

PREPARATION OF THE SITE
FOR THE
WORLD'S FAIR 1964-1965

FOR RELEASE
MONDAY A.M.
APRIL 18, 1960

SUPPLEMENTARY REPORT

FLUSHING MEADOW PARK

.....THE CITY OF NEW YORK

April 18, 1960

Hon. Robert Moses
Commissioner of Parks
The Arsenal, Central Park
New York 21, N. Y.

Dear Sir:

This Supplementary Report has been prepared to accompany the illustrated report with maps and diagrams submitted to you under the same date; this presents, in more detail, the pertinent data that we have assembled over the period of time since we began our study in December of 1959.

Respectfully submitted,

Clarke and Rapuano

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LEASE LINES

Among the important factors that induced the Presidential Commission to select Flushing Meadow Park for the 1964-1965 World's Fair is its adequate size and the fact that the 1939-1940 Fair occupied the same site.

Flushing Meadow Park has a gross area of 1,258 acres and the adjacent Kissena Corridor Park a gross area of 93 acres; of these 1,351 gross acres, 646 acres are available for use by the Fair.

We recommend that that portion of Flushing Meadow Park, extending from Roosevelt Avenue to 69th Road, having a gross area of 801 acres, together with that portion of Kissena Corridor Park, between Lawrence and Main Streets, having a gross area of 34 acres, be leased to the Fair Corporation with the following exceptions:

1. All public highways within this area, comprising approximately 185 acres;
2. The Park Department service building and immediately adjacent land, an area of 4 acres, which the Department requires for maintenance and for the storage of equipment;
3. The playground in Kissena Corridor Park at Elder Avenue and 135th Street, with an area of less than half an acre.

With these exceptions, the area recommended to be leased to the Fair Corporation comprises 646 acres.

The proposed lease lines are indicated on the map on page 4 of the report.

That part of Flushing Meadow Park south of 69th Road is unsuitable for either exhibition use or automobile parking because of its remoteness from the central area. Moreover, the existing recreational facilities on the east side of Willow Lake should be continued in their present use. In 1939 and 1940 the Fair Corporation, which had this portion of the park under lease, made no use of it.

The lease area of 646 acres includes the surface of Meadow Lake, comprising about 90 acres. Deducting the lake, there remains a usable area of 556 acres. If this area should prove to be inadequate, approximately 9 additional acres of land may be added by filling in a limited section of Meadow Lake along its westerly shore. This operation should be carried out by and at the expense of the Fair Corporation.

A portion of the area of Flushing Meadow Park between Roosevelt Avenue and the Interborough Rapid Transit Corona yards is under lease to the Transit Authority. We recommend that this lease, which we understand is on a yearly basis, be terminated by the end of 1962 so this land may be made available to the Fair Corporation.

There are nine occupied dwellings in Kissena Corridor Park on North Hempstead Turnpike, one abandoned dwelling on Elder Avenue and a gas station on Main Street. We recommend that the existing leases between the City and tenants of these parcels be terminated before the end of 1962 and that the buildings be demolished by the Fair Corporation.

Kissena Corridor Park between Peck Avenue and Main Street is traversed by Elder Avenue. This is in use but is not an officially mapped street. We recommend the City take the necessary steps to close this portion of Elder Avenue and incorporate the bed of it in the park. This should be accomplished before the end of 1962.

The leased portion of Kissena Corridor Park requires considerable

grading and filling before it can be used. We recommend this be done by the Fair Corporation at its expense based upon plans approved by the Department of Parks.

AUTOMOBILE PARKING

Records of the 1939-1940 World's Fair show there were 26,000,000 paid admissions and 7,000,000 passes for a total attendance of 33,000,000 in the 1939 season.

It is reliably reported also that the total number of cars parked was 1,600,000. Parking space was provided at Willets Point field, Roosevelt Avenue field, 69th Road fields, the World's Fair fields east of 111th Street, Rosemont field, Arrowbrook field and other smaller fields within the Fair grounds. The total number of cars parked at the Willets Point field was 620,000. Since Rosemont field was closed shortly after it was opened and the Arrowbrook field never did any business, it is evident that nearly a million cars were parked at the other fields mentioned above and presumably in privately operated parking fields adjacent to or near the site.

Conditions today are changed. Vacant areas suitable for private parking lots are no longer available; the sites of the Rosemont and Arrowbrook fields have been built upon; the Willets Point field will be needed for the proposed Stadium and for stadium and commuters' parking.

