June 3rd, 1952.

Mr.H.C.Patton.

Study of Future Surface Car Requirements and Recommendation to Purchase additional Used P.C.C. Cars.

The Service Change Committee has recently given careful consideration to the street car equipment which will be required in 1954 after completion of the Yonge Street Subway. It considers that the requirements for surface car operation at that time will total 863 street cars, based on maintenance of the present volumes of traffic.

Future Volume of Passenger Traffic

I attach herewith Mr.H.P.Lewis's most recent forecast of revenue passengers dated May 27th, 1952, marked Exhibit No.1. This shows that the volume of passenger traffic on the City and Suburban system may be expected to increase to a peak of about 330,000,000 passengers in 1960. For the ensuing decade, 1960-1970 the trend will be downwards, but the total volume will still be above the present level until the end of this period.

It is considered, therefore, that the Service Change Committee's estimate of surface car requirements for 1954 based on present traffic conditions is a reasonable basis from which to continue a study of future requirements.

Present Fleet

The present fleet consists of the following street cars and trailers:-

P.C.C. cars	591
Small Witt - pay-enter	100
Large Witt - pay-enter	75
Large Witt - 2-man	173
Trailers	105
Total	1,044

Of these cars, 105 trailers and 50 Drill cars (large Witt, 2-man) will be scrapped as unsuitable or unfit for rehabilitation as soon as the Yonge Street Subway is in operation. This will leave 889 cars available for service, which is practically identical with the estimated requirements in 1954.

Authority has already been obtained to carry out the necessary rehabilitation of the 175 pay-enter Witt cars to fit them for another 10 years' service and this work will be completed before the end of 1953.

Unless additional cars are purchased, it will be necessary also to rehabilitate and convert to pay-enter operation the 123 large Witt 2-man cars. Authority has already been obtained to proceed with this work on 50 of these cars.

The decision on the remaining 75 cars has been postponed pending consideration of the purchase of additional cars. The immediate determining factor appears to be the equipment requirements for handling the ever-increasing load on the Bloor route.

Bloor Street Multiple Unit Service

The Service Change Committee estimates that after the subway is in operation the Bloor service will require 138 cars for through service over the whole route, plus 36 cars for short-turn service between Yonge and Convell, or a total of 174 cars.

There are now on this route 100 P.C.C. cars equipped for multiple unit operation and we, therefore, require 74 cars to complete the quota. It is considered that all these cars should be equipped for multiple unit operation to enable the growing traffic on Bloor Street to be handled efficiently and expeditiously.

There are two ways of arranging this:-

(a) By conversion of 74 of our existing P.C.C. cars to multiple unit operation

This would involve withdrawing 74 P.C.C. cars from regular service on other routes and replacing them with rehabilitated and converted Witt cars or trolley coaches. An auxiliary bus service has been considered but rejected because combined bus and street car operation on Danforth Avenue and Bloor Street would be undesirable and there is no suitable parallel street.

1. Because of the age and obsolescence of the Witt cars as compared with P.C.C. equipment, it is felt that substitution of such cars would be unacceptable to the public on routes now served by more modern equipment. The cost of rehabilitating and converting 75 large Witt cars for this purpose would be as follows:-

75 large Witt cars rehabilitated and converted to pay-enter operation at $4,300.00 each	..	$322,500.00
Cost of conversion of 75 P.C.C. cars to multiple unit operation at $6,000.00 each	..	450,000.00
Total Cost	..	$772,500.00

2. The conversion of any major route to trolley coach operation - necessary to provide sufficient cars for Bloor Street - would be extremely expensive both in capital expenditure and in operating cost, and would make such substitution prohibitive at the present time.

For example:- Conversion of the Harbord route would release 60 P.C.C. cars but the cost of conversion would be as follows:-

Capital Cost ..		$2,097,000.00
Increased operating cost $112,000.00 per annum capitalized at 3½%		3,190,000.00
Total equivalent capital expenditure ..		$5,287,000.00

(b) By purchase of additional P.C.C. cars

It is understood that Cleveland is about to dispose of 75 P.C.C. cars of which 50 are equipped for multiple unit operation.

These cars are all-electric, P.C.C. cars in good condition about 5 to 6 years old and can probably be purchased at a price of around $20,000.00 each at Cleveland.

The cost delivered and ready for service at Toronto would be as follows:-

Purchase price in Cleveland	$	20,000.00
[illegible]		[illegible]
Freight		500.00
Sub-total	$	24,500.00
Sales Tax 10%		2,450.00
Conversion to Toronto gauge etc.		2,000.00
Cost delivered in Toronto - each -	$	28,950.00
Cost of 75 cars delivered		2,171,250.00
Cost of conversion to multiple unit, 25 cars @ $6,000.00		150,000.00
Total for 75 multiple unit cars delivered		$2,321,250.00
Less scrap value of 75 Witt cars not required at $1,500.00 ea.		112,500.00
Net cost for Cleveland cars		$2,208,750.00

Long Term View

While it would undoubtedly be cheaper for the immediate purpose in view to convert existing P.C.C. cars to multiple unit operation and to replace them on other routes with rehabilitated Witt cars, it is believed that on the long term basis such a

course would be harmful to the future well-being of the system.

It is almost certain that the purchase of new standard P.C.C. cars - now economically undesirable - will eventually become impossible on this continent owing to cessation of mass production due to lack of demand elsewhere. While it might still be possible to obtain such cars in Europe, the cost would be prohibitive.

At the present time, however, there are available good, used, P.C.C. cars of recent manufacture which are suitable for operation in Toronto. This situation will obviously only continue for a limited time. It is believed that the Commission should seize the opportunity to protect its future by the purchase of some of these cars.

It might be asked why Toronto should consider buying additional street cars when so many of the transit properties on this continent are giving them up and turning to trolley coaches, buses or rapid transit operation. It is, therefore, necessary and useful to examine the practice as to vehicular service, past and present, of other transit properties to determine what course should be followed in this city.

It is more or less true that there has been a gradual abandonment of street cars in a substantial number of large American cities and some smaller Canadian cities.

There is obvious justification for the abandonment of street cars in smaller communities but the policy of the abandonment of the use of this form of transportation in the larger communities is decidedly open to question. In fact it is hardly too

much to say that the results which have occurred in a good many of these larger cities leaves open to serious question the wisdom of the decisions made.

It may be not wholly accurate to attribute the transit situation in most large American cities to the abandonment of the street cars. Nevertheless the position in which these utilities have now found themselves is a far from happy one. Fares have steadily and substantially increased, the quality of the service given, on the whole, has not been maintained, and the fare increases have not brought a satisfactory financial result. Short-haul riding, which is the lifeblood of practically all transit properties, has dropped to a minimum and the Companies are left with the unprofitable long hauls. Deterioration of service has also lessened the public demand for public passenger transportation. The result is that the gross revenues of the properties considered, if they have increased to any substantial degree, have not increased in anything like the ratio of the fare increases, and in most cases have barely served to keep pace with the rising cost of labour and material. It is difficult to see any future for most large American properties unless public financial aid comes to their support.

These facts being as they are, Toronto should consider carefully whether policies which have brought these unfortunate results are policies which should be copied in this city. Unquestionably a large part of the responsibility for the plight in which these companies find themselves is due to the fact that the labour cost on small vehicles is too high to make the service self-

sustaining at practically any conceivable fare.

Why then did these properties adopt this policy? It is not unfair to suggest that this policy was adopted in large part by public pressure upon management exerted by the very articulate group of citizens who own and use motor cars and who claim street cars interfere with the movement of free-wheel vehicles and who assert that the modern generation has no use for vehicles operating on fixed tracks but insists on "riding on rubber." If there is any truth in the above suggestion it is an extraordinary abdication of responsibility by those in charge of transit interests. They have tailored their service in accordance with the demands of their bitter competitors rather than in accordance with the needs of their patrons.

