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Division Of Metropolitan Planning



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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

DIVISION OF METROPOLITAN PLANNING

FOR THE

YEAR ENDING NOVEMBER 30, 1925

Ann. Reports

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DIVISION OF METROPOLITAN PLANNING,
November 30, 1925.

To the Honorable Senate and House of Representatives in General Court Assembled:

The Division herewith respectfully submits its annual report for the year ending November 30, 1925.

IMPROVED TRANSPORTATION FACILITIES FROM BOSTON TO EAST BOSTON

Chapter 37 of the Resolves of 1925 directs this Division to submit in conjunction with its annual report a report on improved transportation facilities between Boston and East Boston.

Chapter 37 reads as follows:

RESOLVE DIRECTING THE DIVISION OF METROPOLITAN PLANNING
OF THE METROPOLITAN DISTRICT COMMISSION TO STUDY
AND CONSIDER THE TRANSPORTATION FACILITIES EXISTING
BETWEEN BOSTON AND EAST BOSTON.

Resolved, That the division of metropolitan planning of the metropolitan district commission is hereby directed to study and consider relative to the problems respecting the transportation facilities existing between Boston proper and that part of said city known as East Boston. Said division shall include its findings and recommendations relative to said problems in its annual report for the current year. Approved May 1, 1925.

This Division has in preparation a comprehensive report dealing with added transit facilities for the Metropolitan area. Accordingly in this report we deal only with the construction of vehicular tunnels or a vehicular bridge between Boston and East Boston.

Previous Studies

There have been many reports and studies of bridges and tunnels between Boston and East Boston, the most important of these studies being listed below.

In 1868 plans for a bridge were discussed, and a tunnel was recommended by the United States Army Engineers in Boston as being preferable.

In 1892 the city engineer reported upon a tunnel with a 27-foot roadway, with a maximum grade of 4 per cent.

In 1908 the Boston Transit Commission reported upon a tunnel, suggesting elevators instead of inclines at the ends.

In 1909 a joint board composed of the Boston Transit Commission and the Board of Railroad Commissioners studied the question, but did not recommend the passage of legislation for the construction of a tunnel.

In 1911 the same joint board reported again upon this problem. Its conclusions were that the construction of this tunnel would not do away with the necessity of operating the ferries; that under conditions existing at that time, with large use of animal power, the construction of a teaming tunnel would be inadvisable, but that when mechanical power is more generally substituted for animal power the matter might be properly revised.

Tunnel Reports of 1920 and 1921

In 1920 and 1921 the Division of Waterways and Public Lands of the Public Works Department and the Transit Department of the city of Boston submitted a joint report on a vehicular tunnel between Boston and East Boston. This report was prepared in response to an order of the Legislature, chapter 73 of the Resolves of 1920, and the estimates were based upon careful surveys and borings. The tunnel was to consist of parallel twin tubes located substantially six hundred feet apart, each tube capable of carrying two lines of vehicles. The Boston termini of the tubes were placed near the intersection of Hanover and Richmond Streets and the East Boston termini about one thousand feet southerly of Central

Square. The engineers of the two departments made careful estimates of cost, their estimates being \$16,150,000 for the two tunnels with their separate plazas. They pointed out, however, that one tube could be constructed at a cost of approximately \$8,000,000, which would be capable of carrying the estimated traffic for ten or fifteen years, and that it would be unwise and unnecessary to construct both tubes until the traffic required such construction. Our estimates would indicate that a single tunnel could carry somewhat under five million vehicles as against somewhat over ten million for two tunnels, and that in all probability a traffic of five million vehicles per year will not be reached before 1940. We accordingly heartily agree with the report of the joint board that if a tunnel is constructed, only one tube should be constructed at the present time.

Our engineers have discussed the estimates of the joint board with its engineers as to the cost of the vehicular tunnels and we believe that they can be constructed within their estimates. We, however, feel that certain details in width and location may need to be slightly changed to meet new traffic conditions at the time of construction. As such changes would require additional expenditure, and for the purposes of caution, we have assumed in this report that any vehicular tunnel would cost \$9,000,000. We believe this figure to be conservative and we hope to see the actual cost somewhat less. The exact terminals on both sides of the harbor should be left for determination to whatever board is authorized to construct the tunnels. We strongly feel, however, that on the East Boston side the termini of the two tubes should be located somewhere between Maverick Square and Central Square, and that on the Boston side they should be located near the junction of the proposed Intermediate Thoroughfare and Hanover Street. Possibly one of the termini should be located south of that location and one north.

Arguments have been presented to this Division in favor of a vehicular tunnel between South Boston and East Boston, the East Boston portal being east of the tracks of the Boston, Revere Beach & Lynn Railroad. Such a location would be admirable for traffic bound from Lynn to Quincy, but would not, in our opinion, best serve the bulk of traffic between the north shore and Boston. Furthermore, a tunnel between South Boston and East Boston would be much longer than a tunnel from Central Square to the old city and would probably cost twelve or thirteen million dollars for a single tube and twenty-five million for double tubes.

Tunnel Ventilation

The Commission have given most careful consideration to the question of ventilation and several of its members have visited Pittsburgh, where there is now in operation the only large vehicular tunnel in this country, and have visited New York, where there is under construction and nearly completed a vehicular tunnel under the Hudson River, costing approximately \$40,000,000. The Pittsburgh tunnel is giving admirable satisfaction and is much used. Pittsburgh thinks so well of its first tunnel that it is planning a second vehicular tunnel in the heart of the city. The Pittsburgh tunnel is somewhat longer than the proposed tunnel under the harbor and the system of ventilation adopted is that of a central shaft exhausting air on one side and pumping in air on the other.

The length of the tunnel under the Hudson River will, when completed, be over nine thousand feet and its ventilation problem is much more complicated than that of the Pittsburgh tunnel, not only because of its length, but because of its gradients, dropping as it does some ninety-eight feet at its lowest point below its portals and also on account of the distance between the air shafts which are near the pierhead lines. New York has accordingly adopted a continuous ventilation scheme which pumps in air through a continuous slot located near the pavement on each side and which also draws out the contaminated air through openings in the ceiling over the roadway. This results in practically a continuous upward movement of air throughout the tunnel, and with the very liberal fan capacity provided, it is estimated that the air in the tunnel, if necessary, could be completely changed every one and one-half minutes. This system of ventilation was adopted after very extensive experiments under the direction of the Bureau of Mines in an abandoned mine near Pittsburgh. A short section corresponding to the tunnel was built in the mine and actual experiments made with cars standing in line and emitting waste gases and with a car actually on fire. The

experiments showed that proper ventilation could be supplied even under the most adverse conditions. The problem in Boston is far simpler than the problem in New York because our tunnel is only about half as long as the New York tunnel and because the distance between the air shafts at pierhead lines will be about twenty-two hundred to twenty-seven hundred feet as against thirty-three hundred feet in New York. As the difficulties of the ventilation problem increase almost as the square of the length between shafts, the problem here is much simpler than the problem in New York. As in the Joint Board estimates, we have assumed the New York system of ventilation with liberal and duplicate fan capacity, with power supplied from two independent sources, and with a police patrol located not more than one thousand feet apart and with a system of signalling which would clear the tunnel in case of accident. The Division coincides with the view of the joint board that the problem of ventilating a harbor tunnel between Boston and East Boston is not difficult and is practical of solution.

Bridge

Business men interested in East Boston and other cities and towns along the north shore were the chief proponents of Chapter 37 under which this report is submitted. These gentlemen have earnestly advocated the construction of a suspension bridge between Boston and East Boston rather than the construction of tunnels. Their arguments were certainly deserving of every consideration and we have accordingly had plans and estimates prepared for a suspension bridge. For this purpose we employed Mr. Ralph Modjeski, a consulting engineer of New York City, who has had wide experience in the construction of large suspension and cantilever bridges. We believe no better authority can be found in this country on the construction of that type of structure. He has submitted to us a carefully prepared report and estimate for a bridge, the East Boston terminal of which would be near Central Square and the Boston terminal near the corner of Hanover Street and the proposed Intermediate Thoroughfare (Cross Street). The site appeals to us as the best possible site for a bridge because it crosses the harbor at its narrowest point and because there is sufficient room for the approaches at either end without the necessity of taking or damaging an excessive amount of real estate. Also a bridge in that location is on the natural axis of travel and in a line with the chief arteries leading to the north shore. The report covers the construction of a suspension bridge clearing the harbor at a height of one hundred thirty-five feet above high water with a distance between piers of approximately 1,550 feet and an over all length of 6,240 feet. The grades at either end would be five per cent.

The estimates cover the cost of two types of bridges—first, a bridge which would have a forty-foot driveway, two sidewalks, and room for two rapid transit tracks, his estimate for this type of bridge being approximately \$20,000,000; and second, a vehicular bridge with a roadway forty feet in width and two sidewalks, his estimate for this bridge being \$15,300,000. As, however, we are not discussing rapid transit facilities in this report, we confine our discussion to a purely vehicular bridge. As there is some question as to the type and depth of foundation that would be required, and as it is extremely difficult to estimate the damage to property underneath and adjacent to the approaches to a suspension bridge, we believe that the actual cost may well be substantially in excess of Mr. Modjeski's estimate. For the purposes of comparison, we have assumed a cost of \$18,000,000 for a suitable vehicular bridge, such an estimate being in our opinion no more conservative than the estimate of \$9,000,000 for a single vehicular tunnel.

The Division has conferred with the War Department as to the location and height of the bridge. There can, of course, be no official action taken by the Department until after formal hearings when all parties can be heard, but there has been unofficial expression that the plans seem reasonable so far as navigation is concerned. The only serious objection raised has been an objection to the limitation of the clearance of one hundred thirty-five feet above high water to a width of four hundred feet in the centre of the span; and it has been suggested that the bridge clear high water by one hundred thirty-five feet for the entire width between harbor lines of approximately 1,500 feet. If this requirement should be made, it would preclude the construction of a suspension bridge because

of the added cost and the added length of approaches. There are other objectionable features connected with the approaches to a bridge which are mentioned later in the report.

Traffic

Traffic studies convince us that there is a demonstrated need for either a vehicular tunnel or bridge between Boston and East Boston. The traffic studies made by Mr. Modjeski in connection with his report and by the joint board in 1921 substantially agree, although the estimates made in '21 before the vehicular traffic had shown the remarkable growth of the last four years did not anticipate a traffic of five million vehicles per year until 1944, whereas Mr. Modjeski estimates that such volume of travel will be reached in 1940. We refer to a traffic of five million vehicles per year, because that is the estimated capacity of a single vehicular tunnel. According to Mr. Modjeski's traffic estimate, a second tunnel would be required in 1940, whereas the estimate of the joint board indicates that it would not be required until 1944. Mr. Modjeski's studies of traffic were based upon counts of traffic over the East Boston Ferries, the Charlestown and the Warren Bridges, the population of the territory served and the growth of traffic over large bridges in other cities. It is evident that the traffic in the proposed tunnel or bridge would be that diverted from the East Boston ferries and from the traffic between Boston and the north shore using the Chelsea Bridges over the Mystic River. To such traffic should be added traffic due to the normal increase in population and also the traffic that inevitably develops as the result of the opening of a new route. Mr. Modjeski estimates that the traffic for the first year will be not less than two million four hundred thousand vehicles, or more than four million two hundred thousand vehicles with a probable traffic of three million three hundred thousand vehicles, and the following tables show the basis on which his estimates of traffic for the first year are computed:

Minimum Traffic

Diverted from Ferries	60% of 1,200,000 vehicles	720,000 vehicles
Charlestown and Warren Bridges	15% of 10,000,000 "	1,500,000 "
Traffic developed by new utility		180,000 "
		2,400,000 "

Maximum Traffic

Diverted from Ferries	70% of 1,400,000 vehicles	980,000 vehicles
Charlestown and Warren Bridges	25% of 12,000,000 "	3,000,000 "
Traffic developed by new utility		220,000 "
		4,200,000 "

Revenue

The appended table gives the gross estimated income from traffic based upon Mr. Modjeski's minimum estimate of the number of vehicles and an average toll of fifteen, twenty, twenty-five, and thirty cents per vehicle, respectively.

Year	Number of Vehicles	Tolls at \$0.15	Tolls at \$0.20	Tolls at \$0.25	Tolls at \$0.30
1929	2,400,000	\$360,000	\$480,000	\$600,000	\$720,000
1930	2,600,000	390,000	520,000	650,000	780,000
1931	2,810,000	421,500	562,000	702,500	843,000
1932	3,030,000	454,500	606,000	757,500	909,000
1933	3,260,000	489,000	652,000	815,000	978,000
1934	3,500,000	525,000	700,000	875,000	1,050,000
1935	3,750,000	562,500	750,000	937,500	1,125,000
1936	4,010,000	601,500	802,000	1,002,500	1,203,000
1937	4,280,000	642,000	856,000	1,070,000	1,294,000
1938	4,560,000	684,000	912,000	1,140,000	1,368,000
1939	4,850,000	727,500	970,000	1,212,500	1,455,000
1940	5,000,000	750,000	1,000,000	1,250,000	1,500,000

The following table gives the estimated receipts from tolls using the volume of traffic estimated by the Joint Board as a basis, with the same average receipts per vehicle:

Year	Number of Vehicles	Tolls at \$0.15	Tolls at \$0.20	Tolls at \$0.25	Tolls at \$0.30
1929	1,611,000	\$241,650	\$322,200	\$402,750	\$483,300
1930	1,782,000	267,300	356,400	445,500	534,600
1931	1,953,000	292,950	390,600	488,250	585,900
1932	2,124,000	318,600	424,800	531,000	637,200
1933	2,295,000	344,250	459,000	573,750	788,500
1934	2,493,000	373,950	498,600	623,250	757,900
1935	2,700,000	405,000	540,000	675,000	810,000
1936	2,907,000	436,050	581,400	726,750	872,100
1937	3,114,000	467,100	622,800	778,500	934,200
1938	3,339,000	500,850	667,800	834,750	1,001,700
1939	3,573,000	535,950	714,600	893,250	1,071,900
1940	3,807,000	571,050	761,400	951,750	1,142,100

Financial Plan

In our opinion, any tunnel or bridge should be a toll tunnel or toll bridge, the tolls being adjusted to at least equal the fixed charges and operating expenses of the structure, and in no event would we favor any plan which would place the burden upon the general taxpayer of the city or the district. The collection of tolls from those passing over large and expensive bridges is of wide usage and is being adopted for many new projects as a proper way to meet their cost in an equitable manner. There are several ways in which the bridge or tunnel can be financed.

First—It can be built and operated as a municipal structure.

Second—It can be built as a municipal structure, but leased and operated by public trustees of a district on a service at cost basis as is the Elevated Road; or

Third—It can be built by a public utility specially chartered for that purpose.

The advantages and disadvantages of these three plans are as follows:

First—A bridge or tunnel owned by a municipality would undoubtedly secure its money at the lowest rates and would, therefore, have the lowest carrying charges.

The danger of this plan is the inevitable demand that tolls be reduced or abolished to a point where the structure would not be self-supporting and hence become a burden upon the taxpayers of the city. The present East Boston Ferries are being operated at a loss of \$800,000 per year. The Division is also mindful that the one cent charge for the use of the East Boston Transit Tunnel was abolished within a few years after it had been opened.

Second—The second plan for the construction of a bridge or tunnel with municipal credit but operated by public trustees on a service at cost basis would furnish the money at a low cost and would give greater assurance that self-sustaining tolls would be collected. It would also enable any possible deficit to be spread over a metropolitan area which would include not only Boston, but the cities on the north shore that would be benefited.

Third—The third plan involves the chartering of a public service corporation to build, own, and operate the tunnel or bridge. If such a charter were granted, the Department of Public Utilities should be given full supervision over rates, the issuing of securities, and the quality of service to be rendered. As private capital would cost more than public money, the total carrying charges under this plan would be somewhat higher than

if built with municipal credit. On the other hand, there is much to be said for a plan which in no way involves municipal credit or municipal operation, and which provides a public service in the same way as lighting, gas, railroad or street railway service is furnished.

If such a plan is followed, the charter should grant authority to the city of Boston to take over the bridge or tunnel at any time by paying the then unliquidated cost and should also provide that when the operation of the sinking fund had retired the investment, the bridge should automatically become the property of the city of Boston.

It has also been suggested that when a bridge or tunnel is constructed, the city of Boston might well re-arrange its ferry service, thus saving perhaps \$300,000 per year which would be available in the case of a municipally owned and operated tunnel for operating expenses and carrying charges, thus reducing tolls and increasing travel.

The Division does not recommend any specific financial plan. If private capital is interested, it should present its case directly to the Legislature. If, on the other hand, the city of Boston desires to construct a bridge or tunnel either as a municipal structure or for lease to public trustees, the Division hopes the city will make known its position. This report, therefore, should be considered a report of progress with data as to the operating expenses and probable revenues of either a bridge or a tunnel and with suggestions of various means by which it can be financed, our outstanding conclusions being that some additional means of direct physical connection should be constructed and should be fully supported by adequate tolls.

The chief comparisons between a bridge and a vehicular tunnel are as follows:

	<i>Modjeski Plan Bridge</i>	<i>Joint Board Plan Tunnel</i>	
		<i>Twin Tubes</i>	<i>Single Southerly Tube</i>
Length over all	6,240 feet		5,080 feet
Maximum rise	144 "		98 "
Length of 5% grade	4,463 "		3,600 "
Distance of entrance and exits from waterfront	2,350 "		1,750 "
Total cost, construction and real estate	\$18,000,000	\$18,000,000	\$9,000,000
Real Estate takings and damages	6,000,000	3,500,000	1,500,000
Cost of maintenance, policing and operation (average)	150,000	400,000	200,000
Estimated number of vehicles in 1929	2,400,000		1,600,000
Estimated number of vehicles in 1940	5,000,000		3,800,000
Estimated number of vehicles in 1948	8,000,000		5,850,000 (capacity)
Estimated number of vehicles in 1955	10,000,000	7,500,000	
Ventilation	None required	Forced ventilation required	
Stormy weather	Roadway not protected	Roadway protected	

	Bridge	Tunnel	
		Twin Tubes	Single Southerly Tube
Operating Revenue required to meet operating expenses and 5% on cost (average)	\$1,050,000	\$1,250,000	\$650,000
Operating Revenue per vehicle required to meet cost, assuming 2,500,000 vehicles use structure	42c.		22c.
Operating Revenue per vehicle required to meet cost, assuming 5,000,000 vehicles use structure	21c.		15c.

Note:—On a basis of traffic of 8,500,000 vehicles per annum, it is estimated that a toll of 15 cents could be maintained if twin tubes were built.

From the above comparisons, it is apparent that the advantages of the tunnel far outweigh the advantages of the bridge. Initially the cost of the tunnel is much less, the grades are shorter, the total lift is less, and the roadway is protected from ice and sleet in bad weather and the destruction of taxable real estate is much less. Accordingly it is our recommendation that the need of increased transportation facilities viewed from the standpoint of vehicular traffic only between Boston and East Boston be met by the construction of a single tube vehicular tunnel rather than by a bridge, and that all fixed charges and operating expenses be met by adequate tolls.

The report of Mr. Modjeski is submitted herewith as an appendix.

EXPENDITURES

The Division has an organized staff working under the direction of Edwin H. Rogers, chief engineer and secretary. The permanent staff consists of three assistant civil engineers, two draftsmen, a senior and a junior stenographer, with additional assistants at various times as needed.

The appropriations and expenditures of the Division for the year have been as follows:

General Appropriation		\$30,000 00
Salaries	\$17,961.05	
Services of experts	1,049.00	
Miscellaneous expenses	8,306.29	
Total		27,316.34
Balance		\$2,683.66
Saugus Branch Appropriation—		
Balance from previous year		\$3,679.08
Expenditures for current year		none
Balance		\$3,679.08

GENERAL MATTERS

The following three resolves were passed by the Legislature of 1925 calling for reports by the Division:

Chapter 35—Resolve providing for an investigation relative to the construction, financing, and maintenance of a subway under Huntington Avenue and Stuart Street and of a certain extension thereof in the city of Boston for the use of the Boston Elevated Railway Company. The above resolve provides for a joint study and report by this Division and the Transit Department of the city of Boston.

Chapter 36—Resolve providing for a further investigation by the Division of Metropolitan Planning relative to the construction of a surface transfer station for the use of the Boston Elevated Railway Company west of Harvard

Avenue in the city of Boston and relative to providing rapid transit from Boston through Cambridge and Somerville.

Chapter 37—Resolve directing the Division of Metropolitan Planning of the Metropolitan District Commission to study and consider the transportation facilities existing between Boston and East Boston.

In addition to the above resolves, the two following resolves passed by the Legislature of 1924 called for reports during the current year:

Chapter 38—Resolve providing for an investigation by the Division of Metropolitan Planning of the railroad and steamship terminal facilities of metropolitan Boston.

Chapter 45—Resolve providing in section (a) for a study by the Division of Metropolitan Planning of a comprehensive rapid transit plan for metropolitan Boston.

The Division has submitted its report on railroad and steamship terminals, on a terminal for the Boston Elevated Railway Company west of Harvard Avenue, and in this report has included its report on better transportation facilities between Boston and East Boston. The Division has asked for an additional year for its report on a general rapid transit plan for the metropolitan area and on a subway under Huntington Avenue and Stuart Street.

HIGHWAYS

The Division has during the year spent much time upon the study of a general highway plan for the district.

The Legislature of 1924 passed bills recommended by the division for (a) the construction of the Northern Artery, and (b) a modification of plans of the Cottage Farm Bridge providing for a relocation of the railroad and the construction of an under-pass on the Boston side. The takings for the Northern Artery have been made by the Metropolitan District Commission and it is expected that construction work will be substantially completed during the calendar year 1926. The Metropolitan District Commission has also substantially completed its revised plans for the Cottage Farm Bridge and unless delayed by legal proceedings will let the contract for the bridge during the coming spring.

