

Westfield Deviation, which is being constructed in order to obviate the steep grades which, combined with heavy suburban traffic, cause congestion between Auckland and Penrose, is now nearing completion. Goods traffic to a limited extent is now in operation over one of the tracks (this being a double-track deviation). It will not be possible to open the deviation to traffic of all classes until the new Auckland Railway-station and the yards which form part of it are ready for use. This latter work is being carried out under a contract let by the Minister of Railways.

The Tawa Flat Deviation, which will cut out the heavy grades and circuitous lines between Wellington and Tawa Flat, is now being energetically pushed. Every available face in the tunnels is manned. The very latest tunnelling machinery has been installed, with the aid of which it is hoped to considerably further increase the number of men engaged.

During my term of office two notable forward movements have been made in connection with hydro-electric-power development in that the first unit from Waikaremoana, of 20,000 kilowatts capacity, was put on load at the end of January, 1929, thereby relieving the severe stress which for some time had been thrown on the Mangahao Station, and at the beginning of June, 1929, the first unit at Arapuni, of 15,000 kilowatts, commenced to deliver power on a commercial scale, and has since then been running practically fully loaded. The second unit is now ready, and commenced carrying load at the end of September. It is anticipated that the third unit will be operating before the end of the year. It is a source of satisfaction to the Government that its officers have been able to demonstrate that the claim made by the contractors that it was impossible to erect a power-house on its present site had no foundation in fact. In connection with this development, however, I regret to say a very extensive erosion—much more rapid than was anticipated—has manifested itself in the old bed of the Waikato River below the spillway over which the surplus water escapes. The position has been aggravated by the fact that, owing to the contractors abandoning the contract, the channel has been subjected since the end of 1927 to flows of water which were not anticipated, and which would have been considerably mitigated had the power-house been in full operation taking a large amount of water which otherwise has had to go over the spillway. As a consequence protective measures must be taken, and this work is being energetically handled. The driving is proceeding of two additional penstock tunnels, which are part of the subsequent development of the scheme, and which will be available when, through growth of load, the time arrives for the installation of additional generating machinery. It is estimated that these two tunnels, together with the other four of the present development, will be capable of taking the normal flow of the river, and any additional flow, in all but extreme floods, can be diverted through the existing bypass tunnel round the dam.

Work on the Waitaki River, where a large development is being made about four miles above Kurow, is proceeding satisfactorily. A coffer-dam of interlocked steel-sheet piling has been completed, enclosing a section in the centre of the river, and the rock has been laid bare in the bottom. When this section is concreted the dewatering and concreting of the remaining sections in the main stream will be greatly facilitated. So far the work has been quite successful, although, in common with all work carried out in rivers subject to flood, there must be considerable anxiety so long as the works are in a condition which renders them vulnerable to the attacks of a large flood. However, every precaution which can economically be taken is being taken.

For some time it has been suggested that it will be to the advantage of both parties if an agreement can be arrived at whereby the Government purchases the City of Dunedin's Waipori development, at least so far as the main generation and transformation is concerned, and negotiations have been in progress. Whether these will be finalized or not has not yet been decided, as quite a number of considerations other than strictly commercial factors surrounding this transaction must be considered.

Detailed investigations have been in hand in regard to what is known as the Gowan hydro-electric scheme in the Nelson District. The damage resulting from