

# REGIONAL PLAN BULLETIN

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## Progress on Regional Highway System and A Program for Future Development

**Striking Advances Made . . . Metropolitan Loop Highway Progresses . . . Other Routes  
in Major Network . . . An Expanded System of Expressways . . .  
Program for Defense and Post-War Action**

The most noticeable change that would strike a visitor who is familiar with the New York Region but who has been absent thirteen years is the extent to which the highway system has been improved. He might be astonished at the amount accomplished but he would have little occasion to wonder at the pattern of routes if he remembered the system of highways proposed by the Regional Plan of New York and Its Environs. Expanding and modernizing the highway system at all levels of government—Federal, interstate, state, county and municipal—is the outstanding achievement in regional development, credit for which is due the officials and staff members of the various highway agencies.

In its preceding Bulletin the Regional Plan Association discussed parkway progress and a future parkway program was presented as part of the regional recreational system. This report reviews in a similar manner the growth of the highways available for all types of traffic, showing how the parkway system fits into and supplements the general pattern. A special section is devoted to expressways, including a proposed regional system of such routes, part of which would be open to general traffic and part of which would continue to be restricted to light passenger vehicles. A program for the future, particularly as part of a post-war public works program, is presented.

### Striking Advances Made

The Graphic Regional Plan published in 1929 showed a system of major highway routes, existing and proposed, involving a total of 2,548 miles.<sup>1</sup> Some additions have since been made in the process of

keeping the Plan up-to-date. Progress is reported during the twelve-year period ending with 1940 on 1,419 miles of major routes representing about 54 per cent of the mileage in the original scheme. A large part of this, 979 miles, involved construction of new routes or the substantial improvement of old ones, so increasing their capacity that they could take their proper place in the regional system. The balance of the progress consists in the official adoption or study of certain routes assuring their future construction.

In the central part of the Region the adoption on January 2, 1941, by the City Planning Commission of New York City of a "Master Plan of Express Highways, Parkways and Major Streets" has assured a proper coordination into and through New York City of previously isolated expressways. It has also given impetus to the theory, long advanced by the Association, that a considerable part of such routes should be available for general traffic, giving commercial vehicles the same opportunities for express movement as has been so well supplied for passenger vehicles in Westchester, Putnam, Dutchess and Fairfield counties and on Long Island. It will be shown herein how completely this Master Plan for New York City highways ties in with the proposed regional highway system.

There has been a greatly increased recognition of the need of establishing some adequate form of roadside control in order that state and county highways may continue to have an efficiency which, in many cases, has proved only temporary as uncontrolled roadside development has brought congestion and increased accident hazard. The New Jersey State Chamber of Commerce and the New York and New Jersey Roadside Councils have been particularly active in pointing out the urgency of this problem and in advocating measures to solve it.

<sup>1</sup> The Plan also contained subordinate highway routes made up of about 1,800 miles of minor regional highways and 2,000 miles of important connecting routes. Progress on these is not reported herein except where small sections of the former have since been re-classified as major routes.

The following pages review briefly the progress on the major regional routes in the twelve years from 1928 through 1940, with emphasis on the last four years of that period and with notes on new developments in 1941. These are grouped according to their place in a diagrammatic scheme made up of circumferential, inner and radial routes. A second section deals with expressways and a final one presents a four-year program for the advancement of the high-

A summary of the mileages of major improvements for both the twelve-year and concluding four-year periods are given in the table facing page 4. In many cases routes previously improved have been further improved since 1936, as reported herein, but the mileage involved is not included in the 1936-1940 figures.

### CIRCUMFERENTIAL ROUTES

The system of circumferential routes consists of a

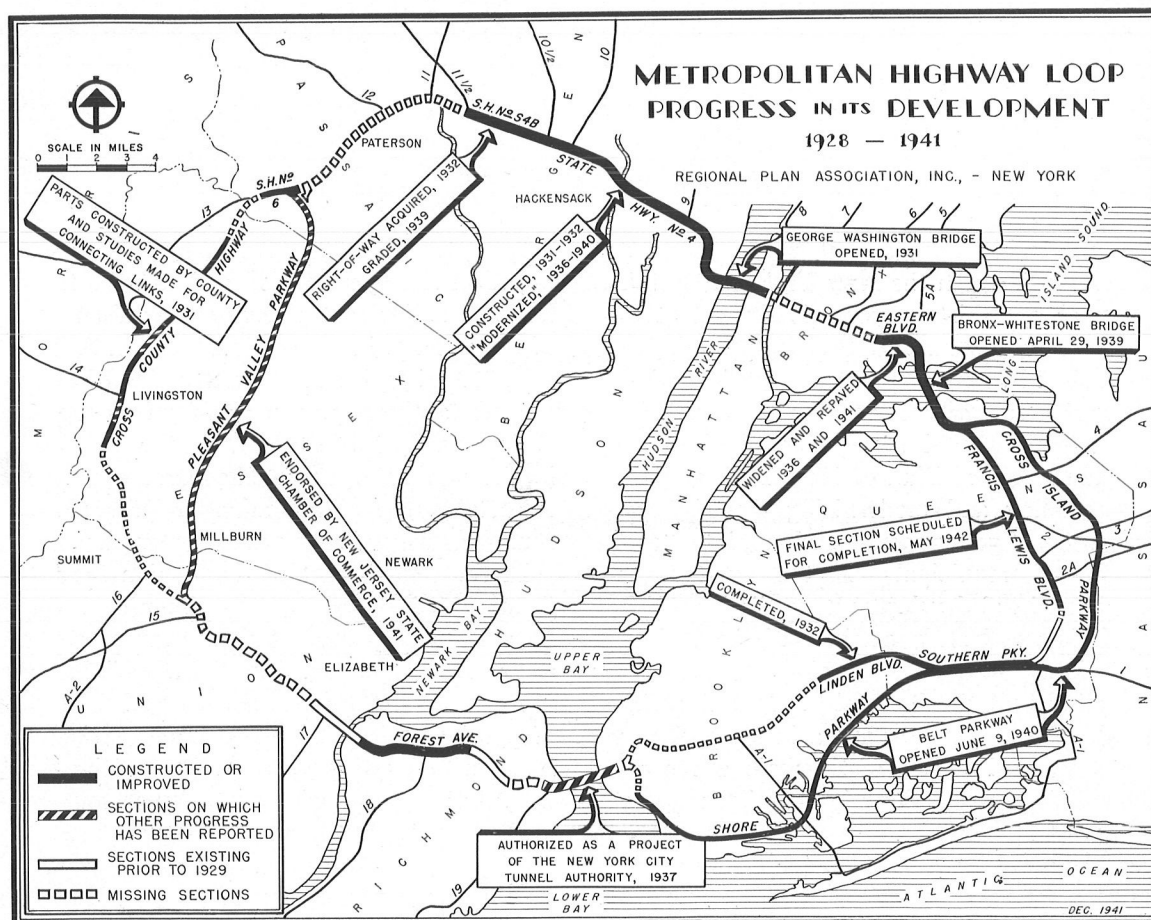


FIGURE 1

way system available for general traffic.<sup>1</sup> As in the parkway program presented in the preceding Bulletin, the proposals herein will, of course, be subject in many cases to Federal priorities resulting from the national defense program and most of them will, therefore, logically fall into a post-war program of public works. Wherever possible preliminary studies should be made and necessary rights-of-way acquired so as to facilitate their inclusion in such a deferred program.