Whereas there is no way to predict the number of visitors to the 1964-1965 Fair, we have set a figure of 40,000,000 people in the first year and 30,000,000 in the second year. These, we believe, are conservative figures. Using the 1939-1940 World's Fair figures as a basis, we would expect a total parking of not less than 2,000,000 cars in 1964. However, in consideration of the fact that car registration has increased at a more rapid rate than the population and that a largely expanded highway network will lead to the Fair in 1964, we believe that it is safe to predict a total parking of not less than 3,000,000 cars in 1964. This indicates an average of 16,500 cars parked in one day, with peaks on weekends and holidays running well above this figure.

We recommend that seven automobile parking fields be provided as shown on the map on page 4 of the report. These fields together have an area of about 140 acres and a capacity of approximately 20,000 cars.

We believe that the best use for the Kissena Corridor Park area during the Fair is for automobile parking. It is separated from the principal area of the Fair by two barriers, Lawrence Street and the proposed Van Wyck Expressway Extension. These two barriers prevent the satisfactory integration of this park area for exhibition uses with the main portion of the Fair grounds.

Additional automobile parking may be provided on six fields: (1) the area between the Van Wyck Expressway Extension and Lawrence Street, where it is proposed also to locate a bus terminal; (2) the Roosevelt Avenue field; (3) the present parking field south of the City Building; (4) & (5) the present parking fields northeast and northwest of the Amphitheatre and (6) the area between the proposed Van Wyck Expressway Extension and the easterly shore of Meadow Lake south of the Boat House. We recommend that a portion of the Roosevelt Avenue field be reserved, as it was in 1939 and 1940, for bus parking.

We recommend that the work incident to the construction, maintenance and operation of automobile parking areas be undertaken by the Fair Corporation at its expense.

STADIUM AREA PARKING

The proposed stadium will occupy an area of 16 acres in Willets Point field, leaving space for parking about 5,500 cars. This space will be used for commuters' parking and stadium parking.

There will be days during the life of the Fair when the stadium will not be in use and we suggest that the Fair Corporation arrange to have the related parking areas made available for its patrons to the extent they are not needed for commuter parking.

EXISTING CONDITIONS

The area of Flushing Meadow Park, proposed to be leased to the Fair Corporation, can be developed more easily for use as a site for the 1964-1965 World's Fair than when it was made available for the 1939-1940 World's Fair.

The existing utilities, which can be utilized in whole or in part by the Fair Corporation and by exhibitors, include approximately 10 miles of sanitary sewers, 20 miles of storm sewers, 15 miles of water mains, 13 miles of gas mains, electric conduits for light, power and communication and sewage pumping stations. The approximate locations of these facilities are shown on the maps on pages 7, 8 and 9 of the report.

It is beyond the scope of this study to survey the underground utility lines within the Park, but we endeavored, by means of spot checks, to determine the extent to which such lines can be utilized. These facilities, that in our opinion are in usable condition, are shown by appropriate symbols on the maps.

An examination of the maps will show that a substantial percentage of the existing underground facilities are in usable condition. However, due to the settlement of the soft material originally used to fill the park on which most of the facilities, intended only for temporary use, were constructed, a considerable amount of repair work will have to be done. Whereas spot checking has shown that most of the subsurface facilities in the two large central areas on both sides of Grand Central Parkway will require some repairs, they are, nevertheless, in usable condition. South of the Long Island Expressway and east of the Flushing River the settlement of the ground has been so great that extensive repairs to the existing subsurface utilities will be needed.

The extent of replacements or of additional subsurface utilities will depend upon the development plan of the Fair and the location of the buildings. We recommend that the cost to replace and construct new underground utilities be borne by the Fair Corporation and that the facilities that the Department of Parks may determine as necessary for restoration and for the future development of the park be constructed permanently.

The reactivation and extension of the sanitary sewer system will require the rehabilitation of the pumping stations at Rodman Street and the Long Island Expressway and at the Grand Central Parkway and the Long Island Rail Road. We recommend that the cost of this work be borne by the Fair Corporation.

With an anticipated average daily attendance to the Fair of 220,000 persons and with a peak attendance of 500,000, the outfall sewer to the Tallmans Island sewage disposal plant will be adequate. We were informed that the Department of Public Works expects to enlarge this plant and that the work will be completed prior to the opening of the Fair.

We recommend that the Fair Corporation be permitted to use the present Boat House on the easterly shore of Meadow Lake. However, the City Building should remain under the control of the Commissioner of Parks and should house the City exhibit. The State Amphitheatre should house the State pageant if the State wishes to use the structure in this way, or should be available to the Fair Corporation for a theatrical concession.

