GATEWAY NATIONAL RECREATION AREA
New York/New Jersey

FLOYD BENNETT FIELD

DRAFT DEVELOPMENT CONCEPT PLAN

AND ENVIRONMENTAL ASSESSMENT
December ~~1980~~ 1981

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I. PROBLEM STATEMENT AND BACKGROUND

This Development Concept Plan for Floyd Bennett Field represents a dramatic shift in National Park Service planning. The budget for new construction and development has shrunk considerably over the past year. With this plan we are taking a truly creative approach to deal with that new reality at Gateway.

The two most significant goals of this plan that clearly distinguish it from past efforts are:

1) to aggressively seek partnerships with the private sector and other governmental and non-governmental institutions to provide a stronger financial base on which to develop the Park

2) to recycle existing structures and resources to maximize recreational programs with minimal needs for capital funds.

This last goal also includes a greater emphasis on the software of parks (programs), and a lesser emphasis on the hardware (facilities). The success of this Development Concept Plan is therefore contingent upon the efforts of many other institutions which will work in cooperation with the National Park Service to efficiently and effectively use Floyd Bennett Field.

Floyd Bennett Field, on the edge of Brooklyn, New York, forms part of the Jamaica Bay Unit of Gateway National Recreation Area. Once an airport and a military base, it has been dedicated since 1972 to quite different purposes: providing open space, recreational opportunity, and a measure of environmental awareness to the urban population that lies just outside its gates.

This is not a transition that can be made easily. The field is intensively developed with miles of concrete runway , large hangar complexes, and numerous support facilities. Beyond the runway grid there are acres of mixed grassland and low shrub thicket that provide habitat for birds and small mammals. A salt marsh is accreting along the northern periphery of the peninsula. Eight hangars of the former municipal airport along Flatbush Avenue enclose mammoth spaces suggestive of oversized gymnasiums. While not open to the general public, the field has been made available under a permit system, to groups such as model airplane flyers, gardeners, and campers. Park staff have created innovative interpretive and environmental education programs for organized groups, primarily school children. But development guidance is needed.

The General Management Plan for Gateway, approved in 1979, established the management zones and resource management strategies for Floyd Bennett Field. The Plan designated the Flatbush Avenue Hangar Row area as a Gateway Village, designed to preserve the significant aspects of the airfield's historic character while providing facilities, through the adaptive reuse of the structures and new construction, for educational, recreational, and cultural programs. The plan also proposed restoration of large portions of the existing landscape to a condition more in harmony with nature and the surrounding natural area.

These ideas remain the guiding concepts for Floyd Bennett Field, and this Development Concept Plan fills in the details of the design and programming proposals that were not included in the General Management Plan. However, this DCP is not based on one of the assumptions that underlay the GMP: that the large capital budget necessary to reach such goals will be available immediately. Instead, this plan includes proposals for reaching similar objectives through imaginative use of existing resources, programmatic innovations, and new institutional arrangements.

The area addressed in the DCP includes, in addition to the former naval air base on Floyd Bennett Field, the nearby shorelands at Dead Horse Bay and Plumb Beach. Bergen Beach is not addressed in this plan; it is assumed that resource management strategies and land use patterns at Bergen Beach will continue as at present without the need for further planning.

The Coast Guard, Navy Reserve, NARDET, and Triborough Bridge and Tunnel Authority maintain excluded properties at Floyd Bennett Field totalling about 82 acres. In addition, an avigational easement for the Coast Guard base landing strip extends across the central section of the field. The recreational use of the field would be greatly enhanced by a resiting of this easement, as proposed in this plan.

Traffic on Flatbush Avenue has been carefully scrutinized in this plan. This is a problem that, for decades, has affected local residents on several weekends each summer. We did not solve it, but we think we have not made it worse and perhaps have even improved the traffic flow in some ways. This plan will provide the local residents with a sorely needed recreational resource which will add vitality to their community while remaining a responsible neighbor, and is a major step in the development of Floyd Bennett Field in a manner that meets the aspirations of the many who have labored so long to create a truly national Environmental Center at Gateway. Of course, planning must continue, and if critical factors, such as the fiscal environment, significantly change , priorities will be reconsidered and new options explored.

II. DESCRIPTION OF THE ENVIRONMENT

II. A. The Region

The following is a summary of the relevant material from the complete description of the environment, published in the 1979 Gateway Final Environmental Statement,and from the 1980 report,"Environmental Inventory and Preliminary Land Use Program",both available for review at park headquarters.

Gateway National Recreation Area is situated at the ocean entrance to the largest urbanized region in the world. Approximately twenty-two million people, or 10 percent of the nation's population, reside within a day-trip radius of one or another of Gateway's units.

Despite suburban migration, the great majority of the region's population remains concentrated in the older communities of the core metropolitan area. This population is racially and ethnically diverse, including numerous white ethnic groups, whose communities remain intact in various parts of the region (many adjacent to Gateway's lands) and growing percentages of minority members, especially black and Hispanic residents, who are generally situated in communities closer to core commercial areas. Increasingly, this metropolitan population is also comprised of proportionately large numbers of poor and elderly residents. The departure of more affluent central-city dwellers for the suburbs has had the effect of lowering the overall income levels of populations remaining in core areas. In 1970, as many as 14.5 percent of the total households in the Gateway counties (Kings, Queens, Richmond, and Monmouth) were below the poverty line, and the percent increased to 18.1 for the other New York City boroughs. In the entire Gateway service area, nearly 12 percent of the households were below the poverty line.

As in many major cities, citizens 65 years and older are also concentrated more heavily in urban counties than in outlying ones. The heaviest concentrations occur in the New York counties of Manhattan (with 14.0 percent 65 and older), Queens (12.4 percent), Bronx (11.6 percent), and Brooklyn (11.1 percent). In the Gateway counties there are some 1.9 million elderly persons, or 11.3 percent of the total population (Perry 1975). As the total population declines in the metropolitan area, the proportion of the 65-and-older group continues to increase.

The number of people who do not own automobiles is also a significant factor in the metropolitan New York area. In 1970, nearly half the households within the Gateway boroughs or counties were without cars.

The most prominent factor in the economy of New York City is its importance as a center of world trade. New York industries providing world-trade employment accounted for 77,000 jobs, or 19 percent of the national total for this type of employment in 1971. While this employment sector is still significant today and New York remains the center of world trade, there have been recent signs of decline. For example, the Port of New York, the nation's largest world-trade industry in terms of volume, handled

27 percent of the dollar value of all goods handled in United States ports in 1967. By 1973, this share had dipped to 20 percent. Thus, it appears that the economic health of New York City, although it will always be important in world trade, will be increasingly determined by the ability of markets to shift in response to a general decline in the size of the economy. New York has also experienced a shift away from manufacturing to a service related economy.

New York is and will continue to be a center for tourism. Tourism alone constitutes a $3.5 billion industry in the Gateway service region. Some 37 percent of the nation's international vistors spend time in New York.

II. B. The Site

The 1,450 acre site at Floyd Bennett Field, a historic civil aviation facility, is dominated by construction and man-altered landscapes. Although few undisturbed natural features and communities remain, the sheer size of the site, as well as the vast number of facilities remaining from its historic period, make Floyd Bennett Field a potentially invaluable recreational resource.

The open portions of the field itself contain extensive stands of phragmites and woodland thickets. Mixed grasslands and low-shrub thickets are also present and provide habitat for several game birds (although no hunting is allowed), including ring-necked pheasants and mourning doves. Mud flats and a thin strip of low salt marsh border with the open waters of Jamaica Bay.

The portion of the field transferred to the National Park Service features a concrete runway grid, six large hangar complexes, and numerous administrative and airbase support facilities. Included in a building inventory of this area are brick and wood-frame dormitory structures; recreation buildings; steam, sewage, and cold-storage plants; gasoline and jet fuel tanks; power generators; radio and beacon towers; and garages and maintenance shops. An internal road system traverses the southwestern part of the field and continues along its northern edge, across the runway of the US Coast Guard, surrounding the entire runway complex.
Dead Horse Bay, fronting on Flatbush Avenue midway between the Belt Parkway and the Marine Parkway Bridge, includes several park concession facilities providing recreational services. Developed by private interests under New York City concession permits prior to Gateway establishment, the facilities are a marina, tennis courts, and a golf driving range.

Plumb Beach includes a small building which houses maintenance, a visitor contact station, storage,and public toilets, adjacent to a parking lot. The maintenance portion lies on city property.

II. B. 1.PARK OPERATIONS

Since 1974 Floyd Bennett Field has been the site of Park Headquarters for Gateway National Recreation Area. The Park Police and the Jamaica Bay District are also headquartered there.

II. B. 2. The Cultural Environment

The area now known as Floyd Bennett Field was originally made up of small islands and marshes interconnected by estuarine streams. Barren Island may have been the site of a village of the Canarsie Indians in the seventeenth century. Dutch and English settlers used the area primarily for grazing stock. Industrial development began in the 1860s with the construction on Barren Island of fish oil and fertilizer factories and, later, garbage disposal plants. These industries gave rise to a small community, which declined in the early decades of the twentieth century as the factories closed. No significant above-ground evidence remains today of the industrial structures or their associated community.

In 1928 Barren Island was selected as the site for New York City's first municipal airport. Completed in 1931, the airfield consisted of a central administration building and control tower, eight aircraft hangars in four pairs built along Flatbush Avenue, one runway paralleling "hangar row" and a second runway forming a "T" with the first. The facility was named Floyd Bennett Field in honor of a pioneer aviator.

Floyd Bennett Field was the scene of many achievements in early aviation, but was never a commercial success. Ten years after its opening the airfield was acquired by the U.S. Navy, which continued to use it until 1971. Despite considerable expansion and new construction during the military period, Floyd Bennett Field retains most of its original structures, and with one exception is free of intrusions that severely disrupt the original configuration of the buildings on the field. For these reasons the National Park Service nominated the municipal airfield area to the National Register of Historic Places, and the Floyd Bennett Field Historic District, some 330 acres in extent, was listed in the Register in 1980.

The property today looks unmistakeably like an airfield. The two original runways form the core of an expanded runway system that has developed over the years. Between 1934 and 1938 two new runways were built by the WPA; these form an "X" and intersect the longer of the two original runways (#6-24). The Navy greatly expanded the field with landfill, lengthened and widened all existing runways except #6-24 (used thereafter only as a taxiway), and built a new runway at the extreme northern end of the field.

The Boundaries of the historic district have been drawn to include only that area of the runway system in existence before 1941. Within this area, there is a 2,500 foot runway section under the jurisdiction of the U.S. Coast Guard; this has been excluded from the district.

The original hangars and Administration Building still dominate "hangar row" along Flatbush Avenue. Infill structures built by the WPA in the 1930s connected the two hangars in each pair, resulting in four hangar complexes. These are referred to today as Hangar Complexes 3, 4, 5 and 6, numbered from south to north. After 1941, a new hangar was erected between the Administration Building and Hangar Complex 5. A large, steel, external frame building, built to accept the forward end of an aircraft, with blue corrugated siding, it is known locally as the "Blue Nose Hangar". It is designated on the National Register form as an intrusion in the historic district.

In the interval between the beginning of Gateway operations and the approval of a Development Concept Plan for Floyd Bennett Field, a pattern of use has developed at the field based upon limited resources. School groups and other youth groups have been actively solicited to participate in recreation and environmental education programs that utilize the field's open spaces and its structures. At the same time, organized groups have been permitted to pursue specific activities for which the field's resources are well suited, often in complete isolation from other users. Over the past several years, annual visitor use has averaged 75,000 at Floyd Bennett Field.

Interpretive and recreational activities at Floyd Bennett Field in the summer of 1981 include a "sports sampler" program for children, a history tour of the hangars and runways of the old municipal airport, and a "hands on" nature study program for the physically disabled. Nature discovery walks are conducted at Plumb Beach and Dead Horse Bay. Ecology Village, where school classes camp out for 24 hours and work in a garden, provides an intensive experience in environmental education. Other groups may camp on their own, without instruction from park staff, in the tamarack grove west of Hangar B.

Floyd Bennett Field hosts several large special events each summer; these are often held in and around the Blue Nose Hangar, with a grandstand erected on the apron east of the hangar. Events in the 1981 season included a celebration of the 50th anniversary of the opening of Floyd Bennett Field as a municipal airport, a citywide recreation and culture festival, the City Gardeners' Harvest Fair, and a citywide Hispanic Festival.

A community garden area near hangar row allows local citizens, under permit, to grow their own vegetables with instruction from park staff and gardening specialists. Local groups play softball on diamonds established on the runways. Several groups make use of the northernmost runway in the field: members of the Model Airplane Association fly aircraft, automobile enthusiasts make use of a course, and the New York Police Department trains recruits in pursuit driving.

The lands at Plumb Beach receive a good deal of unstructured use (picnicing, strolling, sunbathing) by nearby residents and by motorists who exit the Belt Parkway at small pullouts and walk into the site. The inadequate entrance and exit design has led to numerous auto accidents at this site. Fishing and swimming are not permitted here, nor off the Dead Horse Bay shorelands, due to polluted conditions and dangerous currents in the waters of Rockaway Inlet. An erosion abatement program is also under way.

Although it is difficult to separate the portion of the Gateway operating budget that is expended on Floyd Bennett Field, it is estimated that programs, salaries, security, oil, electricity, and miscellaneous items cost approximately $700,000 per year. In addition, in the present fiscal year, approximately $750,000 is being spent on construction projects such as stabilization of portions of the former Administration Building, hangar roofs, and the upgrading of the sewage treatment plant, which will be more than adequate to handle the proposed levels of visitor use .

Smaller structures in the hangar row area which date from the historic period (1931-1941) include a garage and dope shop (Building #26), a fire pump house (#29), sewage pump house (#30), electrical vault (#57), transformer building (#120), and gasoline pump station (#176). These buildings should be preserved. A few structures outside the historic district are also included in the List of Classified Structures under Category C. These are: an ammunition dock (106), small arms magazine (108), storage building (109), and communications building (118). All are located in the northern section of the property, and date from the World War II period.

II. B. 3. The Natural Environment

Summary

Floyd Bennett Field is an altered landscape. Extensive land-filling activities during the twentieth century have connected historically separate Barren Island and smaller tidelands in Jamaica Bay to the main portion of Long Island, and years of development and use have drastically modified its character. Nevertheless, even with water pollution and heavy pressures from the urban environment, portions of Floyd Bennett Field which have been "left alone" for the past 10 to 15 years have reverted to natural conditions through ecological processes. Wedges of low salt marsh, reminiscent of Barren Island marsh, may be found along several miles of the outer edge of the field, or at the developing spit and cove in Dead Horse Bay. Though considerable areas of disturbed soils are covered with Phragmites stands, several expansive areas have revegetated with grasses, setting the stage for habitat similar to the now practically eliminated Hempstead Plains of Long Island.

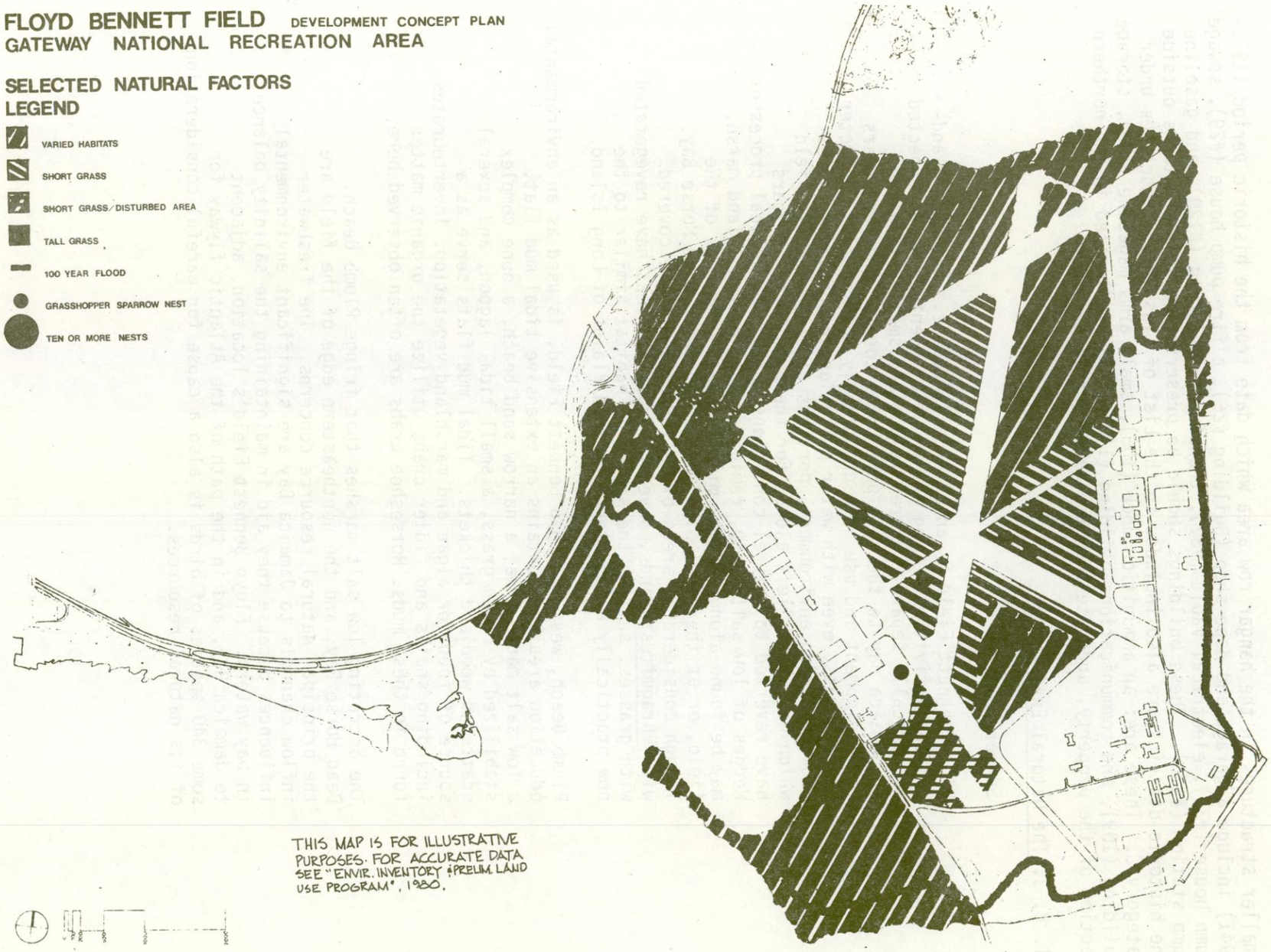
Plumb Beach, west of Floyd Bennett Field, is used as an environmental education area and contains an extensive tidal mud flat, a low salt marsh area, a narrow sand beach, a dune complex stabilized by beach grass, a small tidal lagoon, and several scattered woodland thickets. Tidal mud flats serve as a source of food for algae and marshland vegetation. Invertebrates including snails and fidler crabs utilize the organic matter found in these muds. Horseshoe crabs are often observed here.

