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Design of York Township Sewerage System

Description of Methods Adopted in Preparing Report Recently Submitted to Township Council—General Plan for Sewerage of Large Area Adjoining City of Toronto—Paper Read Before Toronto Branch, Engineering Institute of Canada

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YORK township almost encloses the city of Toronto, consequently, there was at one time a rapid growth of houses and streets in the township lands immediately adjoining the city limits. The people on the margin expected to obtain water, etc., from the city, and the tendency up to a certain stage was to look in that direction for all improvements. A few streets in the township have been sewered in the last few years, and these sewers have their outlets in the adjoining city sewers.

The populous parts of the township are now no longer the mere margin of the city, but the population has spread itself out to such an extent that the time has arrived for the township to look into the possibilities of sewerage of the whole area. The township council called for a preliminary report on a comprehensive sewer scheme. R. O. Wynne-Roberts, who is affiliated with Frank Barber, the township engineer, has prepared a preliminary report on the whole area. This paper gives some notes on the methods adopted in the preliminary investigation of the possibilities of the comprehensive sewer scheme.

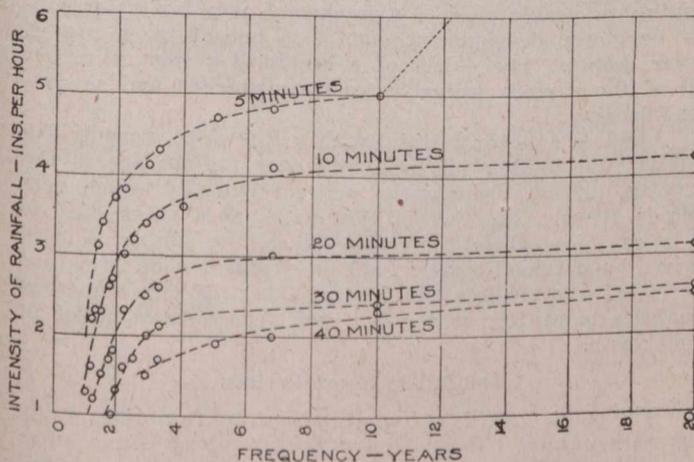


FIG. 1—RELATION BETWEEN FREQUENCY AND INTENSITY OF RAINFALL, STORMS OF VARIOUS DURATIONS, BUFFALO, N.Y.

Note.—Intensity of 9.5 ins. per hour in a storm of 5 minutes' duration was recorded in 1897.

Generally speaking, the greater part of the township slopes towards the lake. The next most important slopes are those towards the rivers Humber and Don, but the general trend of part of the western area is cut into by creeks which rise in the high ground and run diagonally from northwest to southeast, right through the city.

The city and township meet, not on any natural watershed or stream course, but along arbitrary lines, the outcome of real estate subdivision considered in local patches.

The city limits east of the Don are, for almost their entire length, on a line which is the lower edge of a plane sloping down from the north to the city, the Woodbine area between Yonge street and the Humber river being an exception.

In the west, north of St. Clair, the city boundaries are roughly two lines at right angles, and where they meet the corner is the lowest point of the general slope towards the city of nearly half the area of the township in this division.

In going west from Yonge street along Eglinton ave., the summit is reached about Dufferin street, and the Black

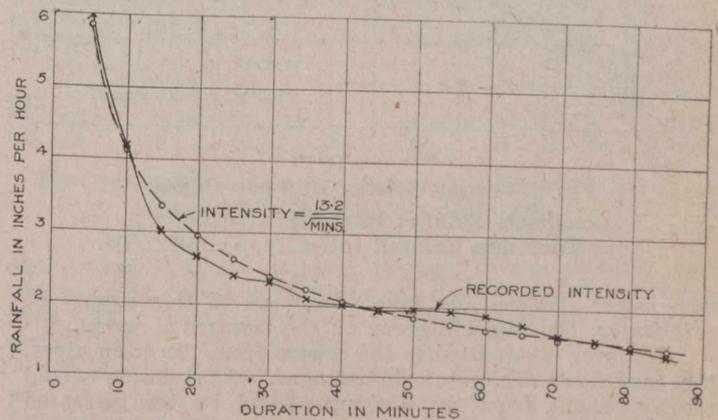


FIG. 2—RECORD RATES OF RAINFALL AT TORONTO

creek drainage area begins roughly from Dufferin street and Vaughan Rd. W.

The Swansea division is not put to any great disadvantage by the city boundaries except that the projection of the block between Annette street and Bloor cuts across the natural slope.

The township of York almost surrounds the city, and the streams rising in the township flow towards the lake through the city. The effect of this is obvious. It means that many parts of the township must be sewered against the natural grade if they are to be clear of the city. The Black creek watershed, Swansea district and the small section north of Danforth and east of Woodbine heights are the only localities in which it is possible to drain naturally away from the city.

It is not the object of this paper to deal with the actual reports submitted to the council, but rather to state the methods adopted in arriving at the data for these reports, so districts and boundaries may be left out of consideration for the present. The first consideration, then, is the quantity of sewage to be dealt with.