayor, and of two councillors for each ward, and the provisions as to their qualifications are substantially the same as in the case of district councils referred to above. All persons of full age, if British subjects and not in receipt of public relief or alms, who are either owners or occupiers of any ratable property within a municipality are entitled to vote at the election of the mayor and councillors. Provision is made for the nomination and election of the mayor, councillors, and auditors, and for regulating the meetings of the councils.

(ii.) *Municipal Functions of Councils.* All public streets and roads are vested in the council of the municipality in which they lie, but no street can be declared a public street after the passing of the Act unless it is at least forty feet wide. Full powers are given as to opening, closing, or fencing public streets, and for supervising the formation and repair of private streets and lanes. Councils are further authorised to execute works for, or to contract for the lighting, sewerage, and drainage of municipalities; to take all measures requisite for the public health; to establish public baths, fountains, and parks; to grant licenses for slaughter-houses, hide and skin markets, for the depasturing of cattle, and for the removal of sand and gravel; to control the erection or pulling down and the maintenance of buildings and hoardings; to organise fire brigades, and to order the removal of inflammable buildings.

(iii.) *Assessments and Rates.* Owners and occupiers of ratable property in municipalities are assessed each year on the same basis as stated above in respect to ratable property within districts under the government of district councils. In addition to the rate authorised by the Public Health Act a *general rate*, not exceeding one shilling in the pound, may be declared; rates for lighting and for the improvement of parks and reserves may also be levied, the former being limited to fourpence and the latter to threepence in the pound. The council may also declare a rate for defraying the expense of watering streets, to be apportioned among the persons liable for the rates in respect of properties fronting such streets. *Special and separate rates* may also be levied in the same manner as by district councils, but, in the case of municipalities, the general and special rates together must not exceed two shillings in the pound.

(iv.) *Borrowing powers* of municipal corporations are substantially the same as those of district councils, and similar additional powers were given to municipalities as to districts by the Municipal Corporations Amendment Act 1903.

(v.) *Revenue, Expenditure, and Miscellaneous.* Other provisions as to the revenue and expenditure of municipalities, and their powers as regards permanent works, are the same as those in force under the District Councils Acts, referred to above, while very wide powers are given to municipal councils in respect of a variety of matters and things to provide by means of by-laws for the general good government of the municipalities.

4. Finances of District Councils and Corporations, 1901 to 1907.—The subjoined tables shew the amounts of assessment and the revenue and expenditure of district councils and of corporations for each financial year from 1901 to 1907, inclusive; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges." (See pages 681-2 *ante*.)

SOUTH AUSTRALIA.—ASSESSMENT, REVENUE, AND EXPENDITURE OF LOCAL AUTHORITIES, 1901 to 1907 (EXCLUSIVE OF MAIN ROADS FUNDS).

Year.*	Amount of Assessment.	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.

DISTRICT COUNCILS.

	£	£	£	£	£	£	£
1901	1,412,507	63,321	15,225	51,919	130,465	65,406	128,499
1902	1,433,036	63,193	15,735	38,198	117,126	66,355	121,210
1903	1,452,413	64,207	15,358	40,713	120,278	64,642	122,936
1904	1,488,716	70,975	14,252	39,766	124,993	70,201	123,779
1905	1,503,230	71,603	15,490	46,603	133,696	69,769	131,028
1906	1,604,979	75,253	16,845	39,987	132,085	72,067	128,605
1907	1,647,895	81,295	18,296	28,395	127,986	81,298	121,030

CORPORATIONS.

1901	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1902	1,195,991	87,961	9,113	60,531	157,605	58,651	157,523
1903	1,208,825	85,702	10,470	57,509	153,681	55,544	152,475
1904†	1,222,522	96,545	14,766	45,534	156,845	61,004	156,722
1905	1,236,578	98,632	15,127	47,267	161,026	60,720	159,863
1906	1,253,566	99,160	14,713	52,225	166,098	63,422	162,078
1907	1,254,956	100,863	14,276	39,779	154,918	88,525	161,754

* Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June. † For eleven months ended the 30th November, 1904.

5. **Adelaide Water Supply System.**—The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga, Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and Thorndon Park, having an aggregate capacity of 3,895,000,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. The total capital cost up to the 30th June, 1907, was £1,693,884, the total amount paid by way of interest on loans being £1,463,824, the total expenditure on maintenance £640,112, and the total revenue £2,191,789. The area served at the same date was 76,532 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1904 to 1907, inclusive:—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1904 to 1907.

Year Ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water. ¹
	Miles.	£	£	£	%	Million of Gals.
1904 ...	640	70,333	19,257	51,076	3.09	3,550
1905 ...	647	72,471	20,002	52,469	3.16	3,650
1906 ...	656½	72,976	22,298	50,678	3.02	3,550
1907 ...	667½	74,727	19,703	55,023	3.24	3,350

1. In the Adelaide Water District there are no governing meters. The quantities shown above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

Graphs relating to Adelaide water supply may be found on page 999 *ante*.

6. **Adelaide Sewerage System.**—In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, 247 miles of sewers had been laid in the city and suburbs up to the 30th June, 1907, the total number of premises connected being 24,393. The sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months. The total cost of construction to the 30th June, 1907, was £625,309.