We recommend that the Fair Corporation be permitted to alter or to eliminate the present park improvements and, if necessary, the pattern of park roads and paths with the provision, however, that they be reconstructed substantially as shown on the plan for the restored park. All reconstructed roads and paths shall be of a type to be specified by the Department of Parks.

The trees within the lease area, particularly those in formal rows, are of great value to the park and should prove of value to the Fair. They have grown for over twenty years on the site and hence are mature; they could not be replaced at their present sizes. We recommend that a contract be let for the replacement of trees that have died and have been removed; this refers to those in formal rows. The replacements should be as large as practicable. The contract should provide for having the trees selected and root-pruned, so they may develop new roots over two growing seasons, before moving them to the Fair site. It is recommended that the Fair Corporation make use of all of the trees on the site that were planted for the 1939-1940 Fair. Where they are situated informally in open areas it may be necessary to move a number out of the way of proposed structures. The trees along walks and roads should be retained in their present location. No large trees should be destroyed without permission from the Department of Parks.

All existing trees are shown on the aerial photograph on page 6 of the report.

The extent of the work required to utilize the present boat basin is discussed elsewhere in this report.

The map on page 7 of the report locates and by appropriate symbols shows the types of foundations of former structures. We recommend that the Fair Corporation use these existing piles and foundations wherever practicable if engineering investigations prove that they are safe for the uses intended.

SPECIAL BUILDING AND SANITARY CODES

We have reviewed the special building and sanitary codes and the steps taken for their adoption by the City for the 1939-1940 World's Fair. Copies of these codes will be submitted separately.

Chapter 544 of the Laws of 1936 (New York State) empowered the City of New York to lease park lands to the New York World's Fair 1939 Incorporated and empowered the Board of Estimate and Apportionment to enact a special code of ordinances for the regulation of the area, to control advertising and amusements in the area adjoining the World's Fair and to regulate tourists' camps in the Borough of Queens.

Section 3 of this Law directed the New York World's Fair 1939 Incorporated to prepare a special code of ordinances dealing with health, sanitation and building "which code shall be submitted to the Board of Estimate and Apportionment . . . for its approval, and if such a code is approved by such board, then such board may enact the same as and for a

special code of ordinances governing the area leased to New York World's Fair 1939 Incorporated. Upon the enactment of such special codes . . . all provisions of the Greater New York Chapter, the code of ordinances of such city and all acts of the legislature and all local laws which may conflict with any provisions of such special code shall be and they hereby are suspended insofar as the area to be occupied by the World's Fair under the lease is concerned during the term of the lease . . ."

In accordance with these directions, the Board of Directors of the Fair had prepared by a special committee a building code which was approved and submitted to the Board of Estimate and Apportionment. The approval of that body was obtained on September 25, 1936.

We understand that a similar procedure, as hereinbefore outlined, is being followed for the 1964-1965 Fair.

We recommend that a revised building code be prepared by a small committee made up of engineers and architects and submitted to the City Council for approval. As in 1939, this special code for temporary Fair buildings and other structures should be administered by a Board appointed by the Fair Corporation (in 1939 the General Manager, the Chairman of the Board of Design, the Director of Construction, the Director of Operations and a representative of the Counsel constituted the Board). Permanent buildings should be designed and built in accordance with the provisions of the normal New York City building code.

We suggest that the revised special code conform, as far as feasible, with basic requirements of the present normal New York City building code and with desirable requirements of the New York State Construction Code in order to assure stable and safe design; that it permit the use of new materials and techniques; that it require plans to be prepared by registered architects or licensed engineers and that it require the payment of a fee for the examination of plans and for the inspection of construction.

It would also be desirable to establish a review Board of distinguished engineers and architects to pass upon unusual conditions and matters not covered by the code.

The special sanitary code prepared by the New York World's Fair 1939 Incorporated was approved by the Board of Estimate on February 2, 1939. This code placed all matters affecting health and sanitation on the Fair site under the jurisdiction of the Commissioner of Health and the Board of Health of the City of New York, with a special deputy commissioner in immediate charge. It provided for a number of special health inspectors to be engaged solely on World's Fair inspection. The control and inspection of food establishments and food handlers were covered at great length. No fees were charged for the issuance of permits. Violations of the code were made punishable in the manner prescribed by the Penal Law.

We recommend that a small committee of qualified persons be appointed by the Fair Corporation for the purpose of reviewing the 1939 special Sanitary code, bringing it up-to-date for submission to the City Council for approval.

CITY, STATE AND FEDERAL EXHIBITS

It is anticipated that there will be active participation in the Fair by the City, by the State of New York, and by the Federal Government.