In fairness there is another important feature to consider, that in most of these cities maintenance of equipment and plant has not been carried out with a thoroughness that Toronto is accustomed to. These properties found themselves with trackwork and overhead either worn out or obsolete and the cost of replacement of fixed equipment was a major factor in the decision to abandon street cars. There was also the plausible argument that initially free-wheel vehicles were less expensive to purchase, and the question of the ultimate utility of the vehicle for the purposes for which it was required was placed more or less in the background.

Few, if any, cities in the United States have rush hour loadings on surface lines comparable to those on major routes in Toronto. Where such heavy concentrations do occur, parallel street systems generally permit distribution of the traffic to two

or more routes and reduce the individual loadings to those which can be handled by buses or trolley coaches.

On the other hand, many of the rush hour loadings in Toronto are beyond the capacity of free-wheel vehicles and the track and overhead system is still in good condition and capable of many years of useful service. Under these circumstances our studies show that street car operation is the only available form of transportation for city routes with a capacity greater than 4,000 passengers per maximum hour, and the cheapest form of transportation for many lesser routes. It is believed, moreover, that the continued use of this economical form of operation has been responsible in a large measure for the lower fares which Toronto has enjoyed as compared with American cities.

Even if the Queen Street subway is constructed within the next decade the situation will remain unchanged, because the initial operation of this subway will be by street car and not by rapid transit car. It would, moreover, be desirable to operate the Queen route through this subway with multiple unit P.C.C. cars.

Future of Track System

I attach memorandum from Mr.W.A.MacRae dated May 23rd, 1952, and marked Exhibit No.2, showing anticipated track replacements during the next 25-year period. From this you will note that the peak of obsolescence will occur between the years 1960 and 1974 with the greatest expenditure in 1965. The great majority of this work effects major routes such as Bathurst, Bloor, Carlton, Dundas, King, Queen, St.Clair and Kingston Road, and only a comparatively small proportion of the work effects minor routes such as

Church, Parliament, Coxwell, Dupont, etc., which might reasonably be abandoned before then.

Future of present Street Car Fleet

I attach herewith memorandum from Mr.J.C.Inglis dated May 14th, 1952, and marked Exhibit No.3, regarding the estimated lifetime of the street cars now owned by the Commission, assuming that the rehabilitation and conversion of all Witt cars is carried out before the end of 1953. From this you will note that in 1963 the 298 Witt cars will be 40 years old and will have reached the end of their useful life. By 1968 the first 139 P.C.C. cars will be 30 years old and will also be due for retirement and thereafter year by year the fleet will gradually be reduced to the vanishing point as indicated in the following table:-

Year	No. of Cars Retired	No. of Cars Remaining
1953	0	1044
1954	155	889
1963	298	591
1968	139	452
1969	27	425
1970	50	375
1971	60	315
1973	15	300
1975	25	275
1977	25	250
1978	100	150
1979	100	50
1981	50	0

The critical period will come around 1963 when we are approaching the peak of track obsolescence and when all the Witt cars will be retired, leaving only 591 P.C.C. cars available for service, as shown on the attached chart marked Exhibit No.4.

Possible Conversion to Free-Wheel Operation

From our experience with trolley coach operation, it

has been deduced that the maximum capacity of free-wheeled vehicles is not more than 4,000 passengers per hour. On this basis the following routes might reasonably be converted to bus or trolley coach operation within the next decade.

Route	Passengers per Maximum Hour	Street Cars Released
Church	1,000	5
Coxwell	1,600	5
Dupont	2,000	20
Harbord (west end)	2,700	37
Lake Shore	1,700	21
Parliament	2,200	6
Queen (east of Woodbine)	1,900	15
St.Clair (east of Yonge)	1,300	9
York Township lines	2,000	13
Total street cars released		131

Of these cars, 118 are P.C.C. and the remaining 13 are Witts.

Routes which should be continued with Street Cars

It is considered that the following routes have maximum passenger demands greater than free-wheeled vehicles can handle, and should be continued in street car operation for at least 20 years.

Major track reconstruction where required should, therefore, be undertaken on these routes as set out in the attached memorandum from Mr.W.A.MacRae, and as shown on the accompanying plan, marked Exhibit No.5.

Route	Passengers Per Maximum Hour	Street Cars Required
Bathurst	6,100	70
Bloor	9,000	174
Carlton	4,200	101
Dundas	4,200	53
Harbord (east end)	3,900	25
King	5,400	88
Queen - Kingston Rd.	7,900	152
St.Clair	6,200	70

Sub-total of Street Cars Required	..	733
Allowance for maintenance - 6%	..	45
Total number of Street Cars required after 1963 ..	..	778

As pointed out above, there will only be available for service in 1963 591 P.C.C. cars. There will, therefore, be a shortage at that date of 187 cars.

Any conversion made on minor routes between now and 1963 will reduce this shortage to some extent by extending the lifetime of the Witt cars by a few years. This modification will, however, have little effect on the long term prospect unless additional Rapid Transit lines are constructed in the meantime.

Summary

To summarize the above considerations:-

1. It is estimated by Mr.Irvin that the traffic demand during the next 20 years will equal or exceed the present level.

2. In 1954 the Bloor Street service should be supplied with 74 additional cars equipped for multiple unit operation.

3. These cars can be obtained by withdrawing 74 P.C.C. cars from regular service and converting them to multiple unit, replacing them on the present routes with large Witt cars, rehabilitated and converted to pay-enter operation. This will cost a total of $772,500.00.

4. Alternatively, 75 used P.C.C. cars from Cleveland can be purchased at an estimated cost of $2,321,250.00.

5. It is considered essential to maintain street car operation on the 8 major routes for at least 20 years and to rehabilitate the tracks where required for this purpose.

6. By 1963 all Witt cars will be retired and there will only be available for service 591 P.C.C. cars. At the same date 778 cars will be required to furnish service on the 8 major routes.

7. This will result in a shortage of 187 cars which will increase progressively as P.C.C. cars are retired.

6. There is no known alternative to continuation of street car operation on the 8 major routes unless Queen or Bloor are converted to rapid transit operation.

For these reasons it is considered that the Commission would be wise to take advantage of the present opportunity of purchasing good, used, P.C.C. cars rather than of rehabilitating at considerable expense obsolete Witt cars for service on major routes.

Recommendation

It is recommended, therefore, that negotiations be commenced with the Cleveland Transit System with a view to purchasing 75 used P.C.C. cars, 50 of which are now equipped for multiple unit operation at an estimated cost delivered in Toronto of $28,950.00 each, and at a total cost for the 75 converted and ready for use of $2,171,250.00.

It is also recommended that negotiations be reopened with Birmingham Transit Company for the purchase of 48 used P.C.C. all-electric cars as offered to us in August, 1951, at an estimated cost of $18,500.00 each, f.o.b. Birmingham and at a total cost delivered in Toronto ready for use of $1,344,000.00.

Estimated Net Cost

If these recommendations are accepted for the purchase of 123 additional cars, it will be possible to eliminate entirely the conversion and rehabilitation of 123 large Witt cars which was estimated to cost $528,000.00. We have already purchased some $50,000.00 worth of equipment for this work, so that the net saving would be approximately $478,000.00.

The net cost for equipment would be as follows:-

75 Cleveland cars, converted to multiple unit operation and ready for service	..	$2,321,250.00
48 Birmingham cars, ready for service	..	1,344,000.00
Sub-total	..	$3,665,250.00
Less cost of converting 123 large Witts, say		478,000.00
Sub-total		$3,187,250.00
Less scrap value of 123 Witt cars at $1,500.00 approximately	..	187,250.00
Estimated net cost of 123 additional P.C.C. Cars at an average cost of $24,400.00 each	..	$3,000,000.00

Enclosures

I attach herewith the following exhibits:-

Exhibit No. 1	..	Forecast of passenger revenue.
2	..	Forecast of Track Replacements.
3	..	Forecast of Street Car Retirements.
4	..	Graph showing track rehabilitation and life of street cars, 1946-1978.
5	..	Plan showing major street car routes to be continued.