The accreting low salt marshes that fringe Plumb Beach, Dead Horse Bay, and the northeastern edge of the field are the principal natural resource concerns. The freshwater inflow channels to Jamaica Bay are significant environmental influences because they aid in maintaining the salinity balance in bay waters. Floyd Bennett Field's location, adjacent to Jamaica Bay, and in the path of the Atlantic flyway for some 340 species of birds is also a cause for careful consideration of its natural resources.

FLOYD BENNETT FIELD DEVELOPMENT CONCEPT PLAN
GATEWAY NATIONAL RECREATION AREA

SELECTED NATURAL FACTORS
LEGEND

- VARIED HABITATS
- SHORT GRASS
- SHORT GRASS/DISTURBED AREA
- TALL GRASS
- 100 YEAR FLOOD
- GRASSHOPPER SPARROW NEST
- TEN OR MORE NESTS



THIS MAP IS FOR ILLUSTRATIVE PURPOSES. FOR ACCURATE DATA SEE "ENVIR. INVENTORY & PRELIM. LAND USE PROGRAM", 1980.

II. B. 3. a. Soils and Water Table

Soils on FBF are mainly "dredge fill" or "miscellaneous fill/urban rubble", containing coarse to fine sands, with varying amounts of silt and shells, and sands containing metals, coal, crushed rock, cinders and rubble. Also found are "natural deposits" which have been relatively undisturbed by past human activities, including mudflats, marshes and sand dunes. Loose, unconsolidated sands primarily characteristic of the area possess poor to fair load bearing capacities while not imposing significant limitations to earth moving or drainage. Chemical analysis of a selected soil sample from the east-central portion of FBF showed no contaminants (metals, pesticides) in excess of U.S. Environmental Protection Agency (USEPA) standards. Pavements on FBF occupy about 25 percent of the total land area and are mainly composed of concrete and macadam runways. Based on the somewhat homogeneous soil characteristics of infield areas adjacent to the runways, it is expected that the "dredge fill" soil extends below the runways as well.

Fresh water on FBF ranges from 2 to 20+ feet below ground surface, and in many locations is perched above salt water. Saline depths range from 8 to 20+ feet below ground surface, both rising above and falling below the mean sea level. Groundwater is at the highest elevation through the central areas of FBF. Quality and quantity of the perched fresh groundwater is unknown at this time. It is known, however, that greater quantities of fresh water are generally at depths of 200 to 500 feet below the FBF area. Any alterations to the study area terrain could result in the lowering of the freshwater table (reduction in fresh water recharge) and increased intrusion of saline waters.

II. B. 3. b. Vegetation

Fourteen major vegetation types (containing 27 mapping units) were identified at FBF, ranging from water-related types (aquatic vegetation, salt marsh vegetation), to dune vegetation to reed vegetation, to upland field and shrubland vegetaton to landscaped vegetation. The distribution of these types was closely correlated with substrate and land-use development conditions of the area.

Successional trends and development history of the vegetation types of FBF is only partially known although the following trends have been recognized:

. sparse vegetation covering sand bald areas may eventually succeed to shrub thicket communities if protected.

. unvegetated or grassy foredune areas will, over time, be transformed to mixed dunegrass areas and eventually to wooded backdunes.

. reed (Phragmites) and shrub thicket communities dominate specific areas of the site.

. grasslands are being invaded by shrubs and trees.

The results of fertility analyses of soil samples obtained from areas where finer-textured fill and topsoil material has been deposited indicate generally good vegetative growing conditions. Growing conditions elsewhere on FBF, e.g. sand bald and urban rubble areas, would be considered poor to marginal, based on these analyses. In general, proposed uses will determine the vegetative survival.

II. B. 3. c. Wildlife

Rabbits, rats, meadow moles and field mice, as well as a large variety of birds, are present in large numbers at Floyd Bennett Field. Grassland habitat is rare in the region, and portions that are displaced by land development should be relocated to the extent possible for habitat of grassland species that are uncommon in the region. Additional carrying capacity analysis is necessary to assess the ability of existing vegetation types to support animal species present.

Although no New York State or Federally designated endangered species have been reported at FBF, several other wildlife species of special concern in the New York region are present. Ones which have been reported on FBF include the northern harrier (marsh hawk), barn owl, upland sandpiper, grasshopper sparrow, black-crowned night heron, great blue heron, and short-eared owl. Common and least terns may also be present. Dr. Peter Post investigated the status of the northern harrier, barn owl, upland sandpiper, and grasshopper sparrow at FBF and documented his work in Survey of Selected Avian Species Breeding at Gateway (1979).

Four Blue-Listed species (species not yet endangered, but threatened), which are unknown as breeders elsewhere within the confines of Gateway National Recreation Area, breed or have bred until 1978 at FBF. (These species are northern harrier (marsh hawk), barn owl, upland sandpiper (plover), and grasshopper sparrow.
)

In addition to being on the National Audubon Society Blue List since 1971, the northern harrier is also listed in Appendix II of the "Convention on International Trade in Endangered Species of Wild Flora and Fauna." The Endangered Species Unit of NYSDEC also considers the northern harrier to be threatened as a breeding species in New York State. New York State law, however, currently provides only for an endangered species list. NYSDEC is currently attempting to obtain legislation to establish a threatened species list, which would include the northern harrier.

II. B. 3. d. Water Quality

Waters of Jamaica Bay peaked in pollutant levels in the early 1960s; since that time water quality has stabilized and for some parameters has improved. Remaining problem areas include high fecal coliform levels, heavy metals concentrations, and high nutrient levels. Primary discharge of pollutants results from wastewater effluents, sewer overflow, and stormwater runoff. Water quality in Jamaica Bay will improve with implementation of the New York City 208 Wastewater Management Program. These incremental improvements are expected to upgrade waters adjacent to FBF to a swimmable quality within 10 to 20 years.

Projected improvement of Jamaica Bay waters to a swimable quality will have a direct positive effect on the aesthetics and ecology of an increased FBF shoreline, however, no swimming is presently being proposed at the field because of the sensitive nature of the edges of the site, its wetlands.

II. B. 3. e. Wave Erosion and other Environmental Hazards and Nuisances

Wind erosion is an existing and potential problem where heavy public use (foot traffic, trailbikes, horses) have decimated stabilizing vegetation. Numerous areas of recent shoreline erosion were noted as were shoreline hazards (broken bulkheads, pilings, other debris) which limit recreational uses. Other potential hazard areas include abandoned buildings and cars, and pest problems (mosquitos, ticks and rats).

Projected flood elevations for FBF range from 7.9 feet for the 10-year flood to 11.4 feet for the 500-year flood. The 100-year flood line, at an elevation of 9.4 feet, covers the eastern portions of Bergen and Plumb Beaches to the Belt Parkway, as shown on the accompanying map. Only the fringes of FBF proper, perhaps some 10 percent of the total land area of the field, are affected by such events. As could be expected, the dune and beach areas and the shores of FBF within the limits of a 100-year flood, are most susceptible to erosion.

Littoral effects, i.e. prevailing currents or average tidal motion, tend to stabilize the beaches, while short-term storm surges enable waves to attack the beach at higher elevations and remove sand. Most of FBF is relatively flat and not susceptible to rill or gully erosion from rains. It was this flatness, and the absence of tall vegetation, that caused blowing sand to be a hazard for aviators during the airport's active life. Since aviation activity has reduced, most of the ground has been overgrown by vegetative cover, eliminating this former problem.

Limited storm wave height data is available for the immediate FBF study area. Estimates of flooding during a 10-, 50-, 100- and 500-year storm have been projected, therefore, using storm surge data recorded by automatic gauge at Fort Hamilton, New York and Sandy Hook, New Jersey. Wave height data recorded during a recent 100-year storm, Hurricane Donna (September, 1960), serves as the base figure for the flooding projections. The tidal height of 8.6 feet above sea level is the maximum recorded height for Hurricane Donna at both Fort Hamilton and Sandy Hook and is a realistic figure for the 100-year design storm surge height.

For the "worst-case" condition -- the coincidence of storm surge with spring tides -- the mean high water elevation of 2.4 feet is added to the 8.6 foot storm surge for a total wave height of 11.0 feet above mean sea level. Without any additional modification, the 11.0-foot storm surge may be used as a conservative estimate for flooding at FBF during a 100-year storm. A correlation curve based on data from 16 storms was derived by the U.S. Army Corps of Engineers to relate tide elevations at Fort Hamilton to those in Jamaica Bay. Using this table, a value of 9.4 feet for Jamaica Bay is found to correspond to the 11.0-foot New York Harbor value. In terms of flooding hazard, land below an elevation of 9.4 feet might be inundated during a 100-year storm.

II. B. 3. f. Air Quality and Meteorological Data

In the FBF area, there is sunshine on about 60 percent of the days of the year. This condition, plus the openness of FBF, suggests investigation of the potential use of solar energy for heating, small-scale power generation, or as a pilot educational project. Highest temperatures in the project area occur in July and August, with lowest readings in January and February. The "air conditioning" season extends from June through September and the "heating" season from October through May. Winter temperatures do not often remain below 32 degrees F for sufficient periods to form adequate ice for skating. Construction of a refrigerated rink would be required if a full skating season is desired at FBF.

Ozone levels exceeding national standards are a regional problem and should not prove a constraint to proposed FBF development. Although carbon monoxide contraventions occur during peak recreational travel days at points of queuing and congestion, expected decreases in auto emissions by the estimated year of project completion should more than offset effects of increased traffic volumes in the FBF area.

Severe storm events which include hurricanes and other tropical storms have occurred in the project area at a frequency of about 80 times per 100 years. Average hourly winds of between 35 and 65 miles per hour and peak gusts of 90 to 95 miles per hour have been documented.

Conditions of appreciable fog, heavy fog and smoke or haze affect but not preclude taking advantage of prevailing long distance views of the Manhattan skyline and Verazzano Narrows Bridge from FBF, and shorter distance views of FBF physical forms such as hangars, dunes and open expansive runways. According to local climatological data averaged over time, visibility in the FBF area exceeds 6 miles about 73 percent of the time, and 3 to 6 miles about 19 percent of the time.

II. B. 3. g. Noise Environment

Aircraft is the dominant noise source at FBF. Included are the overflights from JFK International Airport, and also helicopter activity of the Coast Guard and the New York City Police Department. In terms of proposed activities at FBF, outdoor concerts would be interrupted frequently by JFK Airport-related operations. Interior noise levels would be dependent on building structure and amenities. Such items as double-glazed windows and central air conditioning can minimize interruptions to indoor concerts or other noise-sensitive activities.

Effects of traffic noise would be significant only if sensitive activities are planned near the Belt Parkway or Flatbush Avenue. No significant impact would be anticipated.

II. B. 4. The Transportation Network

II. B. 4. a. Existing System

The existing access network for FBF consists of two roadways: Flatbush Avenue and Belt (Shore) Parkway. On peak summer weekends these facilities can reach their capacities. At most times however, the facilities operate at substantially less than their design capacities.

Flatbush Avenue is a six-lane arterial road with three lanes in each direction. It is posted at 45 miles per hour south of the Belt Parkway interchange, in the area opposite Floyd Bennett Field. A wide tree-lined median separates traffic and one set of signals function to regulate turns and allow pedestrian movement. The existing capacity of Flatbush Avenue is estimated at 4500 vehicles/hour in either direction. This estimate has been verified by counts of daily traffic. The Belt Parkway is a six-lane freeway with grade-separated interchanges. The Belt is posted at 50 miles per hour and has an estimated capacity of 4500-4800 vehicles/hour in each direction.

There is a limit to the number who can exit per hour at the Flatbush Avenue interchange, however, based on the ramp capacity and weaving volumes. Volumes on these types of ramps are usually less than 1,000 per hour, which is confirmed here by traffic counts. It is clear that the Belt Parkway operates at or near capacity during some hours of Saturday and Sunday in the summer. The Belt Parkway interchange may or may not be a capacity restraint during any particular hour depending on the number of turning movements that take place. Traffic counts on the ramps indicate that the turning volumes are significant and it may be concluded that merging probably controls the capacity of the interchange to deliver and accept beach and Floyd Bennett Field traffic.

Northbound, or home-bound traffic from Jacob Riis Park is severely limited by the merging south of the Bridge, and the limited ability of the Belt Parkway and Flatbush Avenue north of the Belt Parkway to accept traffic. The result is long delays on leaving Riis Park on peak-volume days.

Additional traffic turning into and out of Floyd Bennett Field would cause new traffic conflicts. Therefore, development of Floyd Bennett Field includes provision of entrance roadways, parking areas and bus loading areas as outlined in this plan, all of which are designed to accommodate the Field-destined traffic without adversely affecting the capacity of the internal system to deliver traffic to Breezy Point. Bus service to Floyd Bennett Field is operated daily by the Green Bus Lines on route Q-35 Rockaways. This line originates at the Brooklyn terminus of the number 3 and 4 subway lines at Flatbush Ave and Nostrand Ave.(the junction). The route follows Flatbush Ave. to Jacob Riis Park and then onto B 116th street in the Rockaways. Summer weekend service has been operated on Flatbush Ave. to Riis Park on NYCTA Routes B-9 60th Street and B-46 Utica Ave in 1980 and 1981.

II. B. 4. b. Present Operations

Existing conditions on these two roadways show that there is available capacity at most times of the year and at most times of day. The greatest loads presently occur on hot summer Sundays. An analysis of the ten peak days for the Marine Parkway Bridge validates other counts to support this assessment. The present summer weekday operation of these roads shows a volume to capacity (v/c) ratio of .5 to .7 on Flatbush Avenue peak hours. Weekday data for the Belt Parkway were not available. Weekend counts indicated that the v/c ratio was in the range of .8 to .9.

The existing use of the Floyd Bennett Field entrance is in the range of 300-400 vehicles per hour. The present entrance, at the south end of the field, is equipped with a separate turning lane and signal. Additional capacity on approach roadways, except for several peak summer weekends, is readily available to provide access to visitors for planned improvements.Bus service levels on the Q-35 line on summer weekdays are approximately 180 vechicle trips/day in both directions, while weekend service is 270 vechicles trips/day. The service operates at about 15 minute intervals on weekends. A total of approximately 80 vechicle trips/day in both directions is operated on the NYCTA routes.

III. THE ENVIRONMENTAL ASSESSMENT

III. A. Purpose and Need For Action

See page 1, Problem Statement and Background

III. B. The Preferred Alternative (Development Concept Plan)

This DCP for Floyd Bennett Field is designed to be demand responsive. It consists of four elements, all of which are consistent with one another. The four elements will be implemented as appropriate, in response to expansion and contraction of the Gateway capital and operating budget. Element four represents the desired goal for Floyd Bennett Field under the best circumstances, but it is not the assumption of this plan that the proposals in element four must be implemented for the success of this planning effort. The individual proposals in each plan element are not arranged in priority order, nor must all the proposals of each plan element be accomplished before initiating the proceeding plan element. For example, if funding and other factors allow, portions of plan element three might be implemented without completing plan elements one or two. Of course, the implementation of any proposal is dependant upon the availability of funding.

A definition of scope precedes each element in the plan.