The following table gives particulars relating to the Adelaide sewerage system for the years 1904 to 1907, inclusive:—

ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1904 to 1907.

Year Ended the 30th June.	Revenue.			Expenditure.			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1904 ...	30,923	6,594	37,517	5,466	5,962	11,428	26,089	4.12
1905 ...	31,682	6,817	38,499	5,679	5,393	11,072	27,427	4.41
1906 ...	32,530	7,006	39,536	5,921	5,901	11,822	27,714	4.45
1907 ...	32,380	6,390	38,770	6,284	5,460	11,744	27,026	4.00

7. **Water Supply in Country Towns.**—In South Australia there are a number of country waterworks under the control of the Public Works Department. These works are partly used for irrigation purposes, and the most important of them have already been referred to in the section of this book dealing with the subject of "Irrigation." (See p. 589 *ante*.) In addition to the works mentioned in the section referred to, there are other country districts served by reticulations extending over 311 square miles. Detailed particulars of the various works are not available. The total extent of country for which reservoir water was available in 1907 was 4211 square miles, the reservoirs holding, in the aggregate, 7,370,000,000 gallons, and the main pipe-lines reaching 2177 miles. The capital cost of the works under the waterworks branch, as distinct from the water conservation branch, which deals with isolated and remote districts, was £4,016,000, and the net revenue in 1906-7 was £121,250, returning a net percentage of 2.13 on the cost of construction.

8. **Public Lighting in Adelaide.**—In the metropolitan area of Adelaide, public lighting—both by gas and electricity—is carried on by private companies.

(i.) *Gas Lighting.* The South Australian Gas Company supplies gas to the city of Adelaide, Port Adelaide, and Glenelg, and also to Port Pirie, Gawler, Kapunda, and Strathalbyn. The total length of mains is about 200 miles. The following table gives particulars as to the supply of gas in the places specified, separate particulars for the metropolitan area alone not being available:—

SOUTH AUSTRALIA.—PUBLIC LIGHTING, GASWORKS, 1907.

Gas manufactured	Cub. ft.	302,543,000	<i>Capital cost</i>	£350,808
Gas sold	Cub. ft.	282,733,000	<i>Revenue—</i>	
			From sale of gas	£82,437
			" " by-products	£23,274
Coal used	Tons	28,850	Other	£1,308
Number of customers	...	13,178	Total	£107,019
Number of employés	...	284	<i>Expenditure</i>	£67,727

(ii.) *Electric Lighting.* Current for public and private lighting in Adelaide is generated by the Adelaide Electric Supply Company Limited. Electricity is supplied from the power house in Grenfell-street by means of direct current generators for the central area of the district served; the suburban areas, as well as Port Adelaide, are supplied through the agency of direct current to alternating current motor generators. In July, 1908, the capacity of the direct current generators was 1050 kilowatts, and of the direct to alternating current motor generators was 150 kilowatts. Two 750-kilowatt continuous current generating sets were in course of erection. Within the city area proper the three-wire continuous current system was in use; in the suburbs alternating current of 50 periods at 2000 volts is supplied to transformer stations and is thence distributed on the three-wire system. The supply to Port Adelaide is transmitted by a feeder line $8\frac{1}{2}$ miles long at a pressure of 4000 volts, obtained by means of step-up transformers. The district served comprises the City of Adelaide, North Adelaide, Prospect, Walkerville, St. Peters, Kensington and Norwood, Burnside, Unley, Thebarton, Hindmarsh, Woodville, Alberton, and Port Adelaide, covering about 62 square miles. The length of street in which the supply is available amounts to 78 miles. There are $14\frac{1}{2}$ miles of high tension and $87\frac{1}{2}$ miles of low tension cable overhead, and $10\frac{1}{2}$ miles of high tension and $19\frac{1}{2}$ miles of low tension cable underground.

The following table gives particulars of the electric light supply in Adelaide for the year 1907 :—

ADELAIDE.—ELECTRIC LIGHTING, 1907.

Total Load connected (16 candle-power lamp equivalent) ...	51,378	Total capital cost ...	£211,188
Total motors connected { H.P. 1,431		Revenue—	
{ No. 390		From sale of current ...	£21,932
Total Arc lamps connected { Public 63		Other ...	£691
{ Private 548		Total ...	£22,623
Total Glow lamps connected { Public 340		Expenditure ...	£12,593
{ Private 19,521		Number of employes ...	94
Units sold during year ...	1,384,178		

It may be mentioned that in the private Act of the Adelaide Electric Supply Company Limited, the right is reserved to the Adelaide City Council to acquire the company's undertaking, and that the matter of securing these works is one which the City Council will consider in the near future.

§ 6. Western Australia.