10-460-42.

Operations Manager.

EXHIBIT NO. 1

FORECAST OF REVENUE PASSENGERS

Made by MR.W.P.IRVIN

May 27,1952

(COPY)

Executive.

W.F.Irvin.

May 27th, 1952.

Mr.W.E.P.Duncan.

Forecast of Revenue Passengers.

Mr.H.E.Tate, Mr.R.Aiken,
Mr.A.H.Foster, Mr.J.C.Parker,
Mr.J.C.Inglis, Mr.W.E.Evens,
Mr.W.H.Paterson, Mr.R.M.Cumming,
Mr.W.A.MacRae.

In connection with the question of future street car equipment requirements we should take a look at the trend of growth of Greater Toronto, the growth of automobile travel and the trend in transit passenger traffic.

Population

In 1945 the City Planning Board forecast a population of 1,500,000 persons in the Greater Toronto area within 30 years i.e. by 1975.

Attached is a table (RD-140352) showing city and suburban population by years from 1900 to 1951. Also attached is a graph (Drg.4915) showing growth of Metropolitan area population since 1880.

The latter shows that the trend of population increase since 1945 is in line with that from 1940 to 1945 and if continued would give a population of 1,700,000 by 1975. This graph also shows that if the 1940-1950 rate of increase is continued for another 10 years to 1960 and then slowed down to the 1930-1940 rate (depression period) the population in 1975 would still reach 1,500,000 as estimated by the Planning Board.

This would therefore appear to be a reasonably conservative estimate of the future population growth without considering the probable favourable influences of such enterprises as the new Ford plant at Oakville or the St. Lawrence Seaway.

Riding Habits and Revenue Passengers

Attached is a table (WPI-260552) and graph (Drg.5002) showing the trend of served population, revenue passengers and riding habit (i.e. rides per capita per annum) from 1918 to 1951 with annual estimates to 1960 and quinquennially thereafter to 1975.

This indicates a drop in revenue passenger level to 272,000,000 by 1953 with a steady increase following inauguration of rapid transit to a level of 337,000,000 in 1960 and a decline to 270,000,000 by 1975.

In arriving at this estimate I have assumed with respect to population that the served population would not drop below the present 90% of the total population in the metropolitan area. It might be said that the present 90% is abnormally low and will be increased by even partial amalgamation. Retaining the 90% should therefore give a conservative estimate of future served population.

Riding habit rose from a pre-war 185 to 339 in 1945 which held approximately to 1948 but has since declined to 312 in 1951. Considering the large increase in auto regis-

trations this shows that public transit has almost held its own. I have assumed however that the riding habit will drop to 270 by 1953 but that with the introduction of rapid transit services it will gradually climb back to 300 by 1958 (5 years), after which it will again decline to 200 (the 1940 level) by 1975 - unless further extensions are made to the rapid transit services.

Multiplying these 2 factors gives us the estimated revenue passengers in the various years. On the basis of the foregoing assumptions it is therefore estimated that revenue passengers will drop to 272,000,000 in 1953 but will gradually rise to 337,000,000 in 1958 and then fall to 270,000,000 by 1975.

This would indicate that between 1955 and 1967 we can expect to carry upwards of 300,000,000 revenue passengers per annum.

While they will probably be distributed over more lines and a wider area, main trunk lines will likely be carrying just about as heavy a concentration of riders as now.

Auto Registrations

One might well question whether the tremendous increase in automobile registration since the war might not have a serious adverse affect on local transit riding.

It was the writer's expectation back in 1945 that with automobiles, gas, oil and tires available without restrictions after the war, the trend of transit passengers would be

sharply downward. While that did happen in the U.S. generally, aided by the effect of successive fare increases it did not happen here. We can therefore reasonably conclude that since it has not happened in the last five years it may very well not happen at all. Any future downtrend in revenue passengers is therefore likely to arise mainly from the effect of a serious decline in economic conditions and/or of additional fare increases.

It is interesting to note in this connection the relative trends of auto registrations, auto usage (number of autos counted), auto passengers (number of auto passengers counted) compared with transit passengers reported on the system and transit passengers counted in our four annual cordons - on the basis of index number taking 1926 as 100 for all five items.

	Toronto Auto Registration	Four Cordon Counts		Transit Passengers	
		Autos	Auto Passengers	Reported	Counted
1926	100	100	100	100	100
1930	156	164	166	106	108
1935	170	173	168	79	77
1940	203	203	195	88	86
1945	178	133	135	157	143
1950	305	238	224	161	136
1951	334	258	243	159	133

Leaving aside the effect of the war on auto registrations and use, it will be noted that registrations and autos counted pursued closely parallel trends from 1926 to 1940 but

since then, while auto registrations have increased 65%, autos counted in the 4 cordon counts have increased only 27%, and auto passengers only 25%.

It will be noted that transit passengers counted and reported also pursued closely parallel trends until 1940, but since then have diverged somewhat by reason of the decentralizing of industry or more correctly the location of new industries in suburban areas where the transit riding to and from them is not picked up by the cordon counts. Transit passengers reported are still just about the 1945 level, while passengers counted are 7% below the 1945 level (9.3% below the wartime high count of 1946).

Based on the foregoing analysis and assumptions with respect to future trends there would seem to be little doubt that we should plan for a total volume of passengers in the neighbourhood of 330 million annual passengers during the next ten years, gradually dropping to around 270 million by 1975 if no extensions are made to the rapid transit system between 1960 and 1975. If extensions are made in that period we could expect to maintain a riding level around 330 million passengers during that period.

It must be assumed of course that a volume of 330 million passengers would be spread over a much wider area than is now served by our present city system, but the central area

will still remain the core of this larger city. It can therefore be expected that concentration of transit riding on main car lines in the central area will be as great if not greater than at present.

It does not therefore seem reasonable to expect that our main trunk carlines can be converted to trolley coach or bus operation unless there are additional parallel rapid transit trunk routes to take the bulk of the load they now carry or unless there are new developments in bus or trolley coach equipment far beyond anything now known.

W.F.IRVIN,

Director of Development and Research.

10-500-53.

SERVED POPULATION RIDING HABIT AND REVENUE PASSENGERS IN TORONTO METROPOLITAN AREA 1920 to 1951 AND ESTIMATED FIGURES FOR 1952 to 1975