The Legislature of 1925 passed acts providing for the construction of the Southern Artery; the extension of the West Roxbury Parkway to Newton Street; the widening and improvement by the city of Boston of Morton Street; the widening and improvement of River Street in Hyde Park by the city of Boston; and the widening and improvement of lower Main Street and Broadway by the city of Cambridge from the Cambridge Bridge to Mechanic Square. Each of the above matters was the subject of special investigation, study, report, and recommendation by the Division.

Engineering or construction work on most of these street improvements is under way and their completion will signally help the traffic situation in the metropolitan district.

Boston

There are two important links in the metropolitan highway system which lie within the city of Boston and which it is hoped that city will construct or improve.

(a) The Old Colony Boulevard is nearing completion. This important highway begins at the Neponset Bridge and extends along the shores of Dorchester Bay to Columbia Circle. From there traffic will enter the city over a route consisting of the City Strandway, Old Colony Avenue and lower Dorchester Avenue. The stretch of parkway and Old Colony Avenue are of excellent alignment and of admirable width. Lower Dorchester Avenue, however, is entirely too narrow to accommodate the large volume of traffic which will soon pass over it and should be widened to a width of not less than 100 feet, at an estimated cost of about \$800,000.

(b) Harvard Street in Brookline with Harvard Avenue and North Harvard Street in the Allston district of Boston and Boylston Street in Cambridge constitute a most important north and south highway connecting the Jamaica Plain

Parkway and Brookline Village with Harvard Square in Cambridge. It is the first important cross-town route west of Massachusetts Avenue. Harvard Street in Brookline is in excellent condition, but in Boston there is a serious missing link from the northerly end of Harvard Avenue in Allston to Western Avenue. The reconstruction and widening of this missing link, including the construction of a highway bridge over the tracks of the Boston & Albany Railroad at Allston, and the repaving of the section of North Harvard Street from Western Avenue to the Larz Anderson Bridge will give a complete north and south highway from Brookline Village to Harvard Square. It is one of the street improvements most imperatively required.

Cambridge and Somerville

The city of Boston has nearly completed the widening of Cambridge and Court Streets and upon the completion of this work a great volume of traffic will undoubtedly flow over the Cambridge Bridge to and from Cambridge.

The widening of Main Street and Broadway to Mechanic Square and the repavement of Broadway to Massachusetts Avenue will greatly relieve the resulting pressure upon Massachusetts Avenue and other crowded streets in Cambridge. We strongly urge, however, that the cities of Cambridge and Somerville complete the repaving of Beacon and Hampshire Streets; and that the city of Somerville construct a suitable connection between the end of Beacon Street and Elm Street. All of these improvements can be carried out by the respective cities without additional legislation and without undue cost, and will be of very great advantage to the highway system north of Boston.

We are also suggesting to the city of Cambridge—(a) the construction, at an estimated cost of \$131,000, of a cut-off from the corner of Brattle and James Street to Garden Street opposite Waterhouse Street, which will create a by-pass from the Memorial Drive around Harvard Square—this improvement will greatly relieve traffic congestion in Harvard Square; (b) the extension of Fayerweather Street to Sherman Street at an estimated cost of \$85,000. The cost of this extension should in part be covered by betterments to abutting property.

Brookline

The completion of the Cottage Farm Bridge will make essential a connecting way from Commonwealth Avenue to the Jamaica Plain Parkway. The town engineer of Brookline has laid out a connection which seems to us feasible, but there are other possible routes. We feel that the selection of the exact route is a local matter, but that the construction of a route is a public necessity.

It is also most desirable that the town of Brookline construct a connecting way from Lee Street in the Jamaica Plain District to the Jamaica Plain Parkway. We urge its completion, as it will serve as a very useful part of a metropolitan thoroughfare.

Malden and Medford

There is now an east and west highway beginning at Squires Road and Broadway in Revere and running through Malden to Medford Square. It is made up of a new state highway, sometimes known as Squires Road in Revere; Beach Street; Salem Street, Malden; Pleasant Street, Malden; and Salem Street, Medford. The pavement is in excellent condition and the road is much used. The central part of this route has, however, one very serious drawback as a through highway, to wit, that Salem and Pleasant Streets in Malden pass through the heart of the city, are narrow and have car tracks. Pleasant Street in particular is one of the chief shopping streets of the city. It is, therefore, most desirable to have a substitute and parallel through route to relieve congestion in the heart of Malden. Such a parallel route can be provided with ease, the route consisting of the new state highway (Squires Road) in Revere; Eastern Avenue; Madison Street; Medford Street in Malden; and Central Street in Medford. To make this through route effective, it will be necessary to extend Central Street in Medford to Salem Street at an estimated cost of \$85,000 and to repave the remainder of the present street in Medford. In the city of Malden, Madison Street and a

part of Eastern Avenue are in excellent condition, but Eastern Avenue from Beach Street to Ferry Street is much in need of repaving and it would be most desirable to widen the street to a width of at least sixty feet before such repaving is done. Its present width is fifty feet.

Our estimate of the property damages because of a widening to sixty feet for various sections of Eastern Avenue is as follows:—

	<i>Length</i>	<i>Property Damage</i>
Beach Street to Broadway	4,200 feet	\$50,000
Broadway to Faulkner Street	4,200 "	64,000
Faulkner Street to Ferry Street	2,900 "	220,000
Total	11,300 feet	\$334,000

It will be noted that the chief expense of the widening of Eastern Avenue is in the relatively short section from Faulkner Street to Ferry Street. This is because of numerous houses that will be affected by the widening. While it would be most desirable to have the entire street widened, yet it would be a substantial relief to traffic if the two other sections were widened and the entire street repaved.

We also urge the city of Malden to repave Broadway, which is, in reality, the southerly end of the Newburyport Turnpike, and one of the most used thoroughfares of the State.

CIRCUMFERENTIAL HIGHWAY

During the year the Division has spent much time upon a general highway plan for the District, and its studies lead it to believe that the greatest present highway need of the District is the construction of certain missing links in our parkway and road systems, which will give a substantially continuous circumferential highway leading from the north to the south shore, passing around the most thickly settled sections of the Metropolitan area. Boston and its environs are most fortunate in their local and Metropolitan parks, parkways and boulevards; but most of these boulevards were constructed with the thought of leading traffic from outlying districts to the center of the city. The congestion in the central district has now become so serious that it is most desirable to keep as much through traffic as possible out of the down-town region and permit it to circulate freely around the district and in its less congested parts.

With this thought in mind, the Division has made an extensive study of existing parkways and thoroughfares which could properly form a part of an efficient circumferential route; and it presents with this report a plan embodying such a circumferential highway. It has been laid out with the thought of using, so far as possible, existing highways and parkways, uniting them together where no adequate connection exists. The route as laid out will start at the Lynn Shore Drive in Lynn near the Swampscott line and follow Eastern Avenue or other convenient streets to Western Avenue. From Western Avenue, the easterly entrance to Lynn Woods can be reached at the Great Woods road entrance over excellent streets. It is then proposed to construct a suitable parkway through the Lynn Woods to the Newburyport Turnpike and thence by a second section of parkway reach the easterly end of the Lynn Fells Parkway. The Lynn Fells Parkway and parkways in the Middlesex Fells and along the Mystic River, with one short section of street in Medford, will carry traffic to the westerly end of the Alewife Brook Parkway at Massachusetts Avenue. It is then proposed to construct a missing link largely on land now owned by the Commonwealth from the southerly end of the Alewife Brook Parkway to the northerly end of Fresh Pond Parkway at Huron Avenue.

From the southerly end of the Fresh Pond Parkway there are adequate streets and parkways leading through Boston and Brookline to the Stony Brook Parkway which, in turn, will carry traffic to Readville. A short connecting link is required in Readville and another short link near Paul's Bridge and the Blue Hills Reservation is reached. It is then proposed to construct a parkway largely in the Blue Hills Reservation to Randolph Avenue; thence follow Randolph Avenue to the

southerly edge of the Reservation, thence by a new parkway along the southerly edge of the Blue Hills Reservation and West Street to the Five Corners in Braintree, from which roads of good alignment and low gradients reach all sections of the South Shore. Some of these roadways need resurfacing; and we have assurance that this will be done either by the towns or jointly by the towns and the State under the provisions of chapter 90.

The route has been laid out to make the maximum use of existing parkways and streets. Some of these parkways, as, for instance, the roads in the Stony Brook Reservation, and some of the roads in the Middlesex Fells Reservation, while being entirely usable, are in need of improvement and realignment; but we feel confident this will be attended to by the Metropolitan District Commission as soon as the volume of traffic, which this route will bring to these roadways, warrants such improvements.

Originally parkways were carriage roads in our parks, and the name "parkway" still carries to many the thought of a purely pleasure route. Today, however, our parkways are very largely used by automobilists passing in and out of the Metropolitan District; and they have become a most important part of the through traffic routes of the Metropolitan area. It is particularly desirable that they should be so used, because as a rule they have few intersecting streets; they have few, if any, houses bordering them; and traffic can move over them in large volume and at good speed. In the past these parkways have been used entirely for passenger cars, and commercial cars and busses have been excluded. If, however, these parkways are to become parts of important through routes, we believe that it is proper that they be opened to certain classes of commercial vehicles that would not injure the roadways or restrict their use for passenger cars. Today 90 per cent of the cars registered as commercial vehicles are light delivery cars which, with their full loads, weigh less than 4,000 pounds and are capable of traveling at any speed that is safe for automobiles. We accordingly recommend that, so far as the new sections covered by the accompanying bill are concerned, they be opened to commercial cars which, with their loads, weigh less than 4,000 pounds. We think it would be most objectionable to open any of our parkways to the heavy truck, and possibly to the large and cumbersome bus; but we see no distinction between a Ford car with a delivery body and the same car with a passenger body. Furthermore, the registration of trucks is only about 15 per cent of the registration of passenger cars; and the light truck is used mostly for local delivery and not for through business. Accordingly we doubt if the opening of the parkways provided for in this act to light commercial vehicles would increase the traffic on them by over 2 per cent or 3 per cent. Finally, it should be noted that we are not suggesting a complete throwing open of parkways to commercial vehicles, but are merely suggesting an experiment of that nature on the new sections of parkways provided for in this act. The bill accompanying this report provides specifically that the Metropolitan District Commission may close these parkways to commercial vehicles, if, after a reasonable period of actual use by light commercial vehicles, it is found that such use is detrimental to the public interest.

The total length of the missing links provided for in the bill accompanying this report is 12.6 miles. The total length of the circumferential route combining both parkways and general traffic streets is about 37 miles. It will thus be seen that the construction of a relatively few miles of missing links will complete a very important circumferential route. The estimated cost of the missing links of the circumferential highway herein recommended is as follows:

	<i>Land Damage</i>	<i>Construction</i>	<i>Total</i>
Sections in Lynn, Saugus and Melrose	\$105,000	\$591,000	\$696,000
Section in Cambridge	50,000	600,000	650,000
Sections in the Blue Hills district	54,000	589,000	643,000
Total	\$209,000	\$1,780,000	\$1,989,000

The bill provides that as the sections are all parkways they shall be built by the Metropolitan District Commission, and shall be paid for, one-half by the District and one-half from the Highway Fund.

The Division heartily recommends this entire route as the most important Metropolitan highway project of the year. It is the primary recommendation of the Division. It believes that each of the sections will serve, not only as a part of a circumferential route, but will serve as valuable by-passes for local traffic. For instance, the connecting section between the Alewife Brook Parkway and the Fresh Pond Parkway will complete an important route around the crowded section of Cambridge and will enable traffic to avoid the congestion of Harvard Square and Massachusetts Avenue. The connection through the Blue Hills will enable traffic from Dedham and other sections to the west to reach the South Shore. The section through the Lynn Woods will open up a very beautiful district now almost inaccessible, and make its beauties available to great numbers of people who now never see them, and greatly relieve the congestion now existing on those roads leading to Revere Beach and the North Shore.

CHARLES RIVER PARKWAY

The Board also recommends the construction, at an estimated cost of \$550,000, of a parkway along the Boston shore of the Charles River from the end of Bay State Road under the Cottage Farm Bridge to the Stadium. This will furnish a much-needed additional route from Boston to the west, and will cause to be used sections of the parkways along the Charles River now little used.

HAMMOND WOODS PARKWAY

Last year this Division in response to a resolve of the General Court submitted a report on the construction of the so-called Hammond Woods Parkway. The Legislature acted favorably on one section of the route, to wit, the extension of the West Roxbury Parkway from Weld Street in West Roxbury to Newton Street in Brookline.

In line with the ultimate construction of the parkway, it would seem to us desirable in the near future to authorize the construction of that section of the parkway in Hammond Woods lying between Boylston Street and Beacon Street. Our estimate of the cost of this section is \$185,000.

Newton Street, Hammond Street and Boylston Street will form a suitable connection between those two parkways until the section between Newton Street and Boylston Street is authorized by the Legislature.

Bills covering the circumferential highway and the Charles River Parkway accompany this report and are most heartily recommended by this Division. A bill covering a portion of the Hammond Woods Parkway also accompanies this report. We feel that link is desirable, but by no means as important as the other two projects, which we feel should be given preference.

RAPID TRANSIT

Following the recommendations of the Division, the Legislature passed Chapter 21 of the Resolves of 1925, providing for an extension of time within which the Division should submit its report relative to the use of the Saugus Branch as a part of the Metropolitan Rapid Transit System.

On recommendation of the Division, the Legislature also passed Chapter 123 of the Acts of 1925 repealing certain acts relative to a subway and subway station proposed to be constructed in the cities of Malden and Everett. The last-named act referred to a subway terminal in Everett near the Revere Beach Parkway and it was agreed that the repeal of this act would relieve the Boston Elevated Railway from the obligation to construct a terminal which undoubtedly would not be in accord with future plans for the extension of rapid transit service from the present Everett elevated terminal towards the north.

PORT AND TERMINAL DEVELOPMENT

This subject matter was fully covered in a special report of the Division submitted during the present year in response to the order of the Legislature contained in Chapter 38 of the Resolves of 1924.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING.

By HENRY I. HARRIMAN, *Chairman*.
A. C. RATSHESKY.
RALPH S. BAUER.
RICHARD K. HALE.
EVERETT E. STONE.
FRANK G. HALL.
FRANCIS E. SLATTERY.

Appendix with the following title is published separately:

THE EAST BOSTON BRIDGE

A PRELIMINARY REPORT

TO

THE COMMONWEALTH OF MASSACHUSETTS

Division of Metropolitan Planning

BY

RALPH MODJESKI

Consulting Engineer

W. * 6457.35
The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

DIVISION OF METROPOLITAN
PLANNING

FOR THE

YEAR ENDING NOVEMBER 30, 1926



PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE

Mass. 19, 1927.

The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
44 School Street, Boston, November 30, 1926.

To the Honorable Senate and House of Representatives in General Court Assembled:

This Division herewith respectfully submits its annual report for the year ending November 30, 1926.

CIRCUMFERENTIAL HIGHWAY

The primary highway recommendation contained in our report of last year was for the construction of what has been termed the "Circumferential Highway"; that is, the construction of certain missing links in our parkway and highway system which will give a substantially continuous route leading from the North to the South Shore and passing around the most thickly settled sections of the Metropolitan area. The congestion in the central part of the city is becoming more and more serious; and it was then, and is now, our feeling that substantial relief can be afforded the downtown congestion by the construction of this circumferential route.

The Legislature of 1926 made the initial appropriations for the route and authorized the purchase of the necessary lands for the extension of the Lynn Fells Parkway to the Newburyport Turnpike and for a missing link in the Readville section. The large expenditures necessary for the completion of the Northern Traffic Artery, the Southern Artery, and the Old Colony Boulevard, however, prevented the authorization of the entire route. We accordingly now repeat our recommendation of last year and urge that authorization be given for the completion of the Circumferential Highway along substantially the same lines as indicated last year.

Certain minor changes have been made in the route; but it is substantially the same route as suggested last year, starting at the Lynn Shore Drive in Lynn, near the Swampscott line, and following Eastern Avenue or other convenient streets to Western Avenue. From Western Avenue the easterly entrance of the Lynn Woods can be reached at the Great Woods Road entrance over excellent streets. From that point it is proposed that a suitable parkway be constructed through the Lynn Woods and over a portion of the Lynn waterworks reservation, crossing the southerly arm of the reservoir near the Lynn-Saugus line, thence over public or private ways and private lands to the Newburyport Turnpike at or near Walnut Street, and thence, by a second section of parkway from a point near the Saugus River on the Newburyport Turnpike, reach the easterly end of the Lynn Fells Parkway. The Lynn Fells Parkway and parkways in Middlesex Fells and along the Mystic River, with a short section of streets in Medford, will carry the traffic to the westerly end of the Alewife Brook Parkway at Massachusetts Avenue.

It is then proposed to construct a missing link largely on land now owned by the Commonwealth from the southerly end of the Alewife Brook Parkway to the northerly end of Fresh Pond Parkway on Huron Avenue. From the southerly end of the Fresh Pond Parkway there are adequate streets and parkways leading through Boston and Brookline to the recently constructed extension of the West Roxbury Parkway, which in turn will carry traffic to the Stony Brook Parkway, which in turn will take traffic to Readville. A short connecting link is required on the westerly side of the tracks in Readville. Thence the improvement of East Milton Street and a new bridge over the Neponset River will carry traffic over existing parkways and streets to the southerly side of the Blue Hill Reservation.

Several years ago authorization was granted for the construction of a highway along the southerly edge of the Blue Hill Reservation by joint action of the towns of Milton, Canton, and Braintree and the Metropolitan District. There was much delay in securing necessary local action of all of the towns concerned. We are glad to report that all parties now as a unit desire the construction of this highway along the south side of the Blue Hills; and it will constitute an important link in

the circumferential route carrying traffic to South Braintree. The appropriation available for the use of the Metropolitan District Commission expires on December first and we recommend the re-appropriation of a sufficient sum for the construction of the district's share of this improvement. Thence the improvement of certain streets in Braintree, Weymouth, and Hingham will carry traffic to the main arteries reaching Plymouth and other points on the South Shore.

We also recommend the construction of a missing link between the Blue Hills Parkway and Randolph Avenue, so that traffic arriving at Mattapan can pass over the Blue Hills Parkway and this missing link to Randolph, and thence via the circumferential route to the South Shore, without the necessity of passing through the crowded sections of Quincy, East Milton, and Weymouth.

OTHER HIGHWAYS

In addition to the Circumferential Highway, we are this year recommending the construction of:

- (a) An extension of the Fellsway East from its northerly terminus, across the Middlesex Fells Reservation to a connection with the Lynn Fells Parkway. The construction of this parkway will greatly relieve pressure on other parkways in the Middlesex Fells and shorten the distance from Melrose and towns to the north to Boston;
- (b) The extension of Squires Road, Revere, from its present terminus at Broadway across private property to Revere Street, so that the large traffic now using Squires Road can have a direct outlet to Revere Beach.

Bills providing for the above enumerated highways have been introduced.

EAST BOSTON BRIDGE OR TUNNEL

Last year in our annual report we reported, as directed by Chapter 37 of the Resolves of 1925, on improved transit facilities between Boston and East Boston by means of either a vehicular tunnel or vehicular bridge. In that report, we stated:

“The Division does not recommend any specific financial plan. If private capital is interested, it should present its case directly to the Legislature. If, on the other hand, the City of Boston desires to construct a bridge or tunnel, the Division hopes the City will make known its position. This report therefore should be considered a report of progress with data as to operating expenses and probable revenue of either a bridge or tunnel, and with suggestions of various means by which it can be financed, our outstanding conclusions being that

- a. Some additional means of direct physical connection should be constructed; and
- b. That they should be fully supported by adequate tolls.”

Private capital did show strong interest in the project; and a bill was presented and passed by the Legislature for the construction by private capital of a bridge between Boston and East Boston. This bill was vetoed by His Excellency the Governor, not because he was opposed to a bridge or tunnel, but because he felt that in many details the bill did not adequately protect the public interest; and because he was fearful that the cost of private capital would result in excessive tolls.

We have reviewed the situation; and it is still our conclusion that a bridge or tunnel is required; we also feel that if built by public capital as a toll bridge it can be made self-supporting either at once or within a very few years. Public money can be obtained for approximately 4 per cent. Private money will undoubtedly cost 8 per cent, and a bridge or tunnel built with private money may not pay its way for a number of years, though we recognize fully that all statistics as to possible travel are at the best but estimates, and that thus far nearly every toll bridge—private or public—has soon become crowded to its capacity.

We believe it wise that the cities and towns which would be most directly benefited by the bridge or tunnel, to wit: Boston, Chelsea, Revere, Winthrop and Lynn,

should have an opportunity, by a referendum at the next election, to state whether they desire to be created a District for the construction, maintenance, and operation of such a bridge or tunnel. If the vote is affirmative, then we believe a commission should be authorized to construct the bridge or tunnel with the State credit and to establish tolls which in their opinion will make the construction self-supporting. Such a commission should then operate the bridge or tunnel on a service-at-cost basis, and in case of a deficit it shall be charged back upon the cities or towns of the Bridge District in proportion to the assessed value of their property, or in some other equitable proportion. We have named certain cities which we know will be benefited by the construction of such a bridge or tunnel; but there may well be other cities and towns that will be benefited; and if the referendum vote is in the affirmative, then we believe that a commission appointed by the Supreme Court should decide whether other cities and towns will be benefited and should be included in the Bridge District.