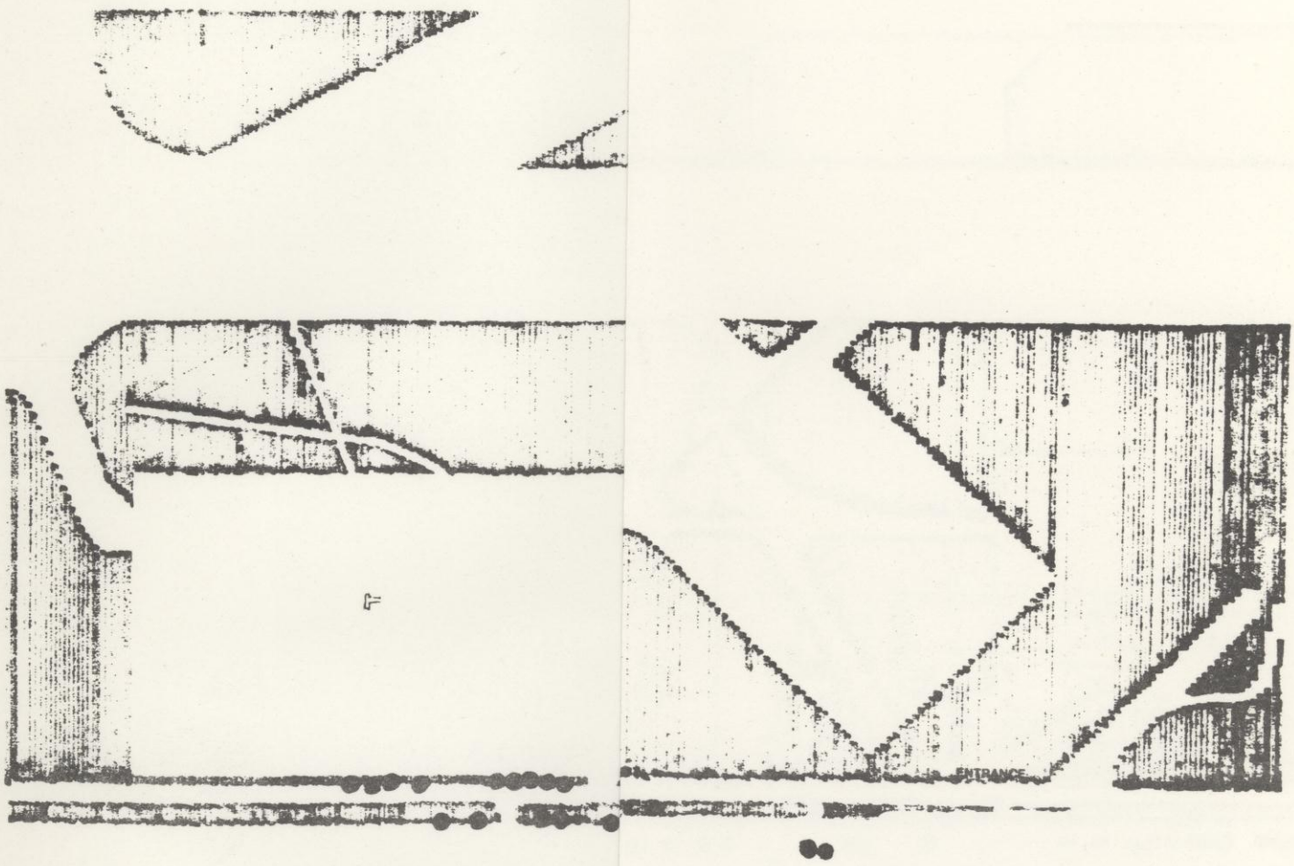
III. B. 1. Plan Element One (NO ACTION)

A description and operating rationale for a strategy of "minimum investment requirements" needed to meet present levels of public use and prevent loss or deterioration of the resource. Increased visitation may result, but investments required solely to support increased use are not included.

The significant natural and cultural resources of Floyd Bennett Field have been described in the Description of the Environment. These include the Floyd Bennett Field Historic District (5 major structures and 6 support buildings dating from the historic period), the Dead Horse Bay and Plumb Beach shorelands, and the accreting beach and salt marsh areas along the northern and northeastern peripheries of the Floyd Bennett Field peninsula and east end of Plumb Beach. To prevent loss or deterioration of these resources and meet present levels of public use without increased use, these actions are proposed.

1. Stabilize Hangar Complexes 3, 4 and 6. (Complex 5 and the Administration Building have already received stabilization treatment.) Work will include repairing steel framing systems where necessary, repointing brickwork, replacing corroded lintels and re-laying displaced brickwork, reglazing or otherwise covering missing lights in sliding doors, reroofing, and repairing flashing. All work is designed to make the structures weather-tight and prevent further deterioration. No interior work will be done.

2. Stabilize support structures, buildings 26, 29, 30, 57, 120 and 176. These structures, including a garage, pump houses, and electrical vaults, require brick repointing, roof repairs, removal of corroded steel lintels and reglazing. With the exception of the garage (building 26), all these structures are small.



ELEMENT 1

GATEWAY VILLAGE SITE PLAN



3. Remove debris from shorelands. The northern shore of the Floyd Bennett Field peninsula is clogged with heavy debris: timbers, corroded steel parts, and other jetsam. To properly preserve these shorelands, eliminate these safety hazards, and encourage their restoration to natural environmental conditions, it is necessary to remove this debris and to keep the beach and marsh areas clean. This will require, initially, a major removal effort. Jetsam will remain a daily problem.

4. The present level of interpretive programs will be maintained. This consists largely of ranger supervised programs emphasizing environmental education and special events. To further communicate the historical themes of the site, the Administration building and hangars would be interpreted through waysides, markers, informative pamphets and tours.

Transportation

5. The existing entrance at the southern end of the field would continue to serve the car-driving visitor, using the existing signalized left turn lane. Vehicles northbound on Flatbush will make a right turn entrance at this location. Exiting traffic will continue to enter Flatbush Avenue here. The entrance will continue to serve National Park Service, U.S. Coast Guard, Navy and other resident institutions as well as the general public.

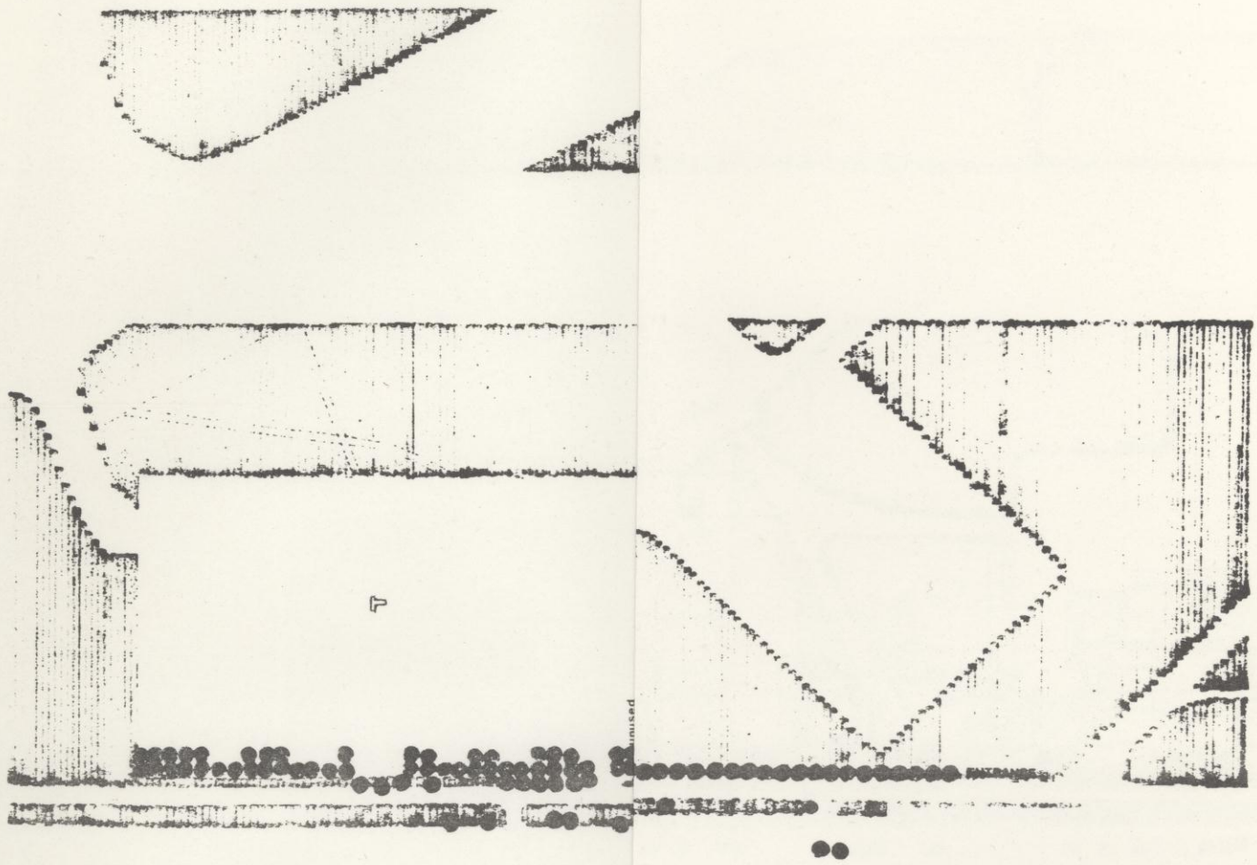
Signal operations will require a modest upgrading to conform to standards of the Manual of Uniform Traffic Control Devices. The signal operation for the intersection must be reviewed and improvements designed. Traffic control and directional signs along Flatbush Avenue, especially southbound, will need improvement to reduce confusion. A sign inventory and recommendations for removal and replacement of non-conforming signs is desirable. New signs will be designed for the 45 miles per hour posted speed and will provide adequate advance notice of the field entrance.

The traffic signals and signage are under the jurisdiction of New York City Department of Transportation. These actions will permit a minimum of 300-400 vehicles/hour to gain access to the field.

III. B. 2. Plan Element Two (Early Action Plan)

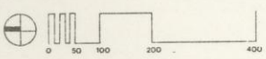
A strategy for maximizing the use of the Floyd Bennett Field's existing resources for recreation and other visitor services in the short term, even without extensive rehabilitation of structures or other investments.

1. The first action to be taken is the phased removal of the existing fence along the length of Flatbush Avenue. The removal of this unsightly barrier will greatly improve the visitor's view of the field from Flatbush, and public space (the street) will no longer be separated from public space (the park). Land forms, bollards, thick shrubbery, and other features will be designed and built at areas that require barriers to random access. The early steps in the removal of the fence might involve removal of portions, or resiting portions a few yards back from the road.



ELEMENT 2

GATEWAY VILLAGE SITE PLAN



2. A new location, outside hangar row, will be found for the New York City Police Helicopter Unit. Several sites are being considered, including other sites on Floyd Bennett Field, and Flushing Meadow Park. This will free up Hangar Complex 4 and 5 for recreational uses. The Administration Building will have been rehabilitated for summer use only, and the Blue Nose Hangar, built only 16 years ago, is still in fair condition. Therefore three large hangar complexes (4, 5 and the Blue Nose hangar) as well as the Administration Building, will be dedicated to recreational and cultural programs during the summer.

3. The Administration Building has been dedicated as the William Fitts Ryan Visitor Center for Gateway National Recreation Area. There visitors will learn of the opportunities available at all the units of Gateway, as well as the other units of the park system, and will gain an understanding of Gateway's overall mission and its role in the National Park System. At the same time, visitors will be oriented to the programs and services at hangar row and elsewhere on Floyd Bennett Field. Exhibits and audiovisual programs here will convey several interpretive themes including the Native Americans who originally lived here, the Dutch and colonial settlers, the growth of New York City, and pioneer aviation at the field.Visitors will be encouraged to climb to the control tower to enjoy a panoramic view of the runway system and Jamaica Bay beyond. The second floor of the Administration Building might house the Jamaica Bay/Breezy Point staff, and the park interpretive staff.

4. Extensive use will be made of the hangars, during the warmer months. Schools, colleges, and recreational organizations such as non-profit summer day camps and folk-dancing groups could make use of the hangars, under short-term special use permits, for activities that would be of some benefit or interest to the general public. The NPS will conduct a "sports sampler" program in one of the hangars in the summer. An expanded schedule of festivals and fairs will be developed, using the Blue Nose Hangar and the apron in front of it as exhibit and staging areas.

5. Outdoor recreational programs will occupy portions of the airfield behind Hangar Row. Use of the runways for sports will be expanded, and sports fields will be developed. Archery will continue at the established site. The community gardening program may be expanded and upgraded by providing amenities to gardeners: a clearly demarcated parking area near the gardens, a shade tree arboretum, and picnic tables. Camping activities will be expanded with a structured environmental program at the existing Ecology Village, unstructured camping in the tamarack grove west of Hangar B, and group camping for 4-500 scouts daily in specified areas of the field. All field activities will be carefully located to minimize disturbing the known wildlife habitats. A crafts garden, including plants for making dyes, herbs and flowers for pressing, etc., will be planted near Building 258, and that building may be developed as an arts and crafts center, becoming an extension of Ecology Village. Instruction in sailing would continue to be provided at the existing boat ramp.

6. A tree nursery will be established near Building 272. This nursery will later serve as a source of trees for the forestation of large areas of the field. Cooperative agreements with appropriate agencies and private companies will be sought, to bring their expertise and resources to bear in this technical field. Major lumber companies will be invited to donate trees and participate in this highly visible and exciting public project. Eventually, trees might be planted at Floyd Bennett Field by school groups, and years later a portion of the trees might be replanted in their neighborhoods, to help green the community as well as the park itself.

7. Cooperative agreements will be sought with organizations involved in education or environmental research. Portions of the former Bachelor Officer's Quarters, bldg. 68, a massive structure near the Job Corps Center, will be leased to organizations under long-term permits for the establishment of offices, laboratories, and dormitories. Neighboring universities , agencies such as NOAA or the Department of Energy, and other organizations will be sought to establish a base here for research in the environmental sciences. The cooperating organizations will be responsible for rehabilitating and operating the structure.

Transportation

8. The existing entrance at the southern end of the field will continue to serve as the major entrance for both park visitors and the Navy, Coast Guard and other resident institutions. The former entrance in front of the Administration Building will also be open to park visitors, and parking for about 1500 cars will be established on the aprons near each usable hangar. The present signal will require improvement for safety and smooth operation, and advance signing will be required. Entrances to the Barren Island marina and the golf driving range on the west side of Flatbush Avenue will be upgraded to improve traffic flow. A bus stop will be incorporated into the redesign of these entrances and exits. As part of the signal upgrading, pedestrian crossing signals, pavement markings and signs will be installed, if warranted, to provide safe at-grade pedestrian access across Flatbush Avenue.

The National Park Service will encourage New York City to complete the proposed bicycle path along the western side of Flatbush Avenue. The bicycle safety course near Building 70 will be actively used. Other bicycle routes will be demarcated on the runway grid where appropriate.

These access changes will allow 400-600 vehicles per hour to enter Floyd Bennett Field without adversely affecting traffic flow on Flatbush Avenue.

III. B. 3. Plan Element Three

A planning strategy and program rationale involving no new capital infrastructure at Floyd Bennett Field. This element will seek optimum utilization of the field's existing resources. It will include rehabilitation of structures, utilities, and other elements, and minor or inexpensive physical changes; it will, therefore, involve large increases in annual use. A statement of policies covering private uses and investments is included.

Under this plan, the former municipal airport will be fully developed as a year-round recreational, educational, and cultural complex, known as the Gateway Village. All the hangars will be adapted to serve new uses, the Administration Building will be rehabilitated, and smaller support structures in the historic district will be preserved and used. Improved automobile access, ample parking space, and a shuttle bus system will encourage and facilitate greatly increased visitor use.

Central to this plan is the idea that park-operated programs and activities can function side-by-side with commercial enterprises in the Hangar Row area. Some of the structures, including two or three of the hangars, would be made available to the private sector, through the issuance of a Request for Proposals (R.F.P.), or by a concession arrangement, for preservation, adaptive use, and operation. The National Park Service would retain for recreational use the remaining hangars, the Administration Building, and all other structures on the field.

The major goal of the R.F.P., or concession agreement, would be to provide recreational programs and to secure a lessee capable of generating enough revenue to rehabilitate, operate and maintain the hangar complexes under lease, providing some revenue for the National Park Service.

A market analysis by the National Park Service shows that this is possible. Three hangar complexes operated by a lessee could return sufficient revenue to the National Park Service to preserve the remaining two historic hangar complexes. However, this will only be confirmed when an R.F.P. is issued and the proposals are analyzed.

1. The great majority of the expansive area of Floyd Bennett Field will be left in a natural condition. A new landscape will be created by man and nature on the underlying "impacted" land, while still cultivating those pioneering species that are creating environmental settings on their own. Developing ecosystems will be allowed to blend gradually into the natural environments preserved in Jamaica Bay. This "urban wilderness" will balance the developed area on hangar row, and will illustrate Gateway's most dramatic theme: the power of nature to reclaim even the most heavily altered landscapes, and to transform them into sanctuaries for people and wildlife.

Passive recreational activities will be encouraged in this natural setting: tent camping for supervised groups; evening astronomy lectures and stargazing at a planetarium set up in one of the abandoned structures along the shore; bird watching along nature trails and marine ecology walks on the beach. All trails will be judiciously planned so that bordering plantings will provide both food and habitat for wildlife. Berms, shrubbery, or where absolutely necessary, fencing will be used to preserve access to this natural area. Presently, several species of mammals (i.e., rabbits,etc.) and sensitive, non-migrating birds reside at Floyd Bennett Field. The habitat for this wildlife will be carefull monitored. Nesting sites will be protected where possible, and new plantings will be carefully selected to preserve the historic character of the field.

2. A boat launching facility and two picnic areas will be established at the eastern portion of the field. To reach these facilities, cars will pass through a control point at the parking lots, then travel the runway system to the eastern side of the field; trees and plantings along the runways will make this a pleasant and dramatic passage. The existing seaplane ramp near Hangar B will be upgraded and will serve private boat-owners as well as school children participating in sailing programs operated either by the park staff or on a concession agreement. Small craft will be launched here. Cars and trailers can be stored on the existing paved area near the ramp. A modest look-out tower constructed to allow park visitors an opportunity to view the field as well as Jamaica Bay, greatly enhancing the interpretive oportunities, as well as providing an identifying marker for visitors on the field.