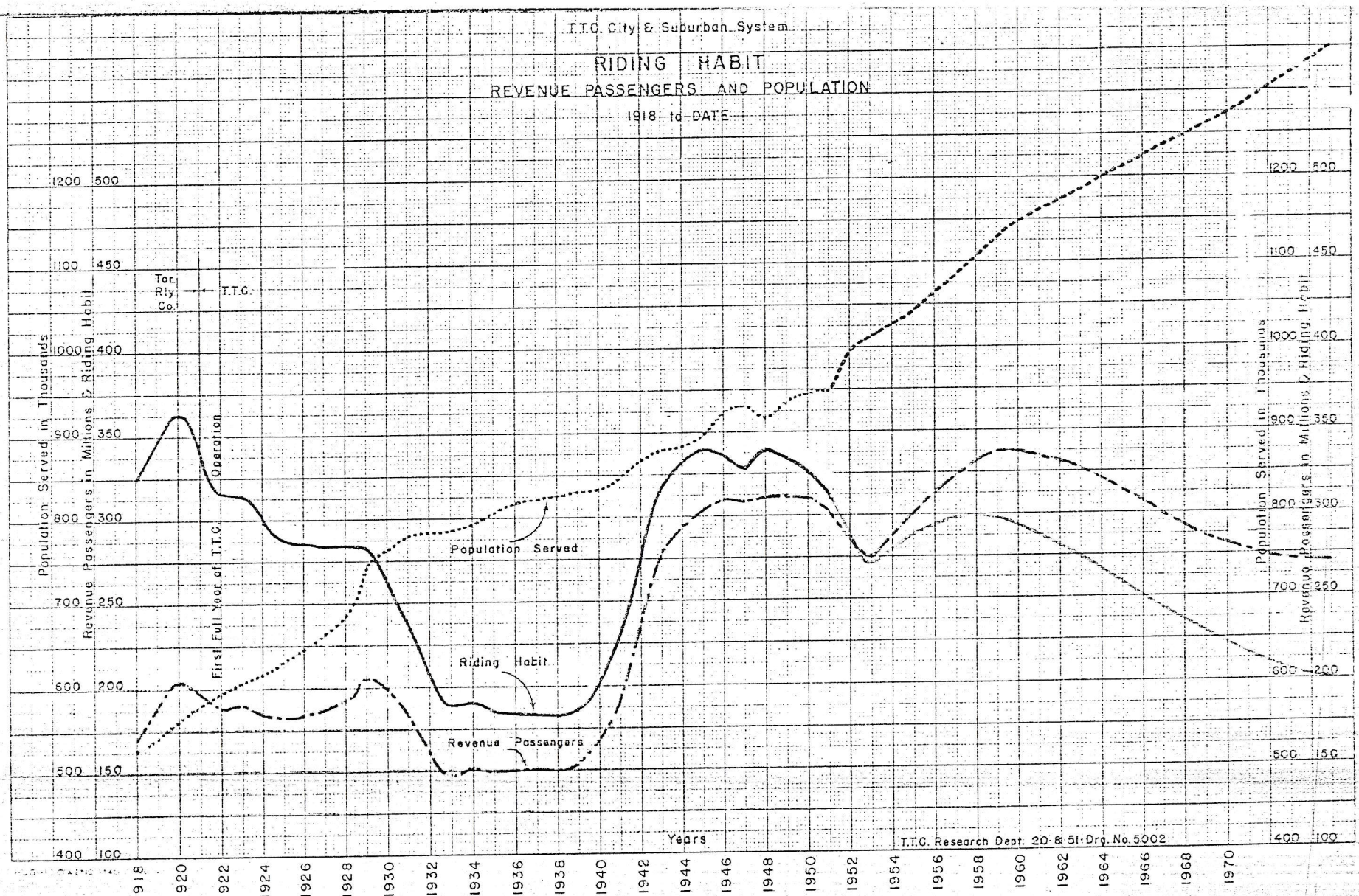
	Metropolitan Population	Served Population	%	Riding Habit	Revenue Passengers
1920	580,508	561,153	97	362	203,819,099
1925	671,176	628,020	94	288	180,779,940
1930	792,474	763,879	96	261	199,522,863
1935	840,169	806,603	96	185	148,715,656
1940	876,641	832,743	95	202	168,147,272
1941	891,578	847,759	95	229	193,668,478
1942	912,953	867,340	95	276	238,991,803
1943	935,215	877,434	95	327	278,539,341
1944	932,919	883,763	95	333	293,799,883
1945	946,532	894,229	95	339	303,390,348
1946	980,971	922,307	94	336	310,115,600
1947	995,252	931,198	94	330	307,590,938
1948	989,434	917,478	93	339	311,155,973
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1950	1,054,983	946,829	90	328	310,484,735
1951	1,081,458	975,000	90	312	302,859,938
1952	1,100,000	990,000	90	290	287,000,000
1953	1,120,000	1,010,000	90	270	272,000,000
1954	1,140,000	1,035,000	90	260	267,000,000
1955	1,160,000	1,044,000	90	290	302,000,000
1956	1,180,000	1,060,000	90	295	313,000,000
1957	1,200,000	1,080,000	90	298	322,000,000
1958	1,220,000	1,110,000	90	300	333,000,000
1959	1,280,000	1,135,000	90	297	337,000,000
1960	1,280,000	1,150,000	90	293	337,000,000
1965	1,350,000	1,210,000	90	260	315,000,000
1970	1,410,000	1,270,000	90	220	280,000,000
1975	1,500,000	1,350,000	90	200	270,000,000

Note - All figures below the line are estimated.

WPI - 260552.

TORONTO METROPOLITAN AREA - ASSESSED POPULATION

Year	Toronto	East York	Etobicoke	Forest Hill	Leaside	Long Branch	Mimico	New Toronto	North York	Scarboro	Swansea	Weston	York Township	East Toronto	Toronto Junction	North Toronto	TOTAL
1900	199,043		3,603							3,711		1,004	3,600	1,504	5,756	1,765	224,936
1901	205,357		3,431							3,576		1,075	3,965	1,524	6,033	1,830	232,346
1902	211,735		3,632							3,553		1,185	10,402	1,900	6,178	2,012	240,597
1903	219,002		3,723							3,522		1,262	10,422	2,579	5,941	2,041	249,492
1904	226,365		3,993							3,569		1,305	11,791	3,141	7,671	2,293	260,133
1905	238,642		4,206							3,517		1,355	11,550	3,205	8,565	2,293	275,331
1906	253,720		4,401							3,567		1,362	12,064	3,771	10,151	2,573	291,514
1907	272,600		4,763							3,623		1,475	15,595	4,206	11,557	3,004	316,303
1908	287,201		4,979							3,307		1,502	17,178	4,781	11,636	3,565	334,199
1909	325,302		5,177				Incorp. 1911			3,565		1,593	19,000			4,193	353,928
1910	341,991		5,466							3,426		1,627	11,561	Joined City 1908	Joined City 1909	4,473	369,544
1911	374,667		4,311		Incorp. 1913		1,137	Incorp. 1913		3,715		1,728	13,734			5,271	405,061
1912	417,250		4,311				1,137			3,713		1,868	16,224			6,393	443,906
1913	445,575		4,272				1,513			4,026		2,198	18,632				476,221
1914	470,144		5,553		42		1,758	985		4,663		2,307	24,340			Joined City 1912	509,797
1915	463,705		5,739		72		1,965	1,153		5,321		2,186	28,970				509,161
1916	460,526		5,711		52		1,976	1,186		5,401		2,156	29,749				506,757
1917	473,829		5,822		54		2,004	1,423		5,525		2,283	32,105				523,045
1918	489,681		5,883		140		2,098	1,863		6,034		2,362	34,278				542,359
1919	499,278		6,536		190		2,490	2,551		6,566		2,495	37,722				557,076
1920	512,812		7,281		187		2,387	2,696	Incorp. 1922	7,343		2,570	44,232				580,563
1921	522,666	Incorp. 1923	10,463	Incorp. 1923	326		4,187	2,850		9,406		3,104	50,856				603,858
1922	529,083		10,500		303		4,335	3,500		10,528		3,299	59,474				621,172
1923	538,771		12,011		374		4,137	3,182	6,303	12,710	Incorp. 1926	3,569	60,209				641,266
1924	542,137	20,290	12,594	2,050	413		4,486	3,917	7,137	13,250		3,965	43,121				655,460
1925	549,429	20,859	13,511	2,190	417		5,299	4,200	8,375	15,733		3,882	47,233				671,176
1926	556,691	23,610	14,315	2,689	457		5,378	5,023	8,300	15,325	3,448	4,002	48,982				687,220
1927	562,899	25,190	14,853	3,015	453	Incorp. 1930	5,378	5,315	9,510	15,824	3,448	4,190	51,584				709,052
1928	585,627	26,843	14,212	3,514	519		5,975	5,622	10,332	17,250	3,669	4,425	55,187				733,176
1929	606,370	30,555	15,050	4,439	581		6,108	6,310	11,003	17,506	4,468	4,606	60,207				757,233
1930	621,596	33,030	12,776	5,494	860	3,537	6,422	6,269	12,263	18,351	4,730	4,618	62,978				792,471
1931	627,231	35,604	12,304	6,305	1,008	3,541	6,454	7,270	13,236	18,982	5,075	4,736	66,383				808,329
1932	626,674	36,202	13,601	7,130	1,257	3,550	6,696	7,484	13,964	18,876	5,232	4,828	68,223				813,717
1933	623,562	36,625	14,145	7,308	1,357	3,746	6,733	7,361	13,964	20,027	5,311	4,958	69,573				815,663
1934	629,235	37,315	14,474	8,233	1,423	3,726	6,335	7,932	14,295	21,356	5,444	4,953	71,434				826,715
1935	633,271	37,393	14,303	9,147	1,670	3,746	6,900	8,236	14,600	21,443	5,504	5,040	72,352				840,135
1936	645,462	38,023	15,113	10,760	1,965	4,100	6,376	8,422	15,454	21,334	5,750	5,053	73,286				851,571
1937	643,309	37,906	15,711	11,117	2,612	4,027	6,940	8,605	16,006	22,110	5,831	5,042	74,126				857,392
1938	647,303	38,132	15,273	11,757	3,309	4,140	7,012	8,664	16,912	22,389	6,063	5,099	74,360				861,423
1939	649,123	38,394	15,974	12,172	4,001	4,258	7,194	8,599	18,205	23,203	6,375	5,289	75,842				868,834
1940	647,098	39,653	16,927	12,779	5,493	4,453	7,467	8,849	20,332	23,274	6,606	5,496	77,175				876,841
1941	655,751	40,364	17,634	12,954	6,687	4,600	7,641	9,214	21,962	23,584	6,872	5,734	78,531				891,673
1942	669,130	41,573	19,477	13,339	7,750	5,320	8,075	9,301	22,953	23,847	7,033	6,165	79,485				912,953
1943	674,235	42,435	20,390	13,484	8,310	5,200	8,354	10,008	24,528	24,480	7,110	6,333	80,248				925,215
1944	676,887	43,399	21,402	13,960	9,227	5,049	8,735	9,900	25,160	24,142	7,142	6,214	81,652				932,919
1945	681,802	44,773	22,686	14,574	9,300	5,448	9,055	10,172	26,432	25,432	7,217	6,337	82,753				945,532
1946	686,555	49,477	25,926	15,102	10,959	5,428	9,629	10,163	30,114	28,444	7,235	6,605	85,324				960,971
1947	695,302	51,336	28,365	15,220	11,681	6,236	9,394	10,299	33,162	31,447	7,313	6,787	87,840				985,252
1948	670,835	53,733	31,476	15,629	13,568	6,677	10,164	10,571	37,232	34,921	7,460	7,170	90,103				999,454
1949	672,104	56,575	38,250	15,973	14,367	7,661	10,271	10,677	45,783	41,318	7,792	7,613	93,248				1,020,955
1950	667,437	60,135	44,137	16,191	15,255	8,044	10,410	10,961	62,646	48,146	7,864	8,018	95,869				1,054,983
1951	659,499	62,251	52,455	16,374	15,636	8,520	11,503	11,078	80,771	56,181	8,030	8,088	96,770				1,081,455
1952																	
1953																	
1954																	
1955																	
1956																	


