

4th. The number and intensity of the changes of direction, or, in other words, the amount of curvature in the main.

5th. The speed at which the water is to be driven, or the quantity required, in a given time, through a main of given dimensions.

Thus it will readily be perceived, that the power required to raise the same quantity of water per diem, through a short straight and large pumping main, to the high ground near Ashbridge's Bay, may not be any greater, or even as great, as that required to drive the same quantity through a long crooked and smaller main to Yorkville: the shorter the pumping main the larger it could be afforded, whereas, with a very long one, there is every inducement to diminish the size, although this length calls for increased diameter. If the supply be taken off this main, the interruptions to the flow thus produced, will call for an increase in its dimensions. If the main is not tapped, (as it should not be,) there may be but little difference in the first cost of the ascending and descending mains, whether the reservoirs are at Yorkville or eastward of the Don, and this will probably be made up by the economy in construction at the latter point, while in the one case the town is only partially commanded, in the other wholly so.

If this reasoning be admitted, the best plan may prove as cheap, if not cheaper than any other which will fulfil the requirements of the case.

With regard to the cost, I cannot venture on estimates, where so much is undetermined by surveys, although I have sufficient knowledge of distance and levels to enable me to estimate the cost of pipes, and, knowing the power required, could fix the cost of the engines and their accompaniments, allowing a sufficient sum for reservoirs, and works in connexion with the pump wells, as well as for all other contingencies. I am satisfied that the cost would not exceed a sum which the citizens ought, and, I think, will not hesitate to expend, for such a purpose, and one which cities of less flattering pros-