1. *Types of Local Authorities.*—In this State there are three forms of local authorities, namely :—(i.) Municipalities, (ii.) Road Districts, and (iii.) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Acts 1902 and 1904. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into road districts, which are administered under the Roads Act 1902 and 1904. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act, while outside municipalities local Boards of Health may be formed. In 1904 another local government measure, the Water Boards Act, was passed, under which Boards may

be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

2. **Municipalities** are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders of the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(i.) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality; if the population is less than 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural-born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

(ii.) *Qualification of Voters.* Every ratepayer, if of twenty-one years of age or over, is entitled to vote at the municipal elections. In the case of joint owners or occupiers, each owner or occupier, if not exceeding two in number, is deemed to be the owner or occupier of half the property; if more than two in number the owners or occupiers may appoint two of their number to be registered in respect of the property. Corporations and companies may also nominate two persons to be registered as voters.

(iii.) *Powers and Duties of Councils.* The councils have power to make by-laws with respect to the usual matters pertaining to municipalities, and are also invested with the control and management of all public places, streets, roads, bridges, sewers, and drains within the municipality. They may contract for the lighting of any part of the municipality for a period not exceeding three years, and may levy a lighting rate; they may construct dams or reservoirs for water supply, may establish fire brigades and baths, and may provide places of recreation, pounds, abattoirs, markets, and weighbridges.

(iv.) *Valuation of Ratable Property.* All land is ratable property except the following:—Property of the Crown used for public purposes or unoccupied; property used for religious or charitable purposes; public libraries, museums, etc.; cemeteries; any land declared by the Governor to be exempt from municipal rates. Generally the annual value of improved or occupied land is the average rent obtainable, less 20 per cent., but in no case may the annual value be less than 4 per cent. of the fee-simple value. The annual value of unimproved or unoccupied land is taken to be not less than $7\frac{1}{2}$ per cent. on the capital value. No allotment of ratable land may be valued at an annual value of less than £2 10s.

(v.) *Rates.* General rates are levied annually, but may not exceed one shilling and sixpence in the pound on the annual value. Lighting rates and special rates for the repayment of debentures and interest may also be struck, but may not exceed the maximum rate allowed in the case of general rates.

(vi.) *Borrowing Powers.* The council of a municipality may borrow money on the credit of the municipality for permanent works, or for the purpose of liquidating the principal moneys owing on account of any previous loan. Permanent works may be the construction or alteration of any street, footway, road, bridge, culvert, wharf, or jetty; the construction of sewers and drains, and works connected with sewerage and drainage;

the construction or purchase of waterworks, tramways, municipal offices, pounds, abattoirs, markets, and baths; the improvement of endowment lands; providing places of public recreation; the construction of a general warehouse, or a theatre, or of refuse destructors; and the purchase of quarries or land. The amount borrowed at any time may not exceed ten times the average ordinary income of the municipality for the two years last preceding, and the amount borrowed to liquidate any loan must not exceed the balance of principal owing. A municipality may also overdraw on the amount of its current account, but the overdraft must not at any time exceed one-third of the ordinary revenue for the preceding year.

(vii.) *Government Subsidies.* Grants are made annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound, and must have collected not less than £300 from such rate. Newly-constituted municipalities are, during the first year of existence, dealt with apart from the provisions of the general scheme, and are allowed a subsidy of £2 for every £1 of general rate collected; in subsequent years they participate according to the general provisions. The following table shews the basis on which the municipalities are classified:—

WESTERN AUSTRALIA.—CLASSIFICATION OF MUNICIPALITIES.

Income from General Rates.			From £20,000 to £30,000.	From £10,000 to £20,000.	From £5000 to £10,000.	From £500 to £5000.	Under £500.
Class	1st	2nd	3rd	4th	5th

No subsidy is paid on income from general rates exceeding £3000.

3. *Area, Population, etc., of Municipalities.*—Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS, AND VALUATION OF MUNICIPALITIES, 1901 to 1907.

Year ended the 31st October.	Number of Municipalities.	Area	Population.	Dwellings.			Unimproved Capital Value of Freehold Land.	Amount Payable in respect of Rates.
				Occupied.	Unoccupied.	Total.		
		Acres.	No.	No.	No.	No.	£	£
1901 ...	42	71,721	*96,807†	†20,989	†967	†21,956	||	||
1902 ...	44	68,867	*96,807†	†20,989	†967	†21,956	||	||
1903 ...	44	73,338	¶115,350	†20,989	†967	†21,956	||	||
1904 ...	43	77,331	†115,182	†20,961	†960	†21,921	||	||
1905 ...	43	75,415	†115,182	†20,961	†960	†21,921	‡8,280,698	132,453
1906 ...	45	81,519	=125,474	†20,961	†960	†21,921	‡8,280,698	142,229
1907 ...	47	89,748	136,845	\$26,756	\$2,050	\$28,806	‡8,280,698	142,770

* Census figures, 1901. † Returns for thirty-nine municipalities only. ‡ Returns for thirty-eight municipalities only. || Not available. § Exclusive of one municipality. ¶ Rough census figures, 1903. = Returns for forty-four municipalities.