We do not recommend the construction of either a bridge or tunnel as a free structure, but merely as a bridge or tunnel on which adequate tolls are charged to cover all maintenance, operating cost, fixed charges, and depreciation. We also feel that provisions should be included in any bill making it a contract between the bondholders and the State that adequate tolls shall be charged until the bonds have been paid off by the sinking fund. Our estimates of cost and annual operating expense of a bridge or tunnel are as follows:

Tunnel or Bridge Built and Operated by the State

	Single Tube Tunnel with Annual Capacity of 5,000,000 Vehicles.	Twin Tube Tunnel with Annual Capacity of 10,000,000 Vehicles.	Bridge with Annual Capacity of 10,000,000 Vehicles.
Cost	\$9,000,000	\$18,000,000	\$18,000,000
Operating expense	\$200,000	\$400,000	\$150,000
Interest at 4 per cent	360,000	720,000	720,000
Sinking Fund, 1 per cent	90,000	180,000	180,000
	<hr/>	<hr/>	<hr/>
	\$650,000	\$1,300,000	\$1,050,000

Tunnel or Bridge Built and Operated by a Private Company

	Single Tube Tunnel with Annual Capacity of 5,000,000 Vehicles.	Twin Tube Tunnel with Annual Capacity of 10,000,000 Vehicles.	Bridge with Annual Capacity of 10,000,000 Vehicles.
Cost	\$9,000,000	\$18,000,000	\$18,000,000
Operating expense	\$200,000	\$400,000	\$150,000
Interest at 8 per cent	720,000	1,440,000	1,440,000
Sinking Fund, 1 per cent	90,000	180,000	180,000
	<hr/>	<hr/>	<hr/>
	\$1,010,000	\$2,020,000	\$1,770,000

It is our feeling that under no circumstances should the average toll to be charged exceed 30 cents per vehicle, as larger tolls would probably discourage traffic, which, of course, can avoid the use of the bridge or tunnel by circling to the north and west. On the basis of a 30-cent toll, our estimates of the number of vehicles and income are as follows:

	Number of Vehicles.	Income.
1930	2,500,000	\$750,000
1935	3,500,000	1,050,000
1940	5,000,000	1,500,000
1950	10,000,000	3,000,000

Our estimates are, we believe, conservative, and indicate that a bridge or tunnel built with public money would be self-supporting by 1935, and might well be so before that date. East Boston and Boston are now connected by two ferries, the annual deficit of which amounts to about \$800,000. If the bridge or tunnel is constructed it will probably not be wise to entirely discontinue ferry service but

undoubtedly ferry service can be lessened—possibly cut in two—and thus a saving of from \$300,000 to \$400,000 effected to the city of Boston.

A bill providing for a referendum as to the public construction of a bridge or tunnel, and providing for its construction by public money, if the referendum is favorable, has been prepared. If the vote of the cities and towns is against construction, then the question may well be revived as to whether a charter may be granted to private interests for the construction of the bridge or tunnel.

SPECIAL REPORTS

The Legislature of 1926 directed the Division to make certain special reports by Resolves which are quoted by title as follows:

Chapter 20—Resolve Providing for an Investigation by the Division of Metropolitan Planning of the Metropolitan District Commission Relative to the Construction of a New Bridge over the Mystic River in the City of Medford.

The report of this Division on this Resolve was submitted to the Legislature on the date specified.

In Chapter 45 of the Resolves of 1924, Section (a) called for an investigation and report by the Division on a comprehensive scheme for the extension and development of rapid transit service within the Metropolitan District and vicinity.

Chapter 38 of the Resolves of 1926 extended the time for filing this report to December first, 1926. The preparation of this report required much study by the members of the Division and its staff of engineers and consultants, and it is needless here to repeat our recommendations made thereon. We desire, however, to emphasize our recommendations for the settlement of the future status of the Boston Elevated Railway. Until the Legislature determines whether public control is to continue or to be abolished or the railway taken over by the Commonwealth, it is unlikely that authorization for any large expenditures for rapid transit improvements will be given.

Chapter 48—Resolve Providing for a Further Investigation by the Division of Metropolitan Planning of the Advisability of Changing the Harbor Lines on the Boston Side of the Charles River.

The report on this resolve was submitted as directed.

The Legislature of 1926 also passed the following order:

House 1491—Ordered, That the Division of Metropolitan Planning of the Metropolitan District Commission be directed, in connection with its further study and investigation under the provisions of Chapter 45 of the Resolves of 1924, to investigate and report on the advisability of extending the Dorchester Tunnel, so-called, from Andrew Square in the city of Boston along Columbia Road to a point at or near the corner of Blue Hill Avenue and Columbia Road, known as Franklin Park Station; thence to a point at or near the corner of Blue Hill Avenue and Talbot Avenue, known as Franklin Field; thence to a point at or near the corner of Blue Hill Avenue and Morton Street; thence to Mattapan Square to meet the extension of said tunnel provided for by chapter 480 of the Acts of 1923. Said division also is directed to report relative to the financing and maintenance, and to the necessity, advisability, feasibility, cost and distribution of cost, of such tunnel.

The investigations and conclusions of the Division were submitted to the Legislature on the subject matter of this order.

MISCELLANEOUS PROJECTS AND IMPROVEMENTS

Charles River Basin

Last year this Division recommended the construction of a parkway along the southerly bank of the Charles River Basin from Bay State Road to North Harvard

Street at the Larz Anderson Bridge. The Legislature approved the project by Chapter 365, authorizing its laying out by the Metropolitan District Commission, and made appropriations totaling \$120,000 for the construction of portions of the route (from North Harvard Street to Western Avenue and at the Cottage Farm Bridge) with, as we understand it, the expectation of completing the necessary appropriation this year. Accordingly, the Metropolitan District Commission have included in their budget for the coming year a request for funds to complete this important parkway link. We heartily second their recommendation and urge this as one of the most important boulevard improvements before the Legislature.

Boston

As the result of conferences with the Boston City Planning Board and the Street Commissioners of the city of Boston, we have jointly recommended to His Honor Mayor Nichols, the introduction of legislation authorizing the construction by the city of Boston, without the debt limit, of the following much needed street improvements, to wit:

- (a) A street or streets extending from the junction of Charles and Leverett streets at the easterly end of the Charles River Dam, thence over existing ways or private lands or both to Causeway Street;
- (b) Dorchester Avenue, South Boston, from Fort Point Channel to Old Colony Avenue to a width of not less than ninety-two feet;
- (c) North Harvard Street, Brighton, from Cambridge Street to Western Avenue, to a width of not less than sixty feet;
- (d) The easterly corner of Cambridge Street and Harvard Avenue, in the Brighton district;
- (e) Morton Street, Dorchester, from Codman Street to a point about opposite Druid Street, and Washington Street, Dorchester, from a point about opposite Sanford Street to a point about opposite River Street to a width of not less than eighty feet;
- (f) Main Street, Charlestown, at the easterly corner of Alford Street, by a taking from the Charlestown playground, and the westerly side of said Main Street by a taking from the park known as Sullivan Square.

Atlantic Avenue and Commercial Street Elevated

Our studies of the use of the Atlantic Avenue elevated railway structure indicate to us that it would undoubtedly be much more useful as an elevated highway than an elevated transit way. In our report on a comprehensive rapid transit plan for the District, we have referred to the conversion of the elevated structure for use as a highway, and presented a plan showing how it could be reconstructed, extended and adapted to the use of the Downtown District in connection with certain suggested street widenings and improvements. One of its great advantages would be its almost entire freedom from intersections and consequent rapid movement of vehicles. If the East Boston Bridge is constructed, such use of the Atlantic Avenue elevated will become almost a necessity. Incidentally the cost of converting the elevated to highway use, including a fair payment to the Elevated, is very much less than the cost of the Intermediate Thoroughfare; and, while it would not serve all of the purposes of the Intermediate Thoroughfare, it would greatly aid the movement of traffic in the Downtown District.

Brookline

The contracts for the Cottage Farm Bridge have now been let; and this long delayed improvement will soon be a reality. This makes essential a connecting way from Commonwealth Avenue to the Jamaica Plain Parkway. We earnestly hope the town of Brookline will take the necessary action to make this connecting link a reality. It is also most desirable that the town of Brookline construct a connecting way from Lee Street, in the Jamaica Plain District, to the Jamaica Plain Parkway. It will serve as a very useful part of the Metropolitan System of highways.

Cambridge and Somerville

Cambridge Street, Boston, has now been completed and is open to service from Scollay Square to the Cambridge Bridge. The need is very manifest for the widening of Main Street and Broadway to Mechanics Square and for the completion of the repaving of Broadway for the balance of its length and of Beacon and Hampshire streets for their entire length. Two years ago a bill was passed permitting the city of Cambridge to widen Broadway as far as Mechanics Square to a width of one hundred feet. Opposition developed because of the extreme width, and last year, with our approval, an amendment was passed reducing the width to eighty feet. We are glad to learn that the city of Cambridge will probably accept this act in the near future.

Revere, Malden, and Medford

We again repeat our recommendations of last year regarding the need of a through way from Revere Beach via Squires Road in Revere and other streets in Malden and Medford to the proposed new connection across the Mystic River from Harvard Street to Spring Street. As previously stated in this report, we have recommended that the Department of Public Works extend Squires Road from Broadway to Revere Street in the city of Revere. We have also in a special report recommended the construction by the Metropolitan District Commission of a connection in Medford across the Mystic River and the marshes of the Mystic River reservation from Harvard Street to Spring Street, provided the city of Medford will widen Harvard Street and Spring Street from Boston Avenue to the Fellsway. With these two improvements made there will be a through way from Revere Beach to the center of Medford, via Revere Street, Squires Road, Eastern Avenue, Madison Street, Medford Street in Malden, and Central Street in Medford, and to Somerville via the suggested Mystic River connection. However, to make such a route entirely effective, it will be necessary for the city of Malden to widen and repave parts of Eastern Avenue, as suggested in our report of last year, otherwise such traffic will perform be routed via Salem Street and Malden Square, already busy localities.

Recent Highway Improvements

It is most gratifying to note the very substantial progress which is being made in improving the highway and parkway system of the Metropolitan District. Part of this work is being done by the Department of Public Works, part by the Metropolitan District Commission, and part by the cities and towns; and there is gradually evolving a network of excellent through streets which we believe will adequately serve the public. Among the most important of these recent improvements completed or authorized in the outlying districts are:

- (a) The widening of Broadway, by the Department of Public Works, across the Saugus marshes to Lynn. We are glad to note that the city of Lynn is repaving portions of Western Avenue, which is a continuation of Broadway, thus effecting an excellent through route to Salem and the North Shore.
- (b) The widening and improvement, by the Department of Public Works, of the main road from Quincy to Nantasket Beach.
- (c) The Northern Traffic Artery now under construction by the Metropolitan District Commission. This should be open to service by the first of the year; and will furnish much needed relief to traffic passing from Boston to the Middlesex Fells, the Revere parkways and beyond.
- (d) The Southern Artery, the contract for which we understand will be let by the Department of Public Works before the first of the year. It is hoped that it will be open for service throughout its length by January, 1928.
- (e) The Old Colony Boulevard extending from the Neponset Bridge to Columbia Road. The Metropolitan District Commission hopes to have this completed during the coming calendar year.

- (f) The extension of the West Roxbury Parkway, which has just been opened to service from Weld Street to Newton Street.
- (g) The widening and improvement by the city of Boston of Morton Street from Forest Hills to Blue Hill Avenue and from Norfolk Street to Washington Street. This will become a still more important route upon the completion of the Southern Artery.
- (h) The widening of the Quincy Shore Driveway along Wollaston Beach will be greatly appreciated by many thousands of people, not only for reaching a popular bathing beach but also as an essential adjunct to both the Southern Artery and the Old Colony Boulevard.
- (i) The repaving of a through route from Arlington Center to Waltham through the towns of Arlington, Belmont, Waverley and Waltham. This work was done by the towns themselves, aided along Pleasant Street in Arlington and Belmont by the replacement of pavement occasioned by the laying of a metropolitan water main.
- (j) The repaving of Common Street by Watertown and Belmont, and the important improvements being made in Watertown Square.
- (k) The widening and repaving of Oakland and Ashland streets from Matapan to West Roxbury. The city of Boston was authorized to do this work by last year's legislature. It will be an important route when completed.
- (l) In the central district of Boston we note in the last few years such important street improvements as the widening and extension of Stuart Street, Kneeland Street, Tremont Street, Cambridge Street, Charles Street, Broadway and Dock Square. All of these afford great relief to traffic conditions in the Downtown District, but there still remains unsolved the location of an important circumferential way such as was proposed by the Special Commission under the general name of the "Intermediate Thoroughfare."

Intersections

Our studies of street congestion lead us to believe that one of the most important future problems to be undertaken is the study of the elimination of intersections by putting one street under or over the other at points of special congestion. New York led the way in this work by the Park Avenue overpass above 42nd Street. Chicago followed suit when it carried Michigan Avenue over the intersecting streets near the Chicago River, and more recently when it constructed a two-deck street parallel to the south bank of the river. We have recently made a study of an overpass from Commonwealth Avenue to Beacon Street, to relieve the congestion of Governor Square. We also believe in the practicability of an underpass of Commonwealth Avenue under Massachusetts Avenue, and of the Cambridge Memorial Drive under that same street. We are also very glad to know that the Metropolitan District Commission, in their plans for the Cottage Farm Bridge, have provided for the future construction of an overpass above Commonwealth Avenue.

The Boston City Planning Board is now making studies for the relief of congestion at the junction of Cambridge and Charles streets. With the widening of Cambridge Street this has become one of the worst intersections in the city, and the value of that improved street would be much increased by remedying the difficulty at this crossing.

City Problems

The parking problem still continues to be one of the most important and difficult problems connected with our city streets. During the last three months the Police Commissioner of Boston, with the added police force now available, has conducted an active campaign against illegal parking, and has very substantially improved conditions in that city, but the problem is still far from solved:

We are of the opinion that the time has not yet come when automobiles should

be excluded from the business section of Boston, and we doubt whether that time ever does come. Nor do we believe it is desirable to entirely prohibit parking in the downtown section, but we do feel that very substantial relief could be afforded by increasing the number of through streets upon which parking is entirely prohibited. Such action has already been taken on many streets like Washington Street and a large portion of Tremont Street, and we believe the principle should be extended to other streets like Devonshire, Congress, Federal, and other ways that are distinctly through streets.

The parking problem is not confined to cities like Boston. It is an increasingly live and vital issue in all except the smallest communities.

In many western cities the use of the automatic electric signal light, together with the boulevard stop, is working successfully, and we should like to see an experiment of this type tried on some street like Commonwealth Avenue. We see no reason why it should not be as effective in Boston as in Cleveland, Detroit and Chicago. Experiments along these lines are already being made in some of the suburban municipalities. We are informed that the city of Lynn has installed such a system on Western Avenue, which is working admirably in allowing freer movement of traffic and has reduced the number of traffic officers.

We have noted with much interest and satisfaction the increase in the number of high-grade garages already completed or now under construction or contemplation, and we look forward to the time when large numbers of people who daily use their automobiles will have garage space in town as well as at their homes. Again many western cities have led the way in leasing for \$100 per year the annual right to store a car in a city garage. Experience is continually pointing the way to many improvements in traffic regulation and traffic handling, and despite the enormous increase in the number of cars in the last three or four years, we doubt whether actual congestion is more serious today than three or four years ago. Rigid enforcement of carefully drawn ordinances and sympathetic enforcement by the courts will do much to solve the street traffic problems of our great cities.

CHANGE IN PERSONNEL OF DIVISION

Owing to the resignation of Mr. Francis E. Slattery as Commissioner of the Transit Department of the City of Boston to accept an appointment as Chairman of the Board of School House Commissioners of the City of Boston, he was ineligible to serve longer as a member of this Division. He was a member of the Division from its organization in 1923, and the commissioners who were associated with him desire to record their appreciation of his helpful and constructive assistance in the numerous problems before the commission and of his interest in the work.

Mr. Slattery's successor in the Transit Department is Mr. James B. Noyes, who, under date of July 9, 1926, was designated by the chairman of the Transit Department to fill the vacancy in this Division.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING.

HENRY I. HARRIMAN, *Chairman.*

A. C. RATSHESKY.

RALPH S. BAUER.

RICHARD K. HALE.

EVERETT E. STONE.

FRANK G. HALL.

JAMES B. NOYES.

The Commonwealth of Massachusetts

x 6457.35

ANNUAL REPORT

OF THE

DIVISION OF METROPOLITAN
PLANNING

FOR THE

YEAR ENDING NOVEMBER 30, 1927



MAY 15 1925

The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
44 School Street, Boston, November 30, 1927.

To the Honorable Senate and House of Representatives in General Court Assembled.

This Division herewith respectfully submits its annual report for the year ending November 30, 1927.

The year has witnessed most gratifying progress in the construction and improvement of important thoroughfares in the Metropolitan District, this work being carried on in part by the Metropolitan District Commission, in part by the Department of Public Works, and in part by the cities and towns of the District.

The Northern and Southern Arteries are now completed and open to traffic and the wisdom of their construction is demonstrated by the extent to which they are used, the Northern Artery now carrying the heaviest traffic of any street entering the downtown section of the Metropolitan District. The only authorized projects remaining uncompleted are the Old Colony Boulevard and the Cottage Farm Bridge, both of which it is expected will be finished and open for traffic by July 1 next.

The completion of the Old Colony Boulevard draws attention to the need for the widening of Dorchester Avenue from Old Colony Avenue to the Fort Point Channel in order that it may properly carry the heavy traffic which will come to it with the opening of the new boulevard.

The completion of the Cottage Farm bridge also emphasizes the great need of an adequate connection between the Boston end of this bridge and the Riverway and its continuation, the Jamaicaway. There are two possible connecting routes, one leading along the line of Essex Street to Beacon Street and thence over private property and public ways to the Longwood Avenue Bridge over the Boston & Albany Railroad, the other bending easterly over private property from the Boston end of the Cottage Farm bridge to the junction of Mountfort Street and Carleton Street in Brookline, and thence following Mountfort Street to Audubon Road, and Audubon Road to a point south of the Boston & Albany tracks and thence by a new short section of parkway to the Riverway. The latter route appeals to us as the more desirable.

We present no bills dealing with these extensions, believing that any necessary legislation should be presented by the local authorities. We believe that if a new roadway is constructed from the end of the Cottage Farm bridge to Carleton Street, it should be of sufficient width to provide for a ramp of an overpass over Commonwealth Avenue, which will undoubtedly be needed in the near future. We also think it might well be argued that the new roadway extending from the bridge to Carleton Street can properly be considered an approach to the bridge.

The cities and towns of the district, both with and without the aid of the Department of Public Works, have undertaken and completed during the current year many important projects. Boston has been particularly active in street improvement. The Dock Square improvement has been finished; the widening of Kneeland Street is nearly done; the widening of Oakland and Ashland Streets, the widening and extension of Morton Street to Washington Street near the Lower Mills, and the improvement of River Street in the Hyde Park district are also under way. We also note the very important improvements carried out by the Boston Park Department, particularly in the Fenway District.

Undoubtedly one of the most important and far-reaching street improvements that has been undertaken by the city of Boston for many years is the extension of the Northern Artery from the Boston end of the dam along

Nashua Street to Causeway Street and the widening of Causeway Street to Beverly Street. This improvement has recently been ordered by the mayor in accordance with the provisions of a bill introduced by this Division at the last session of the Legislature. Not only is it important as a highway project, but it makes possible the entire reconstruction of the North Station with the group of correlated buildings planned by that corporation, work upon which is actually started.

Other cities and towns have been equally active in street improvements. Lynn has repaved Western Avenue from the Saugus River to a point near the Common, rebuilt both streets along the Common and has carried out other extensive street improvements in the downtown district amounting to \$400,000 total cost. Cambridge has started the widening of Broadway to Mechanic Square and has done extensive repaving on Cambridge Street, Broadway, and other important thoroughfares. Somerville has repaved Highland Avenue for its entire length. Medford and Malden are improving Middlesex Avenue and Highland Street. In fact, all of the cities and towns of the district have shown commendable activity in the improvement of their main thoroughfares..

We think it most important that the missing links of the Metropolitan Parks system be completed at an early date. The metropolitan parkways are among the most important vehicular thoroughfares of the district. Many of them, however, are not used to their best capacity because of certain missing links.

Accordingly, we recommend this year the following parkway projects:

MISSING LINK PARKWAYS

First—The extension of Bay State Road under the Cottage Farm Bridge and along the banks of the Charles River to Western Avenue.

This will give a continuous way along the river from Bay State Road to the Arsenal Bridge. The estimated cost of the completion of this parkway is \$250,000. As this item is included in the budget of the Metropolitan District Commission, we do not present any bill for its construction.

Second—The extension of Alewife Brook Parkway from the present terminus of that parkway at Massachusetts Avenue southerly to the northerly end of Fresh Pond Parkway.

This extension has been twice recommended by this Division and is believed to be a most important and much needed link in the parkway system. This matter was referred by the last Legislature to the Department of Public Works for investigation and report. We await with much interest their report and trust their views will coincide with ours.

Third—Two sections of parkway needed to connect the Newburyport Turnpike in Saugus with the Northern Artery.

The two missing sections are (a) the extension of the Lynn Fells Parkway over property recently acquired by the Commonwealth from the easterly end of the parkway in Melrose to the Turnpike; and (b) a short section across the Middlesex Fells Reservation sometimes known as Jerry Jingle Parkway connecting Washington Street in Melrose with the northerly end of the Fellsway East.

As a substitute for this section (b) it is possible to construct a parkway through the Middlesex Fells from a point on the Lynn Fells Parkway near the Melrose-Stoneham boundary to a point on the parkway in the Fells known as Woodland Road. The choice between these two routes will rest largely upon the detail surveys. We are inclined to prefer the so-called Jerry Jingle route as better dividing traffic.

The proposed parkway will also greatly relieve traffic from Wakefield and Melrose, which now must pass through the thickly settled section of Malden to reach Boston. The estimated cost of these two pieces of parkway is \$450,000.

Fourth—The construction of a short parkway between the present terminus of the Neponset River Parkway at the Neponset River and Hyde

Park Avenue and the resurfacing and improvement of a short section of the Neponset River Parkway extension along Regent Street.

The completion of these two sections of parkway will provide a continuous parkway from the Blue Hills Reservation through the Stony Brook Reservation and along the West Roxbury Parkway to a connection through existing streets to Commonwealth Avenue in Newton. The estimated cost of this work is \$150,000. A bill providing for the construction of three of the parkway sections above described accompanies this report.