<sup>1</sup> See FROM PLAN TO REALITY (1933), Chapter II, and FROM PLAN TO REALITY, TWO (1938), Chapters II and III, published by Regional Plan Association, Inc., for a detailed analysis of the periods 1928-1932 and 1933-1936 respectively.

series of concentric rings about the central core of the Region to provide circulation generally at right angles to radial arteries. The Metropolitan Loop is the principal circumferential or belt highway. Progress on the advancement of circumferential routes during the past twelve years may be seen in Figure 2 (facing page 4) and development during the past four years is as follows:

### Metropolitan Loop

This route forms the main key of the regional highway system, encircling the intensively urbanized sec-

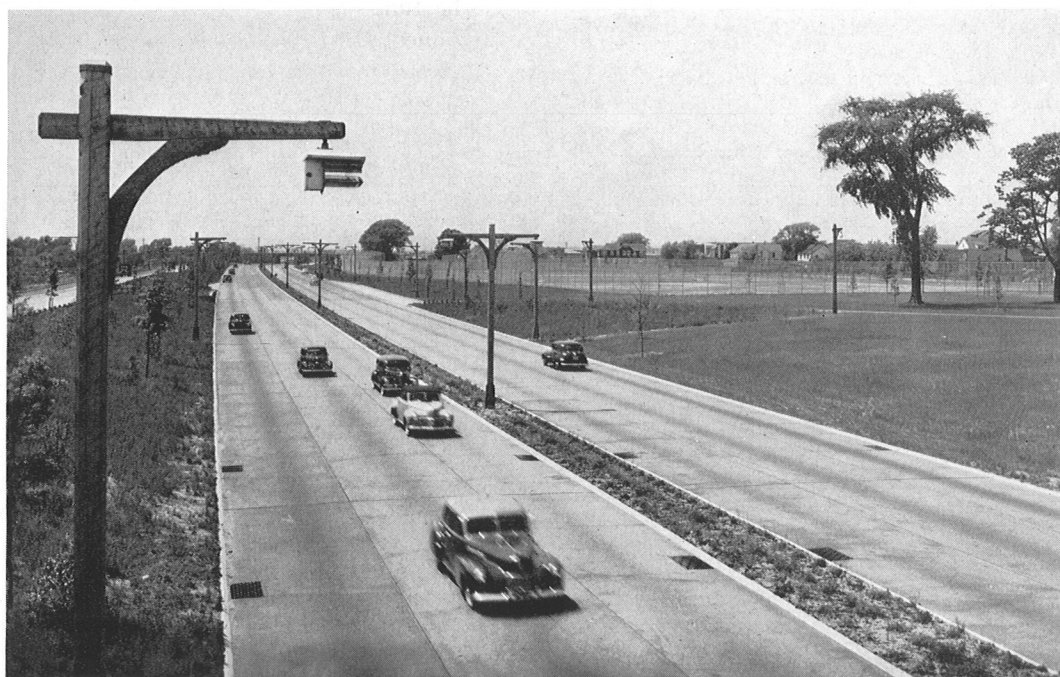
tions of New York and New Jersey at approximately 14 miles from New York City Hall. Its major purpose is to provide through mixed traffic with a central area bypass and a convenient means of interchange between radial routes, thereby relieving congestion within the heart of the Region. Radial arteries connect at the Loop with a system of "Inner Routes" designed to serve the central area.

During the past four years the Brooklyn-Queens segment of the Loop has been paralleled with a parkway. In New Jersey a proposal very similar to this, calling for a 14-mile Pleasant Valley Parkway, has been initiated by the New Jersey State Chamber of Commerce. While both of these will be limited to light

The relation between the present status of the Loop and the advancement of other major highways of the regional system in the central part of the Region is given in Figure 3 (facing page 8).

Excluding the parallel parkways, progress on the main Loop to date shows 48 miles, or 41 per cent, of its total length constructed and an additional 15 miles, or 13 per cent, having received official preliminary action. Of this total, seven miles have been advanced within the past four years. Statistics summarizing progress of the extensions of the Loop are included in those given in the summary table facing page 4.

*Major Waterway Crossings.*—When the Regional Plan was first published, the only existing major waterway crossing in



*Courtesy, Department of Parks, City of New York*

#### METROPOLITAN HIGHWAY LOOP IN THE BOROUGH OF QUEENS

Southern Parkway along the old Conduit right-of-way. Flanking service roads are inadequate for rapid movement of commercial traffic which is prohibited on the central roadways.

passenger vehicles, they will do much to relieve congestion within the central part of the Region. The Association regards them as important supplements to its original Metropolitan Loop proposal, but still holds that the ultimate development of the latter will require a complete loop available for mixed traffic.

A simplified diagram of the Loop, indicating the present character and extent of progress toward its development since the preparation of the Graphic Plan in 1928, is given in Figure 1. Progress shown along its mixed traffic course does not necessarily imply that in each case an adequate type of route has been supplied.

the course of the Loop was the Goethals Bridge over the Arthur Kill, which provided the southerly connecting link between New York and New Jersey. In 1931 the George Washington Bridge supplied the northern interstate connection. The third major waterway was crossed by the Whitestone Bridge which opened April 29, 1939. Ultimately, the proposed Narrows Tunnel and a new bridge over the Harlem River at West 178th Street will be required, each of which has received official consideration.

*In New York City.*—In Manhattan, the Loop was extended easterly about half a mile from the George Washington Bridge Plaza by a crosstown vehicular tunnel, the first in the city. Constructed by the Port of New York Authority and officially opened June 27, 1940, it is two lanes wide and extends under West 178th Street to connect with the Harlem River Driveway in Highbridge Park. A similar tube is planned under West 179th Street. From the above point the Regional Plan calls for a new bridge over the Harlem River to The Bronx which should



include in its design accommodations for future rail communication.

From the Harlem River a new route is proposed to extend across The Bronx to connect and follow Eastern Boulevard from a point where the latter intersects the projected extension of Bronx River Parkway, to and along the Whitestone Bridge into Queens. The section utilizing Eastern Boulevard was widened and repaved in July, 1936, as an approach to the Triborough Bridge; further widening was under way in 1941.

During the past four years advancement of the Queens part of the Loop has taken place section by section so that at the present time a link only about one and a half miles in length through Cunningham Park remains incomplete.<sup>1</sup> On November 13, 1939, a four-mile stretch of Francis Lewis Boulevard<sup>2</sup> from the Whitestone Bridge to the World's Fair Boulevard was opened. Plans call for eventual grade separations at Northern and World's Fair boulevards, Crocheron Avenue, and Union Turnpike. Sufficient land was acquired at these points to permit construction of bridges and ramps. Another portion, from a point south of Grand Central Parkway to Springfield Boulevard, was repaved since the last report of progress, with two 36-foot roadways separated by a five-foot mall.

From the intersection of Springfield Boulevard and Sunrise Highway<sup>3</sup> the route extends westerly through Brooklyn to the proposed Narrows Tunnel. Originally laid out to follow existing and mapped streets, recent study by both the Regional Plan Association and the New York City Planning Commission resulted in realigning the location slightly to the north to follow Linden Boulevard, the Bay Ridge Division of the Long Island Railroad and Fort Hamilton Parkway to the proposed tunnel. The older alignment is retained as a supplementary major route.

*In New Jersey.*—Occupying the unique position as "gateway" to the Port of New York, New Jersey has concentrated its efforts on the development of arterial trunk line highways converging on river crossings. The merging of through traffic in the northeast counties of the State seriously impedes the movement of local traffic. Congestion along north-south routes can be relieved to a large extent by an adequate bypass around the highly developed and densely populated section.

The New Jersey State Chamber of Commerce appointed a Highways and Parkways Committee to study the problem. One of the chief difficulties confronting them was the location of a modern north-south route to connect the populous northern area with the shore resorts. Their study which was made in 1941, includes a parallel parkway for the entire length of the north-south segment of the Loop in Essex County. This is shown in Figure 1, but is not recorded as progress as defined in this report.

Also, in Bergen County the channelization of New Jersey State Highway No. 4 between Fort Lee and State Highway No. 2 and a grade separation at Maywood Avenue constitute a decided improvement in this segment of the Loop.

A section of the Loop following projected New Jersey State Highway No. S-4B between Arcola and Radburn in Bergen County has been graded. The joint effort by communities through which it passes to develop this in accordance with good standards is described under Radial Route 11½.

*Branch of Metropolitan Loop Around Jamaica Bay (Route A-1).*—This provides access from the east and west to the resorts of the Rockaway Peninsula connecting with the Metropolitan Loop at Springfield in Queens and via Flatbush Avenue in Brooklyn.

Construction of the Marine Parkway Bridge and its approach road through Jacob Riis Park to connect with Rockaway Beach Boulevard was well under way at the time of the previous report of progress. These have been completed and were formally

opened by the Marine Parkway Authority<sup>1</sup> on July 3, 1937.

In July, 1938, a section of the route between the Marine Parkway Bridge approach and Beach 116th Street was completed. This improvement extends the route more than two miles along the north shore of the Rockaway Peninsula and consists of a dual roadway with a central separator strip.

As part of the State's program for eliminating grade crossings on the Rockaway Peninsula, an entirely new route has been supplied<sup>2</sup> between Beach 108th Street and Beach 83rd Street. While this was not included in the original proposals of the Graphic Regional Plan it is regarded as a valuable addition in that it will provide traffic relief in a badly congested section of the city.

