



**REPORT OF THE  
TORONTO HARBOR COMMISSIONERS  
SUGGESTING A SOLUTION OF THE  
TRANSPORTATION PROBLEM OF TORONTO.**

THE TORONTO HARBOR COMMISSIONERS,  
Toronto, November 25th, 1913.

*H. C. Hocken, Esq. (Mayor), and Members of Board of Control:*

GENTLEMEN,—We beg to enclose a plan showing roughly the manner in which we propose to secure for our waterfront properties electrical railway service from the Woodbine to the Humber.

For the last two years this matter has been prominently before us, but a number of other questions required settlement before we were in a position to deal with the matter effectively; especially has it been necessary to wait until the terms of the viaduct agreement have been definitely settled.

Speaking generally, we have had in view the placing at or near the foot of Yonge Street, upon or adjacent to our properties, the terminals of the boat, steam railway and electric railway traffic, both for freight and for passengers. This arrangement commends itself to us principally for five reasons:—

1st. A common centre for the transfer of passenger and freight among the three different services will be a great convenience to the business interests and to the citizens generally.

2nd. The free hand that the Harbor Commissioners will have in the planning and sub-division of this property enables it to provide the only adequate site in the City for such terminal.

3rd. The location of such terminals in any section of the City will increase the value of the surrounding property, and we believe that the adoption of some such arrangement as that now proposed will enormously enhance the value of the property held in trust for the City by the Commissioners.

4th. The absolute necessity from the viewpoint of both the City and the Province of providing adequate terminal facilities for the new Hydro-Electric System of electrical radial lines, the success of which largely, if not altogether, depends upon easy access to the City of Toronto as its base of operations.

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5th. The securing of a rapid transit system which, upon the City acquiring the Street Railway, will provide an ideal unified system of service both within and without the City boundaries.

Upon our instructions our Engineer has located a terminal site roughly at the foot of Yonge Street, and the rapid transit electrical railway route along the waterfront from the Woodbine to the Humber, as indicated on the plan. Naturally, having proceeded thus far, we find it necessary to consider the manner in which the line could be operated to the City's best advantage, and so that it would carry sufficient traffic to justify its construction in the near future.

As a result of our enquiries, we came to the conclusion that the lines he had located from the Woodbine to the Humber was a natural entrance for the radial electric railways from the east, west, north-east and north-west, and in conjunction with these radial entrances we saw an opportunity to provide local rapid transit services along the same lines to the citizens in the outlying districts, who are at present suffering under the handicap of an inefficient car service.

We found, however, that we were unable, along the waterfront line, to provide equal facilities for the entrance of the radials from the north and for the relief of the citizens in the northern outlying districts, and we therefore consider carefully the Yonge Street subway proposal with a view to tying it with the waterfront line into one harmonious system at the waterfront and City Hall terminals.

After very careful review of the situation, we instructed our Engineer to prepare suggested plan and estimate of a system of rapid transit, having its terminal at the foot of Bay Street, and on the square in front of the City Hall, providing entrances for radial traffic and a rapid transit service to the outlying portions of the City.

In accordance with our general instructions and our more particular instructions from time to time, our Engineer has prepared the plan. He also, in the same manner, has prepared an estimate of cost, a copy of which is enclosed and which, as directed, he has divided into two portions.

You will observe under this plan and estimate we provide:—

(1) For an immediate expenditure of \$13,197,525, which will build the waterfront line from the Woodbine to the Humber, Yonge Street subway, the necessary radial entrances and the immediate necessities and surface street railway lines as feeders in the suburbs and which will provide a valuable unit to meeting existing contingencies—in all 25.46 miles of double track. This sum also includes an amount estimated to be sufficient for the purchase of those portions of the Mimico radial line in the west and the Scarboro line in the east, which are within the City limits and which the City has decided to acquire.

(2) For an expenditure, as required, of an additional sum of \$1,786,000, for the construction of 23.05 miles of double track of surface street railway lines, making in all an expenditure for the completed system estimated at \$14,983,525.

You will note on the map that the location for the central station for passenger traffic is indicated as the square immediately in front of the City Hall; the north, east and west lines converging upon and having their passenger terminals at this point; and you will further note that on the plan we have indicated the estimated time from various outside points to the terminal in front of the City Hall.

