HARNESSING NIAGARA.

For many years it has been a favorite project of engineers and others to utilize for industrial purposes the enormous water power annually going to waste at Niagara Falls, but thus far little that is practical has been the outcome. Some years ago an important paper factory was located upon the small island midway between the village of Niagara Falls and Goat Island, but it was removed largely in deference to the sentiment which demanded that the immediate vicinity of the falls itself should not be marred by evidences of an exceptionally material era. So when the Dominion of Canada on the one hand, and the State of New York on the other, took steps to prevent private industrial or commercial encroachments in the immediate neighborhood of the Falls proper, by reserving the land adjacent thereto and holding it under Dominion and State regulation, respectively, the action met with popular approval.

But the dominant industrial spirit of the age, now that the falls themselves have been preserved amid their natural surroundings, has actively exerted itself to find a way to utilize the vast power which nature has placed midway between Lakes Erie and Ontario, without approaching too close to the greatest manifestation of the power itself.

There are reasons for believing that a recently organized company has solved the problem. Should they decide to carry out the plans they have in hand the site of operation will be the American shore of the Niagara river between the lower end of Grand Island and the southern and eastern boundary of Niagara Falls village. Here, on the direct line of communication east and west, via the great lakes, Erie canal and a dozen lines of railway, it is proposed to establish what may become if the views of its projectors are realized the greatest power and transhipment station on the continent.

The project primarily involves the construction of a tunnel 11,000 feet long, from a point on the easterly shore of the Niagara river, near the foot of Grand Island, nearly due north, and beneath Niagara Falls village in a direct line, to a point on the bank of the river below the falls. This will be better understood when it is recalled that Niagara river leaves the foot of the falls at almost right angles to its course above the precipice. The country under which this tunnel will pass is nearly level farming land, excellently adapted to the needs of an industrial centre. The tunnel will discharge its water into the river below the falls, with a vertical fall of 218 feet, and by means of turbine wheels it is calculated that, with branches and wheel-pits and races, it will develop a water-power aggregating 130,000 horse-power. Here may be found then advantageous sites for manufacturing, and as the river and canal will afford ingress for the largest steel lake steamers the opportunities for meeting the wants of manufactories, as well as for transhipment, become at once apparent. Boats from the Erie canal may reach the projected canal either from Buffalo via Niagara river, or from Tonawanda, thus opening up transhipment east and west from the site of the proposed industrial centre. It is planned to devote an area 1,000 feet deep on either side of the tunnel to factories and shops. Besides the space to be allotted to mills, elevators, factories and the like, there will be ample room on either side for the mercantile needs of a great city. When it is realized that trunk railway systems, with 12,000 miles of main lines, run right through this site, that lake and canal carriers may meet side by side in the grand canal and that an industrial city is expected with encouragement to be developed there, some of the possibilities of the project may be said to have been uncovered.

The magnitude of the project has raised a question as to the effect on the volume of water in Niagara river of such a draft upon its volume as the plan contemplates. In reply to this the engineer who has the enterprise in charge outlines the situation at some length. He says that Niagara river drains 241,238 miles of watershed territory, which is equal to double the area of Great Britain and Ireland. The river, moreover, has an enormous advantage in having the four great lakes, Michigan, Superior, Huron and Erie, as natural storage reservoirs—87,620 square miles of reservoir area. The average flow of Niagara river (measured by the Lake Survey Board) is 265,000 cubic feet per second, and the above plan contemplates the use of only 6,000 cubic feet per secend—less than three per cent. of the waterflow—so that the change in the flow in the river would be practically imperceptible.

The gentlemen interested in this enterprise have had it called to their attention that the bulk of wheat and Indian corn crops (as well as of barley and rye) follow the line of the great lakes, with either canal or rail transportation thereafter on their way to the seaboard; hence the importance of the plan for a great transhipment station. It is also true that enormous lumber and wood-pulp belts skirt the shores of the great lakes, as well as regions producing or cities shipping copper, iron and silver ores.

These raw materials, the route of which eastward is thus established, are the greatest consumers of power, hence that element in the enterprise projected on the American shore of Niagara river below Tonawanda. The plans outlined contemplate the establishment of cotton manufacturing machinery, wood-working and flour-making industries, for which water power is to be rented at a rate with which steam, of course does not compete. When it comes to electrical industries the possibilities of the project are vast. It is believed that electricity may be generated and transmitted to neighboring cities for lighting and power purposes quite economically, and that storage batteries may be regularly charged and shipped to consumers on demand.—*Bradstreet's.*