TRAFFIC WAYS

In addition to the parkway sections above outlined, we recommend the construction by the Department of Public Works under the provisions of chapter 90, but with certain aid from the Metropolitan District, of the following streets:

First—A street from South Braintree through South Weymouth to the main state road leading to Plymouth. This is really the continuation of the important road south of Blue Hills, which has been jointly constructed during the present year by the Department of Public Works and the Metropolitan District Commission.

Second—The extension of Squires Road from its present terminus at Broadway, Revere, to Revere Street near its junction with Hutchinson Street. This will connect Squires Road, which was built at large expense by the Commonwealth some years ago, to Revere Beach.

Third—The resurfacing of Broadway in Malden. This street is really the southerly entrance of the Newburyport Turnpike into the Metropolitan District.

We recommend that the cost of the construction or improvement of these three streets be divided in four ways, between the city or town, the county, the highway fund and the district. They are all parts of through routes of moderate value to the city or town in which they are located, but of great value as through arteries, and we think that the division of cost above outlined, which is similar to the division of cost of the Southern Artery, is fair and represents the relative importance of the streets to the various parties in interest. A bill covering these recommendations accompanies this report.

The Department of Public Works, with the aid of this Division, has been studying a route east of Medford Square from the Fellsway West to Mystic Avenue and Main Street. We understand that the Department will recommend its construction. We think most highly of this route, but present no bill for its construction, as we understand that matter will be covered in the report of the Department of Public Works. If this route is constructed, Medford should be required to extend Central Avenue westerly from its terminus at Park Street to Salem Street.

During the year, the Division has caused to be made very extensive counts of vehicular traffic in all parts of the Metropolitan District, exclusive of Boston. This work has been largely done through the courteous co-operation of the governments of the various cities and towns and of the Metropolitan District Commission. These agencies have done the actual work of counting through their police departments, and the Division is greatly indebted to them for their assistance. This work has been conducted under the supervision of Mr. Robert Whitten, an experienced engineer in this class of work.

The Mayor's Street Traffic Survey, under the direction of Professor Miller McClintock, has done similar extensive work in Boston in consultation with the Boston City Planning Board and Mr. Whitten, also adviser for that Board. The Division and the Mayor's Street Traffic Survey have together made volume counts and intersection counts at some five hundred localities, and origin and destination counts at one hundred fifty-five places, each authority having about an equal number of counts made. The origin and destination counts entailed the stopping of about 185,000 vehicles and the ascertaining whence they came and whither they were going.

In addition to this work, counts were taken for the Division by the Department of Public Works at places where previous counts were taken three years ago, for comparative purposes. These counts indicated increases in traffic of one-third over three years ago, and in some places the traffic showed an increase of over 50 per cent.

During the year the Division has prepared a complete street plan of all of the cities and towns of the District, and this plan will soon be published in the form of a large map comprehensive of the entire district. This map has been greatly needed for proper studies of the highways of the district. With this map completed and with the data derived from Mr. Whitten's studies of vehicular traffic movements, the Division will, during the ensuing year, prepare a comprehensive thoroughfare plan for the district.

Our recommendations for work by the city of Boston are limited to two projects:

NEW HIGHWAY IN ALLSTON SECTION OF BRIGHTON

First—The extension of Harvard Avenue from its present northerly terminus at Cambridge Street across the tracks of the Boston and Albany Railroad and over public ways and private property to North Harvard Street near Western Avenue and thence along North Harvard Street to the Charles River.

Our vehicular counts show that there is great need for this important crosstown thoroughfare. There is now no adequate crosstown street west of the Harvard Bridge, and the completion of the extension above described will give a through way from Harvard Square and the Charles River through Coolidge Corner to Brookline Village and the Jamaicaaway leading south. The estimated cost of this extension is \$750,000.

AERIAL HIGHWAY FROM NORTH END TO COTTAGE FARM

Second—The conversion of the elevated railway structure on Atlantic Avenue and Commercial Street into an elevated roadway with possible future extensions at either end.

This project was recommended by us last year. Figures furnished us by the Boston Elevated Railway show that the so-called Atlantic Avenue rapid transit division carries a relatively light traffic and is run at a heavy net loss. We accordingly recommend that the city of Boston purchase from the Elevated its elevated structures on Commercial Street, Atlantic Avenue, Beach Street, Harrison Avenue and Castle Street and convert the portion of those structures on Atlantic Avenue and Commercial Street into an elevated roadway which would start at the junction of Commercial Street and Washington Street, North, and extend over existing structures along Commercial Street and Atlantic Avenue to Beach Street, and thence by a new structure along Beach Street across the property of the Boston and Albany and the New York, New Haven and Hartford Railroads to or near the junction of Albany Street and Broadway, and thence over the railroad or an extended and widened Castle Street to a point beyond Harrison Avenue to be determined by the mayor.

The value of such an elevated roadway cannot in our opinion be overestimated. It would be a roadway with few if any intersections, and it is well known that such a roadway will carry from four to five times as much traffic as a surface roadway of the same width with the frequent interruptions of a surface street. We have prepared a general plan of this roadway with certain ramps and approaches indicated thereon. We appreciate, however, that detail study may make desirable changes in the suggested locations of such approaches.

We think it very desirable that this elevated roadway be extended beyond the junction of Broadway and Albany Street at least as far as Arlington Square. Arlington Square has many approaches from various sections of the city, and would be an excellent place for a terminal of the elevated road-

way, although we believe that at some time in the future it may well be extended even as far as the Cottage Farm Bridge. This elevated highway may also at some future date be extended from its northerly terminus on Commercial Street over the bridge and in the rear of the North Station to the Charles River Dam. We, of course, appreciate that the elevated roadway might end at the intersection of Broadway and Albany Street and a surface street be used from that point on, but its usefulness will be greater if it is extended to Harrison Avenue or Arlington Square.

The project for the conversion of the Atlantic Avenue elevated road from a rapid transit route to a thoroughfare serves the double purpose of effecting a saving to the Elevated and furnishing at a relatively low cost an important traffic thoroughfare. Our studies would further indicate that a bus line operating over the elevated roadway from the North Station to the South Station will adequately and quickly care for the traffic between those two points.

The portions of our report dealing with the extension of Harvard Avenue and the conversion of the Atlantic Avenue elevated into an elevated roadway are recommendations both to the Legislature and to the city government of Boston. Without the approval of the mayor, we shall not press these matters before the Legislature. We accordingly earnestly hope that these two projects will be approved by the city government of Boston.

EXCISE TAX ON GASOLENE, ETC.

The Division has long felt that the present method of licensing cars was unsound and unscientific and has favored the imposition of a gasolene tax as the fairest method of providing a fund for the support of the highways, which in a large measure represented the wear which each car puts upon the highways.

The arguments for the gasolene tax have been so often stated that it is unnecessary to repeat them at this time. New York and Massachusetts are now the only states without such a tax, and we are informed that the Governor of New York will this year recommend a gasolene tax for that state. The universality of the tax must be some indication of its fairness.

Undoubtedly if a gasolene tax is imposed it would be wise to change the present registration fees. It has been suggested that a two-cent gasolene tax be imposed, plus a small registration fee, say three or five dollars, for all types of cars. We believe it would be fairer to grade motor vehicles into, say, three classes, to wit: a first class consisting of the light cars, a second class consisting of cars of medium weight, and a third class consisting of heavy commercial vehicles. We also advise the retention of a reduced license fee, based on seating capacity, for motor buses.

It is essential that the sum of the gasolene tax and the registration fees should at least equal the average amount now collected by the state per motor vehicle. To properly carry out the highway program of the state, including the aid which it is giving to city and town roads, it is necessary that the amount collected for motor vehicles should not be less than the amount now collected. It is further felt that the cities and towns of the state are now carrying a very heavy burden for the improvement of their own main highways and that it is reasonable that motor vehicles should make some additional contribution to aid in the construction of such main city and town thoroughfares.

A special gasolene tax of 1 cent per gallon for the benefit of the cities and towns would amount to about \$4.50 per vehicle, and would be a substantial contribution towards the construction of main city thoroughfares. Accordingly we would recommend that an extra gasolene tax of 1 cent be imposed for the benefit of cities and towns, this amount to be in addition to the 2 cents suggested for state thoroughfares.

We would suggest that this additional tax be deposited in a special fund to be known as "The City and Town Gasolene Fund," said fund to be expended under the direction of the Department of Public Works for the benefit of main city and town thoroughfares, the proportion of such fund allo-

cated to each city and town being based upon a ratio dependent upon both the population and the valuation of said city or town.

Summarizing, then, we would favor the reduction of the registration fees and the levying of a gasoline tax of 3 cents per gallon, 2 cents of which would go to the Highway Fund for general purposes and 1 cent to "The City and Town Gasolene Fund" for use on through ways in the cities and towns of the State. The principle governing the amount of the registration fee should be that the revenue from said fees plus a gasolene tax of 2 cents per gallon going to the Highway Fund should produce a per car revenue equal to the present revenue from the higher registration fees. We would suggest a fee of \$3 or \$4 per car for light vehicles, a fee of \$5 per car for heavy vehicles, and a fee on heavy trucks and buses equal to half of the present registration fees for such vehicles.

FUTURE METROPOLITAN RESERVATIONS

It has been suggested that the powers of this Division be extended to include studies of additional metropolitan parks and reservations. It is now over forty years since the existing Metropolitan Park System was laid out and acquired. In that time the population of the Metropolitan District has more than doubled. The value of the parks already acquired is acknowledged by everybody, and it is quite possible that the time has now come to consider whether, at a still further distance from the center, additional park areas should not be acquired. A bill thus amending the power of this Division accompanies this report.

BOSTON ELEVATED RAILWAY

The Legislature adopted an order on April 26, 1927, directing the Division, on receipt of the valuation of the property of the Boston Elevated Railway which the Department of Public Utilities had been requested to make, and of the answers of the Supreme Judicial Court to certain important questions submitted by both branches of the General Court in connection with pending legislation affecting the railway, to review the conclusions contained in its report on improved transportation facilities in the metropolitan district as submitted to the General Court in January, 1927, and to submit not later than December 1, 1927, such revised report and suggestions for legislation as it might deem desirable. The Division reviewed its report in accordance with this order.

METROPOLITAN AVENUE, BOSTON

Chapter 11 of the Resolves of 1927 provided that the Division investigate and report on the feasibility, desirability, and cost of construction of bridges and approaches over the Providence Division and the Midland Division of the New York, New Haven and Hartford Railroad on the line of Metropolitan Avenue in the Hyde Park District of Boston.

This report was prepared and transmitted to the Legislature as a special report on November 21, 1927.

THROUGH TROLLEY CAR SERVICE FROM BOSTON TO QUINCY AND FROM BOSTON TO CHELSEA AND REVERE

Chapter 13 of the Resolves of 1927 directed the Division to investigate and report as to the feasibility and desirability of through trolley car service over the rails of the Boston Elevated Railway Company and the Eastern Massachusetts Street Railway Company from Fields Corner in Boston to Quincy Square and from Maverick Square in East Boston to Winnissimet or Bellingham Squares in Chelsea and to Revere.

The Division made a special report in accordance with this resolve and filed the same with the clerk of the House of Representatives on November 25, 1927, and noted therein that through service had already been established on the Fields Corner-Quincy route by agreement between the two railway companies.

STONY BROOK PARKWAY EXTENSION

Chapter 18 of the Resolves of 1927 provided for an investigation and report by the Division relative to the construction of a parkway or boulevard from the Stony Brook Reservation to the Blue Hills Reservation following a route in the vicinity of West Glenwood Avenue in the Hyde Park District of Boston.

This report was prepared and filed, as directed, with the Clerk of the House of Representatives on November 21, 1927.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING

HENRY I. HARRIMAN, *Chairman.*

A. C. RATSHESKY.

RALPH S. BAUER.

RICHARD K. HALE.

EVERETT E. STONE.

FRANK G. HALL.

JAMES B. NOYES.

The Commonwealth of Massachusetts

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ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING
FOR THE
YEAR ENDING NOVEMBER 30, 1928



The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
44 SCHOOL STREET, BOSTON, NOVEMBER 30, 1928.

To the Honorable Senate and House of Representatives in General Court Assembled.

This Division respectfully submits its annual report for the year ending November 30, 1928.

Many important projects authorized in previous years have been completed and put in useful service. Probably the most important of these is the Old Colony Boulevard, first authorized by chapter 699 of the Acts of 1912, to extend from Columbus Park Circle at the end of Columbia Road southerly along the shores of Dorchester Bay to the Neponset Bridge. In connection with Dorchester Avenue and Old Colony Avenue, this boulevard forms a direct route from the vicinity of the south station to Quincy and other places along the south shore. Within a few days after its opening, it became one of the heavily used arteries of the Metropolitan District, and it is to be hoped that the city of Boston will in the near future widen Dorchester Avenue from the Fort Point Channel to Old Colony Avenue, thus completing the improvement of the route of which the Old Colony Boulevard is an important link.

The Cottage Farm Bridge has been completed and is carrying a heavy traffic. The 1928 session of the Legislature authorized the construction of an extension from the Commonwealth Avenue end of this bridge to Mountfort Street, and the town of Brookline is to widen Mountfort Street to St. Mary's Street, thus making a direct connection between the Cottage Farm Bridge, Audubon Circle and the Jamaica Plain Parkway. The Boston Park Department also has plans for the elimination of the grade crossing at the intersection of the parkway with Brookline Avenue and Audubon Road. These improvements will make a valuable connection between the highways on the north of the Charles River and the important routes leading to the south.

The most important highway link authorized by the Legislature of 1928 was the so-called Alewife Brook Parkway. This parkway in conjunction with the Fresh Pond Parkway will furnish a direct route from the Mystic River Valley to the valley of the Charles and will enable the traffic on upper Massachusetts Avenue to avoid Harvard Square and the congestion on lower Massachusetts Avenue. The Department of Public Works is preparing the plans and will let the contracts early in 1929.

The cities and towns in co-operation with the counties and the Department of Public Works have resurfaced important through routes. Among the most important of these is the resurfacing of Arsenal Street in Watertown and Main Street in Waltham. With this work completed and with the resurfacing by Boston of a portion of Western Avenue there will be an important automobile and trucking route from the heart of the metropolitan district to its western border.

We also note the completion of the resurfacing of Highland Avenue in Malden and Medford, thus creating a short and important route from the Middlesex Fells to the Northern Artery.

The Department of Public Works has completed the resurfacing of five miles of the Newburyport Turnpike and proposes to reconstruct another five miles during the year 1929. This makes even more necessary the resurfacing of Broadway, Malden, and a bill to that end will be introduced in the Legislature.

During the present year the Metropolitan District Commission has completed the Blue Hill River road south of the Blue Hills Reservation, thus making an excellent connection between Washington Street, Canton, and the Five Corners in Braintree. This makes most necessary the resurfacing of the so-called Braintree—Weymouth—Hingham route from Braintree to the main road leading to Plymouth and the south shore.

The Metropolitan District Commission has also completed an important cut-off in the Stony Brook Reservation and plans during 1929 to resurface Regent Street in the Hyde Park district.

The Division of Metropolitan Planning has submitted to the Budget Commissioner a request for funds to complete the Charles River boulevard extending from the end of Cottage Farm Bridge to Western Avenue; for the completion of the Lynn Fells Parkway and the connection to Woodland Road; for the completion of the so-called Braintree—Weymouth—Hingham road which has been before the Legislature for several years; for the repaving of Broadway in Malden, this street being in reality an extension of the Newburyport Turnpike; and for a short section of parkway in Readville to connect the Blue Hills and Stony Brook Reservations.

This Division has also submitted a special report and plan for the improvement of the roadway through Nantasket Beach.

The Division has assisted the recess commission which was appointed to study new rapid transit extensions. A proper solution of the elevated problem and the construction of routes 1 and 2 as laid out by this Division, which we understand will be recommended by the recess commission, are of vital importance to metropolitan Boston.

The Division is deeply interested in the enactment of legislation authorizing the construction of the East Boston Tunnel. It considers this project one of the most important which will come before the Legislature.

One of the most important park and parkway projects which will be presented to the Legislature is the plan for the improvement of the Charles River Basin, which will be presented by the Special Commission appointed to study needed improvements in that Basin. This Division is familiar with the work which will be recommended by the Special Commission and most heartily endorses it. The construction of the missing links in the parkway system along the Charles River together with projects recommended by this Division will go far towards completing the parkway plan for the metropolitan district.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING
HENRY I. HARRIMAN, *Chairman.*

A. C. RATSHESKY.

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The Commonwealth of Massachusetts

ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING
FOR THE
YEAR ENDING NOVEMBER 30, 1929



The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
88 BROAD STREET, BOSTON, JULY 1, 1930.

To the Honorable Senate and House of Representatives in General Court Assembled.

This Division respectfully submits its annual report for the year ending November 30, 1929 and also embodies in its report a statement of important legislation authorized by the 1930 session of the General Court, and a list of the more important projects to be undertaken by the various cities and towns of the Metropolitan District during the current year.

HIGHWAYS

For two years the Division has been working on plans for a comprehensive highway scheme for the Metropolitan district, the plans including the improvement of certain existing highways, the construction of certain missing links and new highways, and the separation of grades at numerous highway intersections where traffic is now greatly delayed. It is obvious that such a metropolitan plan must tie in with the numerous state highways that lead into the district in order properly to accommodate through traffic, and the Division has had the very valuable assistance of the commissioners and engineers of the Department of Public Works and of the Metropolitan District Commission.

As a preliminary to the laying out of a highway plan for the district, it was necessary to have counts made at numerous points in the district and to determine not only the number of vehicles passing the place where the count was taken but to determine the origin and destination of the vehicles. Counts were made at 773 locations, these being taken in the city of Boston by the Mayor's Street Traffic Advisory Board under the direction of Dr. Miller McClintock, by the Department of Public Works on certain state highways, by this Division at certain places and by the police officials of the various cities and towns of the district. The counts covered a period from 8 a.m. to 6 p.m. At 178 points origin and destination counts were also taken, cars being stopped by the officers who questioned drivers as to the point of starting and stopping of their trips. In all 188,000 drivers were questioned.

An analysis of the information thus obtained in the city of Boston was made by the Boston Planning Board and outside of the city by this Division, both analyses being under the charge of Mr. Robert Whitten, an expert on city planning. Numerous diagrams were prepared showing the volume of traffic moving from point to point and the capacity of highways required for the handling of the traffic at the time of the counts and thirty years later.

The Division will issue its comprehensive report during the year 1930. The program which will be submitted in its comprehensive report is large, but the problem is great and the Division is convinced that any piecemeal plan would be entirely inadequate and that the Metropolitan District must fairly and squarely face the problem of an adequate solution of its highway problems. The automobile has ceased to be used primarily for pleasure. It is essential to business and industry and present delays cause serious financial losses running into many millions of dollars annually.

The Division will include in its comprehensive report a study of the separation of grades at important highway junctions. Its studies thus far made clearly indicate that the capacity of many highways can be increased by at least fifty per cent by the separation of grades and the consequent elimination of delays at important intersections.

The specific projects recommended by the Division for the consideration of the Legislature of 1930 included the following:—

- (1) A state highway starting at the end of the Blue Hill River road south of Blue Hills and passing through parts of Canton, Westwood, Dedham, Needham, Newton and Wellesley to a point on Boylston Street (which will become the new Worcester Turnpike) near its crossing of

the Charles River. This circumferential highway will avoid congested centers in Dedham and Needham, will tie together most of the state roads to the west and south of Boston, and will go far to complete the so-called ten-mile radius circumferential highway around metropolitan Boston.

- (2) A highway from the intersection of Washington Street and the West Roxbury Parkway in the West Roxbury district to Blue Hill Avenue at its intersection with Canterbury Street.
- (3) A parkway to connect the Jamaica Plain Parkway with Spring Street at its crossing of the Charles River, thus giving an adequate approach for travel from Providence and the south.
- (4) A state highway for the relief of traffic on Massachusetts Avenue in Arlington and Lexington, involving the construction of a new highway to the north of Massachusetts Avenue and including also the improvement of parts of the Mystic Valley Parkway.
- (5) A by-pass for through traffic around the heart of Stoneham.
- (6) The land for a state highway along the Neponset River from Paul's Bridge to Mattapan, to be used in connection with a new state highway to Providence.
- (7) The land for a parkway leading from the end of Reedsdale Road in Milton to the Furnace Brook Parkway and Granite Ave.
- (8) Several overpasses and underpasses.

All of these projects were authorized by the Legislature except the one for the state highway in Arlington and Lexington, which was referred for further study to the Department of Public Works and the project for a by-pass around Stoneham. This was dropped because the state, the county and the town agreed upon a plan for repaving with concrete the main street of Stoneham and it was felt that this improvement would make unnecessary the construction of the by-pass.

An overpass carrying the Revere Beach Parkway over Broadway, Revere was authorized as was also a circle at the junction of the Revere Beach Parkway and the Middlesex Fells Parkway. Further land takings were authorized at the Cambridge end of the Larz Anderson Bridge, which can be used either for an underpass or a circle as further study may warrant.

An appropriation was also made for the widening and improvement of Forest Street in the Middlesex Fells, this road being a part of the main state highway to Lawrence.

Appropriations were also made to complete certain highway work authorized by the Legislature of 1929 for which only partial appropriations had been made.

The large highway appropriations made, on the recommendations of this Division, both in 1929 and 1930, go far toward carrying out the ultimate main highway plan for the district. The success of the Division's program can be largely attributed to the full discussions had with the Department of Public Works, the Metropolitan District Commission and the various cities and towns in which the projects are located.

Heretofore the cost of metropolitan highway projects that were not state highways or parkways has usually been divided twenty-five per cent each to the state, the county, the district and the city or town in which the project was located. This year the Legislature adopted a policy of placing substantially fifty per cent of the cost upon the Highway Fund, thus lessening the burden upon both the district and the city or town.