3. From the boat launch the roadway will lead north, past a small picnic area, to a picnic ground developed at the bulkheaded area at the northeast corner of the FBF peninsula. Shade trees will be planted and picnic tables provided close to the water's edge, however clearly apart from a nearby wetland area. A parking lot for up to 250 cars at the end of the runway will be designed to control numbers of users and prevent access to the length of the runway. A second look-out tower, color identified, will be constructed here.

4. This picnic site, and other smaller ones in suitable locations, will replace Plumb Beach, which now attracts picnickers and their autos in greater numbers than the area can support. The serious traffic problem that results when cars enter and leave the inadequate Plumb Beach parking lot off the Belt Parkway, dangerous swimming conditions and severe erosion in places, will be modified. Under this plan, Plumb Beach will be closed to automobiles. Visitors can still visit the area on foot or by bicycle to enjoy its salt marsh, shade trees, and beach environment. Swimming will be prohibited as at present. The restrooms will continue to operate. A new, more direct linkage between Plumb Beach and Floyd Bennett might be established for bikes and pedestrians.

5. The Dead Horse Bay shorelands west of Flatbush Avenue and south of the existing marina will remain in their present natural condition. Some trails will be maintained and used for nature walks and interpretive programs devoted to the early industrial history of Barren Island. The old dock pilings, illustrative of that historical period, will remain in place. Swimming is dangerous here and will continue to be prohibited. Access will be by foot, or bicycle. The marina will be upgraded and a restaurant may be added.

6. As part of the general cleanup and upgrading of the field, derelict structures will be demolished. A list of these structures is included in appendix E.

7. The former airfield will assume an interesting and diversified appearance. The green spaces closest to Hangar Row would be devoted to field sports and passive recreation, such as picnic areas, while nesting sites would be protected. In the northern section of the field, meadowlands, low shrub thickets and beach and marsh areas would be developing. The runway in the north would be allowed to deteriorate gradually. Groves of trees would shade the camping area toward the eastern edge of the field and the picnic area on the water's edge.

Community gardens and a tree nursery would occupy some of the southern end of the field. The original T-snaped runway grid would be marked by rows of trees, as would other runway sections used by automobiles. The whole spectacle of the field and its surrounding waters could be enjoyed from the control tower in the Visitor's Center, and from the new lookout towers to be constructed near the boat-launching site, and at the picnic grounds.

8. The Administration Building, in the Gateway Village, would be treated as described in Element Two.

9. Two hangar complexes could be devoted to park-related programs and managed on a not-for-profit basis, jointly operated by the National Park Service and cooperating non-profit organizations. Organizations such as the National Audubon Society, the NY Zoological Society or the Sierra Club, among others, will be encouraged to work with the National Park Service to establish a broad range of exciting educational activities for the public.

10. Two or three hangar complexes will be leased or permitted to the private sector to provide a wide range of recreational activities and recreation related programs. The specific allowable activities will be determined in the review of the submitted proposals, however the range will include court games (i.e. handball, racketball, tennis..), multi-purpose sporting areas, ice or roller skating, restaurants, bowling health clubs, craft and ethnic food markets, exhibit space, and artists workshops and galleries, among others.

11. Space in the Gateway Village area and some of the more substantial outbuildings would be designated for the headquarters of the non-profit organizations which would be participating in the development of the Gateway Village. Some space in the hangars would then be shared between those organizations and the NPS for producing events and programs. As the organizations developed it is possible that they would assume responsiblity for the capital improvement of a hangar, subject to negotiations with Service management.

The organizations would be 501(c)3 corporations, capable of receiving funds from other foundations and tax-exempt donations from individuals and groups. The selection and management of the non-profit organizations would be determined in consultation with Gateway Advisory Commission, as well as other concerned groups.

Among the goals of the Gateway Village organizations would be:

To program events, displays, conferences, small-scale festivals, educational programs, courses, exhibits, community meetings, and any other activities which are not precluded from the Gateway Village by Park Service policies;

to establish a permanent headquarters at FBF for various cooperating organizations and to utilize designated hangars and other structures in cooperation with NPS Management;

to involve a broad base of community groups and special associations (artists, environmentalists, crafts associations, music associations, theatrical groups, etc.) in the realization of the Gateway Village as described in the General Management Plan for Gateway N.R.A.;

to receive funds from public and private sources for the capital improvement of facilities designated for use of the cooperating organizations by the NPS (this includes revenue from the commercial portions of Hangar Row), and for capital improvements such as Jamaica Bay drainage to improve the water quality of the bay;

to offer all activities, events, courses, and other programs to the general public on a fee-for-services, first come/first served basis.

12. As part of the Village, a large exhibit space will be established in one of the hangar complexes. The vision of Gateway as a demonstration of Man's awakening to the necessity of living in harmony with the environment will be the theme of exhibits and programs here.

The idea of an Environmental Center has a long association with Gateway. Part of Gateway's mission is to demonstrate the potential for ecological reclamation in an urban environment, and to communicate to the urban public an appreciation of and concern for the natural environment. This will be accomplished through this feature of the Gateway Village.

An important goal will be to demonstrate that humans, as a species, are an integral part of the environment and that whatever is extracted from the environment has an environmental cost. Interpretation of natural processes and environmental quality will of course be essential elements. But it is the economic aspect which will arouse attention and stimulate action. By demonstrating the real costs of resource use, including hidden costs, a receptivity is created for alternatives. The price of a throw-away container includes clean-up cost and lost energy. In the Village, the National Park Service might demonstrate and give instruction in forms of recycling, from furniture refinishing to home restoration. A center for consultation in energy-saving measures could be adjacent to shops for purchase of supplies. The message is that everyone is involved, and everyone can do something about it, for their own good.

13. Another hangar would be adapted for use as a 300-500 seat, off-Broadway theatre. The theatre will accommodate all kinds of other indoor events: films, concerts,

lecture series, etc. Workshops in theatre arts could be held in conjunction with dramatic performances. The New York theatre world is large and diverse, and badly in need of space; several organizations have already expressed an interest in developing an active theatre program at Gateway.

14. The remaining hangar in the Village complex will be devoted to recreation. Specific uses will be determined, in part, by the program proposed by the lessee in the other hangar complexes; competition between park activities and commercial facilities will be avoided.

15. In the large garage and the smaller structure south of Hangar Complex 3, artist's studios and community meeting rooms will be established. The two large, undivided bays of this structure lend themselves to the production of sculpture and other large art forms; artists' organizations have requested use of such space from Gateway in the past. Artists' workshops and activities could spill over into other buildings in the area, frame structures with somewhat smaller working spaces. Artists' works will be exhibited to the public regularly as part of the Gateway Village program.

> The row of hangars will thus be transformed into a "village" bustling with recreational and cultural activities. Visitors can pass a full day without ever leaving the boundaries of the original municipal airport: playing racquetball or roller-skating, exploring the Environmental Center, enjoying a meal at an ethnic restaurant, learning about the aviation history of Floyd Bennett Field, or taking in a dramatic performance. New landscaping, attractive signing, and kiosks will guide visitors from place to place. The access and parking system, including a shuttle bus, will be designed to encourage visitors to explore the whole village complex, while at the same time connecting the exhibits and demonstrations that communicate environmental messages. Classrooms, conference rooms, and audiovisual facilities will be available. The Center will also encompass research activities in the natural sciences. The most exciting programs of the Environmental Center will be those that bring visitors directly into the natural environment of Jamaica Bay: field trips to marshes and islands; an experimental aquafarm raising oysters and other shellfish; a model organic garden with a city garden demonstration center.

16. The NPS will negotiate with the Coast Guard to relocate their landing runway to a site more compatible with the recreational and safety needs of the park. The taxiway near the Gateway Headquarters is the preferred site. This would open up a large section of the field for active recreational use, with a more clearly defined non-park area.

17. A portion of Floyd Bennett Field will continue to be used by existing institutions and agencies. This area includes the resited Coast Guard, Navy, and NARDET properties; and NPS-owned lands and facilities occupied by the Board of Education and the Job Corps; and administrative activities such as Park Headquarters, Park Police Headquarters, maintenance, research institutions and the tree nursery.

18.A water quality laboratory will be maintained and will provide sampling capabilities to aid in data acquisition for natural resource management activities. In order to monitor marsh islands and water quality in Jamaica Bay and to conduct geomorphological research and biological investigations, a small research vessel may be docked at Floyd Bennett for year-round use. It can also be used for special teacher workshops in environmental education. College interns will work in the lab and on the research vessel to aid in collection of data in support of annual environmental monitoring efforts. Specimens unique to Jamaica Bay and/or Gateway natural environments, both terrestrial and aquatic, can be displayed at the Gateway Village.

19. The former entrance to the municipal airport, in front of the Administration Building, will be used as a pedestrian crossing and drop-off point for cars and buses. A new, signalized entrance north of Hangar Row will be established, with a new double left turn lane cut into the median strip of Flatbush Avenue. Bicyclists who use the Belt Parkway bicycle path will be directed to cross at the new signal. Signing and marking and some additional paving along the eastern side of Flatbush Avenue will be needed. Another new single-lane entrance south of Hangar Row will also be developed. The new signal will be coordinated with the other signals to provide efficient flow on Flatbush Avenue. Other median cuts will be closed and U-turns will be permitted at the service entrance. The existing entrance, near the bridge, will serve only the institutional users of the field. The estimated capacity of the two new entrances is 700-800 vehicles per hour, with no significant impacts to the flow of Flatbush Avenue.

Shuttle service will be initiated to serve Jacob Riis Park. Parking will be provided for up to 2000 automobiles. This convenience will permit park visitors to leave their cars at the Gateway Village, explore the exhibits and services available there, and then shuttle to the beach for a full day of recreation and relaxation. Other visitors may drive from the Gateway Village to activity areas elsewhere on Floyd Bennett Field.

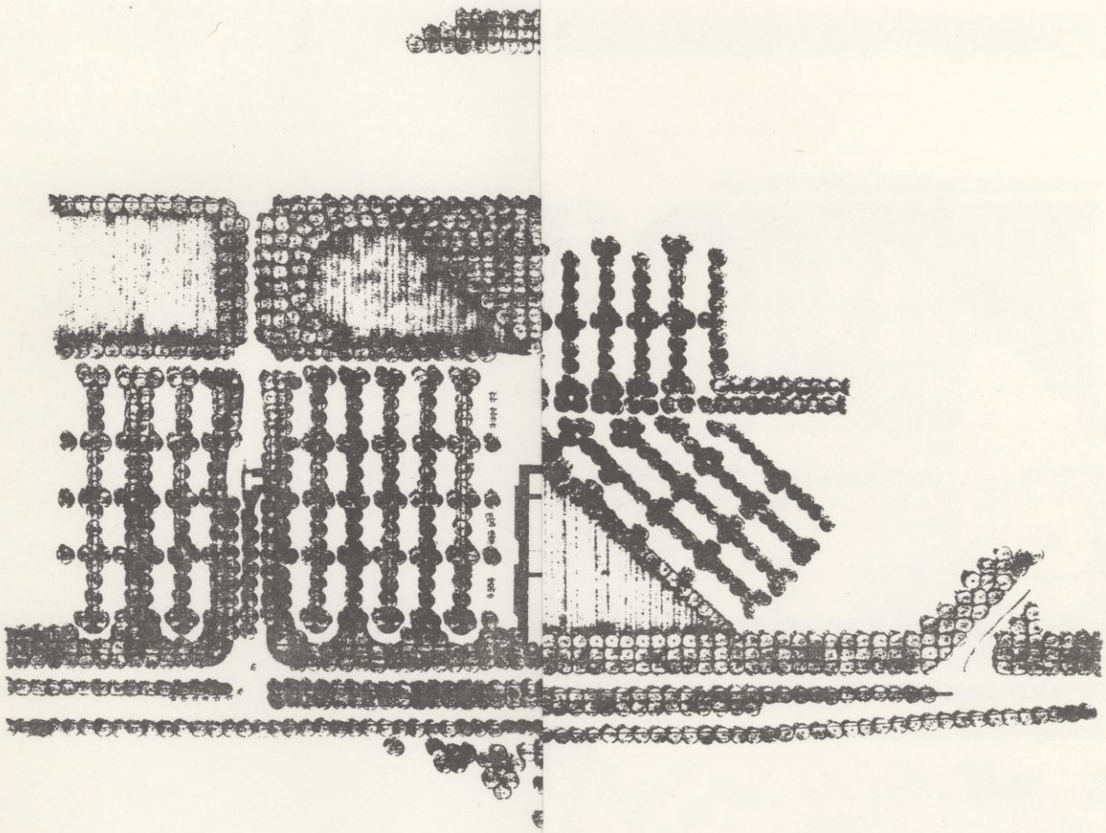
Automobile access for activities beyond the Hangar Row area will be regulated with a permit system.

III. B. 4. Plan Element Four

An element that calls for a moderate level of new capital infrastructure. This element may include new or modified facilities to stimulate and serve increased visitor use.

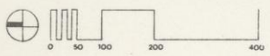
The actions relating to this element are all the actions in Element 3, plus the following access improvements.

1. In order to provide additional entrance capacity it will be necessary to construct a direct link to the Belt Parkway. Most of the park destined traffic originates north and west of the field, and since only limited acreage is available, a partial traffic interchange will be provided. This will entail a deceleration ramp from eastbound Belt Parkway and an acceleration ramp to serve westbound exiting traffic. A two-lane access roadway will be constructed along the perimeter of Floyd Bennett Field adjacent to the Belt Parkway. One bay of the Belt Parkway Bridge over Mill Basin channel will be used to allow exiting vehicles a grade separated crossing of the Belt Parkway. The provision for safe sight distance and adequate merging length will be reviewed with New York State Department of Transportation before a final determination of the feasibility of the ramps is made. The signalized entrances on Flatbush Avenue will continue to provide access as in Element 3.