Another section of this route which utilizes Rockaway Boulevard from West Broadway in Lawrence to a proposed cut-off to Springfield Boulevard in Queens County was widened and repaved during 1938.

### Outer Circumferential Routes

The function of the outer circumferential routes is to connect the principal radial highways and provide direct routes for intersectional travel. The Metropolitan Bypass provides a route around the central area for traffic from or to points outside the Region.

*Suburban Belt Highway (Route B).*—The most extensive development along the entire route is the Thomas A. Edison Memorial Bridge in Middlesex County which carries the route over the Raritan River. Radial Route 19 coincides with Route B at this point and reference to the new crossing is made under that heading.

At the south end of the new bridge a section of New Jersey State Highway No. 35, reconstructed in 1940, supplies an improved alignment through South Amboy to Morgan. An extension of this to Lawrence Harbor is under construction, scheduled for completion late in 1942. This involves new bridges over Cheesequake Creek and the New York & Long Branch Railroad.

Through Morris and Somerset counties sections of Route B have been widened and repaved at various dates, totaling nine miles. In Bergen County Route B corresponds to a short section of projected New Jersey State Highway No. S-4B, and a new cross-county route. Progress is reported on the former under Radial Route No. 11½. The latter has been included in the Master Plan adopted by the County Planning Board in 1940.

The complete development of Route B through Westchester County calls for a mixed traffic route paralleled by a parkway type highway. Developments along the latter for the past four years are described in the preceding Bulletin.

*Rural Belt Highway (Route C).*—From Amityville northerly to New York State Highway No. 109 on Long Island, this route has been improved as State Highway No. 110. This consists of widening and the installation of a new pavement of a variable width and was completed in November 1939.

Between Harriman and Central Valley, in Orange County, Route C has also been widened and rebuilt (completed in November 1938) as a part of New York State Highway No. 32.

*Outer Branch of Route C (Route C-2).*—Construction of a new pavement was completed in January, 1938, on the section of this route in Suffolk County, Long Island, following New York State Highway No. 112 from Patchogue to Medford.

In Putnam County a new alignment of U. S. Highway No. 6 for a distance of one mile east of Brewster has been provided and a new pavement installed in October, 1941. Plans for extending this to the Connecticut State line have been completed by the New York State Department of Public Works. The extension is planned over new right-of-way for its entire length.

<sup>1</sup> Under construction November, 1941, scheduled for completion June, 1942.

<sup>2</sup> Formerly Cross Island Boulevard.

<sup>3</sup> Part of this now called Southern Parkway.

<sup>1</sup> Merged with the Triborough Bridge Authority on February 8, 1940.

<sup>2</sup> Opened on July 3, 1941. Later in the year this was extended to Beach Channel Drive and 112th Street.



## INNER ROUTES

Within the Metropolitan Loop is a gridiron pattern of inner routes consisting of three east-west and nine north-south arteries connecting with the principal radials. This is supplemented by a number of diagonal connections classified as "S" or supplementary routes and a few parkway or boulevard routes classified as "P" routes. Development advancing both of these types of routes is reported along with the inner routes.

The present extent and character of progress along major routes in the central part of the Region is shown on the map in Figure 3. Progress along parkway types of routes has been described in the preceding Bulletin.

Progress for the past four-year period is reported on 27 miles of inner routes of which 25 miles were construction.

### East-West Routes

On the three east-west inner routes, which involve crossing both the Hudson and East rivers, a total progress of 12 miles is reported for the past four years, of which eight miles have been or are being constructed. Description of these developments follows:

*Lower Route (Inner Route I).*—This highway extends from Livingston in Essex County to Springfield in Queens County. In New Jersey a small section, following Belleville Turnpike from Newark Turnpike to the projected New Jersey State Highway No. 10, was improved by widening and elimination of two railroad grade intersections. The improvement involves a viaduct about one-third of a mile long and was completed in 1937.

The portion of the route in Manhattan extending from the Holland Tunnel to the Manhattan Bridge, has had an interesting history. In 1922 the late Nelson P. Lewis, as director of



*Courtesy, New Jersey State Highway Department*

THOMAS ALVA EDISON MEMORIAL BRIDGE

Supplementing the Victory Bridge across the Raritan River for relief of traffic to the resort areas along the Atlantic.



*Courtesy, New Jersey State Highway Department*

BRIDGE ACROSS PASSAIC RIVER ON OLD LINCOLN HIGHWAY

The Pulaski Skyway which appears in the background is limited to light passenger vehicles.

engineering studies for the Regional Plan, developed studies for an elevated highway in the center of Canal Street. Subsequent studies were made in 1929 for the publication of the Plan and in 1939 in connection with the Battery-Brooklyn Bridge controversy. Studies have been made by the City Planning Commission and the Borough President's office, and in November, 1940, the Triborough Bridge Authority included it in a proposed program of National defense directed toward filling in vital gaps in the New York highways.

Through Brooklyn and Queens the route follows Atlantic Avenue and Southern Parkway.<sup>1</sup> During 1939 construction on the removal of grade intersections with Long Island Railroad tracks along Atlantic Avenue from East New York to Dunton was started and is scheduled for completion on October 1, 1942. This improvement calls for the depression of tracks and the development of a highway above them.

A connection between Atlantic Avenue and Conduit Boulevard is being built as part of the Atlantic Avenue improvement. An extension of this along a widened and improved Conduit Boulevard will eventually form a continuous connection between Atlantic Avenue and Southern Parkway.

The eastern end of the route has been supplied with a dual central express roadway for light passenger vehicles with four-lane service roadways on each side for local and commercial traffic. This was completed in May, 1941 as part of the Belt Parkway.

*Central Route (Inner Route II).*—This route runs about midway through the center of the area within the Metropolitan Loop, from the eastern part of Queens County to Totowa in Passaic County. At the last report of progress, construction of its two major river crossings was under way and the small section utilizing New Jersey State Highway No. 3 was completed.

In the latter part of 1937 construction on the south tube of the Hudson River crossing (Lincoln Tunnel) including its approach on the New York side was completed and on December 21st of that year opened to carry two-way traffic.

On May 2, 1938, the shell of the second tube was "holed through" and shortly afterward the concrete work finished. Completion of the tube including its New York approach was deferred at this time because highway facilities leading to the tunnel could not accommodate traffic from two tubes. Work was

<sup>1</sup> Formerly Sunrise Highway.



*Courtesy, New York City Tunnel Authority*

#### PORTAL AND PLAZA OF QUEENS MIDTOWN TUNNEL

View looking toward Manhattan, showing relation of tunnel alignment to the uptown area.

resumed on June 1, 1941, and is scheduled for completion in 1943, including the New York City approach.

Contracts for the construction of the New Jersey approach to the tunnel were awarded July, 1937, and this section of the route was formally opened June 30, 1939. It extends from the tunnel plaza to connect with New Jersey State Highways 1 and 3 at the eastern edge of the Hackensack Meadows and provides express movement for three lanes of traffic in each direction.

Before the completion of the Lincoln Tunnel the desirability and necessity of a distributor route for directional traffic to the southwest were recognized by the Regional Plan Association. Accordingly a freeway type route was laid out on the Graphic Regional Plan as a southwest tunnel approach across the Hackensack Meadows to connect with proposed State Highway No. 10 at Belleville Turnpike and thence to extend southerly across

the Passaic River to State Highway No. 25 in Newark. This proposal has since received recognition by the New Jersey State Highway officials and is included in their plan of metropolitan New Jersey highways as a needed facility.

From State Highway No. 3 in East Rutherford the route follows projected State Highways S-3 and 6 to the Metropolitan Loop near Totowa. Construction of roadways, including a viaduct across Berry's Creek and the Erie Railroad, is at present under way from the previously graded section of this route across the Meadows to its intersection with Rutherford Avenue and State Highway No. 2. Completion of this portion is scheduled for the latter part of 1942.

Proceedings are at present under way for widening Rutherford Avenue which will extend this proposal over the Passaic River to Passaic Avenue in Clifton. From this point, an entirely new right-of-way 180 feet in width is being graded to its junction with State Highway No. 6 at Valley Road.

The Queens Midtown Tunnel, the East River crossing on this route, previously reported as under construction, was formally opened to traffic on November 15, 1940. At the dedication ceremony the chairman of the New York City Tunnel Authority publicly expressed his appreciation to the Regional Plan Association for the invaluable aid early studies of the project by the Association had played in arrangements determining the financing of its construction.