4. *Revenue and Expenditure of Municipalities, 1901 to 1907.*—The following table gives particulars as to the revenue and expenditure of municipalities during each year from 1901 to 1907, inclusive:—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 to 1907.**

Year ended the 31st October	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1901 *	78,021	66,860	82,228	227,109	111,241	23,809	79,365	214,415
1902 ...	94,894	81,436	113,591	289,921	125,721	33,936	123,615	283,272
1903 ...	104,760	80,938	116,653	302,351	142,347	33,294	137,228	312,869
1904 ...	119,110	90,868	213,785	423,763	187,747	38,227	168,524	394,498
1905 ...	130,575	85,798	167,793	384,166	183,226	53,746	174,716	411,688
1906 ...	146,206	95,997	210,226	452,429	165,421	50,739	200,844	417,004
1907 ...	136,868	85,473	151,865	374,206	249,453	57,804	111,125	418,382

* Incomplete.

5. **Assets and Liabilities of Municipalities, 1901 to 1907.**—The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year from 1901 to 1907, inclusive:—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES,
1901 to 1907.**

Year ended the 31st October	Assets.					Liabilities.		
	Balance in Hand.*	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901† ...	37,259	214,984	42,311	13,432	307,986	321,000	19,762	340,762
1902† ...	49,557	294,800	62,239	20,420	427,016	413,050	29,700	442,750
1903 ...	41,375	332,492	64,936	34,140	472,943	437,300	41,200	478,500
1904 ...	72,894	354,798	81,514	36,718	545,924	589,500	32,304	622,104
1905 ...	43,209	473,320	94,892	36,086	647,507	623,414	28,031	651,445
1906 ...	78,579	537,407	110,165	46,495	772,646	713,350	45,597	758,947
1907 ...	39,414	553,873	125,742	55,430	774,459	730,994	47,131	778,125

* Including bank balance, cash in hand, and fixed deposit. † Incomplete.

‡ Exclusive of the municipality of Mount Morgans.

6. **Road Districts.**—The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Acts 1902 and 1904, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tires Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards as regards roads and bridges are described in the chapter of this book entitled "Roads and Bridges." (See pages 682-3 *ante*.) In addition to these powers and duties the Boards have power to do everything necessary for the proper management of the property under their control, and may also construct and maintain tanks, wells, and dams, and bore for water for the purpose of supplying water along any road in the district. Subject to the provisions of the Roads Acts, the Board has also the control and management of any such public reserves, parks, commons, wells, dams, reservoirs, buildings, machines, etc., as the Governor may direct. The Board has also extensive powers for making, altering, and repealing by-laws.

7. **Boards of Health** may be established under the Public Health Act 1886, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case special Boards are elected by the ratepayers. The revenue of these Boards consists chiefly of moneys received from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during each year from 1901 to 1907, inclusive:—

**WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH BOARDS,
1901 to 1907.**

Year ended the 31st October.	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
	£	£	£	£	£	£
1901	15,230	17,477	32,707	18,787	12,992	31,779
1902	17,616	22,569	40,185	19,248	20,114	39,362
1903	21,884	22,610	44,494	22,872	21,184	44,056
1904	25,777	25,904	51,681	28,299	23,321	51,620
1905	26,003	30,864	56,867	30,724	28,061	58,785
1906	*28,242	40,943	69,185	40,518	28,038	68,556
1907†	†33,289	35,285	68,574	39,419	31,697	71,116

* Including sanitary rates, £11,745. † Including sanitary rates, £16,564. ‡ Exclusive of particulars of twenty-one boards which did not furnish returns, and of five boards which were not active during the year, all outside municipalities. Particulars for previous years are also incomplete.

On the 31st October, 1907, there were forty-six Local Boards of Health within municipalities and fifty-five extra-municipal Boards.

8. **The Perth Metropolitan Waterworks.**—These works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000, and were placed under the control of a Board, which was in the year 1904 superseded by the Minister for Works. The original Act was subsequently amended in 1898, 1902, and 1905. The supply of water is derived from three sources—(i.) the Victoria reservoir, (ii.) the Mundaring reservoir, and (iii.) from six artesian bores.

(i.) *The Victoria Reservoir.* This is the main source of supply. The reservoir has a capacity of 212,000,000 gallons, and has a catchment area of 10,000 acres on the Darling Ranges. The water gravitates from the Victoria reservoir to Perth through two mains which are respectively 21 inches and 12 inches in diameter, and 15½ and 17 miles in length. There are two service reservoirs—one of 2,413,000 gallons, and the other of 600,000 gallons capacity. The quantity of water drawn from this reservoir during the year ended the 30th June, 1907, was about 506,000,000 gallons.

(ii.) *The Mundaring Reservoir.* This reservoir is used as an emergency supply. It has a capacity of 4,650,000,000 gallons, but is only connected by one eight-inch main. During the last financial year about 12½ million gallons were drawn. This reservoir has a catchment area of 569 square miles, and was constructed in connection with the gold-fields water supply. (See p. 582 hereinbefore.)

(iii.) *Artesian Bores.* There are in all six artesian bores, the flow from which augments the main supply from the Victoria reservoir. The total flow is about 360,000,000 gallons during the season, which lasts approximately for six months.

(iv.) *Financial Operations of Board, 1901 to 1908.* The following table gives particulars of the financial operations of the Metropolitan Waterworks Board for each year ending the 30th June, from 1901 to 1908, inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—PARTICULARS OF FINANCIAL OPERATIONS, 1901 to 1908.