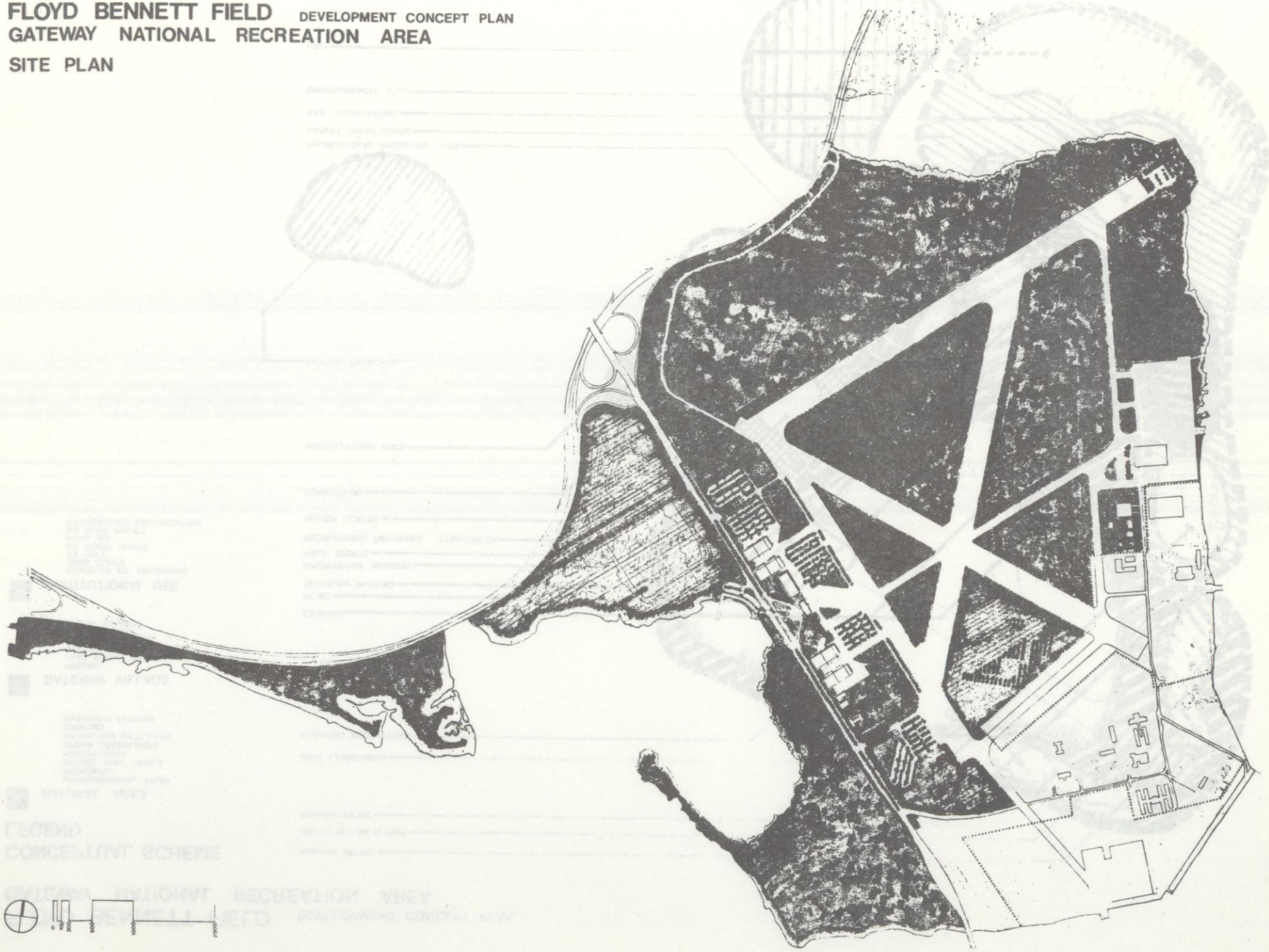


ELEMENT 3 & 4

GATEWAY VILLAGE SITE PLAN



FLOYD BENNETT FIELD DEVELOPMENT CONCEPT PLAN
GATEWAY NATIONAL RECREATION AREA
SITE PLAN



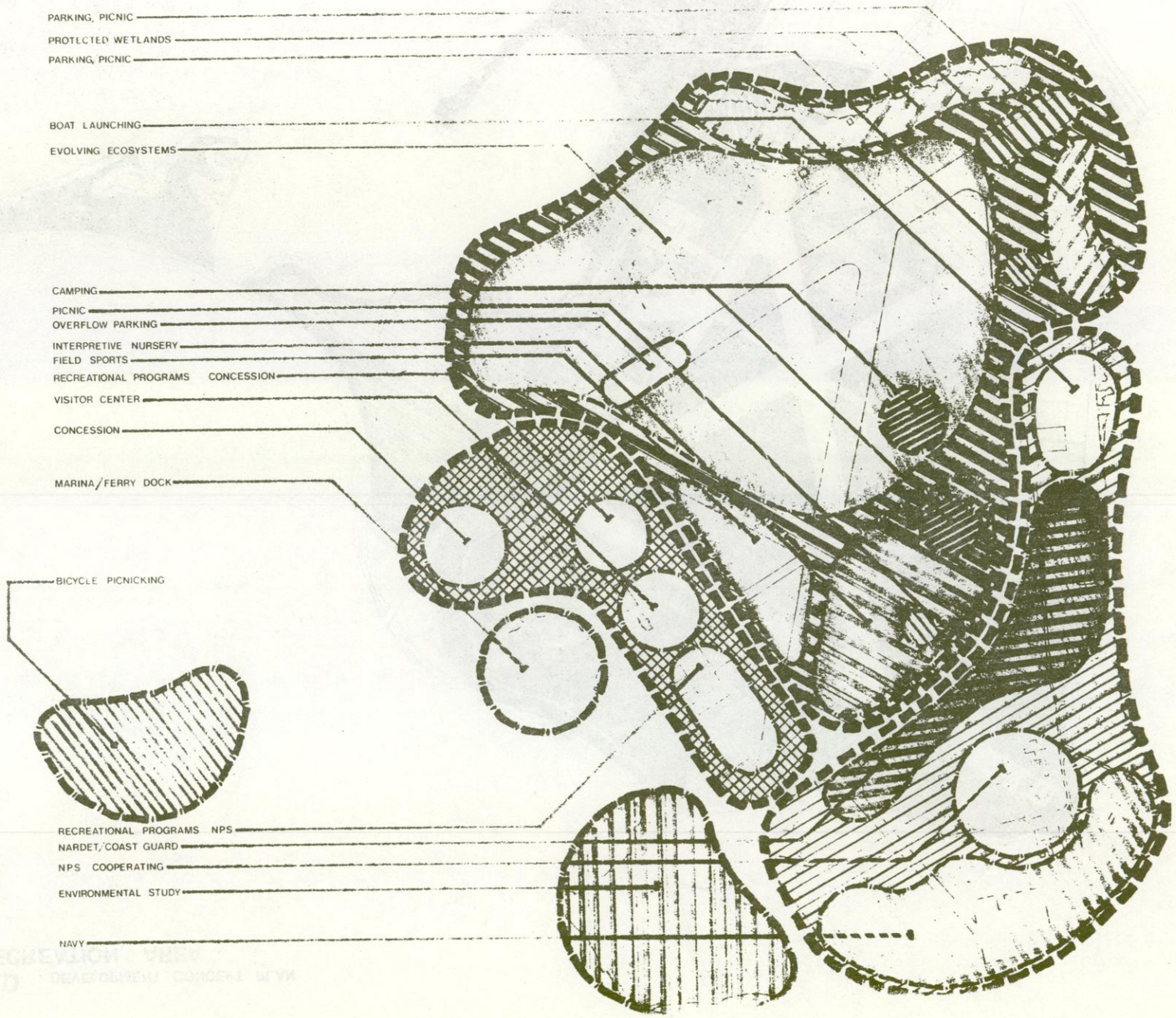
FLOYD BENNETT FIELD DEVELOPMENT CONCEPT PLAN
GATEWAY NATIONAL RECREATION AREA

CONCEPTUAL SCHEME LEGEND

NATURAL AREA
- ENVIRONMENTAL STUDY
- PICNICKING
- NATURE BIKE TRAILS
- FORESTATION
- URBAN GRASSLANDS
- PROTECTED WETLANDS
- CAMPING
- OVERFLOW PARKING

GATEWAY VILLAGE
- PARKING
- YEAR ROUND PROGRAMS
- VISITOR CENTER
- URBAN GARDENING
- FOOD SERVICE
- MAJOR EXHIBITS

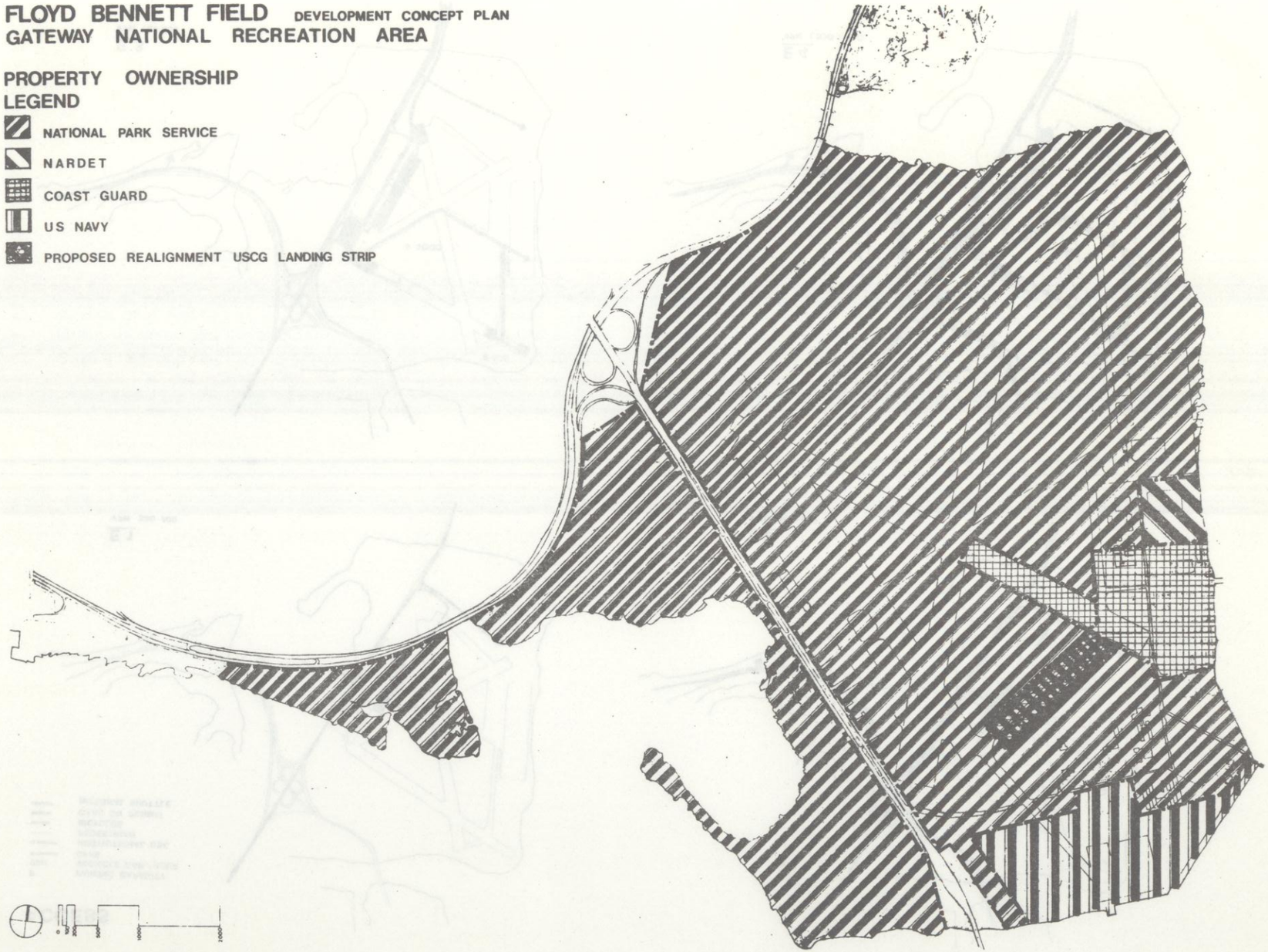
INSTITUTIONAL USE
- BOARD OF ED PROGRAMS
- JOBS CORPS
- US NAVY
- US COAST GUARD
- PARK HQ
- US PARK POLICE
- COOPERATING ORGANIZATION



FLOYD BENNETT FIELD DEVELOPMENT CONCEPT PLAN
GATEWAY NATIONAL RECREATION AREA

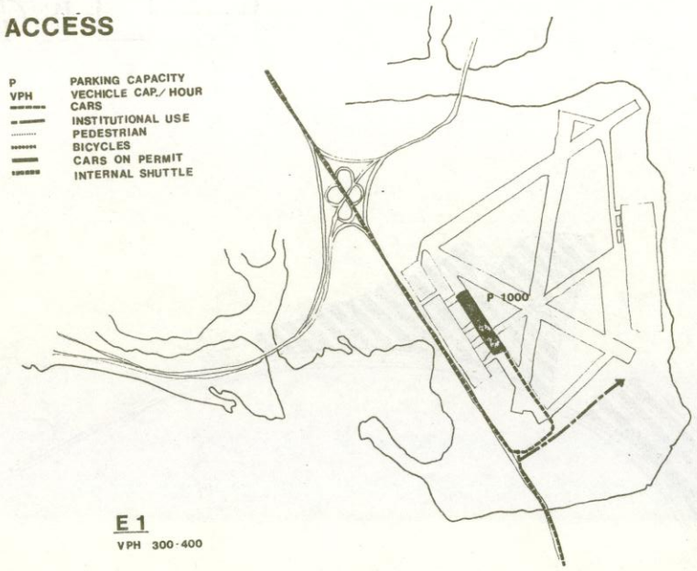
PROPERTY OWNERSHIP
LEGEND

- NATIONAL PARK SERVICE
- NARDET
- COAST GUARD
- US NAVY
- PROPOSED REALIGNMENT USCG LANDING STRIP

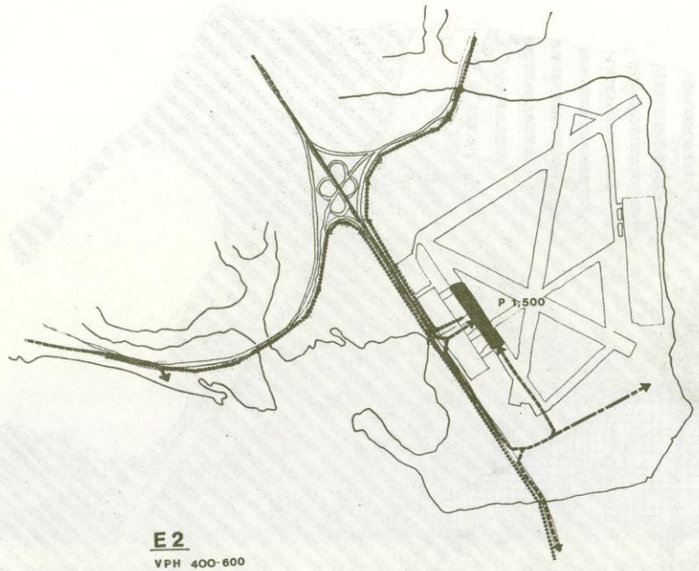


ACCESS

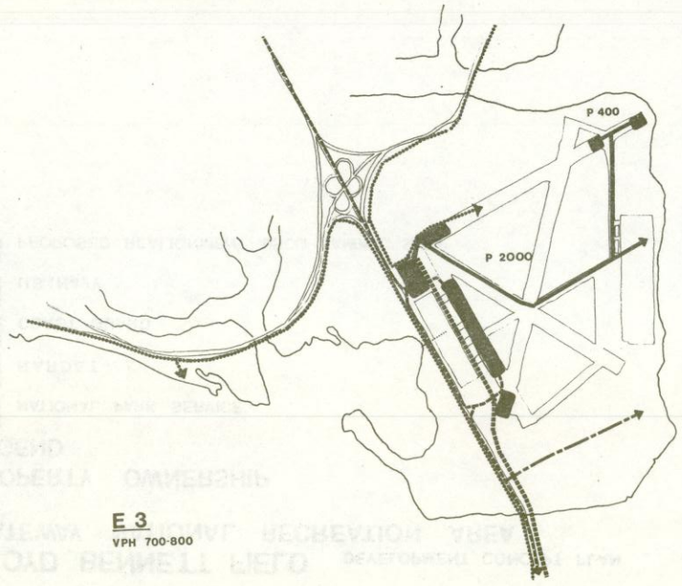
P PARKING CAPACITY
VPH VECHICLE CAP./ HOUR
CARS
INSTITUTIONAL USE
PEDESTRIAN
BICYCLES
CARS ON PERMIT
INTERNAL SHUTTLE