A new six-lane elevated express highway from the tunnel plaza at Hunters Point to the cloverleaf intersection at Borden and Meeker avenues was also completed and opened with the tunnel. This extends the route approximately  $1\frac{1}{2}$  miles over the length previously reported and is the chief improvement in Queens to accommodate anticipated tunnel traffic. Ultimate plans for this approach road extend this portion of Route II along Borden Avenue to the intersection of World's Fair<sup>1</sup> and Queens boulevards. It is included on the City Planning Commission's Master Plan of Highways and will be constructed at some later date.

*Upper Route.*—This extends from Bayside on Long Island across the Harlem section of Manhattan to Paterson, New Jersey. In New Jersey a section following New Jersey State Highway No. 6 from State Highway No. 2 at Hasbrouck Heights to its intersection with the New York, Susquehanna & Western Railroad in East Paterson was completed in December, 1937. From this point a new proposed cut-off to the Market Street Bridge extends the route through Paterson over existing thoroughfares.

The above section is part of an improvement which has been completed to Clifton and includes a new bridge over the Passaic River. This latter part is diagonal in direction and corresponds to Supplementary Route S-8. From Clifton the supplementary route extends to Valley Road near Great Notch. This was graded during 1940 and construction was awaiting appropriation of funds.

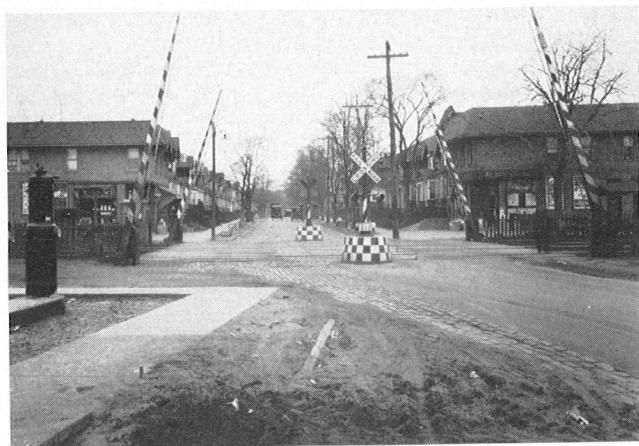
This route includes a future vehicular tunnel under the Hudson River and crosses Harlem in the vicinity of 125th Street, entering Queens via the Triborough Bridge.

In its course along Northern Boulevard the section from Lawrence Street to Kings Road in Flushing was reconstructed as a six-lane dual highway during 1938. The improvement extends over Lawrence Street and includes a new bascule type bridge over the Flushing River. The improvement removes an old bottleneck along the route and will materially aid traffic between the Triborough Bridge and north shore communities.

Diagonal Route S-24 in Northern Queens extends Astoria Boulevard in a southeasterly direction to the Metropolitan Loop (Francis Lewis Boulevard) in the Bellaire section of Queens where Radial Route 2 extends it eastward as a new arterial through the central part of Long Island. A large part of this proposal follows the old Stewart Railroad right-of-way and

<sup>1</sup> Formerly Horace Harding Boulevard.





*Courtesy, Typographical Bureau, Borough of Queens*

#### WOODHAVEN BOULEVARD BEFORE AND AFTER IMPROVEMENT

View at left shows grade intersection with the Long Island Railroad taken in April, 1927. View at right was taken in May, 1941, from a point south of the viewpoint of the other picture; railroad grade separation can be seen in background.

has the endorsement of the New York City Planning Commission.

An important artery supplementing east-west facilities in Queens is World's Fair Boulevard (P-33). This was extended from Rodman Street westerly across Flushing Meadow Park to Queens Boulevard. Completed in September, 1937, it provides relief both to Northern Boulevard and to Grand Central Parkway.

Northern Boulevard (S-24) was widened and repaved between Woodside and Flushing following the removal of trolley tracks in 1938.

#### North-South Routes

Of the nine inner routes running approximately from north to south progress has occurred on six—Routes "a," "b," "e" and "f" in New York, and Routes "d" and "g" in New Jersey.

On Route "g" below the Passaic River the alignment has been moved from State Highway No. 25 easterly to a position along the Central Railroad of New Jersey to coincide part of the way with legislated State Highway No. 100 which has been studied by the State Highway Department.

Route "d" coincides with legislated State Highway No. 100 between State Highway No. 6 in Bergen County and a point opposite Tonnelle Avenue traffic circle, having received official study between these points.

Progress on Route "a" in Manhattan includes the extension of the West Side Elevated Highway from Canal to Duane streets and the completion of Henry Hudson Parkway.

On Route "b," most of which will be limited to light passenger vehicles, progress included a ramp connection between the tunnel approach to the George Washington Bridge and the Harlem River Driveway (opened to traffic in June, 1940); submission of a plan for the Harlem River Drive southerly to the Triborough Bridge to the Board of Estimate by the Borough President and completion of several sections of the East River Drive; starting construction on the Battery-Brooklyn Tunnel in October, 1940, which will connect both Routes "a" and "b" with Route "e" in Brooklyn.

Progress on Route "e" consisted of Meeker Avenue widening; new high-level bridge over Newtown Creek; and construction of an express highway along Laurel Hill Boulevard. Further advancement of the route has been the selection of a new alignment south of the Queens Midtown Tunnel, bypassing the down-

town section of Brooklyn. Hicks Street, to be widened as an outlet of Gowanus Parkway (partly completed in November, 1941) is included in the new alignment. Fourth Avenue parallels Gowanus Parkway as an approach to the proposed Narrows Crossing. Completion of Major Deegan Boulevard as a modern express artery improved Route "e" for a mile of its length in The Bronx.

On Route "f" progress has occurred on the part of Connecting Highway utilized by this route, namely, the section along the New York Connecting Railroad between Queens and Astoria boulevards. Progress consists of official adoption and a start on construction. The southerly part of Route "f" has been shifted to follow the railroad to a point opposite Fresh Creek Basin.

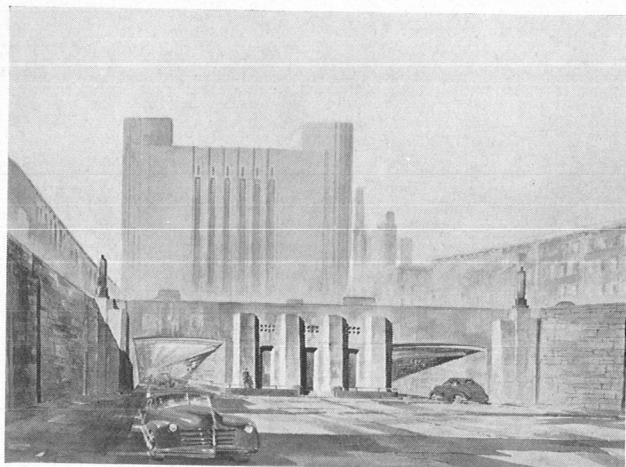
On the inner Supplementary Route S-29, consisting of Woodhaven and Cross Bay boulevards, construction of the section between Queens Boulevard and Forest Park was completed in midsummer of 1937 and the project for widening the route south of the park to Rockaway Boulevard in Ozone Park was opened to the public in December, 1940. Cross Bay Boulevard trestle and bridge have been rebuilt from Big Egg Marsh to the Rockaway Peninsula and extended across the peninsula to the beach front improvement. This section of the route was sponsored by the New York City Parkway Authority as a self-liquidating project and was opened as a ten-cent toll crossing on June 3, 1939. Widening of the last unimproved section of this route across Big Egg Marsh was completed in May, 1941.

#### RADIAL ROUTES

The radial highway system of the Regional Plan is comprised of 21 major general traffic routes which are supplemented by ten parkway routes. These routes radiate from the Metropolitan Loop to the edges of the Region where 16 of them connect to trunk line arteries leading to other centers. At the Loop the system of inner routes, described above, extends the radials through the central area of the Region.

The extent of progress for the twelve-year period is illustrated in Figure 2. The figures in circles are the route designations of the Regional Plan highway system. A description of progress on individual routes during the past four years follows:





Courtesy, New York City Tunnel Authority

#### BATTERY-BROOKLYN TUNNEL

The Brooklyn portal with the ventilation building above. Construction started on the tunnel in October, 1940.

