

tract for renovations to the Port Chalmers Garrison Hall has been finished. The Immigration Barracks, Caversham, has been sold for removal; this work is in progress. A contract has been completed for renovating and painting the Quarantine Island buildings. "Rex" fire-extinguishers have been provided at Central Post-offices, Dunedin, Gore, and Invercargill, the Court-houses at Gore and Invercargill, and police barracks, Invercargill. A large amount of maintenance-work has been done in addition to the above-mentioned works, and many minor fittings supplied to various Departments.

MARINE.

The cast-iron tower for Cape Campbell lighthouse, to replace the wooden trestle tower now decayed, is completed, and the lantern is being fixed in position. A contract has been let for the removal of rocks in Onehunga Harbour, and good progress is being made with the work. A fog-signal is being erected at Taiaroa Head. The Kaipara Heads beacons have been enlarged, and beacons are being erected at Manukau, and the lighthouse-keepers' residences put in repair. The signal-station at Karamea Harbour has been shifted to meet altered conditions; plans for beacons at West Wanganui have been prepared. Additions and repairs have been carried out at the pilot-station, Foxton. Plans for a wharf for the cable-steamer "Iris," Auckland Harbour, have been prepared, and for a wharf in Whangarei Harbour, to give deep-water facilities. A contract has been let for the construction of groynes at St. Clair to protect the sandhills from erosion. Reports have been furnished on Karamea and Motueka Harbours, and a report on the Lake Ellesmere outlet, suggesting methods of keeping it open.

A large number of plans for works by local bodies have been dealt with during the year.

Some snagging has been done in Mahinapua Creek.

ROTORUA DRAINAGE AND WATER-SUPPLY.

The drainage-pipes have been relaid in all the main streets, but the work in the residential portion of the town has yet to be done. Some of the work required to be done below lake-level was somewhat troublesome. The collecting-tank has been made serviceable, and an oil-engine for pumping has been obtained. No house connections have yet been made for a new water-supply.

A survey has been made of a pipe-line from Rotorua to Moerangi springs; the distance is five miles and three quarters. It is proposed to lay a large-diameter pipe sufficient to give a good fire-supply in addition to ample domestic supply. The water from the Moerangi springs is of very good quality. Since this work was done other springs have been suggested as a source of supply, and the question as to their suitability is now under consideration.

HANMER WATER-SUPPLY.

Fresh surveys have been made for water-supply to the Hanmer Township; the proposed water-power scheme at Jollie's Pass would seriously affect the scheme at first suggested.

ELECTRIC TRAMWAYS.

A very large amount of work has been done during the year in connection with approving plans for electric tramways, and in passing sections of tramways, and the rolling-stock on same, as completed.

UTILISATION OF WATER-POWER.

A complete survey for the utilisation of the Huka Falls on the Waikato River is in progress. When this work is done the survey for the alternative scheme to utilise the flow from Rotorua and Rotoiti Lakes by works located in the Kaituna River valley or otherwise will be started.

A survey to determine all necessary data for the Tauherinikau scheme has been in progress for some time; though much hindered by the wet winter a large part of the work is now done. The survey of the Hutt River will then be put in hand to determine which will be the better scheme to develop for the supply of electric power for Wellington City and surrounding districts.

An exhaustive survey is in progress at Jollie's Pass to determine the extent of and the best location for works to utilise the water flowing in the Clarence River, by diverting it by a tunnel through Jollie's Pass. The possibility of increasing the storage-capacity of Lake Tennyson by a dam is also being investigated; it will apparently be possible to do so at no relatively great expense, and thus the control of the flow from the headwaters of the Clarence River will become possible. It appears almost certain that over 20,000-horse power will be obtainable. An alternative to taking the water from the Clarence through Jollie's Pass is to divert it through Jack's Pass. This does not appear at first sight to be so good as the Jollie's Pass scheme, but sufficient data will be got to enable a correct decision being arrived at.

A survey is now nearly completed for a water-power scheme to utilise the water from the two Opuhas, the Opihi, and the Tengawai. A considerable amount of water can be stored by the building of a dam at the upper end of the Opihi Gorge; the flow of water in the streams is considerable, and a good scheme appears to be available. As much as possible of the high-water flow of the two Opuhas and the Tengawai would be diverted into the reservoir on the Opihi.

Some further information of a preliminary character has been got as to the possibility of a tunnel and pipe conduit to divert the water from Tekapo Lake into the Opihi. This is apparently quite possible.

After the Opihi survey is finished some further information will be obtained regarding Lake Coleridge.

A survey of the Teviot River scheme has been completed. A very large storage-lake can be formed by building a masonry dam. The available fall from Lake Onslow to the Clutha for power schemes is 1,780 ft. A series of power schemes would be possible; the lowest one would be the