We recommend that no new building be constructed by the City but that the present City Building in Flushing Meadow Park be suitably altered to house an exhibit worthy of this City. Only minor alterations will be re-

quired. We suggest that the exhibit be designed, built, maintained and manned by a temporary commission. Laws to enable the City to participate and to provide the necessary funds should be enacted.

We propose that the New York State building, provided by the State for the 1939-1940 Fair, be suitably altered to make it more adequate for an exhibit which we suggest be an imaginative pageant. The construction should be permanent. As stated before, if the State does not wish to use the structure in this way, it should be available to the Fair Corporation for some theatrical concession. We understand that the statute for State participation has already been adopted.

The Federal exhibit should be in a building prominently situated and reflecting the leadership of the United States. Necessary enabling legislation should be considered at as early a date as the Congress is able to take up this important matter.

STADIUM

The City has contracted with a firm of consulting engineers to prepare preliminary plans for a Stadium of 55,000 seats, with possible future expansion to 80,000 if needed or desirable. These plans have been completed. If the City approves going forward with this project it could be built and ready for use by the spring of 1962.

The Stadium is intended to be used primarily for baseball games by a club in the new Continental League. It may be possible to arrange with the Club for the sale of combination tickets admitting the holder to both the game and the Fair, to the advantage of both organizations.

The Fair Corporation may wish to consider renting of the Stadium, when it is not in use by regular tenants, for special events which may require a large seating capacity, thus adding to the interest of the Fair.

DURATION OF FAIR

A decision must be made concerning whether the Fair is to last one or two years. Tentative studies, based in part on the 1939-1940 World's Fair, indicate that it will be impossible to finance and to operate a successful Fair unless it runs for two years.

The Convention relating to international exhibitions limits their duration to six months, but provides that two-thirds of the contracting countries may authorize a general exhibition for a period longer than six months. The contracting countries are prohibited from accepting invitations to a World's Fair lasting more than six months unless the six-month limitation has been waived.

The United States is not signatory to the Convention and its agent, the International Exhibition Bureau, has no control over the 1964-1965 World's Fair. However, in order to assure participation of the signatory countries, it appears necessary to obtain the consent of the Bureau to a two-year Fair and to comply with certain provisions of the Convention applicable to an exhibiting country. Whatever steps are necessary in this connection should be taken.

INTRAMURAL TRANSPORTATION

The intramural transportation system is an important element in the pattern of the Fair.

In 1939-1940 one hundred specially constructed buses, each seating

approximately 60 persons, were operated through the Fair grounds over three separate routes. The fare was 10 cents.

Thirty electric tractor trains were used, each train made up of three or four cars and each car seating a minimum of 12 persons. The fare was 25 cents.

Some 200 manual type and motorized lounge chairs, with a lecturer, for one, two or three persons were available at the rate of one dollar per person per hour. Guided tours through the Fair grounds of various durations, at rates of \$1.00 to \$5.00 per person, were also available. In addition, bus service was provided from within the parking fields to the nearest entrance gate at a five-cent fare.

We recommend that substantially the same facilities be provided for the 1964-1965 Fair.

All equipment should be spotlessly clean and attractively painted. As no plan of the Fair has been prepared, specific recommendations concerning routes cannot be made. The buses should be gasoline burning to avoid the noxious fumes emitted by diesel oil engines which, in the crowded Fair grounds, would be especially objectionable. Their number should be limited to no more than the roads can safely accommodate with reasonable brief headway between buses and without undue interference with pedestrian traffic.

We believe that the tractor trains should run generally at grade. When the plan of the Fair has been developed, it may be desirable to provide temporary bridges to carry them over certain main crossings to avoid delays and hazards to pedestrians. The cost of these temporary structures, designed to conform esthetically with the surroundings, would be about \$50,000 each.

We recommend that all lounge chairs be motorized.

These means of intramural transportation will make use of the pedestrian bridges across the Grand Central Parkway, the Long Island Expressway, the Van Wyck Expressway Extension and Lawrence Street, all designed to carry highway loads. In order not to endanger pedestrians or to interfere with their safe movements, it is recommended that temporary additions be constructed on each side of these bridges for the exclusive use by pedestrians.

It is recommended, elsewhere in this report, that the parking fields be operated by the Fair Corporation. We suggest that the transportation of the visitors from the parking fields to the gates be provided also by the Fair Corporation and that the charge be included in the parking fee. We also suggest that the buses operating in the various parking fields be painted a distinctive color for each field and that the parking receipts given the visitors be the same color as the bus. This color scheme would facilitate the return of the visitors to the proper parking field.