Much important highway work authorized in preceding years has, during the past year, been completed and placed in use. Among such projects may be mentioned

- (1) The portion of the Newburyport Turnpike in the city of Malden;
- (2) The Alewife Brook Parkway connecting Massachusetts Avenue with the Fresh Pond Parkway;
- (3) The important highway connecting the Blue Hill River Road with the State Highway to Plymouth in the towns of Braintree, Weymouth and Hingham;
- (4) The extension of the Lynn Fells Parkway to the Newburyport Turnpike;

- (5) The Charles River Parkway running from Western Avenue along the Boston bank of the Charles River to the westerly end of Bay State Road.

In addition to specific highway work authorized by legislative enactment, much important resurfacing and improvement of highways in the district is being carried on either as state highways or under the provisions of Chapter 90. Among such projects may be mentioned the following:

Pleasant St., Canton; Washington St., Dedham; a new bridge over the Charles River between Dover and Dedham; Main St., Weymouth and Hingham; Massachusetts Ave., Lexington; Randolph Ave. in Milton and Quincy; Salem St. in Reading and Stoneham; Woodbury Ave. in Saugus; Belmont St. in Watertown; the main state highway to Natick in Wellesley; a bridge over the Boston and Maine Railroad at Stony Brook in Weston; South Avenue in Weston; Summer St. in Westwood; and Wyman St. in Woburn.

The various cities and towns of the district are also carrying on extensive and important highway work on main thoroughfares. By special act of the Legislature the city of Boston will soon widen and reconstruct Summer Street and L Street in South Boston. Other important resurfacings and improvements in Boston include Boylston Street between Charles Street and Berkeley Street; Boylston Street between Tremont and Washington Streets; Washington Street between Boylston and Stuart Streets; Bunker Hill Street, Charlestown between Main Street and Chelsea Street; Columbus Ave., Roxbury from Northampton Street to Roxbury Crossing; Massachusetts Avenue from Southampton Street to Edward Everett Square; Massachusetts Ave. from Columbus Ave. to Huntington Ave.; River St., Dorchester from Mattapan Square to Duxbury Road; Blue Hill Ave. from Washington St. to Talbot Avenue; Cummins Highway, Dorchester from Richmond Street to River Street; Ipswich Street from the Muddy River to VanNess Street; Franklin Street from Washington Street to Federal Street; Green Street from Bowdoin Square to Chambers Street; Chambers Street for its entire length; South Street in the West Roxbury District; Granite Avenue from the Southern Artery to the bridge; parts of Centre Street, Dorchester; Warren Street in the Brighton District; parts of Albany Street; parts of Belgrade Ave.; and preliminary work on upper Beacon Street, Bay State Road and North Harvard Street.

Important resurfacings and improvements in cities and towns outside of Boston include the following:

- Belmont—Beacon St., northerly road from Corey Road to Ayer Road; Hammond St. from Boylston St. to Newton St.; Boylston St. from Reservoir Rd. west; Newton St. from Hammond St. to South St.;
- Cambridge—Important parts of the following streets—Massachusetts Ave., Cambridge St., Central St., Prospect St., Webster Ave. and Vassar St.;
- Everett—Broadway between Glendale Square and Summit Ave. and between Bowes St. and Dane St.;
- Lexington—Massachusetts Ave. from Marrett Street to Lincoln Street; Woburn Street from Utica St. to Massachusetts Ave.; Concord Ave.;
- Lynn—Western Ave. from Market St. to Franklin St.; Lynnfield St. from Great Woods Road to the Lynnfield line;
- Malden—Exchange St. and Cross St.;
- Medford—High Street to Playstead Road;
- Needham—Parts of Webster Street;
- Newton—Traffic is to be divided on Commonwealth Ave. from the top of the hill west of Lake St. to Norumbega, out-bound traffic using the northerly road and in-bound traffic the southerly road. This is an important highway change which will require extensive resurfacing. Newton is also to repave parts of Centre St., Washington St. and Beacon St.;
- Quincy—Sea Street from the Southern Artery to Hough's Neck and Washington Street from City Square to the Southern Artery;
- Somerville—Beacon St. for its entire length; Elm St. for its entire length; parts of Davis Square; section of Powder House Boulevard and section of Broadway. All these are particularly important as parts of important through ways;
- Stoneham—Main St. for its entire length;

Stoughton—Parts of Washington St. and parts of Canton St. ;
 Waltham—Moody St. from Central Square to Taylor St. and part of Beaver
 St. and Warren St. ;
 Watertown—Parts of Mt. Auburn St., Belmont St. and North Beacon St. ;
 Wellesley—Parts of Washington St. ; Central St. ; and Weston Road ;
 Winchester—Parts of Wildwood St. ; Main St. ; and Highland Ave. ;
 Woburn—Parts of Wyman St. and Main St.

RAPID TRANSIT

By chapter 394 of the Acts of 1930, the Legislature modified the provisions of chapter 341 of the Acts of 1925 providing for alterations in, and extensions to, the Boylston Street subway at Governor Square, with exits on Commonwealth Avenue and Beacon Street.

Work upon the Governor Square extension will undoubtedly be under way within a few weeks.

The Trustees of the Elevated have accepted the provisions of chapter 444 of the Acts of 1924 providing for the construction of a station on the Cambridge subway at the intersection of Charles and Cambridge Streets. This station will be of great convenience to patrons of the Massachusetts General Hospital, to the residents of Beacon Hill, and to the increasing numbers who will use the improved and enlarged park along the banks of the Charles River.

EAST BOSTON TUNNEL

The Legislature of 1929 by chapter 297 authorized the construction of the East Boston Tunnel at an estimated cost of \$16,000,000. Mayor Nichols requested this Division and the City Planning Board to join with the Boston Transit Department in advising him as to the location of the tunnel.

Early in 1930 Mayor Curley determined upon the location and ordered the immediate construction of the tunnel. In his approval of the location he stated his intention to follow the recommendations of the two Planning Boards for the construction of a new highway along the general line of Cross Street, leading from Haymarket Square by the entrance of the tunnel to Atlantic Avenue. In approving the location of the tunnel, he also authorized the widening of North Street from the tunnel plaza to Dock Square and the widening of Porter Street in East Boston.

This Division has prepared a plan for a highway leading from the East Boston entrance of the tunnel northerly to connect with the three main highways to the north, to wit, the shore road, Broadway and the Newburyport Turnpike. This highway will undoubtedly when constructed be built as a state highway and the general plans prepared by the Division have been approved by the Department of Public Works.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING

CHARLES R. GOW, *Chairman*

FREDERIC H. FAY
 RICHARD K. HALE
 EVERETT E. STONE
 FRANK A. BAYRD
 JAMES B. NOYES

The Commonwealth of Massachusetts

*6457.35

ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING

FOR THE
YEAR ENDING NOVEMBER 30, 1930.



The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
20 SOMERSET STREET, BOSTON, JULY 1, 1931.

To the Honorable Senate and House of Representatives in General Court Assembled.

This Division respectfully submits its annual report for the year ending November 30, 1930 and also embodies in its report a statement of important legislation authorized by the 1931 session of the General Court, together with a list of the more important projects to be undertaken by the various cities and towns of the Metropolitan District during the current year.

HIGHWAYS

The Division of Metropolitan Planning is still working on its comprehensive highway plan for the Metropolitan District. Many studies have been made during the year and it is expected that during 1931 this general highway plan will be substantially completed. It is hoped that this plan will be the basis of future highway legislation and construction in the Metropolitan District.

The 1931 session of the Legislature enacted important highway legislation for the metropolitan area. Among the important acts affecting highways are:—

Chapter 2.—Modifying the provisions of the act providing for the reconstruction and widening of Centre St. by the city of Boston.

Chapter 149.—Providing for the construction of a State Highway by the Department of Public Works in Hull and Hingham by passing the heavy traffic at Nantasket Beach and at the same time improving the vehicular approach to the beach.

Chapter 122.—Providing for an increase gas tax to enlarge the funds available for the state highway program in the Commonwealth.

Chapter 422.—Providing for the construction by the city of Boston of a strandway along the E. Boston waterfront.

Chapter 445.—Authorizing the Department of Public Works to construct a state highway in Revere which will ultimately become a part of the new state highway to accommodate E. Boston Tunnel traffic and permit it to reach the three main arteries to the north without passing through congested districts. The Act also provides for some important construction local to Revere Beach.

Chapter 450.—This is the blanket Metropolitan Highway bill of the year. It authorizes numerous projects, to wit,—

- (a) An extension of the Revere Beach Parkway from the Fellsway in Medford to Mystic Ave.
- (b) A widening and improvement of the Alewife Brook Parkway in the city of Cambridge.
- (c) The construction of a new bridge at the end of East Milton St. in the Readville District.
- (d) The construction of the Hammond Woods Parkway in Brookline and Newton.
- (e) The resurfacing of Reedsdale Road and Brook Road in the town of Milton.

The Department of Public Works was also instructed in this act to make plans for a grade separation at the intersection of the Riverway and Huntington Ave. in Boston.

Chapter 454.—Amends the Highway Act of 1930 chiefly in increasing the appropriation for the circumferential highway and for the important parkway that will start on Centre Street and end at the Charles River in the West Roxbury section. It also provides for certain amendments to the Canterbury Boulevard with studies of its extension to Washington St. and to the new Providence highway.

RAPID TRANSIT

Chapter 333 provides for an extension of the operation of the Boston Elevated Railway by the Public Trustees for an additional period of twenty-five years and, by a readjustment of its capital structure, effects savings in excess of one million dollars. This is an extremely important matter which has been before the Legislature in various forms for the last six years.

Work is well advanced on the extension of the Boylston Street Subway under Governor Square. During the year it was decided to extend the subway out Beacon Street to a point beyond Audubon Circle. This extension should be completed within two years, possibly in less time.

EAST BOSTON TUNNEL

The Transit Department of the city of Boston has during the present year let contracts for the construction of the major portion of the East Boston Tunnel and has taken the necessary lands for the Tunnel, for the widening of North Street and of Cross Street in Boston and for the widening of Porter Street in East Boston. The Tunnel is going to be one of the great arteries of travel into and out of Boston. It is of the utmost importance however that proper approaches be built both in Boston and East Boston, the approach in Boston including as a minimum the widening and extension of Cross Street between Haymarket Square and Atlantic Ave. and the approach in East Boston and points north of there including a state highway which will connect Day Square with the North Shore road, Broadway and the Newburyport Turnpike. An important start has already been made on this highway in the enactment of chapter 445.

LOCAL HIGHWAY IMPROVEMENTS

Under the provisions of chapter 90, the State is reconstructing and improving in conjunction with the cities and towns the following highways:

Arlington	-----	Massachusetts Ave.	Needham	-----	Great Plain Ave.
Canton	-----	Pleasant Street	Norwood	-----	Winter Street
		Chapman Street	Reading	-----	Salem Street
Dedham	-----	Westfield Street	Saugus	-----	Main and Howard Streets
Hingham	-----	Main Street	Stoneham	-----	Maple Street
		Short Street	Stoughton	-----	Central Street
		Leavitt Street			Pearl Street
		East Street			Pleasant Street
Hull-Hingham		Nantasket Road (about 2	Westwood	-----	Turnpike Street
		miles)			Summer Street
Lexington	---	Massachusetts Ave.			Westfield Street
Lynn	-----	Walnut Street	Winchester	---	High Street
Malden	-----	Eastern Avenue	Woburn	-----	Main Street
Milton	-----	Randolph Ave.			

In addition the various cities and towns are themselves carrying forward an important resurfacing program which includes many through ways.

RESOLVES

Chapter 37 of the Resolves of 1931 provides for an investigation by the Division of Metropolitan Planning regarding the advisability of extending the Cambridge Subway to Arlington and also extending rapid transit from Lechmere Square to Davis Square in Somerville.

FINANCES

Appropriation for the Division for 1931	\$31,500.00
Expenditures	22,602.39
Unexpended balance	\$ 8,897.61

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING

By CHARLES R. GOW, *Chairman*
FREDERIC H. FAY
WILSON MARSH
RICHARD K. HALE

EVERETT E. STONE
FRANK A. BAYRD
ARTHUR B. CORBETT
HENRY I. HARRIMAN, *Director*

The Commonwealth of Massachusetts

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ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING
FOR THE
YEAR ENDING NOVEMBER 30, 1931.



The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
20 SOMERSET STREET, BOSTON, JULY 1, 1932.

To the Honorable Senate and House of Representatives in General Court Assembled.

This Division respectfully submits its Annual Report for the year ending November 30, 1931 and also embodies in its report a statement of important legislation authorized by the 1932 session of the General Court, together with a list of the more important projects now under way in the various cities and towns of the Metropolitan District.

HIGHWAYS

Owing to the serious financial situation, comparatively little highway legislation was enacted by the General Court of 1932. Several matters were, however, authorized of distinct importance.

Chapter 302 provides for the laying out and constructing of a state highway extending from the Alewife Brook Parkway in the City of Cambridge westerly through this city and the towns of Arlington, Belmont, Lexington, Lincoln and Concord. This highway when constructed will be the eastern end of the Mohawk Trail. Much of this highway has already been constructed and when completed it will run from the Alewife Brook Parkway in the Metropolitan District to the New York State line; avoiding nearly all of the important centers of population such as Concord, Ayer, Leominster, Fitchburg, and Greenfield and forming one of the very important east and west routes across the state.

Chapter 285 will expedite the construction of the Worcester Turnpike. The street railway tracks will be eliminated and the new Worcester Turnpike will run from Brookline Village to Worcester, connecting easterly of Worcester with the important circumferential route around the city.

Chapter 241 provides for the construction of a new bridge over the Saugus River between the Point of Pines and the City of Lynn. This is a much needed structure.

Chapter 287 provides for the construction of a new street from the westerly entrance of the East Boston Vehicular Tunnel through Haymarket Square to the junction of Merrimac and Portland Street. It will form a very important outlet for tunnel traffic and will include a large circle in Haymarket Square itself.

Chapter 301 provides for certain changes and extensions in the Hammond Woods Parkway.

The Division is continuing its studies of both radial and circumferential routes in the Metropolitan District and will have important suggestions to make when funds are properly available for their construction.

RAPID TRANSIT

Chapter 306 authorizes the City of Boston to construct a subway from Park Street under the Common and along Columbus Avenue, Stuart Street and Huntington Avenue to a point westerly of Gainsboro Street. This work will be started by the Transit Department in the near future and will form an important link in through route No. 1, suggested by this Division.

Chapter 299 provides for the purchase by the Boston Elevated Railway Company of the property of the Eastern Massachusetts Street Railway Company in Revere, Chelsea, Everett, Malden and Boston. This is another step toward the improvement and unification of transportation service in the Boston Metropolitan District.

The new subway under and in the vicinity of Governor Square will be completed during the present year, in six months less time than estimated and at a substantial saving in cost. It will be an important link in the transportation system of the Elevated Road.

EAST BOSTON TUNNEL

The Boston Transit Department is making rapid progress in this major project and it is expected that the Tunnel will be opened to traffic within 12 months.

LOCAL HIGHWAY IMPROVEMENTS

Under the provisions of Chapter 90, the State is reconstructing and improving in conjunction with the cities and towns the following highways in the Metropolitan District:

ARLINGTON, Massachusetts Avenue . . .	\$ 45,000	Between Menotomy Road and Winter Street.
BELMONT, Mill Street	54,000	From Trapelo Road to Concord Avenue.
MALDEN, Eastern Avenue	80,000	Continuation of 1931 work.
NEWTON, Washington Street	223,000	From West Newton Railroad Bridge to Peabody Street.
READING, Reading Square	21,000	40' Roadway through Square.
STONEHAM, Maple Street	14,400	Continuation of 1931 work.

In addition, the various cities and towns are themselves carrying forward an important resurfacing program, which includes many through ways.

FINANCES

Appropriation for the Division for 1931	\$23,235.99
Expenditures	21,927.72
Unexpended Balance	\$ 1,308.27

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING

By CHARLES R. GOW, *Chairman*
 FREDERIC H. FAY
 WILSON MARSH
 RICHARD K. HALE

EVERETT E. STONE
 ARTHUR B. CORBETT
 WILLIAM F. ROGERS
 HENRY I. HARRIMAN, *Director*

* 6457.35

The Commonwealth of Massachusetts

ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING
FOR THE
YEAR ENDING NOVEMBER 30, 1932.



The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
20 SOMERSET STREET, BOSTON, NOVEMBER 30, 1932.

To the Honorable Senate and House of Representatives in General Court Assembled:

This Division herewith respectfully submits its annual report for the year ending November 30, 1932.

This year has witnessed gratifying progress in the construction and improvement of important thoroughfares in the Metropolitan District, both on the part of the Metropolitan District Commission and the Department of Public Works, and also to some extent by the cities and towns of the District. The following projects are of particular importance:

1. The Circumferential route from Hingham on the south via the Braintree, Weymouth, Hingham cut-off to Braintree, thence via the Blue Hill River Road to Washington Street in Canton and thence over the recently opened route through Westwood, Dedham and Needham to intersect the Worcester Turnpike in Wellesley. This is proving of great value to the District and is already carrying a heavy traffic.

2. The Worcester Turnpike is completed from Worcester to the Natick line. This is an excellent piece of work, thoroughly modern and an example to be followed in much future highway work throughout the State. The same type of construction will be followed through Wellesley and Newton and should be completed to the Brookline line by the summer of 1933.

3. The Canterbury Highway. This has been completed and opened for traffic from Blue Hill Avenue to the Cummins Highway in the Hyde Park section. It will not carry its full traffic or realize its full value until it is extended to Washington St. in accordance with the original plan and also perhaps southerly to the Neponset River.

4. The Brook Farm Parkway from the West Roxbury Parkway to Spring Street at the Charles River near the Dedham line. This parkway is completed and only needs the short section to be built by the city of Boston from the West Roxbury Parkway to Center Street near Walter Street to be a valuable addition to the parkway projects of the District. It is hoped that this may be extended through Caledonia Grove to Route No. 1. in Dedham.

5. The Hammond Pond Parkway. This has been completed from the circle at Newton and Hammond Streets and the West Roxbury Parkway to within a short distance of Boylston St. and the extension to Beacon Street will be completed probably by the Fall of 1933.

6. The Revere Beach Parkway Extension from the Circle at the Fellsway westerly to Mystic Avenue. This is under construction and will require the removal of peat and its replacement by gravel fill. When it will be ready for use will depend upon the decision on the type and size of drawbridge that must be built across the Mystic River.

7. The underpass carrying Memorial Drive under Massachusetts Avenue in Cambridge. This is completed and has changed that heavily congested point to one where traffic is able to move with speed and efficiency.

8. Paul's Bridge at the intersection of Neponset River Parkway and Brush Hill Road in the Hyde Park District. Bids have been opened for the reconstruction of this bridge.

9. The Charles River Basin improvement. This work is proceeding satisfactorily and it will ultimately be of great benefit to the city of Boston.

10. The extension of Soldiers Field Road in the Brighton District across Weston Avenue to North Beacon Street. This project will be advertised for bids within a month and it will shortly be under construction. It is a desirable and necessary route and will connect the Soldiers Field Parkway with Nonantum Road leading toward Newton, making what will be practically a continuous parkway all along the southerly side of the Charles River from Bay State Road in Boston to Watertown. It should be open for traffic in the summer of 1933.

11. Nantasket cut-off. This is a new highway from Rockland Street in Hingham to Nantasket Avenue in Hull and is a great aid to the heavy Nantasket Beach traffic. The Nantasket Beach road has also been resurfaced.

12. The Roosevelt Circle. This is the circle at the intersection of Forest Street and the Fellsway which is nearing completion. It will prove an attractive and valuable improvement facilitating traffic at this intersection.

13. The East Boston Vehicular Tunnel. The work on this tunnel is progressing rapidly. The work has proceeded from the East Boston side and was holed through under North Square into the already completed portion on July 23, 1932. It will take all of next year to complete the paving, lining, etc. It should be ready for traffic early in 1934. Studies for traffic ways connecting the tunnel with the various highways to the north are under way and some construction work has already been done.

The recommendations of this Division for highway and parkway projects have been listed in House Bills 130, 131, 132, and 133 of this year.

House Bill No. 43 is a special report of the Division of Metropolitan Planning relative to extending the Cambridge Subway to Arlington and rapid transit lines from Lechmere Square in Cambridge to Davis Square in Somerville. This report was made as a result of chapter 37 of the Resolves of 1931.

Senate Bill No. 400 is a report to the Boston Metropolitan Council by the Trustees of the Boston Metropolitan District relative to the advisability of extending Washington Street tunnel in the city of Boston to Sullivan Square in the Charlestown district of said city and removing the elevated structure from Main Street in Charlestown. This Division has made many studies and estimates in connection with this report.

Chapter 299, Acts of 1932, authorized the purchase of the property of the Eastern Massachusetts Street Railway Company in Revere, Chelsea, Everett and Malden by the Boston Elevated Railway Company to provide unified transportation in those parts of the Boston Metropolitan District.

Chapter 306, Acts of 1932, authorized the city of Boston to construct the Huntington Avenue Subway in said city. This act referred to a plan calling for an appropriation of eight and a half million dollars and was not accepted by the Boston Elevated Railway Company. The plan of this Division requiring an appropriation of only five million two hundred thousand dollars for this project has not had much consideration up to the time of the refusal of the Elevated to accept the act, but it has since been more favorably received.

Chapter 302, Acts of 1932, authorized the laying out of a state highway from the Alewife Brook Parkway in the city of Cambridge westerly through Arlington, Belmont, Lexington, and Lincoln to Concord. When completed this will be the gateway to the Mohawk Trail.

Chapter 241, Acts of 1932, provides for the construction of a bridge over the Saugus River between Point of Pines in Revere and the city of Lynn.

Chapter 258, Acts of 1932, makes further provision for certain highways and highway improvements in Revere.