Below is comparison of present and proposed schedule of time:—

| Outside points.                            | Proposed service<br>to Bay and Queen. | Present service<br>to Bay and Queen. |
|--|---------------------------------------|--------------------------------------|
| To St. Clair Ave. and Yonge St.. . .       | 10 min.                               | 20 min.                              |
| To end of civic car line on St. Clair Ave. | 27 “                                  | 35 “                                 |
| To Queen St. and Kingston Rd.. . .         | 17 “                                  | 25 “                                 |
| To Danforth and Broadview Aves....         | 15 “                                  | 25 “                                 |
| To Coxwell Ave. and Gerrard St.. . .       | 18 “                                  | 28 “                                 |
| To Sunnyside . . . . .                     | 14 “                                  | 20 “                                 |
| To Jane and Dundas Sts.....                | 28 “                                  | 53 “                                 |

We have not provided in our estimates the cost of the terminal on the City Hall Square, as we are confident that this site, with a proper terminal building, can be financed separately and will prove to be a profitable business venture.

In order that we might not, especially at the present juncture, put forward a plan subject to some vital legal objection, we have submitted our proposals to our Solicitor, Mr. A. G. McMsater, and enclose herewith a copy of his opinion, in which, although several minor details must be dealt with, he sees no valid objections to our general scheme.

Our action in this matter is dictated solely by our desire to protect and develop the City's waterfront property which has been committed to our care, and by our sincere desire to assist in providing a solution of the present intolerable street railway situation, which affords a very inadequate service to our developed properties, and which, in the future, is almost an absolute bar to the proper development of the "Toronto Harbor Industrial District" in Ashbridge's Bay.

We ask that our proposals be given your due consideration, and we assure you that the Commissioners, our staff and organization will do everything in their power to co-operate with you aiming at a solution of a difficult problem.

Yours very truly,

TORONTO HARBOR COMMISSIONERS,

L. H. CLARKE,

*Chairman.*

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Toronto, November 25th, 1913.

*Mr. L. H. Clarke, Chairman, and Members Toronto Harbor Commissioners:*

GENTLEMEN,—In accordance with your instructions, I herewith submit report, plans and approximate estimates on the radial railway situation as applied to the proposed development work of the Commissioners along the waterfront of Toronto.

The settlement of the viaduct question and the fact that as a result thereof the Commissioners were enabled to secure control of the inner harbor front between Cherry and Bathurst Streets, together with the development plans of the Commissioners, has at last made possible, with a reasonable expenditure, the consideration of a radial railway entrance from both east and west along the waterfront to a central radial railway terminal.

Assuming the location of this central radial railway terminal as being bounded on the north by the new viaduct, on the east by Yonge Street, on the west by Bay Street and on the south by the new harbor front, I have considered the radial railway situation from this viewpoint.

What is known as the standard gauge of four feet eight and one-half inches has been assumed mainly for the reason that the success of radials, serving a district such as surrounds the City of Toronto, on the north, east and west, depends to a great extent on their ability to interchange freight in carload lots with the steam railways. I presume it is generally known that the gauge of the Toronto Railway Company's track is four feet ten and seven-eighth inches, while standard gauge is four feet eight and one-half inches.

Detailed descriptions of the various suggested radial railway routes and surface line extensions are as follows:—

#### ESSENTIAL RADIAL LINES.

##### 1. *Easterly Section—Main Line.*

Indicated on plan by broken lines.

(a) From the waterfront terminal between Bay and Yonge Streets in an easterly direction along the new Marginal Way 130 feet wide, owned by the Commission as far as Cherry Street; thence continuing on the old Don channel (now abandoned) in a south-easterly direction to a point about where the Don River now enters Keating's Cut; thence easterly to a point just west of Carlaw Avenue along the property of the Harbor Commissioners; thence deflecting in a southerly direction to the property of the Harbor Commissioners to the south of what is known as the 150-ft. roadway; thence easterly on the property of the Harbor Commissioners to a point near Morley Avenue; thence deflecting in a north-easterly direction south of Eastern Avenue over to the intersection of Kingston Road and Queen Street

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East, where connection will be made with the present Kingston Road Radial Railway, which the City now has the right to acquire as far east as the present eastern City limits, or what is known as Victoria Park Avenue.

