

proposed would certainly make a great improvement, but this would only partially clear a channel so narrow that it would be continually getting blocked up again.

If the work is approved of it should be put in hand next December, and completed during next summer. The punt may be built, or otherwise obtained, before December. The work of snagging cannot be done during winter. Also, it cannot well be done by contract; so I propose that the work should be done by the settlers on the river, under the directions of one responsible and competent overseer, and all on current wages per day. It would be to the settlers' own interests to do the work as cheaply and as permanently as possible, and several of them would be only too anxious to have the work. Robertson, of run No. 10, with three or four others to assist, would, I believe, do very well as overseer, should no more suitable man be found.

As far as the Crown lands still extend along river (shown by hatching on plan), I would most strongly recommend that at least 20 chains, and preferably 40 chains, be reserved on each side of the river. The slopes are mostly very steep, though in some of the points there are nice flats, but as a rule the land is too rough for any but large holdings. The course of the river is also very serpentine; the areas of these bends are therefore very limited. The timber is usually very light close to the river and on the immediate slopes. Indeed, there seems to be a great absence of durable timber on the river.

The scenery beyond the settlements is very fine, similar to the Wanganui, but on a miniature scale. The photographs accompanying give a good idea of its character. If this reserve were made the liability of slips and snags coming down into the river would be much reduced. On the whole, it is highly desirable that this reserve should be made. Approximately, the area, with 20 chains each side, would be 4,000 acres, and about double that with 40 chains each side. The width of 40 chains each side would preserve almost the whole valley.

In the matter of roads, for the first twenty-five miles up the river the ridge between the Patea and Whenuakura appears to me to be preferable to a road up the banks of the river. The river is very circuitous, the sideling very steep in many places, the ground very liable to slip, and the material for metalling very limited on the lower reaches.

The pictures illustrating this report are from photos supplied by Mr. A. Martin, of Wanganui, and by him presented to the department.

The Surveyor-General, Wellington.

G. T. MURRAY.

REPORT BY JAMES T. STEWART, Esq., C.E., ON WORKS CARRIED OUT BY WANGANUI RIVER TRUST IN IMPROVING THE NAVIGATION OF THE WANGANUI RIVER DURING THE TWELVE MONTHS ENDED 31st MARCH, 1895.

Wanganui River Trust, Wanganui, 8th May, 1895.

I HAVE to report *re* Wanganui River improvements for the year ending 31st March, 1895.

The works done have been: In end of the last working season after the 1st April, 1894—Snagging from Koriniti to Upokopoito, and removal of slip at Ahuahū; two punt-loads of stone put in wall at Upokopoito; five punt-loads of stone put in wall at Aokura. The work was discontinued at the end of April, 1894. Work was resumed on the 4th January, 1895. The works done have been: At Owahaoa (or Schoolhouse) Rapid—271 cubic yards of stone put in wall, and part of the bank at end of former wall protected. The length of wall here is 350ft. At Aokura Rapid—138 cubic yards of stone put in wall. The wall is 300ft. in length. The channel in this rapid was also cleared of seven snags and eight large boulders. At Upokopoito Rapid—148 cubic yards of stone put in walls; one wall of 120ft. and another of 292ft. in length at lower end of rapid. There still remains some stone to be put in to complete these walls. Owing to the scarcity of stone along river-banks near these three rapids, temporary tramways of light wooden rails were laid for considerable distances up two creek-beds to get stone, and a good deal of blasting and excavation had to be done to get the stone out. At these three rapids, which had been places where great difficulty and frequent delays in regard to steamer-traffic were met with in low river, a considerable increase of depth in the channels has been obtained, and they will now be navigable in low river for present steamers when lightly loaded. Snags were also removed at various places, and some clearing of the channel at Kanihinihi done.

Taking the present steamers as of a draught of water suitable to the traffic, there still remains a good deal to be done below Pipiriki to enable them to go safely at low river; for, although, except in low river, the navigation is now fairly clear, yet it is found, especially this last season, that this low river extends more or less over several months. The steamers then run during this period at considerable risk of damage, and a large amount of repairs has had in consequence to be done.

Mr. Hatrick reports that during the year ending the 31st March, 1895, the steamers made fifty-two ordinary and thirty-nine special or extra trips to Pipiriki, and out of these trips on two occasions they were unable to get right through to Pipiriki owing to shortness of water, but that on many of the trips made during the summer months no cargo could be carried, and on several occasions damage was incurred to the steamers, and sometimes more than one day was taken on the up-trip. Mr. Hatrick states that owing to the works done in the last two years he has been able to run the steamers to Pipiriki in a low state of the river such as would frequently have prevented them getting up had the river been in the same state as when he commenced to run the steamer, and this he has carefully observed by having a water-gauge at Pipiriki, and getting the state of the water each week sent down from there by pigeon-express before he arranges the loading of the steamer at Wanganui.