T.T.C. City & Suburban System
RIDING HABIT
REVENUE PASSENGERS AND POPULATION
1918 to DATE
Tor. Rly Co.
T.T.C.
Population Served in Thousands
Revenue Passengers in Millions & Riding Habit
First Full Year of T.T.C. Operation
Population Served
Riding Habit
Revenue Passengers
Years
T.T.C. Research Dept. 20-8-51-Drg. No. 5002
1200 500
1100 450
1000 400
900 350
800 300
700 250
600 200
500 150
400 100
1918 1920 1922 1924 1926 1928 1930 1932 1934 1936 1938 1940 1942 1944 1946 1948 1950 1952 1954 1956 1958 1960 1962 1964 1966 1968 1970

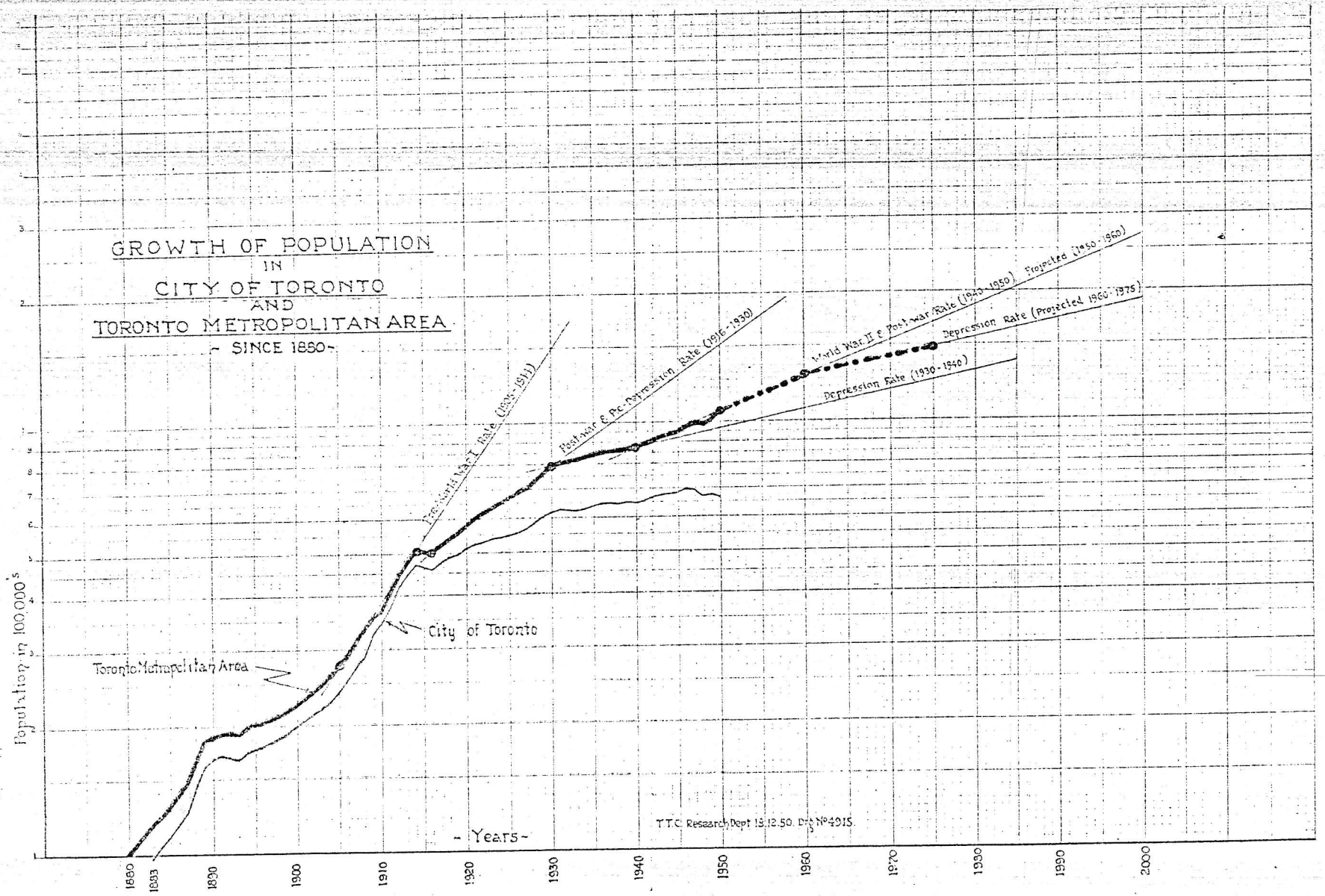

GROWTH OF POPULATION
IN
CITY OF TORONTO
AND
TORONTO METROPOLITAN AREA
- SINCE 1880 -
Pre-World War I Rate (1905-1911)
Post-war & Pre-Depression Rate (1916-1930)
World War II & Post-war Rate (1940-1950) Projected (1950-1960)
Depression Rate (Projected 1960-1975)
Depression Rate (1930-1940)
Toronto Metropolitan Area
City of Toronto
Population in 100,000's
- Years -
T.T.C. Research Dept 15.12.50. Drg. No 4015.
1880
1883
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000

EXHIBIT NO. 2

FORECAST OF TRACK REPLACEMENT 1953-1978

MADE BY Mr. W. A. MALKAS

May 23, 1952

Way and Structures

May 23rd, 1952.