Year ended the 30th June.	Capital Cost of Works.	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Interest Earned by Net Revenue on Net Capital Cost.	Percentage of Expenses on Gross Revenue.
	£	£	£	£	£	Per cent.	Per cent.
1901 ...	386,414	...	386,414	27,249	8,021	4.9	29.4
1902 ...	395,764	...	395,764	32,676	13,059	5.2	36.9
1903 ...	408,681	...	408,681	34,164	18,536	3.8	54.2
1904 ...	413,764	...	413,764	36,517	14,674	5.3	40.2
1905 ...	418,479	...	418,479	42,177	14,561	6.6	35.0
1906 ...	440,125	6,165	433,960	43,571	12,989	7.0	29.8
1907 ...	486,857	15,915	470,942	45,848	14,923	6.6	32.5
1908 ...	503,581	25,463	478,118	46,300	12,685	7.0	27.4

(v.) *Perth Water Supply.*—Consumption of Water, 1901 to 1908. The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1901 to 1908 inclusive:—

PERTH METROPOLITAN WATERWORKS BOARD.—CONSUMPTION OF WATER, 1901 TO 1908.

Year ended the 30th June.	Total Annual Supply.*			Average Daily Supply.*	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	
	From Reservoir.	From Bores.	Total.				Per House.	Per Head of Population.
	000 Gals.	000 Gals.	000 Gals.	000 Gals.	No.	No.	Gals.	Gals.
1901 ...	380,003	161,589	541,592	1,484	6,182	32,000	240	45.2
1902 ...	334,752	168,439	503,191	1,378	7,043	35,000	195	39.3
1903 ...	203,517	366,504	570,021	1,561	8,108	38,350	192	40.7
1904 ...	436,657	264,566	701,223	1,921	9,104	41,000	211	46.8
1905 ...	481,528	274,327	755,855	2,071	10,105	45,000	204	46.1
1906 ...	552,373	288,812	841,185	2,305	10,882	48,000	212	48.0
1907 ...	506,751	359,797	866,548	2,375	12,164	52,000	195	45.6
1908 ...	562,316	219,718	782,034	2,137	13,156	52,000	162	41.9

* In thousands of gallons.

Graphs relating to the water supply of Perth will be found on page 999 *ante*.

9. **Perth Metropolitan Drainage and Sewerage.**—In Perth systems for the disposal of sewage and storm water have recently been put in hand by the Public Works Department. The construction of septic tanks and filter beds was commenced in April, 1906, and has now been completed. The construction of the main sewers and drains is proceeding under the direction of the Public Works Department, while the City Council is engaged in the construction of subsidiary storm water drains. The work of reticulation had not been commenced at the end of the year 1908.

It has recently been urged that the construction and control of the drainage and sewerage works should be handed over to a Board, as has been done in Sydney and Melbourne.

10. **Fremantle Harbour Trust.**—Under the provisions of an Act passed in 1902 a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit

vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 feet long. A channel, 450 feet wide and 30 feet deep at low water, has been blasted and dredged through the rock which formerly crossed the estuary to the river, and wharves and goods-sheds have been constructed along the reclaimed foreshore on the south side of the harbour. At the present time all the European mail boats, which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides. For the year ended the 30th June, 1908, the total revenue of the Trust was £116,495, and the expenditure £105,047, of which £62,585 was interest on loans, redemptions, etc., paid to the State Government.

11. Fire Brigades Boards.—Fire brigades have been established in a number of the more important centres of population in the State. The brigades are under the control of local boards, and are in some cases municipal and in others volunteer. At the end of the year 1907 there were thirty-two such Boards in existence. The figures given below shew particulars of thirty of these Boards for the year 1907, two Boards having remained inactive during the year:—

WESTERN AUSTRALIA.—FIRE BRIGADE BOARDS, 1907.

Number of firemen	498*	Value of land, buildings, & plant	£31,703*
Receipts	£13,943	Expenditure... ..	£13,524

* In 1906.

12. Public Lighting in Perth.—With the exception of the Subiaco Municipal Electric Lighting Plant the supply of both gas and electricity for public and private lighting in the metropolitan area of Perth is under the control of private companies. At present the streets of Perth are lighted almost entirely by gas, the number of incandescent gas lamps in the city alone being 1148 in November, 1908, and the number of electric lamps being only seven. The City Council in June, 1908, served on the Perth Gas Company notice of intention to exercise the powers conferred under the Perth Gas Company Act 1886, and to purchase the works and plant of the company; with the object of fixing the price to be paid a survey and valuation has recently been made.

(i.) *Gas Lighting.* The Perth Gas Company Limited commenced to supply gas for public and private lighting and for power in 1885. Though the company has the right to supply gas within a radius of five miles from the General Post Office, Perth, the present supply is limited to a radius of two miles, comprising the City of Perth, and parts of Subiaco, Leederville, and Mount Lawley. The works are capable of producing daily 250,000 cubic feet of coal gas and 120,000 cubic feet of oil gas. The length of the gas mains is about forty-five miles, ranging from 2 inches to 10 inches in diameter.

The following table gives particulars regarding the supply of gas for public and private lighting in the metropolitan area of Perth during the year 1907:—

PERTH.—PUBLIC LIGHTING, GASWORKS, 1907.