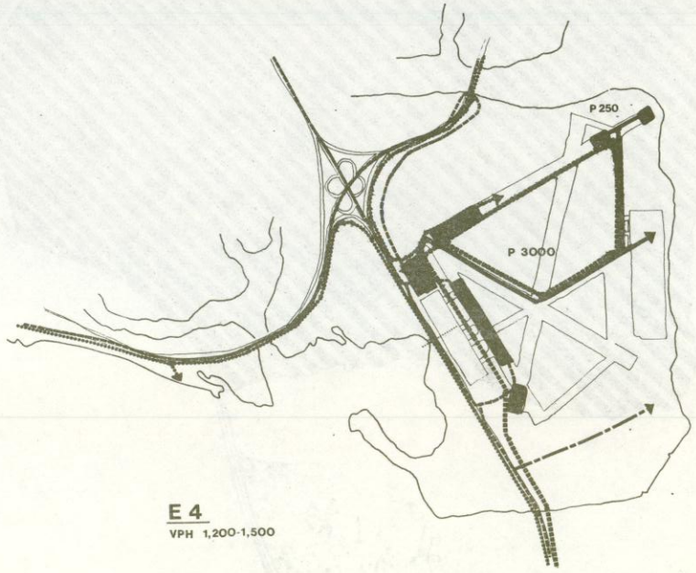
E 1
VPH 300-400



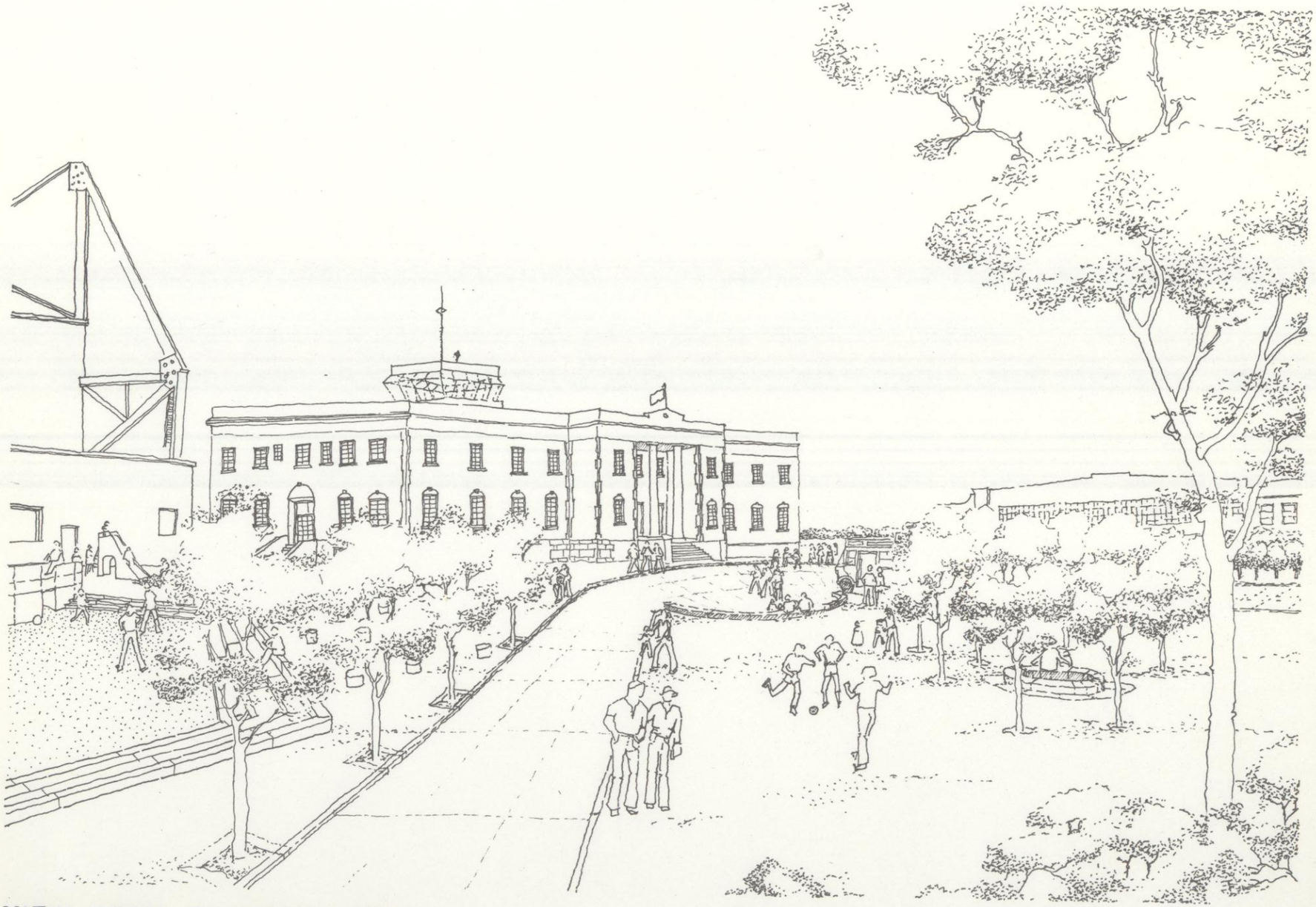
E 2
VPH 400-600



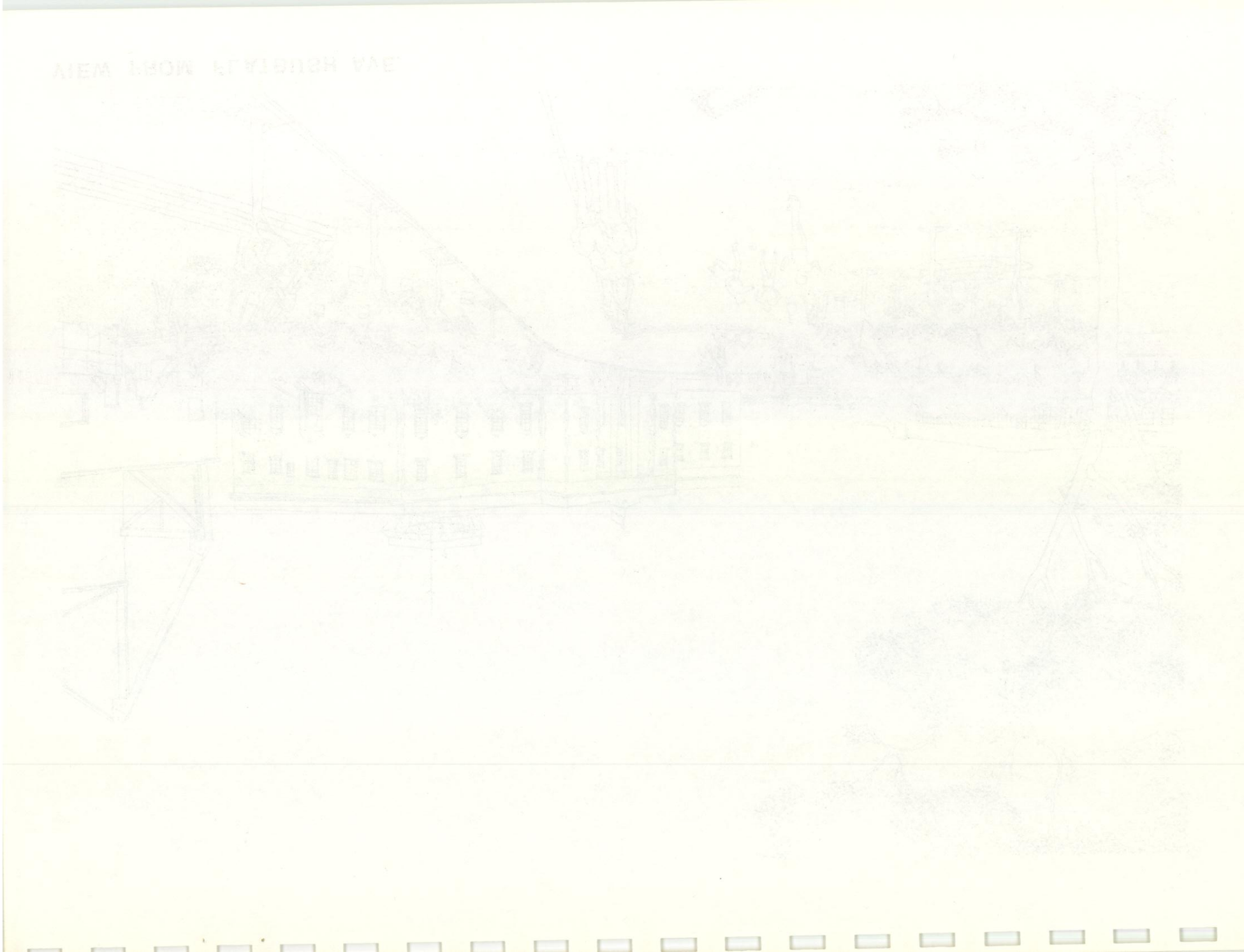
E 3
VPH 700-800

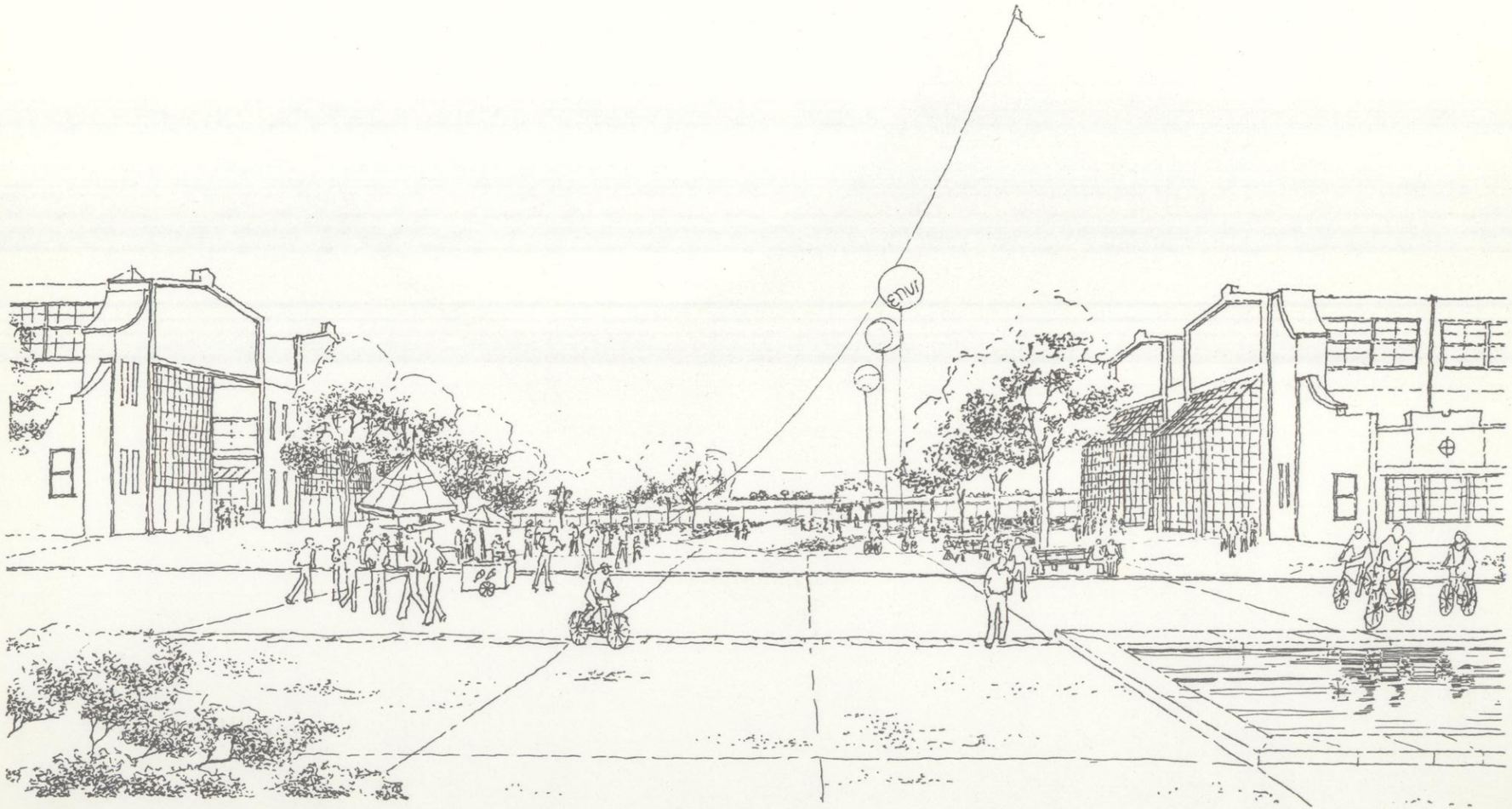


E 4
VPH 1,200-1,500

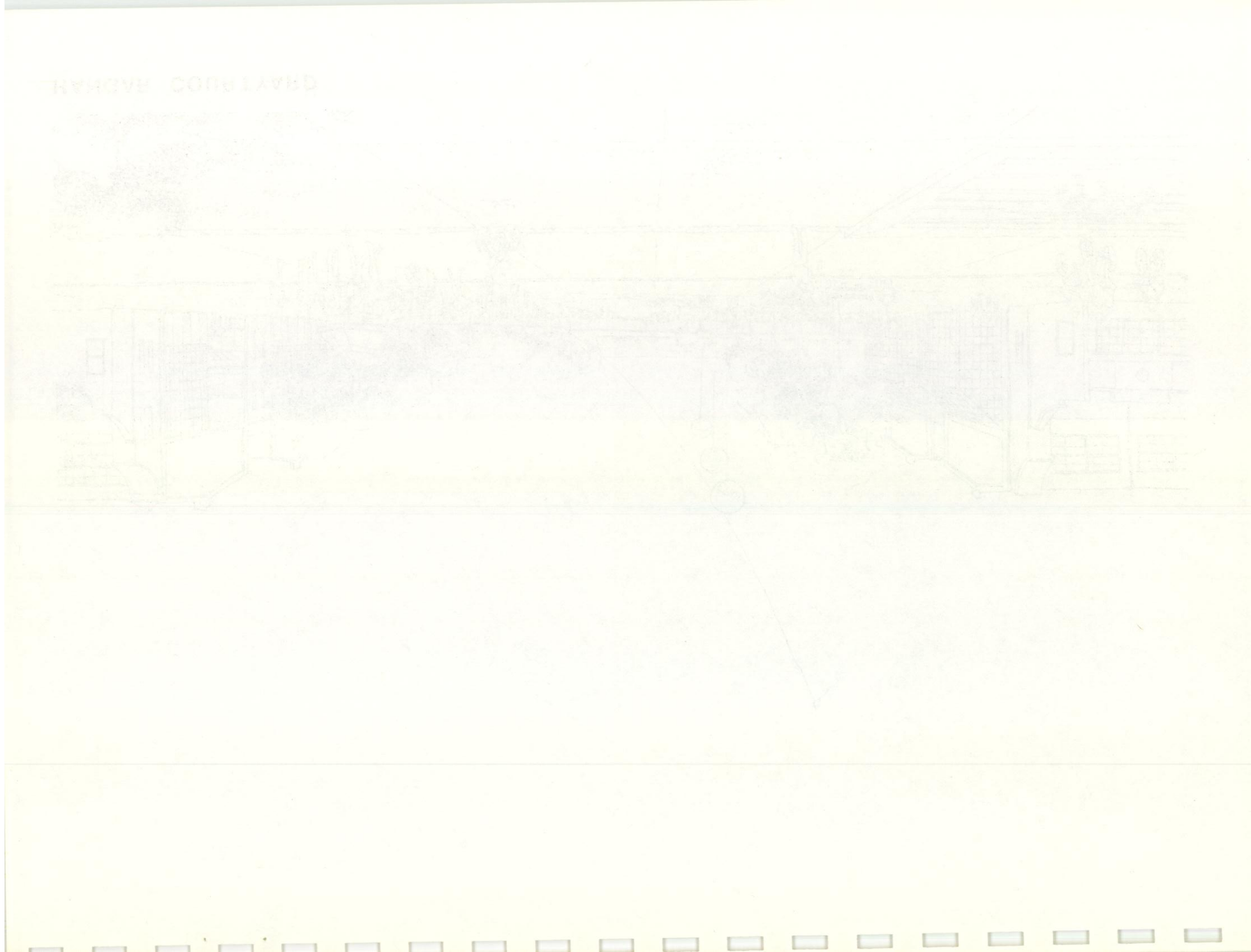


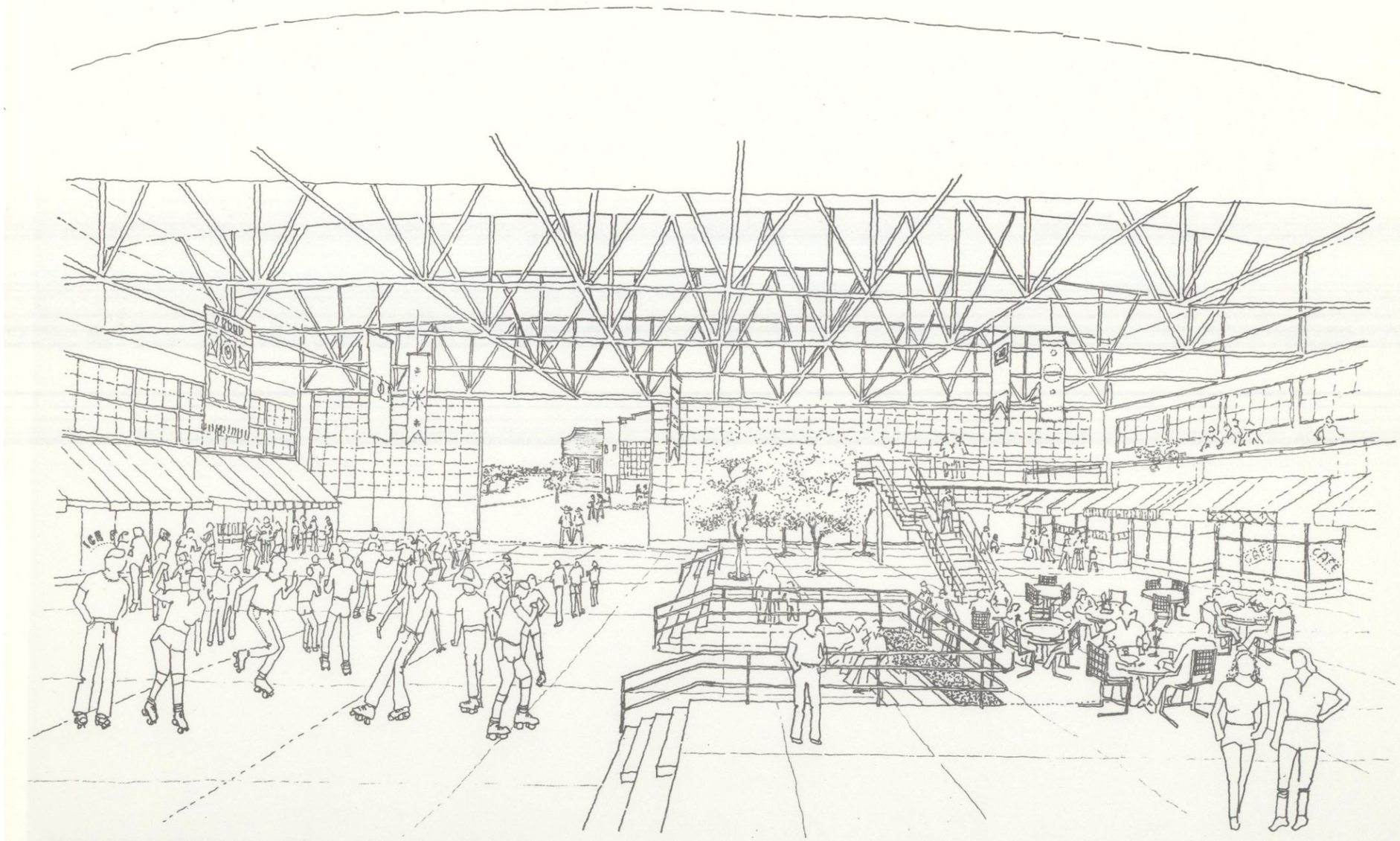
VIEW FROM FLATBUSH AVE.