*Route 1—Sunrise and Montauk Highways on Long Island.*—During the past four years the section of this route which follows the Southern Parkway<sup>1</sup> in Queens County has been completely rebuilt as part of the Belt Parkway. This is a one-mile stretch extending from Springfield Boulevard (Metropolitan Loop) to Laurelton Parkway at Rosedale. Other physical improvement of this route was limited to a grade crossing elimination on the Sunrise Highway at Lynbrook.

Preliminary studies for improvement of the route between Patchogue and Center Moriches have been completed by the New York State Department of Public Works. It is designed as a dual highway, two lanes in each direction, and involves a new alignment between Mastic and Center Moriches.

*Route 2—Through Central Long Island.*—A small section of this from New York State Highway No. 109 easterly through Farmingdale was widened to a width varying between 36 and 53 feet. Construction was completed in July, 1939.

*Route 3—Jericho Turnpike on Long Island.*—In September, 1938, a four-mile bypass along this route north of Riverhead was completed. The improvement extends over new right-of-way from Calverton to Aquebogue and consists of a four-lane dual roadway.

Plans have been completed by the New York State Department of Public Works to widen the section of this route from the junction of State Highway No. 25A easterly to Old Country Road (Riverhead Bypass). Two lanes to be added along the south side will be separated by a mall from the existing roadway.

*Route 4—Northern Boulevard, North Hempstead Turnpike, and North Country Road.*—A high-level viaduct to carry this route across the head of Hempstead Harbor at Roslyn as shown on the Graphic Regional Plan was approved by the War Department, but construction was delayed by lack of funds.<sup>2</sup>

In 1937 the reconstruction of the antiquated railroad underpass on North Hempstead Turnpike east of the proposed Roslyn viaduct was completed.

*Route 5—General Traffic Highway to Boston.*—This route serves mixed traffic along the north shore of Long Island Sound. A spur (Route 5-A) connects the Whitestone Bridge to the main route at the point south of the Bronx-Pelham Parkway.

In Westchester County it follows the projected Pelham-Port

Chester Freeway, the right-of-way for which has been acquired by the Westchester County Park Commission.

In New York City the southern end of the route (5-A) was opened to traffic on October 11, 1941, by the Triborough Bridge Authority and provides a direct connection to the Hutchinson River Parkway from the Whitestone Bridge. The Association contended that its location was ultimately the proper site for a freeway to take mixed traffic from the future Pelham-Port Chester Parkway as well as the light passenger traffic from Hutchinson River Parkway.

In conjunction with supplying adequate outlets for the Triborough and Whitestone bridges, Eastern Boulevard is being widened and repaved by the City from the Bronx River to Pelham Bay Park. The permanent efficiency of this is doubtful unless immediate measures are taken to protect and insure free flow of traffic. Ultimately a new extension through Pelham Bay Park along the New York, New Haven & Hartford Railroad to connect with the Pelham-Port Chester Freeway will be required.

*Route 7—Radial Route through Central Westchester.*—In 1938 a section utilizing New York State Highway No. 22 was realigned and widened along the east side of Kensico Reservoir from Valhalla to New York State Highway No. 120. The improvement provides for four lanes of traffic and includes a new bridge across an arm of the reservoir.

Another section on a new right-of-way between Katonah and Goldens Bridge was under construction in October, 1941. The program of the State Department of Public Works lists the extension of this improvement to the Putnam County line to be completed within three years, including a grade separation structure at Croton Falls.

*Route 9—Along the West Shore of the Hudson River.*—A new alignment has been selected for this route below Hook Mountain, consisting of New York State Highway No. 303 in Rockland County and following a new right-of-way two miles further west to New Jersey State Highway No. 4. The latter was studied and adopted by the Bergen County Planning Board.

Construction on the Storm King Bypass along U. S. Route 9-W has been completed with the last and final link opened in August, 1941. The improvement consists of a four-lane dual roadway and extends from the Bear Mountain Bridge northward to a point on U. S. Route 9-W about 2½ miles south of Newburgh.

*Route 11—Northwest Radial of Expressway System.*—This route extends New Jersey State Highway No. 2 (Radial Route 10½) from U. S. Route 202 in Bergen County to the limits of the Region at Chester and, with the exception of a proposed new bypass of Harriman, follows New York State Highway No. 17.

In Rockland County a portion of this route between the State line and Ramapo was widened from 30 to 44 feet during 1937. Early the following year another section from the Orange County line to Southfields, where a new cut-off is proposed to Monroe, was widened from a three-lane to a four-lane highway. Just east of the limits of the Region at Chester, a grade crossing elimination of the Lackawanna & Hudson railroad tracks was completed in 1937.

The future program of the New York State Department of Public Works calls for a traffic separation north of Hillburn at the junction of Routes Nos. 17 and 59 and also for the relocation of Route No. 17 to by-pass Sloatsburg.

*Route 11½—Arcola to Greenwood Lake.*—Starting at the Metropolitan Loop at Radburn just east of Paterson this route follows projected New Jersey State Highway S-4B to its terminus on Outer Circumferential Route C at the south end of Greenwood Lake.

As early as 1932 the right-of-way for this new route was determined between Radburn and U. S. Route No. 202 in Oakland. In 1937 the portion from Oakland over the Ramapo Mountains to a point on the existing road leading to Greenwood Lake at the northern part of Wanaque Reservoir was surveyed.

<sup>1</sup> Formerly Sunrise Highway.

<sup>2</sup> Under the program adopted by the voters of the state on November 4, 1941 this will be financed by funds diverted from railroad grade crossing elimination bonds.



*Courtesy, Connecticut State Highway Department*

#### MERRITT PARKWAY

An expressway in Connecticut constructed as a parkway and limited to light passenger vehicles.

tures of expressway design when applied to highways to which the abutting owners have the traditional right of access, may make an expressway temporarily or partially—such features as grade separations, central dividing strips, service roads, super elevations on curves, vertical and horizontal curves of large radii and broad shoulders—but it cannot be emphasized too much that a large part of the money spent on such improvements is wasted in metropolitan areas where there is no limitation on the access to the roadways.

The concept of the express routes needed for the Region has changed since the publication of the Plan<sup>1</sup> by expansion to include the principal through routes in the Region. The emergence of freeway legislation and the success of parkways in New York and Connecticut make such a network as shown in Figure 4 appear within the realm of practicability. In fact many of the lesser routes not indicated in the illustration should be freeways or parkways if and when they are established over new rights-of-way.

In the expressway system proposed for the Region there are 1,240 miles. Of these, 732 miles are for mixed traffic and 508 miles for passenger cars only. About one-fourth of the total mileage is in existence as express routes, nearly 85 per cent of which are parkways. New York State accounts for 84 per cent of today's parkway

mileage, Connecticut 16 per cent, and New Jersey none.

#### Freeway Legislation

Several states have enacted legislation permitting the construction of freeways or limited access highways. New York and Rhode Island passed freeway laws in 1937, followed later by Connecticut, California, West Virginia, Colorado, Maryland, Michigan and Ohio.

The routes shown as proposed are those deemed most necessary and practical to develop as expressways either by the inclusion and improvement of existing roadways or parallel alignments. A comparison of this map with that of Figure 2 will reveal the existing routes to which the expressways are related.

#### PROGRAM FOR DEFENSE AND POST-WAR ACTION

With a background of an analysis of progress that has taken place in a broad way throughout the past twelve years and one in more detail for the past four, a program is offered herewith for the advancement of mixed traffic highways within the next four years. These have been correlated with the requirements of recreational traffic described in the preceding Bulletin. A map illustrating the location of projects included in the program is shown in Figure 5 on page 14. Immediately below the map recommended action on each project is listed.

Practically all of the projects contained in the pro-

<sup>1</sup> Compare REGIONAL PLAN, VOLUME I, Page 268, and Information Bulletin No. 33, "The Freeway, a Modern Highway for General Traffic in Metropolitan Area," December 14, 1936.



gram are in the intensively developed sections of the Region where traffic has increased faster than adequate facilities could be provided. The program is designed to supply those missing links in the proposed regional highway system which will do most to correct prevailing congestion, particularly where it is more acute by reason of the emergency. Most of the program is aimed at post-war construction although several proposals are advanced as vital links in the defense highway system. The order of presentation does not imply an order of urgency but follows a clockwise numbering system used to locate the projects on the map.

