

that any filling up, if it should occur as has been suggested, will be very long delayed, and may be coped with by a moderate amount of dredging from time to time as conditions appear to dictate.

The future maintenance dredging thereby required will not, in our opinion, nearly approach in expense the interest and sinking fund on the cost of the works and land taken, which would be necessary if the whole of the flood cross-sectional area were to be obtained by high levees placed a long way back from the river-bank, as suggested under the Public Works Department's scheme. It is possible that the improved tidal scour may be such that no further dredging will be required.

REFERENCE No. 2.

To report on the schemes which have been devised by the Public Works Department to prevent such flooding.

The schemes devised by the Public Works Department may be considered as of a twofold character: firstly, the original scheme to deal with a flood at least as great as that which occurred in 1910, with a reasonable factor of safety; and, secondly, one to deal with a flood approximately of half that magnitude.

Scheme 1: This scheme depends almost entirely upon levee-building, raising the flood level to such a height up-stream as would considerably increase the flood grade, and therefore the velocity, and enable the floods to be safely passed. Provision for ample freeboard was made, and the additional cross-sectional area in the channel due to the dredging out of the material for the stop-banks was not considered as available to any great extent for the discharge of flood-waters. In order to obtain the necessary cross-sectional area without unduly raising the flood heights the levees were to be placed a very considerable distance from the natural banks of the river, and the land on which these banks were to be placed was to be taken from those at present holding it. All the land between the stop-banks and the river was to be also acquired, the compensation to be paid being assessed in accordance with the Waihou and Ohinemuri Rivers Improvement Act, 1910. All the necessary outlets for side drainage and banking of tributary streams were provided for.

Your Commissioners are satisfied that if the works as indicated were carried out the district would be safe from a flood of the same magnitude as that of 1910, and, so long as they were maintained continuously with the freeboard provided in the scheme, they would be adequate for a very considerably greater flood. Your Commissioners consider that the Department was not justified in assuming that no appreciable advantage could be reckoned on from the dredging, and that to obtain all the cross-sectional area necessary by banking, instead of by a judicious combination of dredging and banking, was not the most economical proposal. Particularly was this latter the case as it necessitated setting back the levees so far from the natural banks of the river to avoid excessive raising of the flood level. Taking all the land between the river-bank and these widely placed stop-banks involves a hardship to the riparian owners which your Commissioners consider is not justified. If the provisions of the law at present are such that the riparian owners may receive practically no money in exchange for the land taken from them, and any compensation due to them is to be offset largely or wholly by betterment in which many others share, then the law should be amended. A great many of the subsidiary works which will require to be carried out in connection with the drainage of the adjoining land are included in the Public Works Department's schemes, but as they do not come within the Commission's order of reference your Commissioners have nothing to say in respect of them, except that there is no reason to suppose they are other than adequate.

Where your Commissioners particularly criticize this major scheme is that it does not provide any appreciable protection to the lands affected until it is practically finished, and its magnitude is such that it would take a great many years to complete; also it is too costly, the Department's estimate being £308,160.

Your Commissioners obtained no definite information as to the length of time within which the Department propose to complete the works, but they judge from the progress in the past that the completion of the work will involve a length of time which it would not be reasonable to expect the landowners to wait.