Mileage from central terminal east of junction of Kingston Road and Queen Street East, 4.12 miles double track.

The mileage of Kingston Road Radial lines from intersection of Kingston Road and Queen Street to the east City limits, which is now single track, including branch line to Gerrard Street, is approximately 2.50 miles. It is assumed in this report that the City will exercise the right it now has to acquire this line.

The estimates provide for the acquirement and double tracking of same.

*(b) Coxwell Avenue—Branch Line.*

From a point south of Eastern Avenue, north via Coxwell Avenue to intersection with civic car lines now constructed and in operation from near Greenwood Avenue easterly via Gerrard Street and Coxwell Avenue and Gerrard to Main Street.

Mileage, 0.57 miles double track.

For the present it is assumed that a transfer would be made at junction of Gerrard Street south and Coxwell Avenue, and that when the conditions warranted, the gauge of the civic car line would be changed to the standard of four feet eight and one-half inches. It is now the same as that of the Toronto Railway Company, or four feet ten and seven-eighth inches.

*(c) Don Valley—Branch Line.*

From a point about where the easterly section main line crosses the Don, thence running in a northerly direction on the east bank of the Don, along the property owned by the City.

This line will pass under the viaduct tracks, provision for which has been made in the viaduct agreement, under the new Eastern Avenue bridge, as provided for in the viaduct plant, under Queen Street bridge, under Wilton Avenue bridge, under Gerrard Street bridge, thence north on the property of the City to Winchester Street; then on the property of the City adjoining the west side of Don Mills Road north to the corner of Danforth Avenue and Don Mills Road.

Mileage, 1.80 miles double track.

It is assumed that for the present a transfer would be made to the civic car lines now in operation on Danforth Avenue, and that when conditions warranted, the gauge of the civic car lines would be changed to the standard of four feet eight and one-half inches, thereby being enabled, if desired, to operate into the waterfront terminal at Yonge Street.

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SURFACE LINE EXTENSIONS.

The proposed surface line extensions in the easterly section, indicated on plan by broken line and two dots, to be constructed as required, are as follows:—

(a) *Don Mills Road Extension.*

Commencing near intersection of Don Mills Road and Danforth Avenue; thence north-easterly up Don Mills Road to Fulton; thence easterly via Fulton, Cronyn, Salmon Avenue to Woodbine; thence northerly on Woodbine to Cosburn; thence westerly via Cosburn and Bee Avenue to Don Mills Road to Fulton.

Mileage, 6 miles double track.

(b) *Toronto Harbor Industrial District Extension.*

The development plans of the Commissioners provide for possible street railway service on every alternate street running north and south in the industrial district. Provision has been made for surface line extension from about junction point of eastern main line with Cherry Street in a southerly direction, one belt line connecting with eastern main line about foot of Carlaw; another belt line crossing the ship channel, thence going easterly immediately north of the 350 acres of park reclamation being provided by the Commissioners and meeting the eastern main line at about Leslie Street. In addition, an extension has been provided to connect up with Toronto Island lines when constructed. If deemed necessary, efficient service lines will be constructed on the Commissioners' private right-of-way.

2. *Central and Northern Sections—Main Line.*

Subway indicated on plan by broken line and circle.

Essential surface extension north of St. Clair Avenue on Duplex Avenue by broken line.

(a) From the waterfront terminal between Bay and Yonge Streets in a northerly direction by means of subway under the new viaduct and new Custom House and Postal Station, the latter to be erected at south-east corner of Bay and Front Streets; thence northerly via Bay and Teraulay—Teraulay Street extension, and Yonge Street to St. Clair Avenue and Yonge. This is the route of the proposed subway construction submitted by Mayor Hocken in 1911.

Mileage, 3.09 miles double track to St. Clair Avenue.

*Essential Surface Line Extension.*

(b) Duplex Avenue line to north end of North Toronto.

Commencing at corner of St. Clair Avenue and Yonge Street, this plan provides for the extension of the Yonge Street subway in a northerly direction about 2,500 feet, ending just south of the G. T. R. Belt Line tracks.

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What has been termed the Duplex surface line extension will then cross under the G. T. R. Belt Line tracks at a grade about 5 feet lower than the existing grade of Yonge Street, where it now passes under the G. T. R. Belt Line tracks. From this point it follows the Duplex Avenue extension.

