

It is thought, however, that the arrangement proposed above is more economical, and all the material for construction can be obtained in the country.

The dam is intended to be constructed of masonry and concrete, the trusses and needles of Douglas fir.

The details of the dam have been worked out only so far as is necessary to obtain an estimate of the cost, which will be approximately \$250,000.

The needle dam has been thoroughly tested in France and Russia. The greatest objection to it is that the needles require to be caulked, or otherwise made water-tight. This is no doubt a serious objection where the needles require to be frequently opened. Here it would be necessary to open the dam only once a year, for the spring freshets. A regulating weir would be provided in connection with the dam for the adjustment of summer levels.

Canal to Supply Water from Dam to Mills.

Canals may be constructed on either or both sides of the river to supply water to mills; the mills being built between the canals and the river, and the tail water taken into the river by tunnel or open cuts as may in each case be considered advisable.

The canal would be extended only as it was required to supply new mills, or in the event of it being used for navigation.

The expenditure necessary to construct a canal for supplying water to mills for half a mile below the dam is estimated at \$50,000.

The estimates given above are intended to cover the cost of making available for use 5,626 horse-power for 14 hours per day, at the season of lowest water in the Assiniboine River.

The additional work necessary to increase the power to 10,000 horse-power would be required also for navigation. The surveys have not been sufficiently extended to enable the cost of the additional works to be estimated.

Observations on the flow of the river are being continued, and more borings are to be made at the site proposed for the dam. The additional information, with a plan of the proposed dam and canal, will be submitted with a future report.

Your obedient servant,

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