

cents, which may be increased, brings the estimated cost of construction of these sewers to 73 cents per foot frontage per annum.

3. The Oakwood section comprises the area lying between Vaughan road, Wilmington, Hanson, Donald, Eversfield, Hatherly, Summit and Aileen avenues on the north, Bathurst street on the east, the Toronto city limits on the south, and the railway on the west.

It is stated that nineteen avenues have sewers for part or the whole of their lengths, and as it is considered inadvisable to make any change which would complicate the system, a recommendation is made that the sewers required for the remainder of the streets in Oakwood section should connect with the city sewerage system. About 520 acres in this district must be seweraged at a cost of about \$520,000, or an annual capital cost of 44 cents per foot frontage on a basis of 10-year 6% debentures. The total charge, including the rental, amounts to 67 cents per foot per annum.

The points of connection can be arranged to suit the city sewerage system, but the tentative location of these connections are shown in the accompanying plan. The works commissioner of Toronto has stated that the city can accommodate the combined flow from about 204 acres, but it would be necessary for the township authorities to construct a storm sewer paralleling St. Clair avenue from Ossington avenue to the Rosedale creek sewer.

4. The Silverthorne section, with an area of 360 acres, must be drained into Black creek, and for that purpose a trunk sewer is proposed, to be built along Wilmington, Jesmond, Harris, Westmount, Martin, Holmesdale, Chudleigh and Harvey streets, thence to Dunraven, Keele, Elora and Northland streets, with a storm sewer relief to Black creek which will intercept another storm sewer flowing from the north.

The cost of this scheme will be approximately as follows: Trunk sewers, \$364,000; laterals, \$219,000; share of cost of disposal works, \$110,000; total, \$693,000.

The annual capital cost is estimated at \$64,000, or 59½ cents per foot when based on 30-year 6% debentures for trunk sewers and 10-year 6% debentures for lateral sewers, and \$51,000, or 47 cents a foot when calculated upon a basis of 30-year 6% debentures for both.

5. The proposal for the Eglinton district, including 620 acres, includes a trunk sewer (with an outlet at Black creek) flowing along Dearborne, Pellatt, Sutherland, Lorrie, Clovelly, Leroy, Carrington, Banff, Commodore, Silverthorne, Ewart and Keele streets, and joining the sewer from the Silverthorne section at Dunraven avenue, with a storm water relief to Black creek. This will intercept the storm water and sewage flowing to the north as far as the Belt Line and Bowie avenue.

The estimated cost of this scheme is: Trunk sewers, \$632,000; laterals, \$422,000; share of cost of disposal works, \$190,000; total, \$1,244,000.

The annual capital costs, figured on the same basis as for previous sections, are \$112,000 or \$91,000, or (expressed in terms of foot frontage) 60 cents or 49 cents.

6. Roselawn district similarly drains to the Upper Black creek, and a trunk sewer is suggested along Roselawn, Bowie and Lonborough avenues, discharging into the disposal works on the creek. A subsiding trunk sewer will follow Fourth street, Stayner and Summerhill avenues and Westmount road. The total area to be drained is 630 acres.

7 and 8. The township engineers consider that sewers for the Bedford Park and Upper Black creek districts, the former with 860 acres and the latter 1,000 acres, would be very far in advance of present needs, and as conditions may change in those sections before the sewers are required, no estimates have been presented for those two districts. The engineers state that the main feature to be established is the trunk sewer, and the direction of this is indicated on the accompanying plan.

9. The Lower Black creek section has an area of 100 acres, and is bounded on the north by Eglinton avenue; on the south by Elora to Cripps; on the east by Walter, Juliet

and Bicknell avenues; and on the west by the railway tracks to Jasper and Symes avenues.

The section is too low-lying to permit the sewage being discharged by gravity into the trunk sewers which pass in the vicinity, and pumping will be required at the disposal works. The estimated cost of this scheme is about \$145,000, as follows: Trunk sewer, \$20,000; lateral sewers, \$60,000; pumps and wells, \$5,000; share of cost of disposal works, \$30,000; storm sewers, \$30,000; total, \$145,000.

Estimating the annual fixed charge on a basis of 30-year 6% debentures for trunk sewers, disposal works and storm-water system, and 10-year 6% debentures for laterals, pumps and wells, with a maintenance, power and repair charge of \$2,200, it amounts to \$16,661, or \$13,043 if on a basis of 30-year 6% debentures for all works. The estimated cost per foot frontage is 55 cents in the former case and 44 cents in the latter.

10. The Mount Dennis district includes all the territory west of the railway tracks, south of Weston limits, east of Humber river and north of Black creek, and has an area of 440 acres exclusive of low-lying gardens. It is proposed to drain this area to a disposal plant situated in the Black creek valley, to the north of the creek and east of Southport avenue. The estimated cost of the scheme is \$836,000, and the annual capital cost would be about 59 cents per foot of assessable frontage, or 45 cents per foot if the laterals be based upon 30-year debentures.

When the flow of sewage exceeds three to six times the average flow, the surplus will, where possible, be discharged into relief sewers, but the cost of these are not included in the foregoing schemes, because the sewers already designed are ample for a long time.

The surplus over six times the normal flow will be discharged into the stream, which will at that time be in flood, and consequently no harm can then be done. Consideration was given to every means for enabling all the sections to have one joint sewage disposal works, but this had to be abandoned owing to the difficulties of arranging for the trunk sewers to cross the different valleys at satisfactory grades and on account of the cost of such trunk sewers.

Consequently, at present it seems necessary to have two disposal plants for the western division, one in the Lower Black creek valley for the Silverthorne, Eglinton, Roselawn and Mount Dennis sections, for which 20 acres of land will be necessary, and one in the Upper Black creek valley for the Bedford Park and Upper Black creek sections, which will require about 18 acres of land.

The method of treating the sewage will be either by means of tanks and filters or by the activated sludge process. The disposal works will, of course, be built according to the requirements from time to time, and the whole sewerage scheme is so arranged that any portion can be carried out, provided the work proceeds from the outlets. The entire works will not be completed for several years at least, but it was deemed advisable by the authorities to have comprehensive plans outlined for the sewerage of the entire township, so that any sections that are built will fit into a definite general scheme.

Representing 53 boards of trade, the annual meeting of the Ontario boards of trade adopted without opposition a resolution urging the desirability of the Ontario government's carrying on a highway scheme "until the province is a network of good, substantial roads serving the communities with economy and efficiency, and adding greatly to the comforts of life."

The Light Commission of Kitchener, Ont., which operates the electric and gas plants, as well as the Kitchener & Waterloo street railway, states that it has to solve the problem of providing within the next few months at least 100% more power than is at present supplied. The members are opposed to the hydro-radial by-law, which is to be voted on on New Year's Day, being of the opinion, that when the Chippawa development is completed, the demand for domestic, commercial and industrial power will utilize the 450,000 h.p. that will be developed, without radial railways.