### Action on 1937 Program

Sixteen proposals for the development of general traffic facilities of the regional highway system were included in the 1937 program of public works. Nine were recommended for construction and seven for official adoption or further study. Construction has taken place in whole or in part on seven of these proposals including two projects which were advanced further than the Association recommended. Five of the projects have been adopted as parts of the master plans of New York City and Bergen County. Following is a tabular summary of the progress on each of the projects in this earlier program:<sup>1</sup>

<i>Project</i>	<i>Action to Date</i>
Midtown Manhattan Underpass.....	Adopted on Master Plan.
Relief of New York State Highway No. 17.....	Existing roadway widened. No action taken on parallel relief road.
Southwest Approach to Lincoln Tunnel.....	Preliminary study by New Jersey State Highway Department.
Pelham-Port Chester Freeway.....	No action.
Creedmoor Freeway.....	Adopted on Master Plan.
Long Island Approach to Queens Midtown Tunnel.....	Completed to Meeker Avenue. East of this point it has been adopted on the Master Plan.
Brooklyn-Queens Express Highway .....	Partly completed; another section officially authorized. Remainder adopted on the Master Plan.
Metropolitan Loop Highway.....	In Queens, its final link is under construction. The Bronx section and Narrows Crossing have been adopted on the Master Plan. No action on New Jersey section.
New Jersey State Highway No. S-3 .....	Under construction.

<sup>1</sup> For parkways included in this program see previous Bulletin.

<i>Project (continued)</i>	<i>Action to Date</i>
New Jersey State Highway No. 21 .....	No action.
Atlantic Avenue .....	Scheduled for completion October 1, 1942.
Crosstown Express Highway in Vicinity of Canal St., Manhattan .....	Adopted on Master Plan.
Park Avenue Improvements, Manhattan .....	Adopted on Master Plan.
Northerly Express Highway Approaches to Triborough and Whitestone bridges.....	Partly realized by completion of the Hutchinson River Parkway Extension.
Hamilton Avenue-Battery Tunnel .....	Under construction.
Express Highway on East Side of Hackensack Meadows.....	In Bergen County, adopted on Master Plan. No action taken in Hudson County.

### Construction

Considered in the light of financial resources and availability of materials, all of the projects listed for construction cannot be completed within the next four years. They are presented under this classification as the more urgently needed major highways in the regional system and represent projects which should be constructed as rapidly as practical considerations will permit. Certain of the projects, due to their relation to National defense should be given preference.

A description of projects classified for construction is given below, the numbers referring to the map and list on page 14. Parts of Projects Nos. 18 and 21 are listed only for adoption and acquisition of right-of-way.

#### 1. Springfield-Rahway Freeway

This extends from New Jersey State Highway No. S-24 at Springfield southerly across Union County to Rahway where it would connect with the proposed Shore Parkway and State Highways Nos. 4 and 35. Construction should be synchronized with that of the proposed Pleasant Valley and Shore parkways.

#### 3. Diagonal, Newark Airport to Lincoln Tunnel

Since this project was presented by the Association in the 1937 program, the section across the Hackensack Meadows has been included in the New Jersey State Highway Department's program but with no definite commitment as to its construction. The completion of the north tube of the Lincoln Tunnel will make it urgent that this be built at an early date.

#### 5. New Jersey State Highway No. 21

This section extends north from the recently completed section at Clay Street, Newark, to connect with the proposed Passaic River Parkway. As an important link in a proposed continuous route along the Passaic River from Newark to Paterson it should be built in the immediate future.



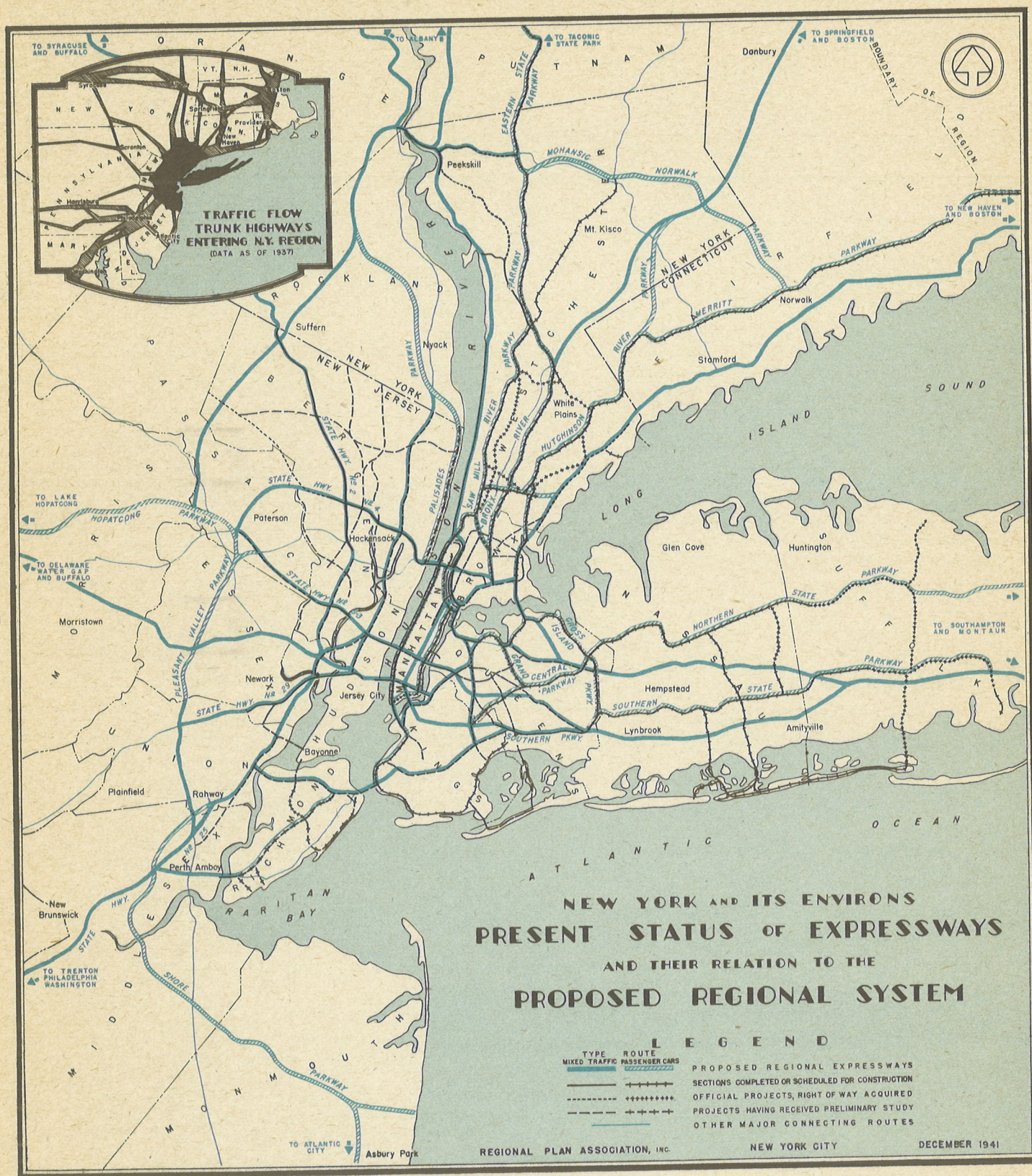


FIGURE 4







### 7. *New Jersey State Highway No. S-3*

This project, extending from the east side of the Passaic River at Rutherford to New Jersey State Highway No. 6 at Great Notch, is part of a direct approach to the Lincoln Tunnel from the Paterson area. A start has been made on preliminary construction consisting principally of rough grading.

### 8. *New Jersey State Highway No. S-4B*

This provides for a new highway approach to the Greenwood Lake area extending from New Jersey State Highway No. 4 in Arcola. It also forms an additional northwest outlet, paralleling State Highway No. 2. The right-of-way has already

River Parkway Extension in order to relieve the Post Road and provide a strategic highway between the Port of New York and the important defense industries along the Connecticut shore. If the section of Hutchinson River Parkway Extension, opened this fall, were made available weekdays to mixed traffic, an express route for commercial vehicles would be provided to both the Whitestone and Triborough bridges, the latter via Eastern Boulevard and Whitlock Avenue (see Project No. 13).

### 13. *Northeast Approach to Triborough Bridge*

This proposal contemplates the provision of facilities along Whitlock Avenue and Eastern Boulevard from the Triborough Bridge to Hutchinson River Parkway Extension which will



*Courtesy, New Jersey State Highway Department*

### JOHN DAVISON ROCKEFELLER MEMORIAL HIGHWAY

Sections of existing state highways from the vicinity of Camden to Belmar in Monmouth County were designated by the New Jersey Legislature in 1938 as parts of this route. The above view was taken along the developed section in Burlington County outside of the Region, where a right-of-way of 520 feet has been provided. The highway is opened to mixed traffic and a 40-foot strip on each side of the right-of-way has been reserved for future marginal roads.

been acquired and several sections graded. It should be completed within the next four years.