Chapter 32, Resolves of 1932, calls for the preparation of plans and specifications for a new high level bridge over the Weymouth Fore River between Quincy and Weymouth.

Mass. Secretary of the Commonwealth

Jan 8, 1934

Studies made by this Division during the year 1932 include the following:

1. The Circumferential Route and its extension to the north and east. There are many factors that make this a difficult and complicated problem.

The congestion and development encountered through Newton, Waltham, Lexington, Woburn, Stoneham and Wakefield would seem to point to a more westerly and northerly route passing around these crowded places and traversing more open country. Both inner and outer routes are being studied, so that this long needed highway may soon be continued northerly from its present terminus at the Worcester Turnpike in Wellesley.

2. The Stoneham-Wakefield-Reading by-pass which would enable the heavy traffic to the north of Boston to pass around the already congested portions of the three towns mentioned.

3. The Watertown-Waltham boulevard along the Charles River beginning at and proceeding westerly from the intersection of Galen St. and California Street in Watertown.

4. Many traffic circles, underpasses and overpasses of great desirability, a few of which are—

(a) Huntington Avenue and Riverway overpass near the Boston-Brookline line;

(b) Southern Artery and Old Colony Parkway-Circle;

(c) Center Street and West Roxbury Parkway-Circle;

(d) Northern Artery and Prison Point Viaduct in East Cambridge near the end of the Charles River Dam Circle.

5. Many additional studies, some of which were made at the request of the various cities and towns of the District.

6. Further rapid transit studies to which reference has already been made.

7. This Division has given considerable study to rehabilitation and slum clearance, as in its estimation these factors enter into highway and parkway projects to a great extent. It is typical of many cities which take pride in their parkway systems, their general appearance and their highways, that the approaches to the city are unsightly, unpleasant and neglected, and often times what might have been beautiful parkways or boulevards leading to the city have been permitted through neglect or indifference to become a serious liability instead of a valuable asset.

This Division has been engaged for some years in preparing a comprehensive traffic plan for the district. Although the registration of automobiles has fallen off slightly in the last year or two due to the depression, the returns from the gas tax indicate that about the same amount of gasoline is being used as in 1929, and there is an enormous mileage of highway and parkway travel throughout the district, to such an extent in fact, that were it not for the efforts of this Division and the cooperation of the General Court in authorizing projects in recent years, conditions would be almost impossible due to the congestion that would have been encountered on the roads that were previously available for travel. Much remains to be done, and there are many studies still to be made of the improvement of existing routes, studies for the relief of congestion at heavy intersections and studies of individual problems as presented by some of the cities and towns in the District.

This Division has anticipated the need for economy by curtailing its expenditures and its economies may be seen from the fact that its expenditures for the current fiscal year were the lowest in its history, totaling only \$19,300.37.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING

By CHARLES R. GOW, *Chairman*
FREDERIC H. FAY
WILSON MARSH

RICHARD K. HALE
ARTHUR B. CORBETT
WILLIAM F. ROGERS

HENRY I. HARRIMAN, *Director*

The Commonwealth of Massachusetts

* 6457.35

ANNUAL REPORT

OF THE

**DIVISION OF METROPOLITAN
PLANNING**

FOR THE

YEAR ENDING NOVEMBER 30

1933



The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING
20 SOMERSET STREET, BOSTON, NOVEMBER 30, 1933

To the Honorable Senate and House of Representatives in General Court Assembled:

This Division herewith respectfully submits its annual report for the year ending November 30, 1933.

Many projects that have been underway have been completed and others of great merit are now under way, their construction having been expedited by the direct grant of six and one-half million dollars received from the Federal Government, authorized and made available by the National Industrial Recovery Act which was passed in June of this year.

The projects that have been completed and those that are underway include the following:

1. Worcester Turnpike continuation to Sumner St., Brookline, including an overpass over the Hammond Pond Parkway.

2. Hammond Pond Parkway from Boylston Street to Beacon Street, Newton.

3. Veterans of Foreign Wars Parkway, Boston from Centre Street to connect with the Brook Farm Parkway at its intersection with the West Roxbury Parkway. A large and attractive traffic circle has also been completed at the intersection of the three parkways.

4. Mystic Valley Parkway Extension from Mystic Avenue easterly to the Fellsway at its intersection with the Revere Beach Parkway, Medford. This is under construction and work on the drawbridge will begin shortly.

5. Pauls Bridge, crossing the Neponset River at the Milton-Hyde Park line, has been widened and reconstructed and this part of the Neponset River Parkway much improved.

6. Soldiers Field Road Extension from Western Avenue to North Beacon Street continues the parkway system along the Charles River to a point near Nonantum Road. This parkway was opened in July and is already carrying a heavy east and west-bound pleasure traffic.

7. The Roosevelt Circle at the intersection of Forest Street and Fellsway West, Medford is an attractive and efficient aid to traffic movement.

8. Northern Outlet—This highway leading northerly from Day Square in East Boston is under construction and some portions have been completed. Eventually it is intended to extend this highway to the Salem Turnpike and the Newburyport Turnpike to expedite traffic to and from the East Boston Tunnel.

9. The East Boston Tunnel is rapidly nearing completion (paving completed May 4, 1933) and should be opened for traffic during the first half of 1934.

10. Boston Tunnel connections—The widening of North Street, Cross Street and Haymarket Square are progressing rapidly. Paving will start early in 1934 so that access to the vehicular tunnel on the Boston side will be much improved in readiness for the tunnel's opening.

11. Charles River Basin Improvement—This improvement is nearly finished. The work along the Boston shore will be completed about June 1934.

12. Blue Hill River Road has been widened and resurfaced from Hillside to Randolph Avenue and is greatly improved. Other improvements in the Blue Hill Reservation have been accomplished by the aid of the C. C. C. and the C. W. A. forces.

13. The Cambridge-Concord Highway which will be the gateway to the Mohawk Trail is underway from the Alewife Brook Parkway to Pleasant Street, Belmont, and the contract for the second section from Belmont through Lexington and Lincoln to the Concord line should be let in the near future.

14. Point of Pines Bridge.—Preliminary work has been started.

15. Weymouth-Fore River Bridge.—Work is underway and a temporary bridge utilizing the old draw span will be opened in February, 1934.

The recommendations of this Division for highway and parkway projects have been listed in House Bills 112, 113, and 114 of this year. These recommendations include:—

1. The completion of a state highway from Day Square in East Boston northerly to suitable connections with the North Shore Road, Broadway, Revere and the Newburyport Turnpike in Saugus.

2. Completion of the new gateway to the Mohawk Trail through Arlington, Belmont, Lexington and Lincoln to the Concord line. This was authorized by chapter 302 of the Acts of 1932.

3. Completion of the Worcester Turnpike through Brookline including an overpass at the intersection of Huntington Avenue and the Riverway.

4. Continuation of the Circumferential Route northerly and easterly from its present terminus at the Worcester Turnpike in Wellesley.

5. Extension of the American Legion Highway to the intersection of Washington Street and the West Roxbury Parkway.

6. Gerry's Landing Bridge and connecting parkways.

7. New highway to Lowell.

8. Quincy-Milton highway.

9. Watertown-Waltham route along the Charles River.

10. Stoneham-Wakefield-Reading cut-off.

The final report of the Special Commission on Zoning and Planning of which Senator Hollis was the Chairman was published in January as House Bill 1240. This was a masterly and comprehensive report and it was expected that its recommendations for a State Planning Board might be realized, but the banking crisis and the closing of all the banks called for emergency legislation the urgency of which crowded all other legislative matters into the background. It is hoped that the need of a State Planning Board will be realized and such a board created in the near future.

The passing of the National Industrial Recovery Act on June 16, 1933, called for special legislation to enable the Commonwealth on one hand and the cities and towns on the other to secure the benefits provided by the N. I. R. A., and these acts are found as chapter 365 and 366.

Chapter 49 is an act establishing an Emergency Finance Board.

Chapter 344 is an act covering the receipt and disposition of the Federal funds under the Relief Act of 1933.

Chapter 364 establishes the State Housing Board.

Chapter 192 is an act to relieve cities and towns in the Metropolitan District of the cost of maintenance of boulevards.

Chapter 215 provides for a topographical survey of the Commonwealth.

Chapter 370 transfers \$8,028,320 of the gasoline tax from the Highway Fund to the General Fund.

Chapter 16 of the resolves provides for an investigation by the Department of Public Works of the Milton-Quincy highway.

Chapter 46 of the resolves provides for an investigation by the Division of Metropolitan Planning and the Boston Transit Department of the removal of the Washington Street Elevated structure.

With the passing of the acts enabling the Commonwealth and the cities and towns to benefit under the provisions of the National Industrial Recovery Act, came the appointments of the following Boards, Commissions and personnel:

- Emergency Public Works Commission
- State Advisory Public Works Board
- A State Engineer for Public Works
- A Regional Advisor for New England

At this time the Emergency Finance Board was given broader powers.

It was fortunate that this Division was ready with a comprehensive plan for highways and parkways for the district, for thus much time was saved that would have been wasted otherwise searching for plans and projects of real desirability in order to put men to work expeditiously, which was the object desired.

With the establishment of the C. W. A., this Division was also ready with a list of suitable and most desirable projects.

It was the opinion of the Board of the Metropolitan Planning Division that, in view of Massachusetts' very substantial contributions to the cost of the Federal Government, there was ample justification for Massachusetts' applying for its share of the money to be allotted and a list of sixteen projects with a total estimated cost for construction of \$7,275,000 was approved for submission to the Emergency Public Works Board.

This Division was called upon to furnish various maps and statistical data to many departments, both legislative and other committees, and commissions, and there are few, if any, departments which have failed to apply for various services of this kind. This service has also been available to various cities and towns in the District.

Studies made by the Division during the year 1933 include the following:—

Rapid Transit Extensions

- (a) Further studies of the Huntington Avenue route.
- (b) Further investigation of routes to Somerville and Arlington.
- (c) A new series of studies of East Boston rapid transit extensions.
 - 1.—Via Orleans Street to Day Square.
 - 2.—Via Porter Street, the airport and Wood Island Park.
- (d) Elevated Structure removal, Washington Street, Boston—chapter 46, Resolves of 1933.

Highways, Streets and Parkways

- (a) Outer circumferential route
- (b) Inner circumferential route.
- (c) Northern Outlet—northerly from East Boston.
- (d) Miscellaneous plans for the facilitation of traffic in the city of Boston to and from the tunnel.
- (e) Hammond Pond Parkway Extension—various routes being studied and considered.
- (f) Various studies of traffic circles and grade separations within the Metropolitan District, with the idea of increasing the efficiency of existing routes and eliminating dangerous conditions where accidents have been frequent.

The following Table is of particular interest at this time, as it shows the effect of the depression on motor vehicle registrations, the cessation of automobile replacement, the loss in value of motor vehicles in service in the state; but opposed to these effects of the depression stands out the fact that gasoline consumption and the accompanying revenue from the gasoline tax shows very little decrease. The gasoline tax is the one source of revenue practically unaffected by the depression.

In 1932 the Legislature appropriated five million dollars from the Highway Fund to be paid to the cities and towns for highway purposes. In 1933, chapter 370 transferred eight million dollars of the gasoline tax from the Highway Fund to the General Fund. In 1934, it may be ten millions or more. It is hoped that with the return of prosperity the funds available from the gasoline tax may again be devoted to highway uses.

TABLE I.—MOTOR VEHICLE STATISTICS—MASSACHUSETTS

	Total Auto- motive vehicle registration	Taxed value of vehicles	Average car value	Excise tax	Total tax- able gal- lons gas	Gasoline* tax
1929	1,025,072	\$389,777,927	\$389.75	\$10,363,325	459,781,366	\$9,195,627
1930	1,013,118	352,760,905	354.20	8,534,837	528,740,317	10,574,806
1931	1,010,526	304,113,291	308.14	7,611,555	565,717,117	15,067,888
1932	924,095	240,317,775	267.75	6,183,706	561,905,051	16,857,151
1933	932,041	212,093,824	235.61	5,287,438	557,013,876	16,710,416

*Tax rate—2c. to May 1931; 3c. since.

Table II shows the monthly consumption of gasoline both in gallons and as a percentage of the total for the calendar years 1929 to 1933, the time during which the gasoline tax has been in operation. Table No. 1 gives the figures for the fiscal year ending November 30.

TABLE II.—MONTHLY GASOLINE CONSUMPTION

	1929		1930		1931		1932		1933	
	Million Gallons	%	Million Gallons	%	Million Gallons	%	Million Gallons	%	Million Gallons	%
Jan. . . .	26.2	5.30	30.3	5.66	33.0	5.82	35.6	6.35	33.5	6.01
Feb. . . .	26.4	5.33	29.9	5.58	29.8	5.26	33.4	5.97	32.7	5.88
Mar. . . .	32.3	6.51	36.2	6.76	37.4	6.60	39.9	7.13	37.5	6.74
Apr. . . .	37.9	7.65	45.2	8.45	47.4	8.37	45.0	8.05	41.0	7.36
May	46.3	9.37	47.9	8.95	49.4	8.72	50.2	8.96	51.6	9.27
June	48.4	9.79	51.4	9.61	53.0	9.36	53.3	9.52	55.6	9.99
July	53.0	10.73	55.1	10.30	59.0	10.41	53.6	9.57	55.2	9.91
Aug. . . .	54.8	11.07	55.7	10.32	60.1	10.60	58.2	10.40	58.4	10.50
Sep. . . .	46.4	9.39	50.4	9.41	53.6	9.46	51.2	9.15	51.9	9.32
Oct. . . .	47.1	9.53	48.0	8.97	53.1	9.37	50.8	9.08	51.6	9.27
Nov. . . .	40.8	8.23	43.4	8.21	46.4	8.20	45.5	8.12	45.4	8.14
Dec. . . .	34.6	7.10	41.6	7.78	44.4	7.83	43.1	7.70	42.4	7.61
Totals . . .	494.2	100.00	535.1	100.00	566.6	100.00	559.8	100.00	556.8	100.00

Table No. 3 indicates the rapidity with which the automobile has entered the lives of the people. Almost unknown in 1904 with only about one vehicle per 1,000 people, it has increased in thirty years to over a million vehicles, or one for approximately every four of the population. The period following the war shows a fairly uniform increase with about 100,000 vehicles additional for every two years.

TABLE III.—AUTOMOBILE REGISTRATION.

	Commonwealth of Massachusetts	Metropolitan District
*1904	3,743	-
1905	5,442	-
1908	19,988	-
1914	85,407	-
1915	112,153	-
1918	206,359	-
1920	319,774	-
1922	461,513	-
1924	683,093	-
1926	838,111	-
1927	828,795	329,183
1928	892,504	382,028
1929	1,025,072	427,645
1930	1,013,118	418,006
1931	1,010,526	414,315 ¹
1932	924,095	378,880 ¹
1933	932,041	382,140 ¹

*This is the first reference to the automobile in the State Highway Commission Reports.

¹Approximate figures for the Metropolitan District (43 cities and towns).

The above figures include pleasure vehicles, commercial vehicles, buses and motor cycles.

This Division has realized for some years the need for economy. It has kept its expenditures down to a minimum and by strict economy and careful management has carried on for the current fiscal year with expenditures totalling only \$17,334.91.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING

CHARLES R. GOW, *Chairman*
 FREDERICK H. FAY
 WILSON MARSH

RICHARD K. HALE
 EVERETT E. STONE
 WILLIAM F. ROGERS
 ARTHUR B. CORBETT

HENRY I. HARRIMAN, *Director*

*64 57.35

The Commonwealth of Massachusetts

ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING
FOR THE
YEAR ENDING NOVEMBER 30
1934



The Commonwealth of Massachusetts
DIVISION OF METROPOLITAN PLANNING
20 SOMERSET ST., BOSTON, NOVEMBER 30, 1934.

To the Honorable Senate and House of Representatives in General Court Assembled:

The Division of Metropolitan Planning herewith respectfully submits its annual report for the year ending November 30, 1934.

SPECIAL REPORTS

In accordance with instructions from the General Court, this Division has been engaged this year in the investigation and preparation of reports on the following matters having to do with proposed rapid transit extensions or improvements in the District.

1. Removal of the Washington Street Elevated Structure in Boston, Roxbury and West Roxbury and substitution therefor of a subway in accordance with Chapter 36 of the Resolves of 1933. This resolve called for a joint report by the Metropolitan Planning Division and the Boston Transit Department.

2. Advisability of extending the Cambridge Subway to Arlington and the rapid transit system from Lechmere Square in Cambridge to Arlington in accordance with Chapter 22 of the Resolves of 1934.

3. Advisability of extending the rapid transit system in the city of Boston from Forest Hills Station to Spring St. or the Dedham line in accordance with Chapter 40 of the Resolves of 1934.

These reports must be filed early in December of 1934. In none of these reports is the Division making definite recommendations but we feel that a sincere effort must be made to provide for the future financing of desirable and needed rapid transit extensions or improvements and therefore we are filing a bill providing for the setting up of a fund which will accumulate for this purpose and make such improvements possible without the burden of long-term bond issues.

PROJECTS AUTHORIZED IN 1934

Of the projects recommended in 1934 by this Division, the following were authorized by the General Court:

1. An overpass carrying the Riverway and Jamaica way over Huntington Ave. at the Boston-Brookline line. This was authorized by chapter 380 of the Acts of 1934 and is a greatly needed improvement inasmuch as this intersection carries approximately 30,000 vehicles on Huntington Ave. east and west bound crossing 30,000 vehicles on the Parkway north and south bound.

2. The Neponset Circle at the intersection of the Gallivan Boulevard, Old Colony Parkway and Neponset Ave. where the daily traffic totals around 50,000 vehicles. This was authorized by Chapter 341 of the Acts of 1934.

In addition to these the following projects were authorized:

1. Chapter 341 authorized the repair and strengthening of Chelsea North Bridge over the Mystic River.

2. Chapter 375 authorized the widening and reconstruction of Ocean Ave., Revere.

RECOMMENDATIONS FOR 1935

This Division is filing a report in December with recommendations for needed projects to be considered in 1935. The list of projects is as follows:

1. Bridge across the Charles River at Gerrys Landing and parkway connecting it with the Fresh Pond Parkway in Cambridge and Soldiers Field Road in Boston.
2. Extension of American Legion Highway from Cummins Highway to Washington St. at its intersection with the West Roxbury Parkway.
3. Construction of a portion of the Circumferential Route northerly from the Worcester Turnpike in Wellesley and Newton.
4. Milton-Quincy route from Reedsdale Road in Milton to the new Fore River Bridge in Quincy.
5. The Watertown-Waltham by-pass along the Charles River.
6. A circle at the Cambridge end of the Charles River Dam.
7. A circle at the intersection of the Arborway and Washington St. in the Forest Hills section of Boston.
8. A circle at the intersection of the West Roxbury Parkway and Centre St. in the West Roxbury section of Boston.
9. A grade separation or by-pass of the Revere Beach Parkway at its intersection with Broadway and Main St., Everett.
10. A circle at the intersection of Park Drive, Riverway and Brookline Ave. in the city of Boston.
11. A circle at the intersection of Quincy Shore Drive and Hancock St. with certain changes in Hancock St. between the circle and the Neponset Bridge.
12. A circle at the Cambridge end of the Cottage Farm Bridge.

The Division is recommending that this whole program be carried out over a period of years. This report also goes into some detail on the proposed plan for setting up a rapid transit fund, which has been mentioned previously in this report.

During the year, the Division has made many studies of other traffic conditions, some at the request of various cities or towns in the Metropolitan District. One subject of great interest is the matter of protecting the new Cambridge-Concord highway from unwise and undesirable development through the towns of Arlington, Belmont, Lexington, Lincoln and Concord and the harmonious cooperation of these towns is worthy of note and special assistance.

Other Legislation passed during the year 1934 of special interest from the standpoint of planning is as follows:

Chapter 21. An act relative to securing the benefits of the NIRA by the cities and towns.

Chapter 41. An act relative to securing the benefits of NIRA by the Commonwealth.

Chapter 338. An act relative to the acquisition of land in the Breakhart Hill section of Saugus and Wakefield.

Chapter 377. An act relative to the diversion of \$10,000,000 of the gas tax receipts from the Highway Fund to the general fund.

Mass. Secretary of the Commonwealth

Nov 9 1935

STATE PLANNING COMMISSION

This Division has decided to file with the 1935 Legislature a bill relative to the creation of a State Planning Commission. Planning for the future is so necessary for an individual, an organization or a great industry that its importance to a great commonwealth can hardly be questioned. The health, happiness and prosperity of our people, the success of our industries and our future development in every line of effort should be considered. The benefits of planning for the future should not be limited to a small area only but should be made available to the whole commonwealth.

STATUS OF HIGHWAYS AND PARKWAYS COMPLETED OR UNDER CONSTRUCTION

1. The Worcester Turnpike has been completed as a double-barreled roadway with a central reservation to Sumner Road, Brookline and from that point it has been resurfaced as a single roadway to Brookline Village Square.
2. Hammond Pond Parkway was opened to traffic in July from Hammond St., Brookline to Beacon St., Newton.
3. The Mystic Valley Parkway Extension from Mystic Ave. to the Fells-way in Medford is nearly completed. The bridge work is finished and the project may be open for traffic about April 1, 1935.
4. The Northern Outlet, a broad, double-barreled highway from Day Square, East Boston to Beach Street circle in Revere is completed, and also its extension northerly to a new circle at the State Highway, thence widened and reconstructed to the bridge over the Boston, Revere Beach and Lynn Railroad near the Point of Pines station.
5. The East Boston Tunnel was opened with fitting ceremony on June 30, 1934 and was named the Sumner Tunnel. The East Boston Plaza and the widened Porter St. are completed and also the widening of Cross St. and North St. in Boston proper as well as the traffic circle at Haymarket Square.
6. The Charles River Basin Improvement (of the lower basin) was completed and officially accepted October 10, 1934.
7. Nonantum Road Extension to Galen St. in Watertown is under construction and will be completed about May 1, 1935. This will be an attractive, broad parkway for four lanes of traffic and a much needed improvement.
8. The Cambridge-Concord Highway is used by traffic from the Alewife Brook Parkway in Cambridge to Sudbury Road in Concord with the exception of a short distance in Lexington. Though not officially opened, the amount of traffic already using portions of this route indicates that this will eventually be a heavily travelled highway with its beautiful long stretches of four lanes width traversing new and open country. It will probably be opened for general travel in June.
9. In the Blue Hills Reservation considerable work has been done. Unquity Road has been widened and resurfaced from Harland Ave., a distance southerly of 2800 feet, and the balance will be completed in 1935. The other roads have been widened and improved, an outlook and a parking space provided, and a general cleaning of brush has improved the reservation and its pathways.
10. Plans have been prepared for a new highway connecting Route No. 1 in Dedham with the Brook Farm Parkway at its intersection with Spring St., West Roxbury, and this project has been authorized, the cost to be met by the Federal grant made in 1934. Bids will be opened soon for this project.