W.A.MacRae.

Chart Showing Probable Replacement of Tangent Track.

Mr.W.E.P.Duncan.

Mr.W.H.Paterson
Mr.W.F.Irvin

Herewith, copy of a chart showing the probable requirements in tangent track replacement over the next twenty-five years.

This chart shows miles of single track to be replaced per year. A figure of $70,000.00 per mile of single track should be used to arrive at any particular year's cost.

Regarding special trackwork replacement requirements, I would point out that a similar chart cannot be drawn, due to the fact that sometimes only small parts, such as diamonds, are replaced at six to ten year intervals, in other instances straight runs on one line are replaced at longer intervals and in still other instances the whole layout may be replaced at one time.

Therefore, in order to arrive at a probable cost of track replacement (tangent and special trackwork), an average figure of about $300,000.00 per year should be added to the yearly costs for tangent track derived from the chart.

In order that various routes may be studied in regard to probable track replacement, we are preparing track system diagram showing, in separate colours, sections of track to be replaced in each two-year period.

"W.A.MacRae"
Engineer of Way and Structures.

Way and Structures

W.A.MacRae May 21, 1952.

Mr.W.E.P.Duncan

Estimated Tangent
Trackwork Replacements.

Mr.W.F.Brundrit.

It is estimated that the following tangent trackwork will require replacement in the years as given:-

1953

Bay Street - Grenville Street to Scollard Street	7,500	F.S.T.
College Street - Spadina Avenue to St.George Street	2,000	"
Queen Street - Kingston Road to Woodbine Avenue	2,000	"
TOTAL	11,500	F.S.T.

1954

Bloor Street - Quebec Avenue to Pacific Avenue	1,800	F.S.T.
- Indian Road to Dundas Street	2,300	"
Bathurst Street - C.N.R.Siding to Queen Street	3,500	"
- Dundas Street to Bloor Street	9,400	"
- Davenport Road to St.Clair Ave.	4,200.	"
Vaughan Road - Bathurst Street to St.Clair Avenue	700	"
TOTAL	21,900	F.S.T.

1955

Bloor Street - Jane Street to Runnymede Road	4,300	F.S.T.
- Huron Street to Bedford Road	2,200	"
Dundas Street W. - Ritchie Avenue to Howard Pk.Ave.	900	"
Queen Street - Ossington Avenue to Yonge Street	20,000	"
TOTAL	27,400	F.S.T.

1956

Coxwell Avenue - Gerrard Street N. to Danforth Ave. West Track	2,800	F.S.T.
Queen Street E.- Ashdale Avenue to Kingston Road	3,400	"
- Woodbine Avenue to Lee Avenue	4,200	"
- Hammersmith Avenue to McLean Ave.	1,700	"
Bloor Street - Lansdowne Avenue to Spadina Avenue	20,200	"
TOTAL	32,300	F.S.T.

1957

King Street - Spadina Road to Sherbourne Street	13,000	F.S.T.
- St.Lawrence Street to River Street	600	"
Dundas Street W.-Runnymede Road to Keele Street	9,000	"
-Ossington Avenue to Bathurst St.	7,800	"
TOTAL	30,400	F.S.T.

1958

Dundas Street - Parkway to Sorauren Avenue	800	F.S.T.
Gerrard Street - Pape Avenue to Greenwood Avenue	6,600	"
- Sword Street to Broadview Avenue	4,200	"
Howard Park Avenue - Indian Grove to Dundas Street	4,200	"
Roncesvalles Avenue - Queen Street to Dundas St.	10,200	"
Broadview Avenue - Bloor Street to Erindale Avenue	500	"
TOTAL	26,500	F.S.T.

1959

Carlton Street - Sherbourne to Parliament Street	2,600	F.S.T.
Church Street - Richmond Street to Bloor Street	12,900	"
Bloor Street - Dundas Street to St.Helens Avenue	9,600	"
TOTAL	25,100	F.S.T.

1960

Dupont Street - Kendal to Davenport Road	3,400	F.S.T.
Main Street - Gerrard to Danforth Avenue	2,800	"
Queen Street - Strange Street to Booth Avenue	1,000	"
St.Clair Avenue - Lansdowne Avenue to Bathurst St.	16,800	"
TOTAL	24,000	F.S.T.

1961

Kingston Road - Queen Street to Victoria Park	19,000	F.S.T.
St.Clair Avenue - Yonge Street to Mt.Pleasant	5,700	"
Dundas Street - Annette Street to Humberside Ave.	1,400	"
Bay Street - Queen's Quay to Fleet Street	1,400	"
Queen's Quay - York to Bay Street	1,600	"
TOTAL	29,100	F.S.T.

1962

Coxwell Avenue - Queen To Gerrard Street South	4,500	F.S.T.
- Gerrard Street N.to Danforth E.Track	2,500	"
Carlaw Avenue - Gerrard Street to Riverdale Ave.	2,000	"
Dovercourt Road - Bloor Street to Davenport Road	9,600	"
Pape Avenue - Riverdale Avenue to Danforth Ave.	5,500	"
Parliament Street - Gerrard St.to Winchester	2,600	"
Riverdale Avenue - Carlaw Avenue to Pape	900	"
Dupont Street - Bathurst Street to Kendal Avenue	2,400	"
Queen Street - River Street to Davies Avenue	1,700	"

1962 (Cont'd.)

Queen Street - Connaught Avenue to Ashdale	1,700	F.S.T.
Bay Street - Scollard Street to Davenport Road	500	"
TOTAL	33,900	F.S.T.

1963

Dundas Street - Bay to Victoria Street	1,800	F.S.T.
Harbord Street - Ossington to Spadina Avenue	11,900	"
King Street - Bathurst Street to Spadina Avenue	3,900	"
Bay Street - Fleet Street to Front Street	1,900	"
- Front Street to Wellington Street	700	"
- Richmond Street to Louisa Street	1,000	"
- Dundas Street to Grenville Street	3,800	"
Bloor Street - Spadina Avenue to Huron Street	1,200	"
- Bedford Road to Jarvis Street	8,500	"
TOTAL	34,700	F.S.T.

1964

Lake Shore Road - Windermere to Roncesvalles Ave.	11,700	F.S.T.
Parliament Street - Winchester to Bloor Street	1,900	"
Mt.Pleasant Road - St.Clair to Eglinton Avenue	13,500	"
Dupont Street - Christie to Bathurst Street	3,300	"
Bloor Street - Huntley to Parliament Street	3,300	"
Davenport Road - Dupont Street to Bay Street	4,500	"
Broadview Avenue - Dundas to Gerrard Street	2,000	"
TOTAL	40,200	F.S.T.

1965

Weston Road - Keele Street to McCormack Street	2,000	F.S.T.
- Northland Avenue to Avon Avenue	2,900	"
Kingston Road - Victoria Park to Birchmount Ave.	14,700	"
St.Clair Avenue - Old Weston Road to Prescott Ave.	3,100	"
College Street - St.George Street to Yonge St.	6,500	"
Gerrard Street - Carlaw Avenue to Pape Avenue	2,000	"
Danforth Avenue - Broadview to Ladysmith Avenue	14,400	"
TOTAL	45,600	F.S.T.