### 11. *Pelham-Port Chester Freeway and Its Extension in New York City*

As early as 1925 the Westchester County Park Commission sought to relieve the Boston Post Road by a new route from the state line at Port Chester to Pelham at the New York City line. The Association proposes that this be extended south along the railroad through Pelham Bay Park to the Hutchinson

permit uninterrupted movement of traffic. Completion of this and the Pelham-Port Chester freeway in the immediate future is essential for expediting the movement of mixed traffic to and from New England.

### 15. *Midtown Manhattan Underpass*

This is essential to provide an express route between the east and west sides of the port and to alleviate local street congestion in midtown Manhattan. The financial success of both the Lincoln and Queens Midtown tunnels are in part dependent on this project.



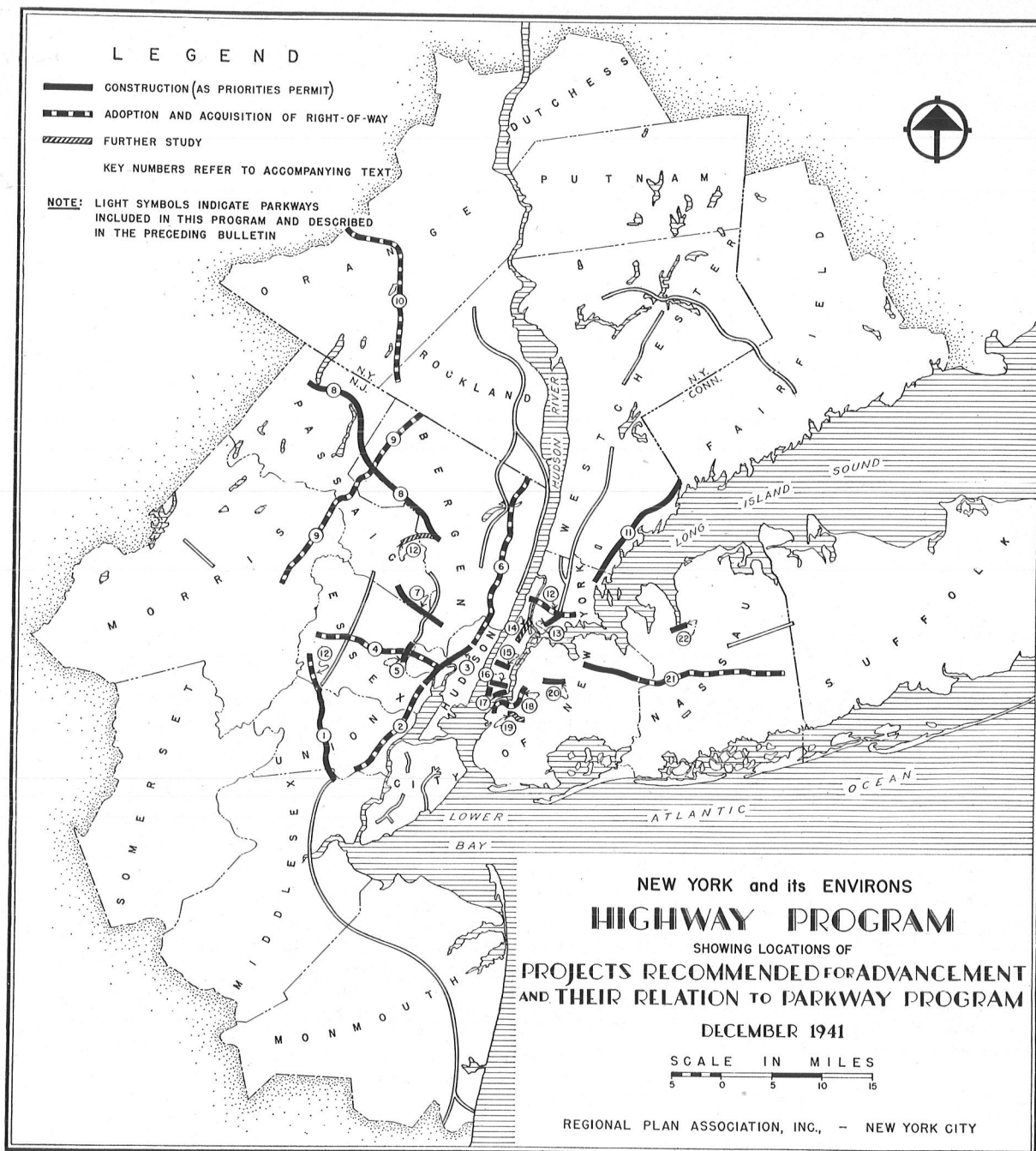


FIGURE 5

Recommended Action: A—Construction (as priorities permit); B—Adoption and acquisition of right-of-way; C—Further study.  
NOTE: For parkways included in this program see preceding Bulletin.

Key No.	Project	Action	Key No.	Project	Action	Key No.	Project	Action
1.	Springfield-Rahway Freeway .....	A	9.	Metropolitan Bypass in New Jersey	B	17.	Southerly Extension of West Side	
2.	Relief Route to New Jersey State Highway No. 25, Rahway to Newark Airport .....	B	10.	Relief of New York State Highway No. 17 .....	B		Elevated Highway and East River Drive .....	A
3.	Diagonal, Newark Airport to Lincoln Tunnel .....	A	11.	Pelham-Port Chester Freeway and Its Extension in New York City.	A	18.	Brooklyn-Queens Crosstown Express Highway .....	B
4.	New Jersey State Highway No. 10.	B	12.	Metropolitan Highway Loop .....	B & C	19.	Express Connection between Atlantic Avenue and Manhattan Bridge, Brooklyn .....	C
5.	New Jersey State Highway No. 21.	A	13.	Northeast Approach to Triborough Bridge .....	A	20.	Easterly extension of Queens Midtown Tunnel Approach .....	A
6.	North-South Freeway in Bergen & Hudson counties .....	B	14.	Park Avenue Improvement, Manhattan .....	C	21.	Creedmoor Freeway .....	A & B
7.	New Jersey State Highway No. S-3.	A	15.	Midtown Manhattan Underpass ..	A	22.	Roslyn Viaduct, Nassau County....	A
8.	New Jersey State Highway No. S-4B	A	16.	Crosstown Express Highway in Vicinity of Canal Street, Manhattan	A			