Mileage from St. Clair and Yonge, northerly 3.17 miles of double track.

*Surface Line Extensions.*

(a) St. Clair Avenue line now constructed and in operation and indicated on plan by short broken line. It is assumed that a transfer point would be made at St. Clair Avenue and Yonge Street, but eventually the gauge would be altered to standard of four feet eight and one-half inches, provision for which was made in its construction as the track allowance is on a separate right of way, and has not been paved excepting at cross town street intersections. This would then permit of operation of St. Clair Avenue west line down to City Hall Square, and if considered advisable through to the Radial Railway waterfront terminal, at foot of Bay and Yonge Streets. Mileage 3.12 miles of double track.

(b) Forest Hill, Eglinton, Vaughan Road Surface Line extension to be constructed as required. Indicated on plan by broken line and two dots.

From intersection of Forest Hill Road and St. Clair Avenue northerly and north-westerly on Forest Hill Road to Eglinton Avenue, thence westerly on Eglinton Avenue to Dufferin Street, then south-easterly down Vaughan Road to St. Clair Avenue.

Mileage approximately 4.80 miles double track.

(c) St. Clair Avenue East, Surface Line, extension to be constructed when required. Indicated on plan by broken line and two dots.

From the intersection of St. Clair Avenue and Yonge Street in an easterly direction along St. Clair Avenue to Alice Avenue, then north to Clarence Avenue, the latter now being called Heath Street East, then easterly via Heath Street to its intersection with East York Avenue.

Mileage 1.35 double track.

(d) Island Section.—Indicated on plan by broken line and two dots. To be constructed when required.

From foot of Bathurst Street southerly over the Western Channel and via Island south and east to the Eastern Channel.

Mileage 3.41 double track.

3. WESTERLY SECTION.

Main Line.—Indicated on plan by broken lines.

(a) From the waterfront terminal between Bay and Yonge Streets in a westerly direction along the new marginal way 130 feet wide, owned by

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the Commissioners, to Bathurst Street, thence north-westerly on property owned by the Commissioners and the City immediately south of the C. P. R. up to the Grand Trunk Railway; thence immediately south of the Grand Trunk Railway in a westerly direction through the Exhibition Grounds by means of a subway; thence in open cut at same level as Grand Trunk Railway to Sunnyside on property acquired jointly by the Grand Trunk Railway and the City for Grade Separation work. The City now has one-third (1-3) equity in this property with the right, under the Grade Separation Agreement, by paying the remaining two-thirds (2-3) of the purchase price, to acquire the property in its entirety. From Sunnyside the line will be carried west along the Lake Shore Road on the Mimico Radial, which will be taken over by the City on January 1st, 1914. From this point the line deflects north-westerly under the G. T. R. and follows the right-of-way of the Humber Valley Electric Railway, which, under the terms of its charter, the City has the right to acquire. The terminus of this radial line for the present will be the intersection of Church and Dundas Streets, with the right of a three-mile extension continuing in a north-westerly direction.

The mileage of this line is 7.85 miles of double track.

(b) *Ellis Avenue—Branch Line.*

From the junction of Ellis Avenue with the Lake Shore, northerly via Ellis Avenue—College Avenue and Elizabeth Street to Bloor. Mileage 1.23 double track. If it is desired, Windermere Avenue may be chosen as a branch line in place of Ellis Avenue line.

(c) *Keele Street—Branch Line.*

From a point just west of Keele Street at its intersection with the Lake Shore Road, northerly through High Park adjoining west limit of Keele Street to Bloor Street.

Mileage 1.13 double track.

SURFACE LINE EXTENSIONS.

The proposed surface line extensions in the westerly section, indicated on plan by broken line and two dots and to be constructed as required, are as follows:

(a) *Queen Street West Extensions.*

Queen Street West, from the Humber River to Church Street. Mileage 1.04 double track.

(b) *May Street, Jane Street and St. John's Road Extensions.*

From the intersection of Bloor Street with the Humber Valley Railway northerly via May, Carvin, Thornhill and Jane Streets to Dundas Street, with branch on St. John's Road. Mileage 1.72 double track.