The foregoing recommendations do not intend to rule out other means of transportation. Consideration should be given to other devices before discarding them as factors in a practical intramural transportation system.

We have examined the possibility of providing a monorail system, or belt-conveyed cars, or a combined hydrofoil boat-monorail train. All these may have their own particular merits but we believe that they are impractical for use at the Fair. We suggest that they be provided by their manufacturers as exhibits to demonstrate their possibilities.

The fares charged in 1939-1940 were quoted only as a matter of

record. The basic charges for the 1964-1965 Fair should be consistent with present day costs.

We recommend that operation of the intramural transportation system be by contract with an experienced transportation corporation.

RESTORATION OF THE PARK

The plan on page 14 of the report shows the main features of the park as we suggest it be restored. Desirable modifications and needed details will be developed by or through the Department of Parks prior to the start of the reconstruction work. All restoration work shall be carried out by the Fair Corporation, at its expense, under the direction and supervision of the Department of Parks. The grounds, where necessary, shall be properly regraded; roads and paths suitably paved; new trees planted or replanted where necessary and grass seeding done as required. Existing structures, utilized for the Fair, shall be restored to their former or other uses as directed by the Department of Parks; permanent new buildings shall be made ready for their intended use; drainage, sewer, water, gas and electric systems shall be left in working order.

The work of demolition of the temporary structures shall be carried out in accordance with specifications to be furnished by the Department of Parks. In general, utility lines shall be disconnected and capped in accordance with applicable laws and regulations; structures shall be demolished to a depth of four feet below grade or as otherwise directed; clean material shall be used for backfilling; all debris, building materials, etc. shall be removed from the site; shrubbery, plants or other landscaping supplied by the participants, which they do not intend to salvage but which are suitable for use in the restoration of the park, shall be left in place and protected against damage; foundation piles, utility lines, whether of temporary or permanent construction, and other improvements, deemed suitable for the restoration of the park, shall be left in place.

Special attention is called to the new structures recommended to be built by the Fair Corporation for Fair purposes, but so designed that, after the Fair, they may easily be altered to be used in the restored park. These structures include a bridge across Lawrence Street, two comfort stations and an administration building for the Botanical Gardens. It is suggested that the plans for this building, which are now in the course of preparation by architects retained by the Department of Parks, be made available to the Fair Corporation at the proper time.

With respect to the Botanical Gardens, we call particular attention to the flower exhibits and other improvements in this area. Plants which the Fair Corporation needs to remove, but which the Queens Botanical Society desires to preserve and use in the restored gardens, shall be transplanted to a location and in a manner approved by the Society and the Department of Parks.

It may not be amiss to repeat here remarks made by Commissioner Moses on the subject of proposals to construct the Fair in such manner that its buildings could later be utilized for an international university or an enterprise similar in character. Proposals of this sort should be given no encouragement whatever by the Fair Corporation. Serious consideration of such schemes would be bound to complicate the plans for the Fair and dampen the enthusiasm of prospective participants who have been told that the buildings to house their exhibits must be of a certain type of design under a

special building code, safely constructed and, with very few exceptions, built for temporary uses of not over two years. The cost of building permanent structures would be almost astronomical; such buildings would be impossible to design and construct within the time limits involved; they would lack the variety of architectural forms and materials which give interest to an exposition; they would not interest foreign nations and private exhibitors wishing to show their individual architectural styles, construction materials and techniques. Furthermore, Flushing Meadow is park property required for neighborhood recreation in a fast growing community. It is inalienable and must by law be turned back to the City as a well-developed park at the termination of the Fair. No permanent use can be permitted which is not in fact a park use.

EXPRESSWAYS AND PARKWAYS

One of the most important factors that influenced the selection of the Flushing Meadow Park site is its accessibility and its geographical location at the center of the City. It is reached easily by motor, rail, water and air from any part of the metropolitan area where 15,000,000 people live and work.

The motor vehicle, a major factor in our economy, is indispensable to the average family. As a result, the public officials of the metropolitan area are constantly struggling to provide adequate highway facilities for the ever increasing output of motor vehicles and for our spreading and growing population.

The map on page 16 of the report shows the comprehensive network of parkways, expressways and other major routes in the metropolitan area. Highways in use are shown by a solid band of color; other symbols indicate the highways which today are either under construction or in various stages of design or planning. Many of these are scheduled to be completed by 1964.