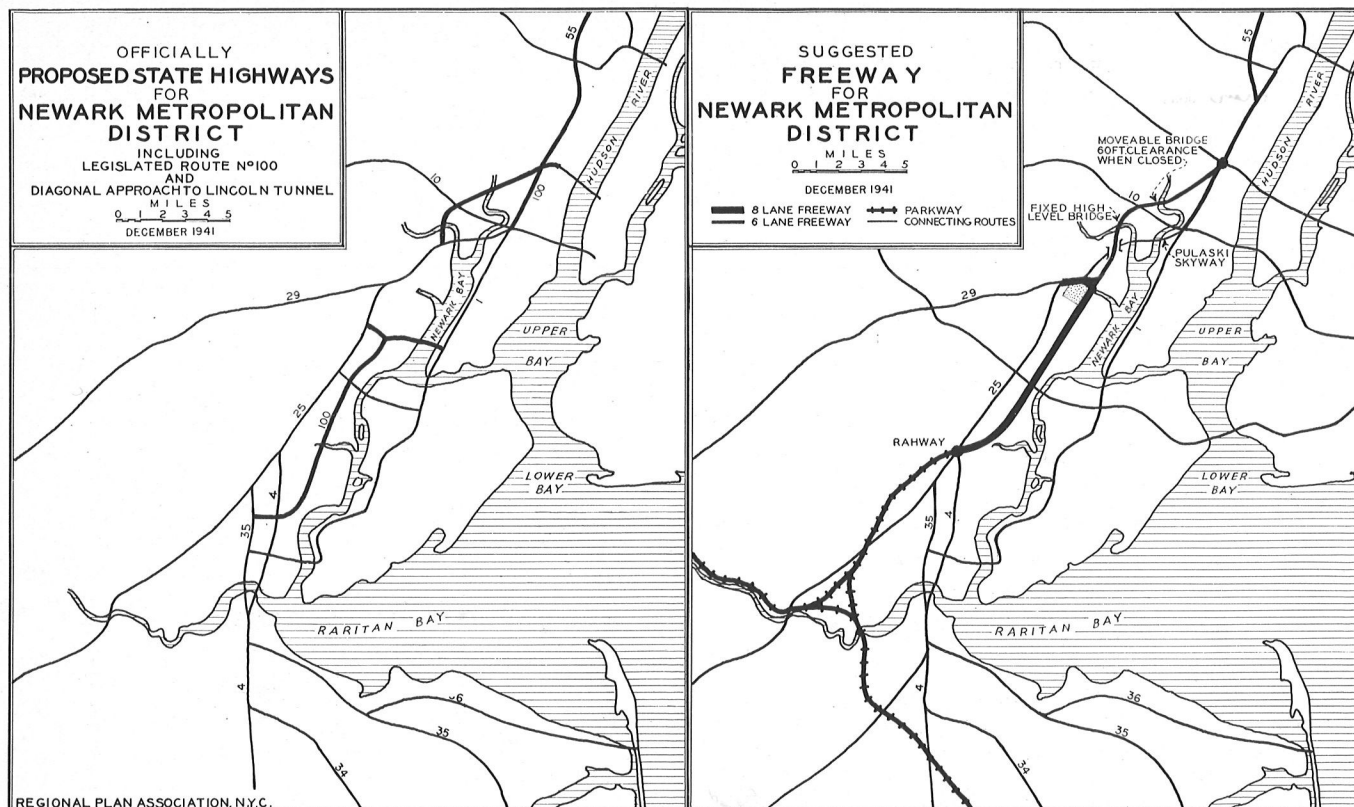


FIGURE 6

A STUDY (RIGHT) FOR IMPROVED NEW JERSEY APPROACHES TO INTERSTATE HIGHWAY CROSSINGS, COMPARED WITH THE PROPOSALS (LEFT) OF THE STATE HIGHWAY DEPARTMENT

#### 16. Crosstown Express Highway in Vicinity of Canal Street, Manhattan

This consists of an elevated structure connecting the Holland Tunnel and West Side Highway with the Manhattan and Williamsburg bridges. A plan for such a connection was released by the Association in the controversy over the Battery-Brooklyn crossing. Studies have been made by several public agencies since that time and the project has grown in public esteem. What is now needed is the adoption of a definite plan so that actual construction may proceed as soon as possible.

#### 17. Southerly Extensions of West Side Elevated Highway and East River Drive

The extensions of these arteries are important to obtain the full benefits of the new Battery-Brooklyn Tunnel. Construction of these should be scheduled with that of the Tunnel.

#### 20. Easterly Extension of Queens Midtown Tunnel Approach

An extension of the Queens Midtown Tunnel approach from the Meeker Avenue Bridge traffic circle, along Borden, Caldwell, and Eliot avenues to connect with World's Fair Boulevard at Queens Boulevard should be constructed within the next four years. In the more distant future an express highway south of this to connect with Interboro Parkway and give access to the Jamaica Bay area and south shore of Long Island, will have to be provided.

#### 21. Creedmoor Freeway

As indicated in the 1937 program this project calls for a limited access highway from the intersection of Astoria and Northern boulevards at Flushing along the old Stewart Railroad right-of-way and into Nassau County utilizing the old Motor Parkway for most of its way to the Babylon-Farmingdale Road. This would provide for mixed traffic a much needed express highway connecting the central part of the Region with the central and south shore of Long Island. Within the immediate future, construction should be started on the Queens section and a definite plan adopted including the acquisition of missing links for its extension in Nassau County.

#### 22. Roslyn Viaduct, Nassau County

This project is included in the immediate construction program of the New York State Department of Public Works. Its completion will eliminate a serious bottleneck along Radial Route 4 of the regional highway system.

#### Adoption and Right-of-Way Acquisition

Experiences of the last depression clearly showed that the lack of plans seriously delayed action toward relieving unemployment. As an approach to problems after the peak of defense expenditure the Association recommends that definite plans be prepared and that the rights-of-way be acquired in the immediate future so that a "work reservoir" will be created to lessen

the severity of any future employment crisis. The following projects are recommended for adoption and acquisition of right-of-way. Parts of the project listed as No. 12 are suggested for further study.

2. *Relief Route to New Jersey State Highway No. 25, Rahway to Newark Airport*

This would replace New Jersey State Highway No. 25 between Rahway and Newark Airport with a permanent type of express route. From Rahway to Elizabeth it follows Legislated Route 100. Plans for a northerly extension of this to Newark Airport should be adopted and the right-of-way of the entire project acquired.

4. *New Jersey State Highway No. 10*

The status of this project, envisioning a freeway extending easterly from Livingston across Essex County to the Belleville Turnpike in Hudson County, has not changed since it was listed for adoption and mapping in the previous program of urgent projects. It is still urgent that a definite plan should be adopted and its right-of-way acquired.

6. *North-South Freeway in Bergen and Hudson Counties*

This constitutes parts of Inner Route "d" and Radial Route 9, extending from the Lincoln Tunnel approach northerly through Hudson and Bergen counties. Following the easterly edge of the Hackensack Meadows it extends across Overpeck Creek to continue along the west side of the Overpeck Meadows; thence it continues north through several Bergen County communities to connect with New York State Highway No. 303.

A program for the immediate future should include the adoption of a definite plan and a start in the acquisition of its right-of-way. The communities in Bergen County through which this project passes can materially aid in determining its alignment by intelligent control of new subdivisions and cooperation with the County Planning Board.

9. *Metropolitan Bypass in New Jersey*

This involves a route parallel to U. S. Highway No. 202 along the west shore of the Ramapo River from the New Jersey State line near Suffern to Pompton Lakes and a southerly extension of this over new right-of-way to New Jersey State Highway No. 6 near Parsippany. The project is designed to replace a part of U. S. Highway No. 202 with a modern roadway along a more direct alignment for traffic destined for New England from points south. It is also a strategic link in the coastal defense highway system. A plan for its alignment should be adopted and a start made on acquisition of its right-of-way.

10. *Relief to New York State Highway No. 17*

The need is still apparent for the section of this proposal between Hillburn and Southfields as listed for adoption and acquisition in the previous program of the Association.

North of Southfields, adoption and acquisition of a new align-

ment to the limits of the Region at Chester is included in this program. The New York State Department of Public Works' future program includes a similar proposal to Middletown.

12. *Metropolitan Highway Loop*

The present status of the Loop can be seen on the map in Figure 1. Sections of the Loop which should be advanced in the immediate future are:

- (a) A direct route to cross The Bronx from the Whitestone Bridge to George Washington Bridge tunnel approach including a new bridge over the Harlem River. Adoption and acquisition of the entire section should be started within the next four years.
- (b) Study should be given to an adequate location of the Metropolitan Loop north and west of Paterson where it would connect State Highway No. S-4B at Radburn and State Highway No. 6 at Totowa.
- (c) The section through the gap in the Watchung Mountains between Summit and Millburn presents special difficulties. A plan for this should be worked out by the New Jersey State Highway Department in cooperation with local authorities and a definite right-of-way determined and acquired.

18. *Brooklyn-Queens Crosstown Express Highway*

Segments of this route north of Meeker Avenue Bridge are completed, under construction, or officially mapped. The section between the projected Battery-Brooklyn Tunnel approach at Hamilton Avenue and the southerly plaza of Meeker Avenue Bridge still requires study. A definite plan should be adopted for this section and the right-of-way acquired within the immediate future.

**Further Study**

The following two projects by reason of their complicated physical design and cost require more detailed study than the Association could give. It is hoped that officials responsible for providing these facilities will give due consideration to their advancement.

14. *Park Avenue Improvement, Manhattan*

On the assumption that the improvement of Park Avenue north of 96th Street with a direct connection across the Harlem River to Grand Boulevard and Concourse in The Bronx will ultimately be required, a plan developed by the Association showing its location was presented in the 1937 program. A final plan should be worked out jointly by the city and the New York Central Railroad.

19. *Express Connection between Atlantic Avenue and Manhattan Bridge, Brooklyn*

An express connection between Atlantic Avenue and the Manhattan Bridge Plaza is needed as an adequate channel for traffic to and from the bridge. A preliminary study by the Association envisions bypassing the busy intersections of downtown Brooklyn. It should receive further detailed study by city officials.