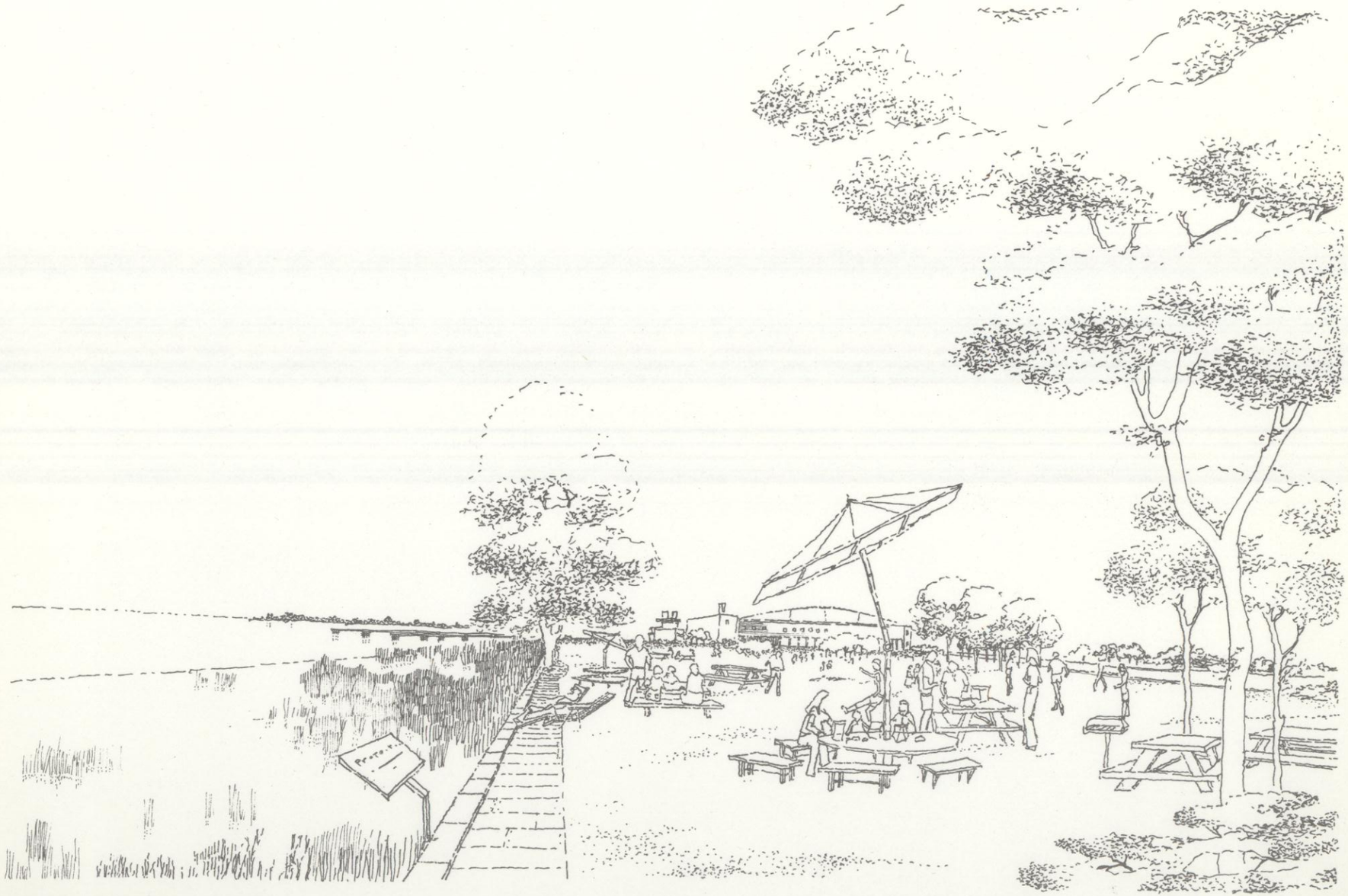


HANGAR COURTYARD

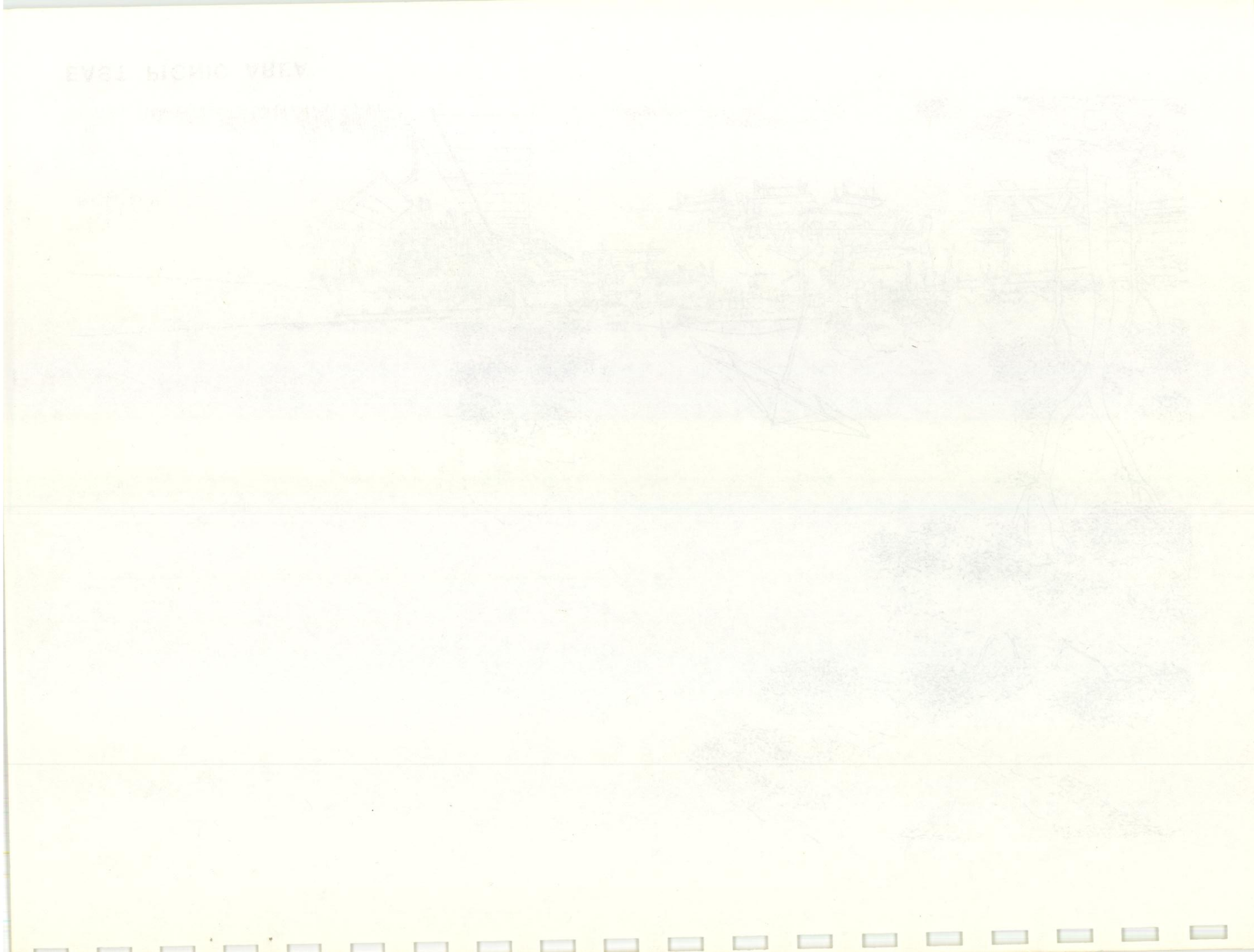




RECREATIONAL USE OF HANGAR



EAST PICNIC AREA





SUPERVISED GROUP CAMPGROUND

Initiation of ferry service to the Deep Creek area of Dead Horse Bay will require dock construction. No dredging will be needed because adequate water depth exists, and shallow draft vessels shall be used. A pedestrian overpass with ramps will be constructed to provide grade separated access for ferry and local bus riders. For years, ferry service to and within Gateway has been discussed. This dock at Floyd Bennett Field will be aimed at meeting several objectives: 1. it would offer access to residents of inner city areas presently unable to get to Gateway by public transit, 2. it would decrease the traffic on Flatbush Ave. by offering an alternative means of access to the private car,and 3. it would offer the users a meaningful recreational experience on the way to the park. Ferrry service might eventually be operated between Floyd Bennett Field and Breezy Point as a shuttle for visitors who elect to avoid the traffic at the bridge, and leave their cars at the field. The departure site at Floyd Bennett will most likely be at Dead Horse Bay, although the US Navy dock is also possible. Full daily operation of bus service to Jacob Riis Park will be initiated. A low clearance vechicle will be considered for passage beneath Flatbush Ave. via the existing low underpass at the base of the Marine Parkway Bridge. Parking for up to 3,000 cars will be provided. The number of vechicles which will be accomodated for access to Floyd Bennett Field without significant impact to traffic flow ranges from 1,200 to 1,500 per hour.

III. B. 5. Future Traffic Estimation

The planning of access improvements requires consideration of traffic estimates. These are based upon visitor estimates, included in Appendix B; for each element of the plan.

Some basic assumptions for the transportation analysis were that most (85%) visitors would continue to arrive by auto for the foreseeable future, and that the likely auto occupancy would be 3.0 people per car, somewhat lower than the existing occupancy rate. Fifteen percent would come by bus or bike. Nearly 85% of all visitors would arrive via the southbound direction on Flatbush Avenue. From these assumptions, the estimated number of vehicle trips in the peak hour were developed for design purposes.

Estimates of the percentage of present travelers passing Floyd Bennett Field on the way to Breezy Point who will be attracted to the recreational opportunities at the field are difficult to make. Limited data for Riis Park indicate that 20% of the visitors enjoy non-swimming related activities. It is likely that with frequent and convenient bus access to the beach and a wide range of additional activities at the Field, from 25% to 50% of the future visitors to the field will be people already using the roadway system, the other 50% to 75% being new visitors not presently visiting Gateway at all.

The recommendations in each plan element are the results of the analysis contained in Appendix C, estimate of peak hour Vehicle trips.

III. C. The Other Alternatives

In October, 1980, the following alternatives were presented in public meetings and via a special edition of the Gateway Outlook. The publication also summarized the basic data, describing the resources of the Park, and was mailed to the 15,000 people on the Gateway mailing list. The document, prepared by private consultants on contract to the National Park Service, was "The Floyd Bennett Field Environmental Inventory and Land Use Program". Public meetings were held and comments were received by the National Park Service in response to the alternatives, many expressing enthusiasm for the concepts illustrated, but concern for the associated costs. Simultaneously, the fiscal environment within the federal government changed, dramatically, and a more cost effective, modest, environmentally acceptable approach was sought. This D.C.P. is therefore a result of this changed reality and the public's response to the following alternatives (each involves a capital cost of from $75 to $125 million)

III. C. 1. Naturalistic

This plan calls for the massive alteration of the landscape of a large area of Floyd Bennett Field and construction of a water landscape, with tidal pools, canals, lagoons , and other natural settings. This approach enlarges and maximizes that portion of the site which is to be used for nature-related activities and pursuits. The "north 40" area will result in a "synthetic" or man-made natural zone with carefully fashioned plant and wildlife environments, developed to encourage environmental education and passive outdoor recreation. The area would be 500 to 700 acres of significantly altered landscapes. This zone would be carefully protected, monitored, and accessible to visitors only via raised-level walkways or other similar controlled routes. Canoeing in the zone or exploration by foot would be possible only by special permission or permit.
The remainder of the site would accommodate a major visitors' center, in addition to the reuse of the hangars, parking, services, and active recreation. The existing historic runways could be interpreted through the use of landforms and special vegetation in a formal or less formal manner.

III. C. 2. The Historic Artifact

The artifact approach could involve varying degrees of preservation, adaptive reuse and/or interpretation. In this plan, waterways are created throughout the site on top of the existing runways. These waterways would be circulation systems which would integrate the recreation activities with programmatic exhibits, displays and simulations with which the visitor could elect to participate. The program could center on people using the water routes to discover how water can be seen as the center of life processes and how this site can be seen as a large and exciting journey through human artifacts and ecological processes.

This concept would seek to test the value of developing Floyd Bennett Field so that it maintains its present character and pattern of the runways, preserves the hangars, tower and selected other buildings as historic artifacts.

III. C. 3. The Urban Approach

The rationale for this concept would be to carry out the mission of the Service through the creation of a nationally recognized science and nature study facility. As the environmental inventory and assessment indicates, there are no major unique environmental characteristics or phenomena on the site. Without major design and construction, it might have little appeal to a national audience. Gateway could be the "gateway" to the National Park System by creating, through creative information dissemination, a complex oriented towards providing information and education to the general public regarding our national natural resources, their history and tradition. This would imply the use of hangars, and additional new buildings as required, for awareness centers, greenhouses, theaters, simulation studios, participation chambers, etc. This suggests the capture of a large area of water to the east of the site. This would be accomplished through the use of a jetty, series of floating platforms, underwater tunnel, or a kind of boardwalk or pier connected to or separated from the site. This area would provide an experience of intimate contact with the water otherwise unavailable at Floyd Bennett Field.

(All the preceding descriptions of the alternatives are from pages 57 to 87 of the "Environmental Inventory and Preliminary Land Use Program", October, 1980).

III. D. Impact of the Preferred Alternative

The general impacts on the park and region of development of Floyd Bennett Field were extensively described in the Final Environmental Statement, 1979, for the Gateway General Management Plan. This document is available for review at park headquarters.

The detailed proposals of this plan are generally consistant with the more general proposals previously published, except that the general level of use has been significantly reduced, along with a great reduction in the capital budget. The zoning and visitor use proposals are generally unchanged. Therefore the majority of the expected impacts are also unchanged. The following section is a supplement to the previously published impact analyses of the Gateway Final Environmental Statement, and specifically identifies the impacts that were not previously identified in the F.E.S..

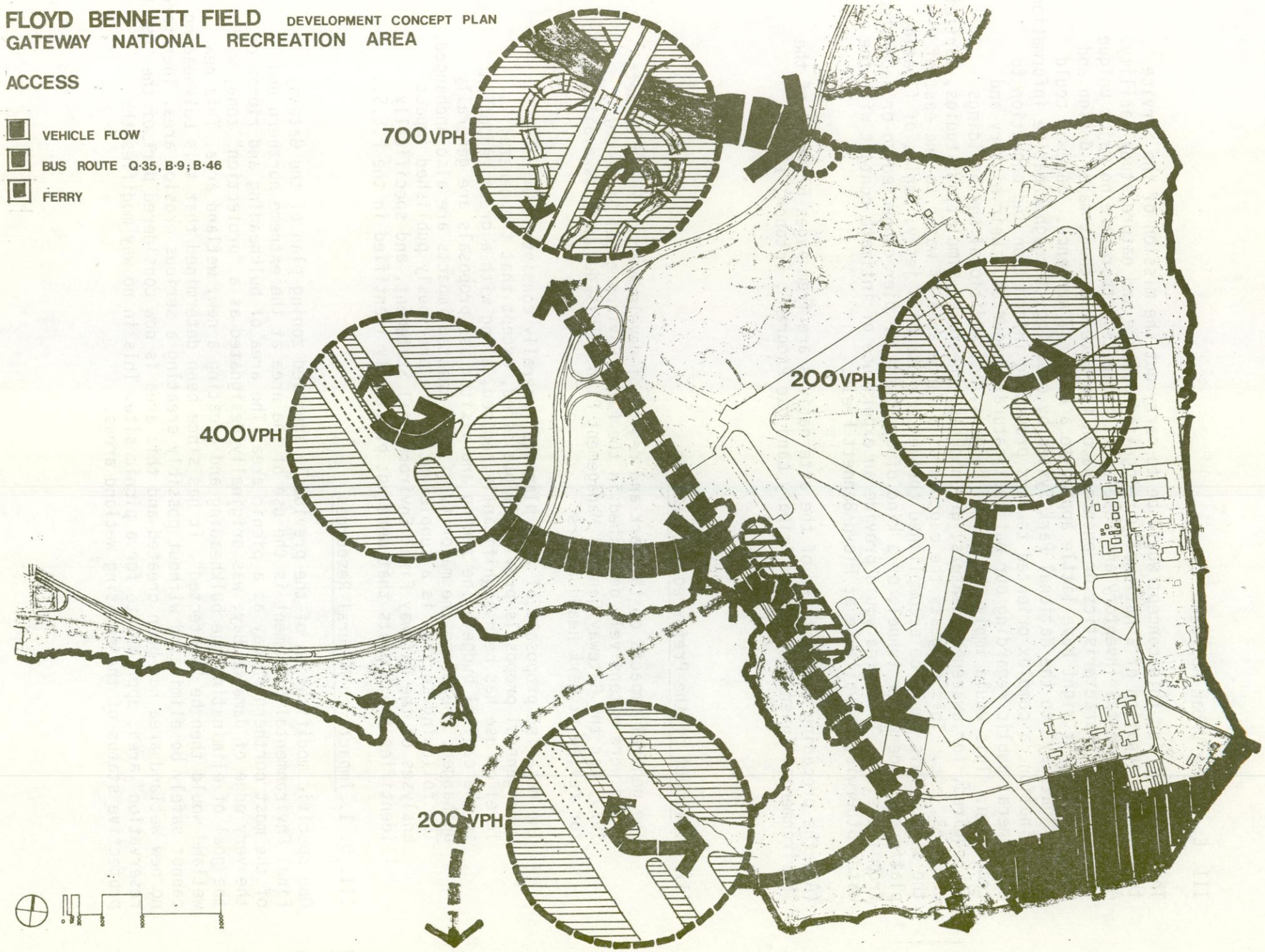
III. D. 1. Impacts to Natural Resources

One specific modification of the previously approved zoning plan of the Gateway Final Environmental Statement is the use of the area at the extreme northern end of the most northern runway as a picnic area. The area of bulkheading and riprap on the very edge of Jamaica Bay, was originally designated as a "protection" zone, with the goal of eliminating the bulkheading and creating a new, wetland area. This new wetland would then be "protected". It has since been determined that this bulkheading cannot safely be eliminated without possibly creating a serious erosion area. Therefore, no new wetland area has been created and this area is now considered part of the "use by reservation" area, appropriate for a picnic site. This in no way modifies the protective status of the existing wetland areas.

FLOYD BENNETT FIELD DEVELOPMENT CONCEPT PLAN
GATEWAY NATIONAL RECREATION AREA

ACCESS

- VEHICLE FLOW
- BUS ROUTE Q-35, B-9; B-46
- FERRY



None of the actions included in the four plan elements would result in significant adverse impacts to natural resources at Floyd Bennett Field. Beneficial results will be realized from leaving much of the field in a "natural condition" and encouraging increasingly stable ecosystems supporting a greater diversity of plant and animal life. An area of acreting wetlands near the proposed picnic site on the edge of Jamaica Bay might be adversely affected by uncontrolled trampling by picnickers. This will be mitigated by signage, boardwalks and the stationing of rangers on crowded days to educate people on the sensitivity of the wetlands.Some impacts to the wetlands might still result.