Gas manufactured	Cub. ft. 51,837,000	<i>Capital Cost</i> —	
Gas sold	Cub. ft. 47,498,000	Buildings*	£4,310
Coal used	Tons 4,780	Machinery, plant, etc.	38,465
Number of customers	1,081		
Number of employes... ..	57	Total... ..	42,775
		<i>Revenue</i>	23,828
		<i>Expenditure</i>	13,952

* Land is used conjointly in connection with both the gas and electricity supply undertakings of the company. The value of freehold property in 1906 was £22,563.

(ii.) *Electric Lighting.* (a) *The Perth Gas Company Ltd.* is empowered to supply electric light within a radius of five miles from the General Post Office, Perth. Particulars of the operations of the company in regard to electric lighting are not available. (b) *The South Perth Electric Supply and Power Company Ltd.* supplies current in the municipality of South Perth. Continuous current is generated and distributed on the 3-wire system, the length of cables (overhead) being about twenty-four miles. Current was first supplied in 1905. (c) *The Subiaco Municipal Electric Lighting Plant* supplies current over an area of about one and three-quarters miles in the Subiaco municipality, the length of streets wired (overhead) being thirteen and a-half miles. Continuous current is generated, the capacity of the generators being 200 kilowatts, and is distributed on the 3-wire system (440-220 volts). Current was first supplied in June, 1903. The capital cost at the end of the year 1907 was £15,451, exclusive of land; at the same date there were four motors, eighteen arc lamps, and 5386 glow lamps connected. During the year 1907 there were 133,136 units of current sold, the revenue therefrom being £4094, and the expenditure £2833.

Particulars regarding electric lighting for the metropolitan area are too incomplete for publication.

§ 7. Tasmania.

1. **Development of Local Areas.**—In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. Under the provisions of these Acts parts of the State were placed under the control of Town Boards and Road Trusts. The general rate under the Municipalities Acts was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound. Road rates might also be imposed in addition to municipal rates under the Roads Acts, with reference to which further particulars are given in the chapter of this book on "Roads and Bridges."

2. **Acts now in Force.**—In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act of 1906, are vested with powers and authorities under the following Acts:—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, the Roads Act 1884, the Rural Municipalities Act 1865, the Police Act 1905, the Town Boards Act 1896, the Public Recreation Grounds Act 1888, the Cemeteries Act 1865, and the Californian Thistle Act 1883. The Governor is authorised to unite, subdivide, or abolish municipalities or wards on petition, and may do so without petition if in any municipality there is at any time no council or an insufficient number of councillors to form a quorum. The Act of 1906 was amended in 1908.

(i.) *Formation of Councils.* In the case of municipalities not divided into wards the council is to consist of the number of members, being a multiple of three, assigned to it by the Governor, while the councils of municipalities which are subdivided consist of three councillors for each ward. Any resident elector is eligible to act as a councillor

unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

(ii.) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale:—

Annual Value of Property	Under £30.	£30 to £80..	£80 to £160.	£160 to £240.	£240 to £360.	£360 and upwards.
Number of Votes	1	2	3	4	5	6

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupier as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

(iii.) *Local Districts and Committees.* Any municipal council may by special resolution define a local district to be assigned to a local committee, and any district proclaimed under the Public Recreation Grounds Act 1888 may also be defined as a local district. A local committee may exercise any of the powers and functions conferred upon councils as may be declared to be within its province by special resolution.

(iv.) *Revenue and Rates.* The ordinary revenue of a council, which consists principally of (a) rates (other than special rates), tolls, ferry dues, market dues, fees, and other charges authorised by the Act, and (b) grants from the central Government, is carried to a general account called the municipal fund. Rates are of two kinds, namely, (a) general, and (b) special. (a) *General Road-Rates*, of not less than sixpence in the pound of the annual value of the whole of the ratable property in a municipality, must be levied at least once a year, but the total amount of all such rates levied in any one year must not exceed one shilling and threepence in the £. The proceeds of general road rates are carried to a separate account and are to be applied for the purposes of constructing and maintaining roads, streets, bridges, jetties, wharves, and tramways; at least three-fifths of all sums received in respect of property situate in a particular ward from the making of such a rate must be expended within such ward for the purposes mentioned. *General Health Rates* may be levied either prospectively or retrospectively in order to defray the expenses incurred in the execution of the Public Health Act 1903. (b) *Special Rates* may be made for the purpose of defraying the cost of constructing and maintaining works for sewerage or drainage, for the manufacture of gas, electricity, hydraulic or other power; watering or lighting roads; maintaining public recreation grounds; the destruction of rabbits; any of the purposes of the Public Health Acts; and of constructing and maintaining slaughter houses, abattoirs, or other works. A *Codlin Moth Tax* may be levied as prescribed by the Codlin Moth Act 1888, and when a council undertakes the removal of house refuse from premises the expense of such work is to be paid for by a *Special Cleansing Rate*. For defraying the expenses incurred in the execution of any work for the special benefit of a particular part of a municipality, the council may also levy a special rate called a *Separate Local Rate* upon all ratable property within such part, but the question as to whether any work is or is not for the special benefit of any particular part of the municipality must be referred to the Minister, who may direct, when such rate would exceed sixpence in the pound, that the question of levying the same be left to the decision of the electors of the defined part; whenever the expense to be incurred involves more than one yearly rate, the question must be referred to the electors.