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Regarding surface line extensions to be constructed as required, it may be stated that the lines shown on this plan and described as such, are simply suggestions for consideration; their location is not absolute, but from careful observations and consideration of topography of the districts and from reconnoissance survey they appear to be logical. The surface line extensions could, of course, be extended in many directions, as for instance: From Duplex Avenue surface lines may be extended east and west, as required, to serve this rapidly developing district. Similarly regarding Forest Hill Road, Eglinton and Vaughan Road and St. Clair Avenue east lines.

#### RADIAL RAILWAY CONNECTIONS AND TERMINALS.

##### *North-Eastern Radial Railway Entrance.*

In their development the radial railways must of necessity have Toronto as their main terminal.

Considering first the eastern section of the City. Under date of October 8th, 1913, Chief Engineer F. A. Gaby, of the Hydro-Electric Power Commission, reported to the Hon. Adam Beck, Chairman of the Hydro-Electric Power Commission, on the proposed municipal Hydro-Electric Railways for the Toronto and north-eastern districts. Below is the last paragraph of his report dealing with the terminal situation:

“As outlined in the report we have considered the Toronto Terminal as located in the north-eastern section of the City and freight handled by a subsidiary company. This arrangement, while satisfactory, would require careful management and we would strongly recommend that steps be taken at once to interest the City in providing a proper route to the down town section. It has been suggested that the proposed lines could use a street north of and parallel to Danforth Avenue. The ravine could be crossed on the lower deck of the new viaduct and the centre of the City reached via Ontario, Gerrard, Jarvis and Mutual Streets. This would give a route close to the business and financial districts and also provide for access to the market districts at the lower end of Jarvis Street.”

The plan now submitted provides for an entrance for the Municipal Hydro-Electric Railway, Markham and Uxbridge branch by Cosburn Avenue, Don Mills Road and the Don Valley to the waterfront terminal between Bay and Yonge Streets.

The proposed entrances for the Municipal Hydro-Electric Railway for Toronto and north-eastern districts are shown on this plan, one line serving the district between Toronto, Markham and Uxbridge; and the other district between Toronto, Port Perry and Whitby.

As now located, the Port Perry and Whitby line will have to make use of Danforth Avenue Civic Car lines, which necessitates changing gauge of track, or transfer freight and passengers in the vicinity of Dawes Road.

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This line can be re-located so as to join the Markham-Uxbridge line just north-east of the intersection of Woodburn and Cosburn Avenue, then one radial entrance will be used via Cosburn and Don Mills Road and line on east bank of the Don, or what we have termed the Don Valley line, thence along the new marginal way of the Harbor Commissioners to the radial railway terminal on the waterfront between Bay and Yonge Streets.

#### NORTHERN RADIAL RAILWAY ENTRANCE.

The entrance for radials from the north has been provided for by means of the Duplex Avenue line, which is proposed to be constructed to the north limit of the former town of North Toronto; thence, by means of a subway from just south of the G. T. R. belt line by means of Yonge, Teraulay and Bay Street subway, to the City Hall Square and Radial Railway waterfront terminal.

It is very probable that on account of the cost of right-of-way any projected radial lines in a north-westerly direction would parallel the Grand Trunk Railway belt line now in use, and provision has also been considered for their entrance at about the intersection of Duplex Avenue and the Grand Trunk Belt Line Railway. From this point they would come down the Yonge, Teraulay and Bay Street rapid-transit subway to the City Hall Square and waterfront terminal.

#### WESTERN RADIAL RAILWAY ENTRANCE.

For projected lines from Guelph, Georgetown and Brampton to Toronto an entrance has been provided by means of the Humber Valley Electric Railway right-of-way, which, under the terms of its charter, the City has the right to acquire.

The right-of-way of the Humber Valley Electric Railway is only shown on this plan for a distance of 2.84 miles to the intersection of Church and Dundas Streets—but the charter provides for the right to construct 3 miles further in a north-westerly direction from intersection of Church and Dundas Streets.

Entrance to the waterfront Radial Railway Terminal is then obtained by using the Lake Shore Road Mimico Radial to Sunnyside, which will be acquired by the City on January 1st, 1914, and from Sunnyside to terminal over Western Main Radial Line adjoining to the south and at the same level as the Grand Trunk through South Parkdale, subway construction through the Exhibition grounds; thence parallel and immediately south of the C. P. R. to Bathurst Street and thence along the marginal way of the Harbor Commissioners to terminal between Bay and Yonge Streets.