A detailed map on page 20 of the report shows the arterial system planned in the immediate vicinity of Flushing Meadow Park. This system is well planned and capable of handling effectively all traffic expected in this area in the foreseeable future including the anticipated Fair traffic. We suggest that the section of the Van Wyck Expressway Extension between the Long Island Expressway and the Long Island Rail Road, where it is not needed to be elevated, be depressed as much as soil conditions will permit, and that one or more pedestrian crossings designed for highway loads be provided as part of the expressway.

It is also recommended that suitable ramps and interchanges to serve the proposed bus and automobile parking fields for the Fair be provided on the Van Wyck Expressway Extension and on the Grand Central Parkway where required. The cost of these ramps and interchanges, shown on the map on page 4 of the report, should be borne by the Fair Corporation.

We have not examined in detail the complex interchanges between the various arterials to determine whether or not all desirable and feasible connections are provided. This was outside the scope of the report.

The Throgs Neck Bridge, the Clearview Expressway to 73rd Avenue and the Clearview-Long Island Expressways interchange are under construction and scheduled to be opened to traffic early in 1961.

It is essential that the schedule shown on page 22 of the report for the design, land acquisition and construction of the Grand Central Parkway

Widening, the Whitestone Expressway, the Northern Boulevard Improvement, the Van Wyck Expressway Extension and the Clearview Expressway between 73rd Avenue and Hillside Avenue, be strictly adhered to in order to assure completion of the system prior to the opening of the Fair and thus avoid future traffic bottlenecks. The proposed improvements, estimated to cost \$95,000,000, will be constructed by the State Department of Public Works with Federal and State urban and interstate funds. The City's contribution is limited to \$700,000 as its 50% share of the land acquisition cost for the Van Wyck Expressway Extension and the Grand Central Parkway Widening. Commissioner Moses acting as co-ordinator has requested the State Department of Public Works to make these urban and interstate funds available as needed by judicious modifications of present schedules and other feasible means.

A brief outline of the work involved in the proposed improvements is given below.

Grand Central Parkway Widening:

It is proposed to widen Grand Central Parkway from six lanes to eight lanes between St. Michael's Cemetery and the Kew Gardens Interchange and from four lanes to six lanes between the Kew Gardens Interchange and the Clearview Expressway. A report on this work, prepared by consultants retained by the State Department of Public Works, is nearly completed.

The proposed widening will require the reconstruction of four pedestrian bridges built by the 1939 Fair Corporation, namely, the three bridges over the parkway between 64th Road and the Long Island Rail Road and the overpass across the Long Island Expressway north of the Amphitheatre. This reconstruction will be done as part of the parkway widening.

Whitestone Expressway:

Whitestone Parkway will be widened from four lanes to eight lanes between the approaches to the Bronx-Whitestone Bridge and Northern Boulevard. A new four lane fixed span bridge, with 35 foot clearance, will be built across the Flushing River immediately west of the present bridge. This clearance, as well as the discontinuance of opening the present bascule bridge, was approved by the Corps of Engineers in October 1959. The widened arterial will be used by mixed traffic. The widening will require the acquisition of private property along the westerly border of the existing right-of-way; the greater part of the required land is owned by the City. Contract plans by consultants for the State Department of Public Works are well advanced.

Northern Boulevard Improvement:

Northern Boulevard is to be reconstructed to provide express connections between the Whitestone Expressway, Grand Central Parkway and the major highways west thereof. The present engineering agreement between the State and a firm of consultants for the preparation of the contract drawings is being revised to include the Grand Central Parkway interchange as part of the Northern Boulevard Improvement.

Van Wyck Expressway Extension:

It is proposed to extend the existing Van Wyck Expressway northerly

along the easterly border of Flushing Meadow Park, as a divided six lane expressway, to a connection with the Whitestone Expressway. The Triborough Bridge and Tunnel Authority has employed engineers to investigate the possibilities of this route and preliminary studies have been completed.

The highway law is being amended to include this new artery as a part of the State arterial system.

Clearview Expressway—73rd Avenue to Hillside Avenue:

This work was originally scheduled to be placed under contract in August 1963 and completed in September 1965. However, the date of construction should be advanced to complete the circumferential route around the site of the World's Fair.

We recommend that a permanent pedestrian bridge, designed for highway loads, be constructed at the expense of the Fair Corporation across Lawrence Street between Flushing Meadow and Kissena Corridor Parks, similar in design to the bridges built for the 1939-1940 World's Fair across Grand Central Parkway. This bridge will provide access, without crossing Lawrence Street, between the parking field in Flushing Meadow east of the Van Wyck Expressway Extension and the parking field in Kissena Corridor. After the Fair this structure will constitute a desirable physical connection between the two parks. It is suggested that the bridge be built by the State as part of the Van Wyck Expressway Extension with funds provided by the Fair Corporation.