11. A project also authorized is the proposed grade separation at Beaver Brook in Waltham. It is proposed to carry Main St. over the Boston and Maine Railroad.

12. The construction of the authorized overpass to carry the Riverway-Jamaicaway over Huntington Ave. near the Boston-Brookline line has not yet been started but should shortly be underway.

13. The same is true of the traffic circle at Neponset Bridge which has been referred to above.

14. Wellington Bridge reconstruction is under contract but the work has been delayed through various causes and completion is not expected until nearly January 1, 1936.

15. The new bridge over the Boston, Revere Beach & Lynn Railroad just southerly of Point of Pines must be completed by June 1, 1935, as it will be necessary to detour traffic via the beach road while construction is proceeding and the beach road must be cleared at an early date.

16. The Point of Pines Bridge between Revere and Lynn is progressing favorably and its completion is expected about September 1, 1935.

17. The Fore River Bridge between Quincy and Weymouth has met with some delays and although the approaches have progressed rapidly and present an impressive appearance, formal completion will probably not be possible before October, 1935.

18. Granite Street and Pond Street southerly from Braintree Five Corners toward the Randolph line are being widened and will be resurfaced, with the work accomplished sometime in the summer of 1935.

The year 1934 witnessed a slight increase in total registration of motor vehicles and a considerable increase in the use of gasoline. For the fiscal year ending November 30, 1934, the registration was as follows:

Pleasure vehicles	827,719
Commercial vehicles	112,260
Buses	4,134
Trailers	752
Motor Cycles	1,375
Total	946,240
Total number of drivers' licenses	1,053,527
Gas tax income estimated at more than.....	\$17,000,000

The Division's appropriation for the year was \$18,300 and its expenditures amounted to \$17,674.05.

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING:

FREDERIC H. FAY, *Vice Chairman*

WILSON MARSH

RICHARD K. HALE

ABRAHAM C. WEBBER

WILLIAM F. ROGERS

HENRY I. HARRIMAN, *Director*

6457.35

The Commonwealth of Massachusetts

ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING
FOR THE
YEAR ENDING NOVEMBER 30
1935



Mass. Secretary of the
June 5, 1935

The Commonwealth of Massachusetts

DIVISION OF METROPOLITAN PLANNING

20 SOMERSET ST., BOSTON, NOVEMBER 30, 1935.

To the Honorable Senate and House of Representatives in General Court Assembled:

The Division of Metropolitan Planning herewith respectfully submits its annual report for the year ending November 30, 1935:

SPECIAL REPORTS

In accordance with Resolves passed by the General Court in 1935, this Division has been engaged this year in the investigation and preparation of reports on the following matters having to do with proposed rapid transit extensions or improvements in the District:

1. Chapter 14 of the Resolves of 1935 relative to the advisability of electrifying the Saugus Branch of the Boston and Maine Railroad.
2. Chapter 24 relative to the extension of rapid transit service from Mattapan to Forest Hills via Hyde Park.
3. Chapter 46 relative to extending rapid transit service northeasterly from Maverick Square in East Boston to Orient Heights and the acquisition of the Boston, Revere Beach and Lynn Railroad.

These reports will be filed the first of December. In none of these reports is the Division making recommendations for the carrying out of these projects at this time.

RAPID TRANSIT

The reasons for our conclusions in the above listed reports are the same as they have been in the past in similar reports, that is, that the projects are not justified under the present financing system which provides for payment of the cost of rapid transit extension by long term bonds, on which the interest is provided by rentals paid by the Boston Elevated Railway. This system has resulted in virtual stagnation of rapid transit development because the extensions proposed rarely show promise of sufficient additional income for the Elevated to offset the rental charges. For this reason, we are again including, in that part of our annual report which contains recommendations for legislation, a bill providing for the setting up of a so-called "Rapid Transit Fund" to finance short term bonds for rapid transit extensions or improvements. *

This matter is gone into in greater detail in our report containing recommendations. It is hoped that the recommendation will be adopted in the not-too-far-distant future so that a wise and orderly program for rapid transit development may be initiated.

The Division has also, during the past year, made further studies of the rapid transit situation, in general, and of the proposed Huntington Avenue subway, in particular.

* Commissioner Webber dissenting (see his statement in House No. 11 of 1936 and House No. 52 of 1935).

PROJECTS AUTHORIZED IN 1935

With two exceptions, the Chicatawbut Road extension from the Blue Hill Reservation to Granite Street in Braintree, and the reconstruction of a portion of Beacon Street in Newton, no highway or parkway projects were authorized by the Legislature this year for construction within the Metropolitan District, excepting those which might be financed through grants from the Federal government from monies available under the Hayden-Cartwright Bill, or subsequent legislation providing Federal funds for highways and grade crossings. The projects which may be constructed through these means are as follows:

Highways

Saugus and Lynnfield.—The widening and reconstruction of the Newburyport Turnpike.

Revere.—The widening and resurfacing of Ocean Avenue.

The extension of the northern outlet in Revere, Malden and Saugus to the Newburyport Turnpike.

Hingham.—A cut-off from Whiting Street at Gardner Street north-easterly to Main Street.

Traffic Circles

Cambridge.—One at Cambridge end of Charles River Dam. One at Cambridge end of Cottage Farm Bridge.

Grade Separations

Quincy.—Water Street over the Old Colony Line near the Quincy Adams Station.

Waltham.—Main Street over the Fitchburg Division of the Boston and Maine Railroad, near Beaver Brook.

Braintree.—School Street Crossing.

Canton.—Dedham Road Crossing.

Weymouth.—Main Street Crossing.

RECOMMENDATIONS FOR 1936

This Division is filing a report in December with recommendations for projects whose construction is most urgent. We fully realize the need for economy and careful expenditure and we do not expect to see the construction of all these projects immediately but since they are all desirable and must eventually be required, we do urge a systematic plan whereby they may be constructed over a period of time before their cost becomes excessive and before the district suffers from their lack.

The Highway projects are as follows:—

1. Extension of the Circumferential Route northerly from the Worcester Turnpike through Wellesley, Newton, Weston, Waltham, to Lincoln, to connect with the new Concord Highway.
2. The Milton-Quincy Highway from Reedsdale Road and Randolph Avenue in Milton easterly to Washington Street in Quincy, near the westerly end of the new Fore River Bridge.
3. The Watertown-Waltham Highway from Galen Street in Watertown westerly along the Charles River to Weston Street in the western part of Waltham.
4. Willard Street from East Milton southerly to West Street in Quincy. The widening and resurfacing of this portion of Route 37.
5. A traffic circle at Forest Hills in Boston where the very heavy traffic of the Arborway crosses Washington Street.

The parkway projects are as follows:

1. A bridge at Gerry's Landing across the Charles River between Boston and Cambridge.
2. A traffic circle at the intersection of Centre Street and the West Roxbury Parkway in West Roxbury.
3. A by-pass or grade separation at Everett to separate the grades at the crossing of Main Street and Broadway by the Revere Beach Parkway.

LEGISLATION IN 1935

Among the Acts passed by the General Court in 1935 of special interest to the Metropolitan District and pertaining to transportation are the following:

Chapter 336.—An act further extending the time to April 30, 1937, during which there shall be collected an additional excise tax of one cent on sales of gasoline.

Chapter 383.—An act authorizing the Metropolitan District Commission to lay out and construct a parkway from Chicatawbut Road in the Blue Hill Reservation to Granite Street in Braintree.

Chapter 448.—An act providing for the purchase by the Commonwealth of the dam in the Charles River, near Moody Street in the City of Waltham.

Chapter 456.—An act relative to the appropriation of money for WPA projects.

Chapter 464.—An act providing for a public works program.

Chapter 469.—An act providing for the construction of a State Highway on the route of the Middlesex Turnpike from Arlington to North Chelmsford.

Chapter 475.—An act providing for the creation of a State Planning Board.

Chapter 476.—An act transferring a portion of the proceeds of the gas tax from the highway fund to the general fund to the extent of nine and a half million dollars.

Chapter 487.—An act relative to the widening and reconstruction of Ocean Avenue in Revere.

Chapter 492.—An act providing for the construction of tunnels or subways in the city of Boston and the purchase and removal of certain elevated structures in said city with the aid of federal funds.

Chapter 17.—An act relative to the reconstruction of a portion of Beacon Street in the city of Newton.

STATUS OF HIGHWAYS AND PARKWAYS IN THE METROPOLITAN DISTRICT
COMPLETED OR UNDER CONSTRUCTION

1. Mystic Valley Parkway Extension was opened from Mystic Avenue to the Fellsway July 20, 1935, but its full value will not be realized until the Wellington Bridge is completed because, at present, it is open only to south bound traffic.
2. The Wellington Bridge over the Mystic River is partly open (for north bound traffic) but final completion is not expected until June of next year (1936).
3. Nonantum Road Extension to Galen Street in Watertown was opened to pleasure traffic May 2, 1935.
4. The Chicatawbut Road Extension southeasterly from the Blue Hills Reservation to Granite Street in Braintree was opened November 15, 1935.
5. The Cambridge-Concord Highway from Alewife Brook Parkway westerly to West Concord was completed and accepted July 31, 1935.
6. The new Dedham-Spring Street Highway across the marshes was opened for traffic October 7, 1935.
7. The Fore River Bridge will be opened about the middle of February, and final completion will probably be in April, 1936.
8. The Neponset Circle in Dorchester will be completed December 10, 1935.
9. The overpass carrying the Riverway over Huntington Avenue at the Boston-Brookline line will be ready for traffic about the latter part of September, 1936.
10. The Point of Pines Bridge between Lynn and Revere was opened to traffic September 29, 1935.
11. Granite Street in Braintree was opened in October, 1935, and Franklin Street in Braintree was completed in November, 1935.
12. The grade separation at Beaver Brook in Waltham will probably be completed in September, 1936.
13. The grade separation at Main Street in Weymouth will be ready some time in June, 1936.
14. The grade separation carrying Water Street over the Old Colony Railroad at Quincy Adams, Quincy, is expected to be completed in December, 1936.

HINGHAM

Included among the projects in the WPA list for highway construction by the Public Works Department is a short cut-off in South Hingham from the intersection of Route No. 128, Whiting Street and Gardner Street, easterly and northerly to a point in Main Street, a distance of 1.4 miles, at an estimated cost of eighty-five thousand dollars for construction alone. At present, Route No. 128 (the Circumferential Highway) coincides with Route No. 3 on Whiting Street as far as Queen Ann's Corner and thence northerly along Main Street to Hingham Centre. This is a roundabout route, twice as long as the above-mentioned cut-off.

In September, 1935, the Selectmen of Hingham received a petition signed by four hundred citizens of Hingham. A copy of the petition was sent to this Division with the following requests:

1. That the construction of a by-pass highway through Hingham to relieve Main and East Streets of Route No. 128 be placed on the roster of projects to be considered by the Division.
2. That a study be made of said project and if funds and facilities are available, a plan be prepared of such proposed highway in conjunction with officials of the Town of Hingham.
3. That such project be recommended to the Department of Public Works for construction if, after study, the Division considers it worthy.

Accordingly, considerable study was given to such a plan and a route was worked out that seems to have the approval of many of the citizens of Hingham. The total length of such a route from Whiting and Gardner Streets northerly to the Nantasket Road is five and a half miles, or about four miles longer than the portion already mentioned as having been included in the WPA program. No one has questioned the desirability of such a by-pass, but there is doubt as to its immediate necessity and there is a feeling that economically it is not warranted at this time.

To build a modern highway of adequate width traffic circles where needed, and a grade separation at the railroad crossing would require an expenditure in the neighborhood of a million dollars. Does the traffic warrant such an expenditure now? The Department of Public Works has agreed to take traffic counts along Main Street and East Street at points of greatest congestion and report their findings to us. Careful surveys will be required, buildings located and soundings and borings made before an accurate estimate of cost can be arrived at. Also, traffic counts and records of accidents must be studied and data must be obtained to learn who is using the highway and the origin and destination of the vehicles. With this information, the problem will be nearer solution and the economics of the project can be stated with some accuracy.

Hingham is a town of great attractiveness and antiquity, as we measure time in this country. It should be preserved from the hordes of vehicles rushing toward Nantasket. A by-pass through new and open country seems the only way to preserve its old time charm, but the matter of financing is a serious one.

OTHER STUDIES OF THE DIVISION

Many traffic and other studies in the various cities and towns of the District have been made this year, some at the request of municipalities and many because we have seen the need for change or improvements. The work has included proposed treatment of busy or dangerous intersections by traffic lights, traffic circles or grade separations.

CHANGES IN PERSONNEL

Mr. John C. Kiley, who was chairman of this Board last year, resigned the first of this year, 1935; his successor has not yet been appointed, so Mr. Frederic H. Fay is Acting Chairman as well as Vice Chairman.

Mr. John F. McDonald was appointed to the Board May 20, 1935, to represent the Boston Transit Department. He succeeds Mr. Arthur B. Corbett who resigned in 1934.

Miss Agnes C. Conroy, who has been secretary of this Division since January, 1924, resigned November 15, 1935, to accept a position with the State Planning Board. She has been succeeded by Miss Catherine M. Downey.

STATISTICS

The total of motor vehicles registered in Massachusetts, the number of drivers' licenses issued and the income from the gas tax, all continue to increase despite the depression. The total of drivers' licenses for 1935 was 1,077,880. The total receipts for the year from the three cent gas tax is well over \$18,000,000.

The population of the Metropolitan District, according to the State census for 1935, exceeds the two million mark, the actual figures totalling 2,021,670, or 46½% of the total state population of 4,350,910.

The registration of motor vehicles was as follows:

Pleasure vehicles	838,406
Commercial vehicles	114,244
Buses	4,528
Motor Cycles	1,375
	958,553
Trailers	506
	959,059

APPROPRIATIONS AND EXPENDITURES FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1935

Appropriation	\$18,960.00
Expenditures	18,509.23
Balance	\$ 450.77

Respectfully submitted,

DIVISION OF METROPOLITAN PLANNING:

By

FREDERIC H. FAY, *Vice Chairman and
Acting Chairman*

WILSON MARSH

RICHARD K. HALE

ABRAHAM C. WEBBER

WILLIAM F. ROGERS

JOHN F. McDONALD

HENRY I. HARRIMAN, *Director*

The Commonwealth of Massachusetts

ANNUAL REPORT
OF THE
DIVISION OF METROPOLITAN
PLANNING
FOR THE
YEAR ENDING NOVEMBER 30
1936



The Commonwealth of Massachusetts

*To the Honorable Senate and House of Representatives in the General Court
Assembled:*

The Division of Metropolitan Planning herewith respectfully submits its annual report for the year ending November 30, 1936:

SPECIAL REPORTS

In accordance with Resolves passed by the General Court in 1936, this Division has been engaged this year in the investigation and preparation of reports of the following subjects having to do with proposed rapid transit extensions or improvements in the district:

1. Chapter 12 relative to the advisability of extending the rapid transit system from Sullivan Square in Boston to Medford Square, Medford.
2. Chapter 20 relative to the advisability of extending the rapid transit system from Everett Station in the City of Everett to Malden Square in the City of Malden.
3. Chapter 21 relative to the advisability of extending the rapid transit system in the City of Boston through the Roxbury Crossing and Jamaica Plain districts to the Forest Hills district of said city.
4. Chapter 29 relative to the extension of rapid transit facilities in the East Boston district of the City of Boston.

These reports will be filed the first of December in accordance with the requirements of the respective resolves.

RAPID TRANSIT

Some years ago, this Division studied and has ever since recommended and urged the construction of a subway extension from the Boylston Street subway, at or near Exeter Street, via Exeter Street to Huntington Avenue, thence westerly along Huntington Avenue.

Federal funds to the amount of \$1,175,000 have been earmarked for this project leaving Boston to appropriate only \$500,000 to complete it as far as Mechanics Building. The public have apparently not been aroused to the extent to which conditions in Boylston Street and Huntington Avenue would be relieved and improved by the removal from those thoroughfares of 800 trolley cars each 24 hours, or a peak hourly load of more than a car per minute.

When one contemplates the obstruction to traffic offered by a modern trolley car with its stops and starts and the area of highway utilized, the removal of all these street-cars would have the same effect on traffic as would the diversion to some other route of many thousands of motor vehicles. Many cities of size comparable to Boston pay the whole cost, without federal assistance, to accomplish such an improvement in the conditions in an area the size of the Back Bay district. Boylston Street would be transformed from a narrow, congested way to a wide, efficient thoroughfare. Furthermore, this extension of subway service, with the removal from the surface of these trolley cars, would not only benefit the motoring public. The elevated car riders, especially those during the peak hours, would gain by the increased speed of travel as the running time would be reduced to about one-third of its present figure. There would also be a saving in cost of operation of between \$20,000 and \$30,000 a year. In view of these savings in time and

money to the automobilist, the car rider and the Boston Elevated, this Division hopes that this extension may be authorized and constructed in 1937.

HIGHWAY PROJECTS AUTHORIZED IN 1936

The General Court authorized only one new project in the Metropolitan District for construction. That was Chapter 377 for the construction of the bridge over the Mystic River between Arlington and Medford.

Chapter 71 of the Resolves of 1936 calls for a report by the Department of Public Works giving recommended plans and specifications for the widening and reconstruction of the so-called Middlesex Turnpike from Arlington to Chelmsford.

RECOMMENDATIONS FOR 1937

This Division is filing a report in December with recommendations for projects most urgently needed. We realize the need for economy and careful expenditure. We are also aware that the use of the motor vehicle and its speed of operation are both increasing and efforts must be made to provide for these trends so that our transportation system may continue to function without sacrificing safety and efficiency.

The highway projects are as follows:

1. A bridge across the Charles River at or near Gerry's Landing.
2. A section of the Circumferential Route westerly from the Newburyport Turnpike to Reading.
3. The Milton-Quincy Highway from Reedsdale Road and Randolph Avenue in Milton to Washington Street, near the new Fore River Bridge, in Quincy.
4. The Watertown-Newton-Waltham By-pass.
5. Widening and resurfacing Willard Street, Quincy.

The parkway projects are:

1. A traffic circle at Park Drive, Riverway and Brookline Avenue; double-barrelling the Jamaica way from the Huntington Avenue overpass southerly to Prince Street; and a traffic circle at Forest Hills—all in the City of Boston.
2. A grade separation or by-pass of the Revere Beach Parkway at its intersection with Main Street and Broadway in Everett.

LEGISLATION IN 1936

Chapter 431—An Act transferring \$3,650,000 from the Highway to the General Fund.

Chapter 398—An Act further extending the time during which there shall be collected an additional excise tax on sales of gasoline to April 30, 1939.

Owing to the severe floods in March, 1936, and the serious damage to property, highways and bridges, large sums were appropriated from the Highway Fund by several acts for the relief of the stricken communities in the flood areas; for the repair, construction and reconstruction of permanent bridges; for the construction of temporary bridges; and for the reconstruction of damaged highways.

STATUS OF HIGHWAYS AND PARKWAYS IN THE METROPOLITAN DISTRICT COMPLETED OR UNDER CONSTRUCTION

1. Mystic Valley Parkway extension in Medford was opened from Mystic Avenue to the Fellsway to two-way traffic August 1, 1936.

2. The Wellington Bridge over the Mystic River was also opened to two-way traffic August 1, 1936.

3. The Fore River Bridge was opened to traffic May 23, 1936.

4. The Neponset Circle in Dorchester, at the intersection of Gallivan Boulevard, Old Colony Parkway and Neponset Avenue, was completed December 10, 1935.

5. The grade separation at Beaver Brook in Waltham, carrying Main Street over the Fitchburg Division of the Boston & Maine Railroad will be opened to traffic in December, 1936.

6. The grade separation at Weymouth was accepted August 17, 1936.

7. The grade separation carrying Water Street over the Old Colony Railroad at Quincy Adams, Quincy, will be opened for traffic December 5, 1936.

8. The overpass carrying the Riverway and Jamaicaway over Huntington Avenue at the Boston-Brookline line was opened to one-way traffic August 23, 1936. Owing to partial subsidence of the fill, the official opening and dedication set for August 30th had to be postponed but the overpass continues to be used to great advantage in spite of the delayed completion.

9. The widening and reconstruction of Beacon Street, Newton, has been completed and Beacon Street is now in good condition from the Boston line westerly to its intersection with Washington Street, near Newton Lower Falls.

Note. All of Beacon Street (Route #16) is now in good condition with the exception of that portion in Boston circling the reservoir from Cleveland Circle westerly to the Newton line. This is an old two-lane concrete pavement, laid in 1916. It is in very bad condition requiring constant patching. The bituminous shoulders are also in bad shape and a new pavement forty feet wide should be built as a matter of safety and economy.

10. The traffic circle at the Cambridge end of the Charles River Dam, which was expected to be constructed with the aid of federal funds, has been given up for the present.

11. The traffic circle at the Cambridge end of the Cottage Farm Bridge which was to have been constructed this year has also been delayed in construction.