(v.) *Ratable Property.* The council is not empowered to levy any rate or charge (except for water, prevention of fire, cleansing, drainage, or sewerage, or for light or power actually supplied, or for any service actually rendered) upon—Crown property; any property used solely for religious purposes; any portion of any premises used exclusively as a public library, museum, school of arts or mines, literary or scientific institution, or any cemetery; benevolent asylums or charitable institutions; or upon any building or place vested in trustees for an agricultural or pastoral society for the purposes of a show ground. The Crown has in any such case the right to commute its liability by payment of a sum agreed upon between the council and the Treasurer.

(vi.) *Borrowing Powers.* Power is given to the council to borrow money either—

- (a) By the sale of debentures under provisions of the Local Bodies Loans Act for the purpose of permanent works and undertakings, or for the purpose of liquidating the principal sum owing on account of a previous loan; or
- (b) By way of temporary advances against rates to an amount not exceeding one-half the expected total proceeds of such rate. Temporary advances must be paid off within twelve months of the date of borrowing.
- (c) Under the amending Act of 1908, councils may raise temporary loans by way of bank overdraft on the credit of the municipality to an amount not exceeding one half of the prior year's revenue, and in addition may overdraw to the extent of deposit receipts for money due by the bank.

(vii.) *General By-laws.* The councils have wide powers to make by-laws for the general purposes of the Act, and particularly in connection with the following matters:—The trespass and agistment of animals; the erection or demolition of buildings, awnings, and temporary structures; the prevention and extinction of fires; the granting of licenses; the regulation of markets and weighbridges and the establishment of rents and fees for the use thereof; the regulation or the prohibition of the introduction of any pest or anything affected by a pest; the control of public safety and the preservation of public decency; the control and management of roads and footways; the imposition and collection of tolls upon roads and bridges, and of rates and dues upon ferries, wharves, tramways, jetties, piers, and markets under the control of the council; the regulation of various trades and callings; the control of the general traffic in public places, boats and boatmen, vehicles, steam rollers and bicycles.

The councils are also vested with all powers which were conferred upon any of the local bodies mentioned above (see page 1042 *ante*, para. 2), and which were abolished by the Local Government Act 1906.

(viii.) *Water Districts.* Any number of municipalities, situated so as to be capable of taking advantage collectively of some common water system or catchment area, may by petition to the Governor be constituted a water district under the Act. In every case where a water district is proclaimed upon the joint petition of two or more municipal councils the management of such district is in the hands of a joint council consisting of such a number of members of each of the councils as the Governor may determine. This council is invested with borrowing and rating powers and may supply water within the district on such terms as it may fix, provided that no water may be supplied for irrigation until domestic and stock supply purposes have first been satisfied. Provision is also made in the Act for uniting municipalities for the purpose of carrying out sewerage, irrigation, or water conservation schemes for the common benefit of the municipalities, or for any other purpose authorised by the Act, such as, in the opinion of the Governor, is likely to be of permanent utility, and is best capable of being carried out by concerted action.

3. Annual Value, Revenue, and Expenditure of Municipalities.—The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1901 to 1906, inclusive. Particulars of operations under the Act of 1906 are not yet available:—

**TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES,
1901 TO 1906.**

Year.	Number of Municipalities.	Annual Value of Ratable Property.	Revenue.				Expenditure. ²
			From Rates.	From Govt.	From other Sources. ¹	Total.	
		£	£	£	£	£	£
1901 ...	21	683,039	55,953	3,798	47,880	107,631	109,811
1902 ...		688,745	57,526	4,498	51,870	113,894	107,932
1903 ...		702,067	56,367	500	50,890	107,757	110,162
1904 ...		718,635	61,107	...	85,045	146,152	141,202
1905 ...		739,005	60,097	...	89,555	149,652	153,937
1906 ...		749,537	64,059	150	72,610	136,819	140,745

1. Including sums derived from loans.

2. Including repayments of loans.

4. Annual Value, Revenue, and Expenditure of Town Boards, 1901 to 1906.—The following table gives similar particulars to the above for town boards. These boards were abolished by the Act of 1906, but particulars of the new municipal districts are not yet available:—

**TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF TOWN BOARDS,
1901 TO 1906.**

Year.	Number of Town Boards	Annual Value of Ratable Property.	Receipts.				Expenditure.
			From Rates.	From Govt. ¹	From other Sources.	Total.	
		£	£	£	£	£	£
1901 ...	20	154,101	16,014	9,073	3,847	28,934	28,851
1902 ...	20	165,937	10,171	6,645	8,691	25,507	25,015
1903 ...	22	172,905	10,321	4,758	10,077	25,156	24,302
1904 ...	23	192,572	13,320	6,599	10,468	30,387	29,735
1905 ...	23	194,878	13,328	5,278	14,962	33,568	32,193
1906 ...	23	243,424	14,284	572	15,173	30,029	34,080