TRAFFIC MAINTENANCE

Grand Central Parkway, Northern Boulevard and Whitestone Parkway are heavily traveled highways. Since they are all scheduled to be reconstructed and widened prior to the end of 1963, measures should be taken to maintain a sufficient number of usable lanes, by appropriate phasing of construction and by convenient detours, during the period of construction. The importance of keeping traffic moving during construction cannot be overemphasized. We have examined the preliminary plans prepared by the State's consultants and have assured ourselves that there are practical ways of maintaining traffic. The details are too involved to describe in this report.

RAIL ACCESS

Flushing Meadow Park is served by three lines of the City's rapid transit system, namely, the IRT Flushing Line running along Roosevelt Avenue, the Queens Line of the Independent System, running along Queens Boulevard and the Forest Hills Line of the BMT running on the Independent tracks along Queens Boulevard as far as 71st Avenue and operating Monday to Friday between 6 AM and 8 PM. The map on page 18 of the report shows these lines with their local and express stations.

At the time of the 1939-1940 World's Fair the City of New York built a temporary subway spur from the Kew Gardens Yard of the Independent system through Flushing Meadow Park, roughly along the easterly side of the park, to a point just south of the Long Island Expressway. The cost was nearly \$1,200,000. Following discussions with the City Transit Authority, we do not recommend that this be done for the 1964-

1965 World's Fair. We are informed by the Transit Authority that at today's prices a similar spur, with required additional cars and incidental work, would cost 10 million dollars.

We believe such a large expenditure is not justified. Most of the Fair visitors using the rapid transit will ride to the Willets Point station of the IRT Line from which point a short walk of about 1,200 feet over a recommended pedestrian overpass will take them to the Fair grounds. BMT system passengers and Independent Line passengers can reach the IRT Willets Point station by transferring without cost at the Queens Plaza station and at the Jackson Heights station, respectively. At the latter station, suitable escalators are now in operation. If the spur were to be built, the comparatively few Fair visitors proceeding on the Independent Line beyond the Jackson Heights station would have to change trains at the Kew Gardens Yard and pay an extra fare. We believe these visitors can conveniently and more economically be carried to the Fair site by an adequate shuttle bus service, as discussed later in this report.

We recommend, however, that the present part-time service on the Forest Hills Line of the BMT be made full time for the duration of the Fair.

A pedestrian overpass was built at the expense of the Fair Corporation (1939-1940) from the Willets Point station on Roosevelt Avenue to the Fair site. The deck has been removed and the structure has been demolished across and south of the Long Island Rail Road but the steel framework between Roosevelt Avenue and the railroad is still in place and in usable condition.

We recommend that a similar pedestrian overpass be rebuilt for permanent use. This pedestrian overpass is obviously essential for access to the Fair and the cost of reconstruction should be borne by the Fair Corporation. Maintenance of the pedestrian overpass should be the responsibility of the Fair Corporation for the duration of the Fair and subsequently of the Department of Parks. It is recommended that the City obtain the necessary right-of-way and easements from the Long Island Rail Road Company for the reconstruction, maintenance and operation of the pedestrian overpass and grant permission for their use to the Fair Corporation.

As stated above, we believe that most of the Fair visitors using the rapid transit system will ride to the Willets Point station of the IRT Line. The Transit Authority estimates that this substantially larger volume of passenger traffic can be accommodated by increasing service on the IRT Flushing Line from the present 9-car to 11-car operation and by providing additional fast express service at peak Fair hours from Times Square and Grand Central in Manhattan to the Willets Point station. This increased service, as estimated by the Authority, will require the expenditure by the City of New York of about 12 million dollars for 80 additional cars, the enlargement of the Corona Yard and necessary improvements to the Willets Point station.

The Fair site was conveniently served in 1939-1940 by a World's Fair Station built on the Port Washington Branch of the Long Island Rail Road at the expense of both the Rail Road Company and the Fair Corporation. Records indicate that the Rail Road Company paid for the platforms and stairways and the Fair Corporation paid for the bridge over the tracks and for incidental improvements.

Service was provided from the Pennsylvania Station directly to the

World's Fair Station, with two to fifteen minutes headway, depending upon the volume of traffic, between the hours of 9 AM and 9:45 PM. The last shuttle train left the World's Fair Station between 2 and 3 AM. Shuttle tickets could also be purchased and used on regular Port Washington trains which stopped at the Fair.

We recommend that the station be rebuilt for the 1964-1965 Fair, at the sole expense of the Rail Road Company. The anticipated large number of Fair visitors who will use the station assures the Rail Road Company that the modest cost of rebuilding will be recouped in a relatively short time.