12. A portion of the northerly circumferential route between the Newburyport Turnpike and Andover Street in Peabody is under construction by the Department of Public Works.

13. The new cut-off from Squires Road, Revere, to the Newburyport Turnpike at Fenton Street in Saugus is under construction by the Department of Public Works.

OTHER STUDIES

Many route and traffic studies in various cities and towns in the District have been made this year by this Division. Some of these studies have been initiated by us because of particular need for changes or improvement due to traffic congestion. Other studies have been made at the request of various municipalities. Among these studies are the following:

1. The Concord highway extension toward Boston.
2. The Hillside Street widening, Milton.
3. The Coolidge Avenue widening and paving, Watertown.

4. The Middlesex Turnpike northerly from Arlington.
5. The Canton-Braintree route.
6. Various intersections and traffic circles.
7. The Charles River Basin roadways.

During the year, the Division wrote to all the Planning Boards in the District to keep informed of their problems and to offer its cooperation.

A study was made of the bus traffic and bus traffic routes covering the activities of both local and interstate bus companies and also the movements of buses of the Boston Elevated Railway Company.

Considerable study has been given to the Boston traffic and parking problems as this Division was asked to cooperate with the Boston Chamber of Commerce, the Boston City Planning Board, the Boston Real Estate Exchange, the Boston Police, Park and Traffic Departments, and other civic organizations, in the consideration and solution of these difficulties.

CHANGE IN PERSONNEL

Mr. Richard D. Grant was appointed to the Board this year in June to succeed Mr. Abraham C. Webber, resigned, as the member from the Department of Public Utilities.

STATISTICS

The total number of motor vehicle registrations for 1936 in the Commonwealth surpassed the previous peak of 1929 and the figures are as follows:

Pleasure vehicles	910,196
Commercial vehicles	118,477
Buses	4,814
Motorcycles	1,316
	1,034,803
Trailers	10,405
	1,045,208.

The total number of drivers' licenses issued was 1,128,516, which is also a new record high.

The number of taxable gallons of gasoline consumed each month and the percentage of monthly consumption together with the corresponding receipts from the three-cent gasoline tax are given in the following table:

GASOLINE CONSUMPTION, ETC., 1936

	GALLONS	%	TAX RECEIPTS
January	40,754,678	6.23	\$1,222,640.36
February	36,732,084	5.61	1,101,962.52
March	43,146,314	6.59	1,294,389.41
April	50,894,857	7.78	1,526,845.73
May	59,165,975	9.04	1,774,979.24
June	61,140,945	9.34	1,834,228.37
July	67,320,559	10.30	2,019,616.79
August	65,692,372	10.05	1,970,771.16
September	60,869,298	9.30	1,826,078.96
October	60,600,832	9.26	1,818,024.95
November	53,918,496	8.24	1,617,554.87
December	54,072,453	8.26	1,622,173.60
Total	654,308,863	100.00	\$19,629,265.96

These figures indicate how the use of the motor vehicle is increasing.

FINANCIAL STATEMENT

APPROPRIATIONS AND EXPENDITURES FOR THE FISCAL YEAR ENDING
NOVEMBER 30, 1936

Appropriations	\$19,340.00
Expenditures	19,049.20
	<hr/>
Balance	\$ 290.80

Respectfully submitted,
DIVISION OF METROPOLITAN PLANNING:
By

FREDERIC H. FAY, *Vice Chairman
and Acting Chairman*

WILSON MARSH

RICHARD K. HALE

RICHARD D. GRANT

WILLIAM F. ROGERS

JOHN F. McDONALD

HENRY I. HARRIMAN, *Director*

6457.35

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

DIVISION OF METROPOLITAN
PLANNING

FOR THE

YEAR ENDING NOVEMBER 30

1937



The Commonwealth of Massachusetts

To the Honorable Senate and House of Representatives in General Court Assembled:

The Division of Metropolitan Planning herewith respectfully submits its annual report for the year ending November 30, 1937:

Each year, the preparation of our annual report has afforded us an opportunity to take stock of past accomplishments and to look ahead into the future with hope and enthusiasm. Every year we have been able to point to certain new accomplishments and improvements in our transportation system, whether they be parkway, highway, or rapid transit developments, but in spite of all that has been achieved in the past, there remains much to be done. Traffic is crowding the completed ways and clamoring for wider roads and for greater safety of travel.

The years to come must find the Boston Metropolitan District still in the forefront—still progressing toward our original goal which vision set for greater service to the taxpayer and to the traveler on our highways. The depression, with its attendant unemployment and demands for relief, has unfortunately seen the diversion of many millions of dollars from the Highway Fund to other purposes. Our highways have suffered in consequence and the increasing use of the automobile has far exceeded the development and improvement of our highway system.

For that reason, we are taking a long look ahead this year and presenting to the General Court an ambitious six-year program of highway and parkway development designed to make travel safer and more efficient in the years to come. Our report and recommendations, which will be filed the first of December, will present a clear picture of those improvements which are most needed, in the hope that they may be carried out in an orderly way, over a period of years, a way that will lay no heavy burden on either towns or taxpayers.

The following is the list of recommended projects:

THE CIRCUMFERENTIAL HIGHWAYS.

1. It was evident from the beginning of the Division's studies that a main Circumferential Highway on approximately a ten-mile radius was needed. Such a highway is now partially completed and heavily traveled. This route, known as Route No. 128, now extends from Hingham on the south, northerly and westerly as far as the Worcester Turnpike near the Wellesley-Newton line. It should be extended from its easterly terminus northeasterly through Hingham to the present highway leading to Nantasket. At its westerly terminus it should be extended northerly and easterly to the Newburyport Turnpike in Lynnfield. Such a route will intersect substantially all of the main highways leading into the city and greatly assist the traffic of both the district and the State.

2. A part of the Circumferential Highway southerly of the Blue Hills is a parkway, and therefore not used for commercial traffic. For this reason there is need of a commercial route or by-pass passing through Randolph southerly of Route No. 128 and of the Blue Hills Reservation. When constructed it will become a part of Circumferential No. 128.

3. An inner circumferential route that is much needed is the so-called Milton-Quincy Highway, an east and west all-purpose highway extending from Reedsdale Road in Milton to the new Fore River bridge in Quincy. It will by-pass much of the South Shore traffic around Quincy, and will enable it to select less congested routes into Boston.

RADIAL HIGHWAYS.

4. The so-called Watertown-Newton-Waltham Highway, extending from Galen Street, Watertown, to Weston Street, Waltham. This route was first designed as a parkway. Further study shows that it should be built as an all-purpose route.

5. The new Concord Highway now terminates at the Alewife Brook Parkway in Cambridge. It should be extended easterly to a point near Porter Square, where a number of routes are available for access to Boston. The Concord Highway is really the gateway to the Mohawk Trail, and is daily becoming a more important and more traveled route.

6. The Department of Public Works plans, in co-operation with the State of Connecticut, to construct a new highway leading from New York to Boston. It will enter the district in Walpole and when completed should shorten the running time between New York and Boston by an hour, at the same time, carrying traffic through a non-congested section of both States. The Division recommends the construction of the portion of this route lying in the district.

7. The American Legion Highway should be extended from its present terminus at Cummins Highway southwesterly to Washington Street at or near its intersection with the West Roxbury Parkway. This extension was part of the original project, and the money now invested in the American Legion Highway will be of little use until the extension is made.

8. A new highway following in part the old Middlesex Turnpike is required which will leave the Concord Highway in the town of Lexington and go in a general northerly direction to a point near Lowell where connections may be made to the main highways to the Merrimack Valley. Part of this route lies in the district and is recommended.

9. A fine highway has now been constructed from the Newburyport Turnpike to Day Square in East Boston. It should be extended along the general route of Bremen Street, or some other suitable street, to the entrance of the Sumner Tunnel.

10. A very necessary improvement is the widening and repaving of Dorchester Avenue from Old Colony Avenue to Fort Point Channel. This is now a bottleneck for the heavy traffic that enters Boston by the Old Colony Parkway.

11. A bridge across the Charles River at Gerry's Landing is recommended. This would connect the parkways on the north and south sides of the river and permit the heavy parkway traffic now using Alewife Brook Parkway and Fresh Pond Parkway to enter Boston without passing through Harvard Square or without using the crowded Larz Anderson bridge.

Mass. Secretary of the Commonwealth

July 8, 1938

12. An extension of Memorial Drive on the Cambridge side of the Charles River to Arsenal Street in Watertown is recommended. This will complete the parkway system along the northerly side of the Charles River from the Dam to Watertown.

CIRCLES AND GRADE SEPARATIONS.

13. At the intersection of Northern Artery and Prison Point Viaduct, at the Cambridge end of the Charles River Dam.

14. At the intersection of the Northern Artery and Washington Street in Somerville.

15. At the intersection of Washington Street and Boylston Street (Worcester Turnpike) in Brookline Village.

16. At the intersection of Washington Street and Arborway in Forest Hills in Boston.

17. At the intersection of Park Drive, Riverway and Boylston Street in Boston.

18. At the intersection of Commonwealth Avenue and Cottage Farm bridge in Boston.

19. At the intersection of Memorial Drive and Cottage Farm bridge in Cambridge.

20. At the intersection of the Revere Beach Parkway with Broadway and Main Street in Everett.

The following table lists the above-mentioned projects, gives their estimated cost and indicates the classification to which they belong. Those which are listed as highway projects should, in our judgment, be paid for entirely from the Highway Fund. Those listed as parkway and city projects should be paid for at least 50 per cent from the Highway Fund.

HIGHWAY CONSTRUCTION PROJECTS.

To be Built by the Department of Public Works.

1. Circumferential Highway	\$5,700,000
2. Commercial by-pass south of the Blue Hills	1,300,000
3. Inner Circumferential, or Milton-Quincy, Highway	1,400,000
4. Watertown-Newton-Waltham Highway	1,600,000
5. Easterly extension of Concord Highway	1,000,000
6. Portion in district of New York Highway	575,000
7. Extension of American Legion Highway to Washington Street	500,000
8. Extension of Middlesex Turnpike	500,000
9. Extension of Turnpike from Day Square to East Boston Tunnel	1,000,000
10. Dorchester Avenue widening	450,000
13. Circle at intersection of Northern Artery and Prison Point Viaduct	350,000

14. Grade separation at intersection of Northern Artery and Washington Street, Somerville	400,000	
15. Grade separation at intersection of Washington Street and Bolyston Street, Brookline Village	800,000	
	<hr/>	\$15,575,000

PARKWAY PROJECTS.

To be Built by Metropolitan District Commission.

11. Gerry's Landing bridge and connections .	\$400,000	
12. Memorial Drive extension to Arsenal Street	175,000	
19. Traffic circle, Memorial Drive and Cottage Farm bridge, Cambridge	200,000	
20. Grade separations and traffic circles, Revere Beach Parkway, Broadway and Main Street, Everett	600,000	
	<hr/>	1,375,000

CITY PROJECTS.

To be Built by the City of Boston.

16. Grade separation, Arborway and Washington Street, Forest Hills, Boston	\$500,000	
17. Traffic circle, Boylston Street, Park Drive and Riverway, Boston	250,000	
18. Grade separation, Commonwealth Avenue and Cottage Farm bridge, Boston	500,000	
	<hr/>	\$1,250,000
Grand total		\$18,200,000

The Division recommends an annual appropriation which, together with any funds received from the Federal government, shall approximate \$3,000,000 each year for a period of six years, the money to be expended each year by the Department of Public Works and/or the Metropolitan District Commission, and/or the city of Boston on the projects approved by the Governor.

An additional radial route into Boston, to relieve the already heavily congested Old Colony Parkway and the Forest Hills-Jamaicaway routes, and to facilitate the direct entrance to the heart of the city of traffic from points in the district and State south of Boston, is needed. Mattapan is the focal point for this traffic. From Mattapan northerly Blue Hill Avenue heads directly toward the business center of the city, and as far as Grove Hall near Franklin Park its width is 120 feet. Northerly of Grove Hall the Blue Hill Avenue-Hampden Street direct route narrows to widths varying from 60 feet to as little as 45 feet as far as Massachusetts Avenue, and it is wholly unsuited for arterial traffic. It would

be desirable to construct a connection from the wide portion of Blue Hill Avenue at Grove Hall to the junction of Massachusetts Avenue and Albany Street. This project would cost several million dollars, and is not included because of doubt as to the apportionment of its cost.

Albany Street from Massachusetts Avenue to Broadway, 80 feet in width, should serve for some time reasonably well as a part of this suggested radial route from the south. From Albany Street at Broadway a connection is needed around the congested, downtown, business district to the newly widened Cross Street at Clinton Street near the entrance to the East Boston traffic tunnel. We understand this connection is being studied as a possible elevated highway by the special commission on the removal of the Atlantic Avenue elevated structure, created by chapter 22 of the Resolves of 1937, and for this reason we make no recommendation regarding this connection at this time.

The Jamaicaway, between the Huntington Avenue overpass and Prince Street, is very heavily traveled and should be double-barreled. This is a parkway of the city of Boston, and we understand the park department of that city has plans to carry out this work in the near future. For that reason we have not included it in our list of projects, although we recognize its great need.

When the city of Boston can afford to do so, it would be most desirable to widen Rutherford Avenue from City Square, Charlestown, to Sullivan Square. This is one of the main arteries into Boston. We have not included it in our program because it is very distinctly a city project.

We have laid out a comprehensive six-year program because of our belief that the need not only of the motorist but of the business man of the Metropolitan District requires a real solution of the highway problem. Such a solution can be reached only by building, step by step, successive links in a well-considered long-range program. The Federal government has recognized the need of long-range, advance planning of public works by the passage of the Employment Stabilization Act of 1931. An important feature of this act is the requirement that Federal departments and other agencies having charge of construction shall "prepare a six-year advance plan with estimates showing projects allotted to each year", with the further provision that the six-year program be kept up to date by annual revision and extension. We believe that the application of this principle to the highway problems of the Metropolitan District will result in wiser and more economical expenditure of public moneys, and at the same time speed relief from traffic congestion.

There may be objection to the expenditure of \$3,000,000 for the construction of projects within the Metropolitan District. The answer is that fully 50 per cent of the automobiles of the State are registered from the Metropolitan District, and that more than 50 per cent of the gasoline is purchased within that district. When the outstanding highway bond issues are paid for, and when it is no longer necessary to allocate so large a portion of the Highway Fund for general purposes, there should be available for construction purposes at least \$10,000,000, and to appropriate less than one third of that sum for projects in a district that pays in half of the Fund does not seem to this Division to be excessive.

COMMONWEALTH AVENUE UNDERPASS

It is with a great deal of pleasure that we call attention to the fact that the underpass carrying Commonwealth Avenue under Massachusetts Avenue in the Bay Bay section of Boston is nearly completed. This Division has studied, urged and recommended that improvement for several years. Its completion will enable the automobile traffic to and from the west to flow in an uninterrupted stream beneath the heavy north and southbound traffic of Massachusetts Avenue and will eliminate a serious traffic situation at that point. This underpass will be opened to traffic the latter part of January.

RAPID TRANSIT.

It is also gratifying to be able to report that in Boston the subway extension from Copley Square to Huntington Avenue via Exeter Street is under construction. The Division has urged this project for several years as the most economical way to speed up travel for the Elevated car riders using Huntington Avenue lines and also to clear up the congested condition along Boylston Street and Huntington Avenue. This subject was considered at some length in our 1936 report.

It is obvious that this subway project must eventually be extended westerly to pass under the busy Massachusetts Avenue intersection as far as Gainsborough Street and its ultimate terminus should be Tremont Street, if not Brookline Village. When this is accomplished, Huntington Avenue will become a very valuable extension of the Worcester Turnpike, almost into the heart of Boston, since the removal of the present street-car reservation will transform the avenue into a wide and efficient boulevard for general traffic.

STATUS OF HIGHWAYS AND PARKWAYS IN THE METROPOLITAN DISTRICT COMPLETED OR UNDER CONSTRUCTION.

The new highway in Revere, Malden and Saugus was completed November 30, 1937. This highway will connect the Newburyport Turnpike with Squire Road and thus, via the northern outlet, with the East Boston Tunnel.

The section of the Newburyport Turnpike from Felton Street in Saugus northerly to a point in Lynnfield just south of the Peabody line is being reconstructed and widened so that it will be double-barreled with two forty foot roadways separated by a twenty foot strip, and will include a new traffic circle at Fenton Street and three grade separations. This will be completed about the middle of December.

The northern portion of the Circumferential, Route No. 128, from Lynnfield passing under the Newburyport Turnpike and thence north-easterly into Peabody has just been completed as far as Andover Street.

The Huntington Avenue overpass is still closed as the reconstruction of the southerly approach is underway.

Grade Crossing Eliminations:

The Canton-Norwood-Westwood project was completed August 28, 1937.

The Waltham-Beaver Brook project was completed September 18, 1937.

There were twenty-six Chapter 90 projects completed during the year in fifteen cities and towns in the Metropolitan District. Among these is Commonwealth Avenue in Newton from the Boston line to Centre Street, Newton Centre. With the exception of a section between Brighton Avenue and Harvard Avenue in Boston, the whole length of Commonwealth Avenue from Boston to the Charles River is now in good condition.

The Metropolitan Park Department has improved many sections of the various parkways in the District. Work has been done on the Mystic Valley Parkway in Arlington, Memorial Drive in Cambridge, Soldiers Field Road in Brighton, Furnace Brook Parkway in Quincy, Quincy Shore Drive in Quincy and Chicatawbut Road in the Blue Hills Reservation from Randolph Avenue, Milton, through Quincy, to Granite Avenue, Braintree.

Reconstruction of a portion of the Revere Beach Parkway in Everett and a portion of the Mystic Valley Parkway in Medford was started in September.

The construction of a new bridge over the Mystic River to connect River Street in Arlington with Harvard Avenue in Medford was started August 26, 1937 and the bridge will be completed in April, 1938.

SPECIAL STUDIES.

In addition to those projects included in our recommendations, many studies and estimates of cost have been made this year, some at the request of our Commission, some at the request of special bodies studying various problems and some at the request of various towns and cities of the District.

A good deal of study has been given to the traffic problems in Boston, the Atlantic Avenue situation and the gateways to the north, south and west.

Many traffic circles have been studied and designed as well as grade separations at particularly serious intersections.

EAST BOSTON TUNNEL INCLINE — CAMBRIDGE STREET, BOSTON

We have given considerable study to the situation on Cambridge Street between Chambers Street and North Russell Street caused by the incline of the East Boston Tunnel. This incline forms a bottleneck at this point causing serious impediment to westbound traffic on Cambridge Street. Our plan proposes to reduce the size of the incline to accommodate only one track instead of two as at present, thereby allowing an extra lane for westbound traffic on the street. This is an inexpensive and much needed improvement. The estimated cost is less than \$20,000.

MATTAPAN SQUARE, BOSTON

This busy intersection has been studied and a recommendation made for a temporary or experimental traffic oval to provide rotary traffic to reduce accidents and expedite movement. Without any taking of property

and with only the slight expense of placing portable posts or standards, a rotary oval can be tried out and still leave forty feet of the pavement to be used for traffic all around. This would provide a large safety or pedestrian island in the centre of the Square. If this method of traffic handling is found satisfactory and an improvement on congested conditions, it could be made permanent. If not, it might indicate a modification or even, if removed, the cost to the City would have been practically nothing.

The parking problem should receive some attention in the Square. Diagonal parking should be prohibited and also parking at or too near the corners. A little cooperation and enforcement of commonsense parking rules are badly needed here.

METROPOLITAN DISTRICT MAP

Our maps of the Metropolitan District, both on the scale of 800 feet to the inch and 2,000 feet to the inch, have been revised and brought up to date to include the new highways recently constructed.

STATISTICS

The use of the automobile continues to increase as shown by the following table—the highest number of motor vehicles registered and the greatest number of drivers' licenses ever issued to date in Massachusetts.

STATE MOTOR VEHICLE REGISTRATION

CALENDAR YEAR — 1937

Pleasure vehicles	954,762
Commercial vehicles	119,167
Buses	4,917
Motorcycles	1,169
	<u>1,080,015</u>
Trailers	11,311
	<u>1,091,326</u>
Total Drivers' Licenses	1,178,934

The number of taxable gallons of gasoline consumed each month and the percentage of monthly consumption together with the corresponding receipts from the three-cent gas tax are given in the following table:

STATE GASOLINE CONSUMPTION

CALENDAR YEAR 1937

	GALLONS	%	TAX RECEIPTS
January	42,823,352	6.18	\$1,284,700.58
February	42,228,710	6.10	1,266,861.32
March	52,751,284	7.62	1,582,538.51
April	54,444,669	7.86	1,633,340.06
May	61,475,797	8.87	1,844,273.93
June	65,639,742	9.47	1,969,192.28

July	71,201,729	10.28	2,136,051.87
August	68,310,704	9.86	2,049,321.11
September	62,392,073	9.00	1,871,762.21
October	61,202,521	8.83	1,836,075.65
November	56,002,080	8.08	1,680,062.40
December	54,328,782	7.84	1,629,863.45
Totals	<u>692,801,443</u>	<u>100.00</u>	<u>\$20,784,043.37</u>

These figures compared with previous years indicate the steadily increasing use of the automobile and the steadily increasing income from the gasoline tax. About half of this income comes from the Metropolitan District.

FINANCIAL STATEMENT

APPROPRIATIONS AND EXPENDITURES FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1937

Appropriations	\$19,800.00
Expenditures	<u>19,708.77</u>
Balance	\$ 91.23

Respectfully submitted,
DIVISION OF METROPOLITAN PLANNING
By

FREDERICK H. FAY, *Vice Chairman*
and Acting Chairman

WILSON MARSH

RICHARD K. HALE

WILLIAM F. ROGERS

JOHN F. McDONALD

RICHARD D. GRANT

HENRY I. HARRIMAN, *Director*

Financial Statement Verified.

Approved.

GEO. E. MURPHY,
Comptroller.



