

Electric Railway Department

Report on Radial Railway Entrances and Rapid Transit for the City of Toronto.

The Toronto City Council on Feb. 22, 1915, appointed the Commissioner of Works, R. C. Harris; the Chief Engineer, Toronto Harbor Commissioners, E. L. Cousins, B.A.Sc., A.M.Can.Soc.C.E., and the Chief Engineer of the Hydro Electric Power Commission of Ontario, F. A. Gaby, to prepare a comprehensive plan for a proper rapid transit system with radial entrances. The three officials above named met on Feb. 26, 1915, and having secured Mr. Cousins' consent to act as Engineer in Charge, obtained the Harbor Commissioners' permission to permit him to supervise the work in addition to his other duties. The result is embodied in a report which was submitted to the City Board of Control on Dec. 6 as follows:

General Conditions Underlying Study.—The future growth and development of the city will be largely dependent upon the provision of adequate transportation facilities, properly located. The extension of these facilities should, and usually does, precede the population, but in Toronto of late years the conditions have been reversed. Any policy which results in such reversal will fail to develop the resources of the city to the fullest extent. The growth of Toronto beyond the limits of the areas served by car lines has been remarkable. There are at present approximately 85,200 people residing without the city limits of 1891, and 31,400 of an interurban population, outside, but adjacent to, the present city limits, totalling 116,600 people, the equivalent of almost a quarter of the entire population of the city. Future expansion may be directed, and largely controlled, by the establishment of a broad, definite transportation policy, providing for the control of all electric railway lines, radial and local, operating within the city limits.

Existing Conditions.—The present situation in Toronto is briefly as follows: The Toronto Ry. Co. holds the franchise, expiring in 1921, for exclusive surface railway rights (subject to certain exceptions) on the streets of the city as of 1891. The railway company, many years since, objected that under its charter, it was not required to extend its lines beyond the city limits of 1891, and was upheld by decision of the Imperial Privy Council. During the period intervening between that and the present the city continued to increase in population and area, until now, as hereinbefore stated, there are approximately 85,200 people living without the limits of 1891, and within the limits of 1914. In addition there are some 31,400 persons residing adjacent to, but outside the city limits, and within the limits of approximately an eight mile radius from the corner of King and Yonge Sts. The municipality in 1911, and succeeding years, constructed civic car lines in outlying districts, along Gerrard St., Danforth Ave., St. Clair Ave., and Bloor St., west from Dundas St. At present there are 18.28 miles of single track civic line in operation, with a graduated fare, the maximum being 2c. The revenue derived pays operating expenses. There are still districts without the limits of 1891 lacking adequate means of transportation. This condition can only be relieved by the construction of additional civic lines, always keeping in mind the necessity for ultimate unification of the lines so built, with the present street railway system upon its acquisition by the city in 1921. This is the

only economical and reasonable form of quick relief to be given these districts.

Radial Railway Entrance.—We have carefully studied the question of radial railway entrance, assuming the following bases: 1. The acquisition by the city of the Toronto Ry. on the termination of the franchise in 1921. 2. The construction of the waterfront viaduct by the Grand Trunk and Canadian Pacific Railways. The main principle governing our studies has been the creation of a comprehensive plan for entrance and terminal facilities for all radial railways, of the present and future, and to provide those facilities on such a scale as to embrace probable requirements for the next 25 years, i.e., to provide forthwith lands for ultimate requirements as to terminals and rights of way of the various main trunk lines, but developing and constructing on the unit principle as conditions



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necessitate and finance permits. In investigation of possible radial entrances, we have surveyed and contoured in detail approximately 150 miles of line, radiating from the centre of the city, in northerly, westerly and northwesterly, easterly and northeasterly directions. These activities have not been confined to the area lying within the city limits. While on the presentation plans we indicate areas to be served by these trunk radial railway lines, we desire to emphasize that, while detailed alternative locations have been made in every case, we have refrained from indicating exact locations, in order to prevent real estate exploitation at the expense of the citizens generally, and this project in particular. Fortunately, we were able, both on the east and west, from the waterfront north, to locate several lines, all of which would afford satisfactory alignment and gradients. While in the estimates liberal allowance has been made for the cost of right of way, we are of opinion, that if prudently handled, especially in the outlying districts, such right of way may be

secured at little expense, by reason of the fact that large real estate owners will, in all probability, dedicate same, because the benefit accruing to their properties from modern transportation facilities, will handsomely repay them for any land so contributed. If real estate owners hold their lands at prohibitive prices, then, under the scheme presented, it will be easy to adopt other locations, which will equally well serve the requirements. This phase of the problem involved detailed study of the following, viz.: Present and future radial railway situation and probable volume of business. The physical location of the trunk line entrances within the city limits, adequate for present and future requirements. The location, size and character of terminal, having always in mind the fact that it should be located, if possible, on the axis of maximum movement. Provision for future expansion both as to trackage for trunk line entrances and terminal facilities. Provision for proper interchange of traffic with steam railway lines. The co-ordination of rail and water transportation. The possibility of locating the trunk line entrances, so as to permit of their use for serving suburban districts adjacent to the city. The economics of the whole question.

Rapid Transit System.—The object of the study has been, in the main, to secure by survey and research all useful data pertaining to the economic and physical conditions of the problem. We have attempted by a combination of practical and theoretical analysis, to estimate the probable future growth, distribution, and density of population, for the city and surrounding territory, i.e., as applied to residence, light and heavy industries, wholesale, warehouse and general business. To obtain these results, we have made a comparative study of the past growth of the city, and contrasted such with like data from other cities of similar size, and some that now have several times our present population. It is well known that, generally speaking, the growth of most cities, having relatively similar characteristics, follows well defined lines, which, graphically plotted, are of considerable use in projecting probable future population. The density of population is controllable, requiring only adequate transportation facilities, properly placed, together with such legislation as will prevent improper housing.

Rapid transit is not necessary in any city until such time as the congestion, due to vehicular, pedestrian and surface railway traffic on the streets, in the central section, has reached or is rapidly approaching the point of saturation, and then only after every other effort has been exhausted to improve existing surface transportation facilities. If this proves futile, then and then only, should serious consideration be given rapid transit. This term is generally misapplied. To many, it portends the elimination of all overcrowding conditions, and the final solution of transportation problems. As a matter of fact, there is as marked overcrowding on rapid transit lines as one encounters on the majority of surface railways at the rush hour periods. It means, in effect, the accomplishment of maximum distance in minimum time, and the amelioration of surface congestion. To provide such, the following methods are usually employed: Underground subway or tunnel construction. Elevated track structures. Combination of