1. Including loans.

5. Total Revenue and Expenditure of Local Bodies, 1901 to 1906.—Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to the shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each year from 1901 to 1906, inclusive. Particulars under the Act of 1906 are not yet available:—

**TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE
OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1901 to 1906.**

Particulars.	1901.	1902.	1903	1904.	1905.	1906.
*REVENUE.						
	£	£	£	£	£	£
Marine Boards and Lighthouses	44,114	44,095	36,827	50,016	60,672	77,224
Municipalities ...	103,833	109,397	107,349	146,152	150,291	186,669
Road and Bridge Trusts ...	21,564	22,794	25,124	28,879	28,663	30,271
Cemetery Trusts ...	1,093	1,062	1,087	1,227	2,078	1,121
Town Boards ...	19,861	18,862	19,506	24,304	28,290	29,457
Water Trusts ...	6,794	8,378	8,427	9,318	12,623	12,363
Total ...	197,259	204,588	198,320	259,896	282,617	287,105
†EXPENDITURE.						
	£	£	£	£	£	£
Marine Boards and Lighthouses	43,157	42,525	36,006	57,804	54,867	68,114
Municipalities ...	106,013	103,434	109,662	141,202	153,937	140,595
Road and Bridge Trusts ...	18,941	20,429	30,133	28,703	27,166	30,060
Cemetery Trusts ...	1,036	1,134	1,062	1,204	1,152	1,208
Town Boards ...	19,778	18,370	19,752	23,351	26,815	33,508
Water Trusts ...	6,891	8,451	8,967	6,697	12,593	12,446
Total ...	195,816	194,343	205,582	258,961	276,530	285,931

* Exclusive of amounts contributed by the general Government. † Exclusive of expenditure from Government contributions.

The total amount advanced by the general Government to local bodies for public works up to the 30th June, 1906, was £391,838, of which £78,350 had been advanced for the purpose of water supply, £10,700 for light, £6937 for buildings, £154,476 for harbour improvements, £15,100 for roads and streets, £3600 for the redemption of debentures, £83,334 for drainage, £2841 for cemeteries, £1500 for recreation grounds, and the remaining £35,000 for the lighting and water supply of Launceston.

6. Hobart Water Supply.—The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as "wells." By an Act of the State Parliament passed in 1860 the works were transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(i.) *Storage Reservoirs.* There are two storage reservoirs about $2\frac{1}{2}$ miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the reservoirs, and thence by three 10-inch cast-iron mains, of which two lead to the distributing reservoirs and one direct to the shipping and southern portion of the city.

(ii.) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure, 1907.* The total capital cost to the end of 1907 was £186,692, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at the end of 1907 amounted to £160,750. At the same date the number of tenements supplied in the city and suburbs was 7301, the population at the last census in 1901 was 32,418, and the length of reticulation mains at the end of 1906 was seventy-four miles. The revenue and expenditure for the last eight years were as follows:—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1901 to 1908.

Particulars.	901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
	£	£	£	£	£	£	£	£
Revenue	18,806	19,091	18,862	20,200	20,127	19,125	21,802	19,719
Expenditure ...	20,161	16,126	16,624	15,667	16,576	15,817	17,785	22,901

(iii.) *Proposed Extensions.* Parliamentary sanction to borrow £63,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £49,000 of this amount is to be spent on the construction of a new storage reservoir.

7. Hobart Sewerage System.—A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is collected and treated in septic tanks and is then discharged into the estuary of the River Derwent. Up to the end of the year 1907 about twenty-six miles of sewers had been laid, and 1809 tenements, sewerage a population of 9045, had been connected at a cost of about £100,000. During the year 1907 the average quantity of sewage treated daily was 278,000 gallons, the revenue for the year being £3107. Extensions are in progress with a view to completing the sewerage of over 2000 acres so as to serve an estimated population of about 30,000 people.

8. Public Lighting in Hobart.—Gas is supplied for public and private lighting in the metropolitan district of Hobart by the Hobart Gas Company. The plant is capable of an output of 500,000 cubic feet of gas per day, the holder capacity being 660,000 cubic feet. The district served comprises the city of Hobart, New Town, and Queenborough. Gas was first supplied for public lighting in 1857. In September, 1908, there were about 51 miles of mains, ranging in diameter up to 18 inches.

The following statement gives particulars of public and private lighting in Hobart for the year 1907:—

HOBART.—PUBLIC LIGHTING, GASWORKS, 1907.

Gas manufactured	Cub. ft.	90,157,000	<i>Revenue—</i>		
Gas sold	Cub. ft.	82,381,000			
Coal used	Tons	7,721		From sale of gas	£25,124
Number of customers	...	3,610		From sale of by-products	4,299
Number of employes	...	80		From other sources	111
Capital cost—					
Land and buildings	...	£12,304		Total	£29,534
Machinery, plant, etc.	...	77,077			
Total	...	£89,381	<i>Expenditure</i>	...	£19,924

(ii) *Electric Lighting.* The Hobart Electric Tramway Company Limited supplies a small amount of current for lighting purposes; this supply is, however, only on a very small scale and is incidental to the business of the company or the maintenance of its tramways. (See p. 750 *ante*.)