Projected lines from Hamilton and Brantford will make their location in a manner that will enable them to connect with the proposed surface line extension on Queen Street West, west of the Humber River, at a point on the line between the Humber River and Church Street, then by using this

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line and the portion of the Mimico Radial to be acquired by the City January 1st, 1914, that is, between the Humber and Sunnyside and the Western Radial Main Line from Sunnyside easterly, access is given to the waterfront Radial Terminal between Bay and Yonge Streets.

#### GENERAL.

Provision has been made for direct connection between the waterfront Radial Lines and the Bay, Teraulay, Yonge Street Subway, so that such radial line cars as considered desirable can operate direct without change up the Bay Street Subway to the City Hall Square—loop at this point and return to the waterfront terminal.

#### ESTIMATED COST.

Considering the estimates of cost of this system I would like to mention the main factors which have governed their preparation.

Your preliminary instructions were to consider the cost of entrance of Radial Railways along the waterfront in order that the waterfront developments might have not only adequate steam railway facilities as provided for in the Viaduct Agreement, and proper transportation facilities by water, but also the benefit of proper co-ordination of rail and water transportation as directly applied to radial railway development.

The information obtained at the time of making hydrographic and land surveys of the entire waterfront from the Humber to Victoria Park enabled us to make accurate estimates of these portions of the proposed lines, that is the Eastern Radial Line from Bay and Yonge Streets to the Woodbine, and the Western Radial Main Line from Bay and Yonge to Jane Street.

With regard to estimates of what we have termed branch line radials, such as Don Valley Line, Coxwell Avenue Line, High Park, Keele Street Line, Ellis Avenue Line and Duplex Avenue Line, the estimates have been prepared from reconnaissance survey.

With regard to suggested surface line extensions, reconnaissance surveys have been made and the estimates based as carefully as possible thereon, and I feel that these estimates are liberal.

The estimates given below include as to private right-of-way, full cost of grading for proper double track construction, as to the surface lines on streets, no grading has been allowed for, as in the ordinary course the streets will be graded for vehicular traffic before the necessity for a railway line arises, but provision has been made for the necessary excavation and concrete foundation to provide for double track allowance on streets previously graded and ready for pavement.

It will be observed that the line from Bathurst Street to the Woodbine is to be constructed on land at present covered by water. The Harbor Board

have entered into contracts for the reclamation of large areas on the waterfront, which include the proposed right-of-way, and, as a matter of business policy, I have assumed that the Commissioners would be glad to arrange for the free rights-of-way necessary in return for adequate transit service.

These estimates include the necessary overhead construction ready for electrical operation.

It is assumed that the electrical power equipment, such as sub-station, transformers, etc., will be supplied by the Toronto Hydro-Electric at their expense, on account of the magnitude of the power contract.

Land damages have been estimated and apportioned where any private property is affected, but this applies to a very small portion of the entire system, for the reason that 97 per cent. of all the lines will be built either on property now owned by the City or Harbor Commissioners, or on existing streets outside the City limits of 1891.

We have not provided in the estimates for the cost of the terminal just south of the City Hall, as we feel that this site, with a proper terminal building, can be financed separately, and will prove to be a profitable business proposition.

ESTIMATES OF COST.

Estimates for the essential lines include construction cost, 10 per cent. for engineering and contingencies, interest charges on capital during construction period and also equipment.

(a) ESSENTIAL RADIAL RAILWAYS. (MAIN AND BRANCH LINES.)

Mileage 25.46 double track.

*Eastern Section.*

Indicated on plan by broken line.

- (1) Main line, from the Radial Waterfront Terminal to Victoria Park Avenue and Kingston road.
- (2) Coxwell Avenue Line.
- (3) Don Valley Line to Danforth.
- (4) Purchase price and cost of double tracking portion of York Radial within the City limits on Kingston Road and branch to Gerrard Street . . . . . \$1,933,300 00

*Northern and Central Section.*

Subway indicated by broken line and circle.

Duplex Avenue Surface Line indicated by broken line.

