

The Opuatia Creek is another valuable waterway suitable for launch traffic, and is navigable, with a good depth of water, up as far as Glen Murray, a distance by the creek of between 7 and 8 miles. There is a considerable traffic at present upon this creek, but it ought to be improved by the removal of a few snags and some overhanging and sunken willows.

The Whangamarino Creek, with its tributary the Maramarua Creek, offers great facilities from a navigation point of view, having ample width with plenty of water and easy curves. The Whangamarino is navigable for deep-water launches a distance of 9 miles up to the Falls, whilst its branch, the Maramarua, is navigable from the junction for a distance of some 6 miles to a point where a shallow canal was constructed some years ago from the creek to the old Miranda Coal-mine. When that mine was worked a shallow-draught stern-wheel steamer brought down coal to connect with a railway-siding near the mouth of the Whangamarino. It is unfortunate that these tributary creeks of the Waikato, being the most suitable naturally for navigation, do not pass through or tap any really good country. The swamps through which they flow, though probably of a rich character if unwatered, lie so low as not to be amenable, or only partially so, to drainage by gravitation. So far no attempt has been made to embank these swamps and unwater them by mechanical means, and it is questionable whether any such action should be permitted without careful consideration of the effect of such proposals upon the Waikato River, as the low-lying lands are now available to receive flood-waters in times of high flood in the river.

The Mangatawhiri Creek is, so far as we are aware, not utilized for navigation, as the settlers in its valley are better served by the railway service.

The Aka-aka, Awarua, and Otatau Creeks are all tidal, and are all navigable for some distance at high water. The settlers in the swamp lands served by these creeks would be benefited by any improvement in the northern branch through the delta of the Waikato or by the construction of the Waiuku canal.

The Waikare and Whangape lakes, together with the low-lying Whangamarino swamp area, form valuable flood-overflow or impounding reservoirs, and in their absence the height of floods at and below Mercer would be greatly increased.

The discharge of Lake Taupo into the Waikato River is approximately an average of 5,000 cubic feet per second. The low summer or minimum flow of the Waikato River at Mercer is estimated to be about 9,000 cubic feet per second, whilst the big flood-discharge in 1907 is estimated to have reached 60,000 cubic feet per second. As a large proportion, if not the great bulk, of the high floods are probably derived from the mountain country above Lake Taupo, it seems to be desirable that the question whether it is feasible or advisable, by the construction of headworks at the outlet from the lake, to regulate and to an extent control the floods in the lower river should be investigated. Owing to the large area of Lake Taupo—238 square miles—a comparatively small increase in its height caused by storing the waters until they could be let off slowly would have an enormous effect in reducing the peak of the floods in those reaches of the river where the surrounding country is low, and in a corresponding manner the storage could be utilized to increase the minimum summer flow, to the benefit of navigation. We have not the data before us upon which to come to a conclusion, nor do we think that such an inquiry, which must necessarily be a long one, is within the scope of our reference, but we recommend that a recording-gauge should be erected at the outlet of the lake to the river, and that recording-gauges should be erected at various points on the river, including one at or near Hamilton (or Ngaruawahia) and one at Mercer, so that simultaneous observations may be taken over an extended period of time, and data obtained from which it could be determined whether such regulating headworks would be financially justified. Such a storage in Lake Taupo might permit of the reclamation of certain swamp and lake areas which now perform the function of flood-overflow reservoirs.

The settlers in the district adjoining Lake Waikare have formed a Waikare Drainage Board, and have brought forward a scheme for the drainage of the lake by closing up the Rangiriri and Onetea Creeks, which now connect the lake with the Waikato River, and providing for its reduction in level and the drainage of the surrounding lands by the construction of an artificial canal, 40 ft. in width, to