In 1939-1940 daily excursion trains were run by the Pennsylvania Railroad Company from Philadelphia and Bay Head Junction through the Pennsylvania Station, directly to the World's Fair Station. The same service should be provided for the 1964-1965 Fair.

BUS SERVICE

In addition to the rapid transit lines and the Long Island Rail Road, which will provide mass transportation to the Fair grounds, there are also numerous existing bus lines which fan out from Flushing and Jamaica to all parts of the City and surrounding areas. The principal routes, either privately or City operated, are shown on the map on page 18 of the report.

In order to make the site directly accessible by bus, it is recommended that consideration be given to establishing the following additional services shown on the map on page 23 of the report:

- 1) A shuttle bus service for the duration of the Fair from the 71st Avenue station of the Independent Subway at Queens Boulevard directly west of 108th Street, to a convenient terminal within the Fair grounds in the vicinity of Rodman Street, north of the Long Island Expressway. This line would be operated by the City Transit Authority. Starting from its point of origin, it would run north to Jewel Avenue, then east to the Van Wyck Expressway Extension, then north along the expressway to the terminal within the Fair grounds, whence it would return to its point of origin.

- 2) A temporary bus service from Idlewild Airport to the same terminal within the Fair grounds. This bus would originate at Idlewild Airport, travel north along the Van Wyck Expressway and its extension to the terminal within the Fair grounds and include a side trip to the center of Jamaica to pick up Fair visitors. A private transportation company operates a route now between Idlewild and La Guardia Airports along Main Street and has indicated that it would provide the above service.

- 3) A more frequent permanent bus service on the present Transit Authority's Corona Avenue line, with the inclusion of a stop at the terminal within the Fair grounds for the duration of the Fair. This line has its western origin on Queens Boulevard at the Grand Avenue station of the Independent subway, then it runs easterly partly along the Long Island Expressway to the Long Island Rail Road Station on Main Street in the center of Flushing.

BOAT, FERRY AND AIR SERVICE

The present boat basin and the adjacent bulkhead at the north end of Flushing Meadow Park on Flushing Bay were built by the State of

New York and served as the water-gate to the World's Fair of 1939-1940. To accommodate excursion steamers, the Fair Corporation at that time built the present L-shaped pier 1,048 feet long. It provides landing facilities for about 150 boats in addition to excursion steamers.

It is recommended that the Fair Corporation begin negotiations with public carriers for the establishment of regular daily excursion service to the basin from Manhattan, Connecticut and other desirable points of origin.

It is recommended also that a daily ferry service be established from central Manhattan to the basin, this service to be operated by established public carriers.

Representatives of a number of public carriers were interviewed to ascertain the feasibility of the recommended services, the lines' docking requirements at the boat basin and their interest in providing service to the Fair in 1964 and 1965.

Representatives of two of the lines indicated that they have excursion boats with 500 passenger capacity with shallow draught which can operate to the boat basin, probably without dredging. If the auxiliary short channel and the turning basin are dredged to an adequate depth, as recommended subsequently in this report, many other excursion boats in New York Harbor could operate to the Fair.

One line offered to provide seven sailings daily between 9 AM and 6 PM, leaving from West 42nd Street and making an intermediate stop at the Battery. Another line would provide six sailings daily between 10 AM and 8 PM, leaving from 42nd Street. A third line would sail from Battery Park and have four sailings daily between 10:30 AM and 8:30 PM. The running time for all these sailings would be about 2 hours each way.

It appears from these preliminary discussions that there should be no difficulty in establishing adequate water access to the Fair.

It is recommended that the basin be operated jointly by the Department of Parks and the Fair Corporation.

The main channel in Flushing Bay is 200 feet wide and 12 feet deep and is dredged periodically by the Corps of Engineers, U.S. Army. This channel is adequate for any vessel that might wish to use the boat basin.

Experience shows that the boat basin and the auxiliary short channel leading to the basin silt up quickly. We recommend that soundings be taken prior to the opening of the Fair and that these areas be dredged if the depth is found to be insufficient to accommodate the proposed excursion boats.

The Fair site is easily accessible from La Guardia Airport, only a short distance away, and from Idlewild Airport by means of the bus service recommended elsewhere in this report. We suggest that, for the duration of the Fair, La Guardia Airport be included as a scheduled stop by all of the existing established helicopter lines.

Much credit in the preparation of this report is due to members of our regular staffs and to Nicholas D. Fazia and Carl E. Holgren who assisted as special consultants in certain phases of the report.