1966

Davenport Road - Old Weston Road to Dovercourt	14,200	F.S.T.
Old Weston Road - Davenport Road to Townsley Ave.	1,800	"
Carlton Street - Yonge Street to Mutual Street	1,900	
King Street - Jefferson Avenue to Shaw Street	4,400	"
- Ontario Street to Parliament Street	400	"
Queen Street - Cowan Avenue to Northcote Avenue	3,500	"
Bathurst Street - Queen to Dundas Street	2,900	"
St.Clair Avenue - Bathurst to Yonge Street	12,800	"
Elizabeth Street - Dundas to Albert Street	1,500	"
TOTAL	43,400	F.S.T.

1967

LakeShore Road - Park Lawn to Queen Elizabeth	4,500 F.S.T.
Dundas Street - Victoria Street to George Street	2,500 "
- Bathurst Street to McCaul Street	7,400 "
- Simcoe Street to Bay Street	2,500 "
Church Street - Bloor Street to Asquith Avenue	500 "
St.Clair Avenue - Prescott to Lansdowne Avenue	3,500 "
Queen Street - Yonge Street to Parliament Street	7,000 "
- Broadview Avenue to Strange Street	1,700 "
- Booth to Connaught Avenue	12,100 "
TOTAL	41,700 F.S.T.

1968

Lake Shore Road - Long Branch to Mimico Creek (Part of this work has been plotted into 1969)	40,900 F.S.T.

1969

St.Clair Avenue - Keele Street to Old Weston Road	2,200 F.S.T.
Bay Street - Wellington Street to Richmond Street	2,100 "
Bloor Street - Parliament Street to Broadview Ave.	6,500 "
Danforth Avenue - Ladysmith to Luttrell Avenue	19,700 "
Dundas Street - Sorauren to College Street	2,600 "
TOTAL 1968 and 1969	74,000 F.S.T.

1970

Front - Angus Place to Spadina	3,600 F.S.T.
- Spadina Avenue to Simcoe Street	5,000 "
- George Street to Sherbourne Street	800 "
- York Street to Yonge Street	2,800 "
Fleet Street - Bathurst Street to Exhibition	5,300 "
Lake Shore Road - Mimico Creek to Park Lawn	1,800 "
Dundas Street - Don Bridge to Broadview Avenue	2,500 "
- Howard Park to Parkway	300 "
- Keele Street to Annette Street	2,700 "
Gerrard Street - Broadview to Carlaw Avenue	4,700 "
Queen Street - Parliament Street to River Street	4,200 "
Weston Road - McCormack Avenue to Northland Ave.	1,500 "
TOTAL	35,200 F.S.T.

1971

Bathurst Street - Fleet Street to Front Street	2,800 F.S.T.
Lake Shore Road - City Limits to Windermere Ave.	2,800 "
Adelaide Street - Simcoe Street to York Street	1,300 "
College Street - Dovercourt Road to Clinton St.	6,200 "
Dundas Street - Humberside Avenue to Ritchie	7,400 "
- McCaul Street to Simcoe Street	400 "

1971 (Cont'd.)

Queen Street - Northcote to Ossington Avenue	4,000	F.S.T.
King Street - Sherbourne Street to Ontario Street	1,700	"
- Parliament to St.Lawrence Street	4,100	"
- Triller Avenue to Wilson Street	900	"
TOTAL	31,600	F.S.T.

1972

King Street - Shaw Street to Bathurst Street	6,500	F.S.T.
College Street - Brock Avenue to Dovercourt Road	4,400	"
- Clinton Street to Spadina Avenue	7,000	"
Dundas Street - Lansdowne to Ossington Avenue	9,800	"
Bloor Street - St.Helens Avenue to Lansdowne Ave.	400	"
TOTAL	28,100	F.S.T.

1973

Adelaide Street - Spadina Avenue to John Street	2,500	F.S.T.
- Yonge Street to Victoria Street	400	"
King Street - Dufferin Street to Jefferson	2,100	"
- Wilson Street to Beatty Avenue	400	"
Queen Street - Roncesvalles to Cowan Avenue	7,100	"
Dundas Street - Sherbourne Street to Don Bridge	7,600	"
Spadina Road - Dundas Street to Spadina Crescent	4,000	"
Victoria Street - Adelaide Street to Queen Street	600	"
Gerrard Street - Parliament to Sword Street	3,500	"
TOTAL	28,200	F.S.T.

1974

Broadview Avenue - Gerrard Street to Danforth Ave.	7,400	F.S.T.
- Queen Street to Dundas Street	2,300	"
College Street - Dundas Street to Brock Avenue	2,500	"
Dundas Street - College Street to Lansdowne Ave.	400	"
Queen Street - Lee Avenue to Hammersmith Avenue	2,100	"
TOTAL	14,700	F.S.T.

1975

King Street - Roncesvalles to Triller	1,200	F.S.T.
- Beatty Avenue to Dufferin Street	6,700	"
Carlton Street - Mutual Street to Sherbourne St.	2,800	"
TOTAL	10,700	F.S.T.

1976

Weston Road - Keele Loop to C.N.R.Bridge	1,400	F.S.T.
Adelaide Street - York Street to Yonge Street	2,800	"
- Bathurst Street to Spadina Ave.	4,000	"
- John Street to Simcoe Street	2,500	"
Ossington - Harbord to Bloor Street	2,200	"
TOTAL	12,900	F.S.T.

1977

Lake Shore Road - Queen Elizabeth to City Limits	3,100	F.S.T.
- Sunnyside Bridge	500	"
Church Street - Wellington Street to Richmond St.	1,600	"
Coxwell Avenue - Gerrard South to Gerrard North	1,600	"
Bay Street - Louisa Street to Dundas Street	1,200	"
TOTAL	8,000	F.S.T.

1978

Gerrard Street - Greenwood Avenue to Coxwell	4,600	F.S.T.
McCaul Street - Queen Street to Loop	800	"
TOTAL	5,400	F.S.T.

W.A.MACRAE,

Engineer of Way and Structures.

EXHIBIT NO. 3

FORECAST OF STREET CAR RETIREMENTS

Made by MR. J. C. EWING

May 14, 1952

Executive.

J.G.Inglis. May 14th, 1952.

Mr.W.E.P.Duncan. Street Car Retirements.

As requested at the meeting of the Service Change Committee on May 8th, the following is an estimate of possible future street car retirements.

Present Fleet (May 1952).

Type	No.of Cars
P.C.C.	591
Small Witt - Pay Enter	100
Large Witt - " "	75
Large Witt - Two-Man	173
Trailers	105
	1044

Street Car Fleet - December 31st, 1953.

In readiness for rapid transit operation, and provided no P.C.C. cars are purchased outside, 123 Large Witt two-man cars will be rehabilitated and converted for one-man operation. With the commencement of the subway, 50 Large Witts and 105 trailers will be retired and the surface street car fleet will be as follows:

Type	No.of Cars
P.C.C.	591
Small Witt - Pay Enter	100
Large Witt - Pay Enter	198
	889

It is expected that the rehabilitation program presently being carried out on the Witt cars will permit them to be operated for a further ten years, until December 1963.

Therefore, there will be 889 street cars until 1963, with no retirements or purchases likely in the 10 year period.

Street Car Fleet - December 1963.

In December 1963 all of the 298 Witt cars will be over 40 years of age, with the oldest ones being about 43. It would not be wise, economically, to operate these cars for a longer period. At or about that time therefore, it will likely be necessary to retire 298 Witt cars.

The street car fleet would then consist of 591 P.C.C. cars with an average age of 19 years, and varying from 25 to 12 years of age.

P.C.C. Retirements.

It is difficult now to anticipate the age at which a P.C.C. car should be retired, but it must be mentioned that it was designed for a life of about 15 years.

Based on the present condition of our older P.C.C. cars, now 14 years old, an economical operating life of greater than 30 years may not be realized.

