

(1.) *What should be the route or routes of one or more canals?*

We recommend—

(a.) That a barge-canal should be constructed by the Auckland Harbour Board, by the Tamaki route, between the Waitemata and Manukau Harbours, and that the waters of the Manukau Harbour east of the Mangere embankment and bridge be impounded :

(b.) That the route for a barge-canal, or joint barge-canal and barge-railway, to connect the Manukau Harbour and the River Waikato, be by the Waiuku arm of the Manukau, which should be impounded at the Needles ; that this canal should connect with the Awarua Creek (which should be improved), thus giving access to the northern channel of the River Waikato :

(c.) That the route for the connection of the River Waikato with the Hauraki Gulf by a canal should be by the Mangawara Creek and Piako River.

(2.) *The dimensions of these canals, and the class of vessels to navigate them.*

(a.) The Tamaki and Waiuku canals should be suitable to carry barge traffic and small towing steamers and launches. The canals should have a depth of 6 ft., with a bottom width of not less than 30 ft., and with such side slopes as the quality of the ground passed through will require or permit. The locks should have a depth on the sills of 8 ft. (so as to permit of future deepening of the canals to that depth) and a clear width of 30 ft., with a length of 150 ft. inside the gates.

(b.) If a barge-railway be adopted across the Waiuku Hill, it should be made capable of taking barges having a gross weight of 100 tons.

(c.) The Mangawara canal (if and when constructed) should be 30 ft. wide at the bottom, and have a water-depth of 8 ft., with a view to carrying steamers of the class navigating the Piako River and barges of a size and character capable of being towed across the Thames Gulf. The locks should have a clear length of 350 ft., with a width of 30 ft., and a depth on the sill of 8 ft.

(3.) *The character and quantity of probable traffic thereon, and the revenue to be derived therefrom.*

(a.) On the Tamaki canal the traffic would include not only through traffic from the Waikato via the Waiuku canal, but also a considerable volume of goods of all classes sent from the Waitemata for transshipment at the Onehunga Wharf to steamers trading out of the Manukau Harbour, and, in addition, a considerable future traffic to arise from industries situated on the water frontages of the proposed impounded area east of the Mangere Bridge. We have had insufficient reliable data placed before us to determine the quantity of the traffic that would pass through this canal or the revenue to be derived therefrom. We are, however, satisfied that at a cost not exceeding £300,000 the construction of the link to connect the two harbours now under the jurisdiction of the Auckland Harbour Board is justified.

(b.) Through the Waiuku canal or over the barge-railway, if constructed, there would be carried coal in considerable quantities, particularly from mines to be developed on the western side of the Waikato and Waipa Rivers. There would, in addition, be agricultural produce from the Waikato to Auckland, and in return heavy goods, including manures, iron, and other requirements of the farmers on land served by the Waikato River and its tributaries, and a considerable quantity of the goods required by the residents in the towns. We are unable to reduce to figures the quantity of the probable traffic on this proposed canal or to furnish any figures as to the revenue to be derived therefrom.

(c.) If the Mangawara-Piako canal were constructed there is no doubt that large quantities of coal would be carried through it from the Waikato mines to all the districts abutting on the Hauraki Gulf and the Waitemata Harbour. As the navigation of the River Waikato above the junction of the Mangawara Creek is excellent, there is little doubt but that a steamer connection with Auckland for the carriage of goods would be at once constituted, but it is not possible to determine at present the quantity of traffic or the revenue likely to be derived therefrom.