

(h.) When floods have occurred before adequate warning could be given the loss of stock has been heavy.

The total area affected by floods is 30,000 acres.

While it is practicable at reasonable expense to prevent such flooding or erosion on the major portion of this area, there are some places, which will be dealt with more particularly later on, which could not be protected except at a cost in excess of their value.

REFERENCE No. 3.

To ascertain the best method of providing for the control of the said river and its tributaries so as to safeguard the lands affected, and to provide for the effective control and improvement of the said river and its banks.

The works recommended by your Commissioners are shown on plans Nos. 1, 2, and 3 attached, and consist of—

(a.) The setting-back of the existing levees at certain points where they unduly constrict the passage of flood-waters. These points are notably in the region of Allanton and between Otokia and Henley. At the present time the small levee on the East Taieri side, which runs from the hills opposite Outram to a short distance below the railway-bridge on the Mosgiel-Outram Railway, is breached in several places. If this were not so it would undoubtedly constrict the waters to such an extent as to make disaster certain on one side of the river or the other. Therefore your Commissioners consider that at present this levee should not be repaired; or, alternatively, if it be repaired, then it or the levee on the western side should be set back on such an alignment as will eliminate the constriction existing at this crossing, and the railway-bridge must be extended to span the opening so left. The greater part of this work would be a charge against a small portion of the East Taieri district, and from the evidence your Commissioners doubt if at present the benefit to be derived by the comparatively limited area would justify the expense. If at a later date a comprehensive scheme for the complete protection of the East Taieri is decided upon, the removal of the constriction at the railway-bridge as just mentioned must form an integral part of such scheme.

(b.) From the Outram Railway-bridge to the Otokia Railway-bridge, a distance of about nine miles and a half, the levees must be raised to a height of 1 ft. above the flood-slope shown on plan No. 2, which has been drawn from information obtained by the 1917 Commission as to the height of the flood of 1908.

(c.) A suggestion has been made that from the Otokia Railway-bridge to a point one mile and a quarter below Henley Railway-station the existing line should be utilized as a levee, the present flood-openings in it being replaced by box culverts protected against inflow by flood-gates, and that sufficient of the existing levee at each end should be removed to enable the flood-waters to flow over the flat land lying between the railway and the bank of the river. A certain amount of raising of the railway-line would be necessary, and there would then be an adequate channel for the passage of flood-waters. But there is a doubt as to whether the Railway Department would view with equanimity the prospect of running trains over an embankment which had not been built specially for a levee, and which might be subjected to the pressure of a considerable head of water for some time. The Chief Engineer, when interviewed in regard to this aspect of the matter, expressed himself as prepared to consider such a scheme, though he could not commit his Department to it without maturer consideration.

As an alternative to this scheme of utilizing the railway the present levee might be set back sufficiently far, as indicated by the third alternative on plan No. 3, to allow adequate waterway. The witnesses from the plain expressed the opinion that if the Railway Department would not allow their line to be utilized the levee should be shifted back close to the fence of the railway reserve, so as to utilize as waterway the whole of the strip of land previously mentioned, the argument being that the lowest ground lies close to the railway, and that most of the floods would be able to pass along this low ground without actually endangering the lives or property of the people who now live close under the shelter of the existing levee on the river-bank. On the other hand, if this embankment were only shifted back to approximately half the distance to the railway, these people would