Using a 30-year life, the retirement of our P.C.C. fleet would be as follows:-

Year	No.of Cars Scrapped	No.of Cars Remaining
1967	0	591
1968	139	452
1969	27	425
1970	50	375
1971	60	315
1973	15	300

Year	No.of Cars Scrapped	No.of Cars Remaining
1975	25	275
1977	25	250
1978	100	150
1979	100	50
1981	50	0

"J.G.Inglis"

Asst.Manager of Equipment.

EXHIBIT NO. 4

CHART SHOWING ESTIMATED TRACK REPLACEMENTS

AND

NUMBER OF STREET CARS REQUIRED AND AVAILABLE

1946 - 1978

TORONTO TRANSIT COMMISSION
EQUIPMENT DEPARTMENT

Street Car Retirement Program 1952-1980

Based on Witt Car Life - 40 Years
" " P.C.C. Car Life- 30 Years

Year	Cars to be Retired	Cars Owned by T.T.C. After Disposal of Cars Shown
1952		1167
1953	283 Cars (105 Trailers, 50 Brill, 128 L.Witts)	884
1955	7 Large Witts	877
1957	30 P.C.C. A.14 Acquired, 30 L.Witts retired	877
1961	37 L. Witts	840
1963	96 S. Witts	744
1968	139 P.C.C. A.1	605
1970	77 P.C.C. 50 - A.2, 27 - A.10	528
1971	60 P.C.C. A.3	468
1973	15 P.C.C. A.4	453
1974	25 P.C.C. A.5	428
1976	105 P.C.C. 50 - A.11, 25 A.12, 30 A.14	323
1977	73 P.C.C. 25 A.9, 48 A.13	250
1978	100 P.C.C. A.6	150
1979	100 P.C.C. A.7	50
1980	50 P.C.C. A.8	0

Reference - T.T.C. Chart File No.7529

Dated - January 22,1958.

From L. M. V.
Dec. 4th 1956

DISTRIBUTION OF T.T.C. VEHICLE MILES BY TYPES

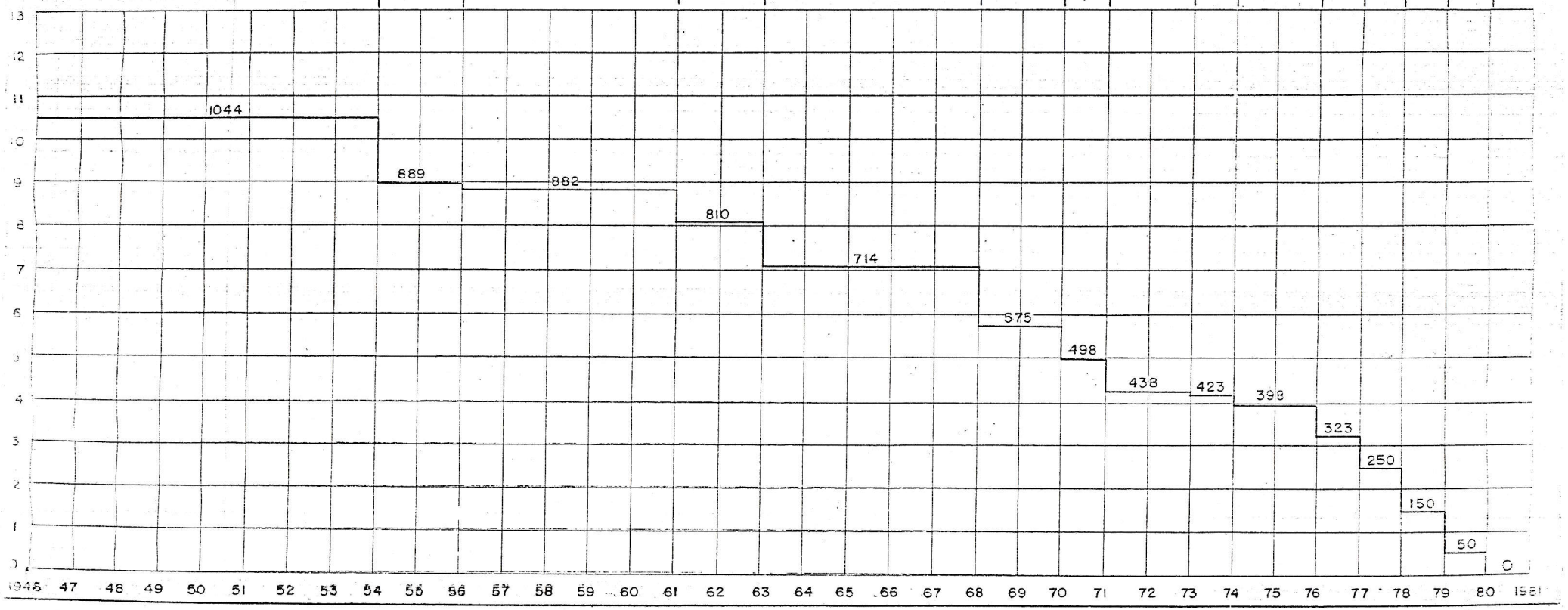
	Subway	Street Car	Trolley Coach	Bus	Total
1930		26,913,215		1,393,859	28,307,074
1935		21,656,404		1,728,486	23,384,890
1940		22,372,739		2,311,743	24,684,482
1945		33,805,624		3,080,586	36,886,210
1950		32,043,403	2,499,067	3,737,033	38,279,503
1951		31,832,334	2,477,743	3,684,278	37,994,355
1952		29,055,164	2,206,424	3,275,097	34,536,685
1953		30,245,063	2,286,551	3,351,673	35,885,287
1954	4,734,443	26,093,627	3,569,298	10,893,926	45,291,294
1955	5,597,500	23,507,068	3,423,544	13,947,888	46,476,000
1956(B)	5,725,800	24,097,200	4,014,000	13,314,300	47,151,700
1956(E)	6,201,100	23,951,800	3,828,000	12,783,900	46,764,800
1957	6,470,000	23,290,000	3,830,000	13,310,000	46,900,000
1958	6,440,000	23,200,000	3,800,000	13,320,000	46,800,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1960	6,460,000	22,540,000	3,700,000	13,400,000	46,100,000
1961	16,000,000	16,700,000	3,800,000	13,500,000	50,000,000
1962	16,100,000	16,700,000	3,700,000	14,100,000	50,600,000
1963	16,400,000	16,700,000	3,700,000	14,500,000	51,300,000
1964	16,300,000	16,200,000	3,700,000	14,500,000	50,700,000
1965	16,200,000	15,900,000	3,700,000	14,500,000	50,300,000
1966	16,100,000	14,100,000	3,600,000	14,600,000	48,400,000
1967	16,300,000	13,600,000	3,500,000	14,600,000	48,000,000
1968	26,400,000	6,500,000	3,400,000	17,300,000	53,600,000
1969	26,500,000	6,400,000	3,300,000	18,200,000	54,400,000
1970	26,700,000	6,500,000	3,400,000	19,200,000	55,800,000
1971	26,800,000	6,300,000	3,400,000	20,400,000	56,900,000
1972	27,500,000	6,500,000	3,300,000	21,500,000	58,800,000
1973	33,200,000	5,000,000	2,600,000	21,600,000	62,400,000
1974	33,200,000	4,800,000	2,500,000	24,000,000	64,500,000
1975	33,200,000	4,500,000	2,300,000	24,900,000	64,900,000
1976	33,300,000	4,300,000	2,200,000	26,200,000	66,000,000
1977	33,300,000	4,300,000	2,200,000	26,200,000	66,000,000
1978	36,800,000	4,000,000	2,200,000	27,000,000	70,000,000
1979	36,900,000	3,900,000	2,200,000	27,000,000	70,000,000
1980	37,000,000	3,700,000	2,300,000	28,700,000	71,700,000

31.619.23.

STREET CAR RETIREMENT PROGRAM

April 24/57.

BASED ON:- WITT LIFE 40 YRS.
P.C.C. CAR LIFE 30 YRS.



Equipment Dept. Blue Print File No. 7529.