- (1) Main line of subway from waterfront terminal north via Bay, Teraulay and Yonge, to St. Clair Avenue.
- (2) Subway and surface extension, north from St. Clair Avenue to north City limits via Duplex Avenue.....\$7,703,550 00

*Western Section.*

Indicated on plan by broken line.

- (1) Main line from Radial Waterfront Terminal west to corner of Church and Dundas Streets.
- (2) Ellis Avenue branch to Bloor.
- (3) Keele Street (High Park) branch to Bloor.
- (4) Cost of acquiring portion of Mimico Radial in the City limits between the Humber River and Sunnyside.....\$3,560,675 00

Total estimated cost for essential lines .....\$13,197,525 00

(b) SURFACE LINE EXTENSIONS.

To be constructed as required.

Estimates for suggested surface line extensions include construction cost, interest charges on capital during construction and 10 per cent. for engineering and contingencies.

Mileage 23.05 double track.

*Eastern Section.*

- (1) Lines north of Danforth Avenue.
- (2) Lines for Toronto Harbor Industrial District..... \$846,000 00

*Central and Northern Section.*

- (1) Forest Hill, Eglinton and Vaughan Road.
- (2) St. Clair Avenue, east from Yonge to East York Avenue, via Alice and Clarence Avenues.
- (3) Island lines ..... \$669,750 00

*Western Section.*

- (1) Queen Street West extension, west of Humber River to Church Street.
- (2) May, Jane and St. John's Road extension, north from Bloor to Dundas .... \$270,250 00

Total estimated cost for surface line extensions to be constructed as required .....\$1,786,000 00

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*Summary.*

|                               |                 |
|-------------------------------|-----------------|
| Essential lines .....         | \$13,197,525 00 |
| Surface line extensions ..... | 1,786,000 00    |

Total expenditure called for on this plan ... .. \$14,983,525 00

In fairness to the above estimate the cost of the Civic Car lines already constructed should be added, and to place all the estimates on the same basis we have estimated the amounts already expended on Civic Car lines as follows:

*Eastern Section.*

Danforth Avenue and Gerrard Street.—Track construction, concrete foundations, overhead work and equipment ..... \$519,110 00

*Central and Northern Section.*

St. Clair Avenue.—Track construction, ballast, overhead work and equipment ..... \$247,400 00

*Western Section.*

No Civic Car lines in Western Section.

The above additional estimates change the estimated cost of the entire Civic system, essential lines to read as follows:

|                            |                 |
|----------------------------|-----------------|
| Eastern Section .....      | \$2,452,410 00  |
| Central and Northern ..... | 7,950,950 00    |
| Western (no change) .....  | 3,560,675 00    |
| Total .....                | \$13,964,035 00 |

Regarding time shown on plan from the City Hall Square to various parts of the City—may say that they have been computed on the basis of a schedule of 11, 15 and 18 miles per hour, including stops, the various rates of speed being applied to different locations and conditions throughout the routing.

Regarding probable financial returns—no attempt has been made to estimate the revenue, but from close observations of the traffic conditions made in 1911, and study of rapid transit systems in other cities, I have no hesitation in saying that on a straight five-cent fare the revenue would be sufficient to meet the operating and overhead expenses.

All of which is respectfully submitted,

E. L. COUSINS,  
*Chief Engineer.*

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McMASTER, MONTGOMERY, FLEURY & Co.,  
Toronto, November 25th, 1913.

*Toronto Harbor Commissioners, Toronto:*

DEAR SIRs,—At your request, I have carefully gone over with your Chief Engineer, the plans you have directed him to prepare providing for an Electric Railway System along the waterfront and extending north therefrom both at the east and west ends of the City.

There can be no question, in my opinion, but that this plan can be carried out, notwithstanding any franchise enjoyed by any Corporation, with the exception of the use of three or four short connecting lines on City streets, in locations annexed since 1891, such streets not being served at present by the Toronto Street Railway Company, and, apparently, not likely to be served. While the use of these short lengths of streets is in no way essential to your plan, it would evidently make for convenience if all questions as to the right to use them can be cleared away, and if you desire to use them, I would advise that, in order to avoid the possibility of vexatious litigation with corporate interests, it would be wise to have the scheme validated by an Act of Legislature.

Yours truly,

(Sgd.) A. C. McMASTER.