A critical factor in maintaining a "natural" atmosphere at Floyd Bennett Field will be the maintenance of continuity between all the evolving natural systems. Careful adherence to "natural" or "indigenous" vegetation introduction will increase species diversity of the field. Preliminary studies by Cooperative Park Research Units (CPRU's) have identified plant species tolerant of both landfill soils and coastal environments. These studies will continue to assure that new planting have minimal adverse impacts on existing systems.

Closing Plumb Beach to vehicular traffic (Element 3) will direct people to Floyd Bennett Field for recreational purposes. Plumb Beach, with its marsh and tidal mud flats, will provide an important outdoor wetland laboratory for environmental education purposes. The effect on Floyd Bennett Field is discussed above.

The general impacts of opening up Floyd Bennett Field to additional numbers of visitors, including campers, bird watchers, and sports enthusiasts, will be adverse to some of the vegetated areas near the runways, and other designated access corrdiors. Care will be exercised to avoid disturbing the nesting sites of the bird species on the site. Nesting sites of the grasshopper sparrow shall be carefully monitored to minimize visitor disturbance, especially during nesting season. However, it is assumed that the increased visitor use might result in the abandonment of a few sites. As vacant buildings are rehabilitated or demolished, the barn owl population will be somewhat disturbed, and alternative vacant structures should be identified for their use.

III. D. 2. Impacts to Cultural Resources

III. D. 2. a. Element 1

Stabilization of the hangars, Administration Building, and certain support structures in Floyd Bennett Field Historic District, as proposed in this element, will benefit these deteriorating structures. Work would be performed according to the NPS Cultural Resource Management Guideline (NPS-28), and supervised by a qualified preservation specialist.

III. D. 2. b. Element 2

Although Floyd Bennett Field's resources would be used more intensively at this stage, no significant impacts to cultural resources would result, beyond the beneficial effects of building stabilization. Increased use would produce general wear and tear, which would be offset by regular maintenance. The buildings of Floyd Bennett Field, especially the hangars, are sturdy, utilitarian structures

that can hardly be damaged by the kinds of seasonal programs envisioned. The removal of the fence along Flatbush Avenue might result in vandalism to the hangars, Administration Building, or other structures, but the area would be patrolled at night and other security measures, such as maintaining an effective lighting system, would be taken to protect these resources.

III. D. 2. c. Element 3

Adaptive use of the Administration Building, the four hangar complexes, the garage/dope house, and other structures in the Historic District would result in the long-term preservation of these signficant buildings, and would ensure their continued maintenance. Use of the Administration Building as a Visitor Center and for park offices will require some modificiation of interior spaces, although the building is basically well-suited for such uses, with large public spaces and information windows on the first floor and offices on the second. No significant exterior changes will be required, except those necessary to accomodate the handicapped. A wheelchair ramp placed at one of the side (north or south) entrances would be noticeable but less intrusive than one installed on staircases on the Flatbush Avenue or airfield facade. The hangar interiors would be extensively modified to accomodate year-round uses. Although the lean-tos and infill structures were originally steam-heated, the hangars themselves were not so designed; their enormous interior spaces and loose, sliding doors make efficient heating and cooling impossible. Independent structures within the hangars may be built to provide a tight envelope. Alternatively, drop ceilings could be installed, and the sliding hangar doors permanently sealed, leaving only the "pilot doors" in use, although this would reduce the capacity and flexibility of the use of the structures. In some cases, removal of the sliding doors and replacement with compatible infill walls and new doors may be desired, or glass greenhouse-like structures could be built to cover the sliding door openings. The extent of change to the hangars' exterior appearance will depend on the specific design chosen, and some impact to the visual integrity will result, although the overall sense will not be significantly altered.

Hangar interiors will inevitably be subdivided, although in the case of ice rinks or bowling alleys, large undivided spaces would remain and would be somewhat reminiscent of the original spaces. The interior of Building 26, the garage, may be slightly modified to accomodate use by artists.

The general appearance of Hangar Row will be altered to some degree as the area is developed as a recreational, cultural, and educational center. Umbrella-covered outdoor eating areas, exhibits or demonstrations under tents or pavailions, signs directing users between buildings, shuttle bus stops: these features will result in a measure of visual relief where none exists presently in the large paved areas between the hangar complexes. The sense of a functioning airfield will be reduced; however, most of these facilities will be temporary in nature, and all will be of a scale inconsequential in relation to the huge hangar complexes. While the present landscaping will be respected, new landscaping will also be introduced. Some paved areas will be planted, particularly the aprons between the hangar complexes and the airfield, where parking lots will be established. New plantings on the site will be carefully selected to preserve the historic character of the field, as much as possible.

The runway pattern in the Historic District will remain in its present configuration. Rows of trees will outline those sections of the original east-west runway which will be used by automobiles. Other runways will be used for sports activities. Those in the designated natural area will be allowed to deteriorate gradually as grasses and shrubs develop; most of these runways lie outside the Historic District. If the present Coast Guard landing area comes under NPS jurisdiction, this section of the original airfield could be included in the National Register historic district, where it properly belongs.

Among the derelict structures to be demolished as part of Element 3 are three located within the boundaries of Floyd Bennett Field Historic District. These are: Building 238, a concrete block storehouse at the north end of Hangar Row; Building 126, a concrete block shed at the south end of Hangar Row; and the water tank west of the Blue Nose Hangar, if it is determined to be expendable. The water tank is not listed or described in the National Register form for the Historic District. Buildings 126 and 238 are described in the form as "intrusions", and are so indicated on the map of the district included with the nomination. The removal of these structures will not, therefore, affect the significant qualities that qualify Floyd Bennett Field for listing in the National Register. All these structures have been evaluated and were found to not be eligible for National Register listing.

The National Park Service maintains its own inventory of historic structures, called the List of Classified Structures (LCS). Buildings 118, 232 and 233, all proposed for demolition, are not within the Historic District but are included in the LCS. All are listed under Management Category C, "Buildings which may be preserved". This designation reflects a professional determination that these buildings need not necessarily be retained if their condition, the potential for reuse, the costs of rehabilatation, and safety factors indicate otherwise. Under the existing circumstances, the demolition of these derelict structures will not constitute a loss of significant cultural resources.

III. D. 2. d. Element 4

No new significant impacts to cultural resources would result from the actions proposed here, beyond those discussed under Element 3.

III. D. 2. e. Archeological Considerations

No major construction is proposed in any element of this DCP. The installation of new mechanical and electrical systems in the Hangar Row buildings poses the only major opportunity for ground disturbance, but it is unlikely that levels below the 1930s landfill will be reached. Nevertheless, an archeologist should be consulted as plans for the utility systems are developed, and archeological testing or monitoring may be necessary. The exact location of any Indian settlement area on Barren Island is unknown. Industrial development was concentrated on the southern shore, mainly to the east of Flatbush Avenue. This area is under the jurisdiction of the Navy; it has been heavily disturbed by modern construction and relandscaping. No NPS undertakings are proposed in this DCP which may affect

archeological remains of the Barren Island industrial community. The Dead Horse Bay beach area, including the old ferry dock pilings, will be left undisturbed, to be used only for interpretive walks and casual strolling on the beach. Dead Horse Bay had a rendering plant in the early 20th century.

III. D. 2. f. Compliance Requirements

In accord with the Programmatic Memorandum of Agreement executed in December 1979, between the National Park Service and the National Council of State Historic Preservation Officers on the National Park Service planning process, a Memorandum of Agreement (MOA) regarding implementation of the Gateway National Recreation Area General Management Plan was signed in February 1981 by the Advisory Council on Historic Preservation and the NPS. This agreement provided for implementation of the proposals contained in the GMF without further consultation with the Advisory Council, with certain exceptions. Among those exceptions is the development of a DCP for Floyd Bennett Field. The MOA states that the DCP will be submitted at the draft stage to the New York State Historic Preservation Office and to the Advisory Council on Historic Preservation. If the SHPO or ACHP raise objection to any provisions of the plan within 30 days of receipt, the National Park Service will seek to resolve those objections through consultation and consideration of alternatives. If an agreement satisfactory to all parties cannot be reached, the National Park Service will implement the steps set forth at 36 CFR 800.

Representatives of the SHPO and ACHP have received copies of the Task Directive for the DCP and are already familiar with the scope of this planning effort. Copies of this draft have already been sent to these offices for review.

Individual actions carried out under the authority of this DCP that affect National Register or LCS properties or that may affect archeological resources will still be subject to in-house review by cultural resource management professionals in the Regional Office, through use of the "Assessment of Effect" format(xxx form).

III. D. 3. Transportation Impacts

Floyd Bennett Field is served by the major access corridors of Flatbush Avenue and the Belt Parkway. The Flatbush Avenue corridor currently operates at traffic levels varying from undisrupted traffic flow to severe congestion, depending upon the season, day of the week, and time of day. The Marine Parkway Bridge, during times of severe congestion acts as a bottleneck, causing delays as traffic backs up from the toll booths at the bridge. In general, the access proposals in the plan will reinforce existing traffic flow patterns, contributing to, but not significantly increasing, the traffic at times of severe congestion. The emphasis of indoor recreational activities as the basic year-round use of the hangar row area will take advantage of the roadway system at a time when it normally operates well below capacity. Park programming will schedule events to coincide with available roadway capacity. There may be some added traffic at the times of high volumes on one or two summer weekend days. On these days, when traffic congestion may normally occur for one to three hours, the possibility exists for up to 30 minutes of additional delaay. A proposal is included as part of

Element Three and Four to add bus service between Floyd Bennett Field and the beaches of Breezy Point to mitigate possible delay as well as reduce present congestion.

Undisrupted traffic flow occurs on the access corridors on most weekdays during nonrush hours and on spring, fall and winter weekends. During rush hours on weekdays, the direction of heavy traffic flow is the opposite of the direction of park visitor flow in the Flatbush corridor. On winter days, when traffic levels are low, the plan proposes to increase the number of vehicles at most by 400 cars (about 150/hour) and about 5 bus trips. Less than 5 percent of these vehicles will be traveling through the Rockaways. At present an insignificant number of vehicles enter the park on these days.

On spring and fall weekdays, 800 additional cars and 15 additional bus trips (about 250 vehicles/hour) will be traveling to Floyd Bennett Field. The proposed increase on these days of undisrupted traffic flow may cause only a few seconds of additional delay in the Flatbush corridor.

On spring and fall weekends, the lowest traffic levels currently exist on the approach roads to Floyd Bennett Field. The proposed increase of 1,100 cars and 20 buses/day (about 400 vehicles/hour) will cause only short (several second) intermittent delays at major intersections, and traffic flow will continue to operate smoothly.

On summer weekdays, undisrupted traffic flow is mixed with intermittent congestion. In the direction of park visitor traffic, undisrupted traffic flow occurs in the Flatbush corridor. The plan proposes to increase daily traffic to FBF by 1,300 cars and 25 bus trips (about 500 vehicles/hour). The increased traffic will cause minor delays in the traffic flow in the Flatbush corridor, causing some increased delays near the Kings Plaza shopping center. The Belt Parkway, in the direction of the majority of park visitor traffic, eastbound in the morning and westbound in the afternoon, will not be adversely affected by this increased traffic. No major traffic delays will result from this proposal. These conditions of undisrupted traffic flow will represent 90 percent of the year, all but the summer weekends.

Intermittent congestion occurs on many of the summer weekends and holidays. At these times, the travel time from the subway station at the intersection of Flatbush and Nostrand Avenues to the Breezy Point Unit takes from 45 minutes to 1½ hours. Travel on the Belt Parkway, in either direction, is often congested on weekends, and travel time from the Van Wyck Expressway interchange, about 8 miles away, which would take about 15 minutes on weekdays, takes about 45 minutes.

The plan proposes to reduce some of the congestion caused by the backup from the Marine Parkway Bridge toll booths. About 3,000 parking spaces, eventually to be removed from the Breezy Point Unit, will be provided at Floyd Bennett Field, and shuttle buses will provide access to the beaches. This will remove about 2,000 vehicles from the traffic flow over the bridge, replacing those vehicles with about 150 bus trips. This will reduce the traffic congestion at the bridge.

Activities at Floyd Bennett Field on summer weekend days can be expected to attract 3,000 to 4,000 vehicles. This will result in demand of 1,200-1,500 vehicle/hour. The addition of access ramps from the Belt Parkway will accommodate at least 300-500 vehicles/hour. Delays to existing traffic which is currently slowed, will be minimized by the ramp capacity. The opportunity to shift present auto users to the shuttle at a congested location will likely reduce overall energy consumption and lower emission levels.

In general, the existing roadways have, at most times, the capacity available to accommodate the traffic volumes expected to be attracted to Floyd Bennett Field. This is true even if 100% of the trips during most periods are made by people who are new users of the park. The majority will probably be people who are already aware of the recreational opportunities at Gateway. If we assume that 50% of the summer weekend users of Floyd Bennett Field are already Gateway users, then the peak use will not likely affect adversely the traffic flows on the surrounding roadways.

Construction will require disturbance of the median strip of Flatbush Avenue and the area of the field along the Belt Parkway. The drainage patterns will be affected by the construction. However, roadway design analysis will provide adequate consideration of these effects.

Traffic volumes on Flatbush Avenue are normally at less than one-half capacity. The levels of use proposed in this plan will be lower than the design capacity of the roadway. It is estimated that at least 800-1,000 vehicles/hour could be accommodated on the roadways into Floyd Bennett Field. Using a conservative estimate that 50% of the users would be new park users, then the plan proposals use up only about one half of the available capacity.

Estimates of users arriving by bus indicate a need for additional bus service on the local bus routes serving the park. Average summer weekday conditions will require 30 additional daily bus trips provided 100% of the users are not now using the Green Lines bus. If 50% of the users are first time users, 15 additional trips will be required. This probably represents two additional bus trips in the peak hour. The impact to the present local users is more frequent bus service. The addition of weekday service on the B-9 60th Street and B-46 Utica Avenue bus services, which currently serve Riis Park on summer weekends, will afford additional access for Brooklyn residents.

III. D. 4. Air Quality and Meteorological Conditions

Air quality improvement plans for the New York area rely primarily upon vehicle fleet replacement for improvements to monitored pollutants. The regional ozone (hydrocarbon) conditions have slightly improved for 1981 and a downward trend in pollutant level is anticipated. As a result of these proposals, we do not anticipate any significant new addition of pollutants to the air.

III. D. 4. Ferry

Construction of an open pile docking facility and introduction of ferry operations will not adversely affect the local environment. Introduction of large ferry vessels to Dead Horse Bay, with their resultant wake, could somewhat increase the rate of erosion in the area. The installation of a tire barrier to absorb a significant proportion of the wake would mitigate this impact. The availablity of an alternative to automobile travel will provide an opportunity to additionally reduce auto traffic to the park.

III. E. Summary of the Impacts of the Other Alternatives

The first alternative involves significant dredging to create the "canals" in the "north 40". This could lead to release of various contaminants into Jamaica Bay such as heavy metals, oils, greases, and various toxic chemicals. Other significant impacts to the natural environment include the reduction of the underground fresh water body on the field, some upland plant species would decline due to an increase in ground water salinity, more productive marsh vegetation would eventually develop along the new edges of the marsh areas, and new shorebird nesting sites would be developed. The cultural resources would not be significantly impacted in this alternative.

The second alternative (the artifact) involves flooding the runway system. This would involve considerable pumping of water to fill the new "canals". This would impact the cultural resources, however the results, visually, would be quite similar to the existing view, with open expanses of canals where runways used to be. The dikes for the canals would impact the natural resources by covering large areas of grasslands with new land fill to create the dikes. The recreational potential of the field would be greatly enhanced by the additional ease of access to waterways that could be used for a wide variety of activities.

The third alternative (the urban center) would be the most costly to develop and operate. The extensive construction would have the greatest impact on the natural and cultural environment by modifying, to some extent, the historic scene. Great care would have to be taken to minimize new construction in the Hangar Row area. The field would, in this alternative, offer the widest range of activities for the visitor and be capable of serving the greatest number of people. The platform jetty would involve extensive pile driving, and the significant environmental impacts on the natural resources of Jamaica Bay that are associated with pile driving, such as disturbance of benthnic organisms, increased turbidity of the bay among others. The jetty would greatly enhance small vessel docking opportunities in the bay.

No Federally listed endangered species are located at Floyd Bennett Field, however four species, the marsh hawk, barn owl, upland sandpiper, and the grasshopper sparrow are on the New York State Blue List and are found in the area around the field. All 3 alternatives would have some impact on these birds because of the level of development proposed, by significantly reducing the undisturbed areas of the field and thereby somewhat disturbing the nesting sites of the birds.

In reference to protection of wetlands all three alternatives protect the existing wetlands, alternative 1 actually adds significant new wetlands to Jamaica Bay.

Less than 10% of FBF is in the 100-year flood plain and new construction would avoid areas in the flood plain.

III. F. Consultation and Coordination

In December of 1974, the planning effort for Gateway National Recreation Area began. Early in 1975 the team issued contracts to a number of consultants, both in New York and within the Park Service, for the procurement of basic information. A public involvement effort in the planning of Gateway National Recreation Area was also initiated in July of that year.

A primary objective of National Park Service planning at Gateway is to involve the public as individuals as well as through public interest groups and organizations at the earliest possible stage in the planning process and, in all cases, before planning decisions have been made.

From September 1975 to February 1975, the Gateway planning team conducted the first phase of its public involvement program, which was to acquaint the region's population with the planning issues at Gateway. Community opinion leaders were initially identified by contacting the offices of borough presidents, the mayor's offices of community planning in New York, and city, county, and municipal agencies in New Jersey. Telephone calls and mail-back response cards, which led to a master mailing list, were used to enlist group and organization leaders in setting up more than 500 informal interviews and meetings. Brochures and slide shows were used to show the park's existing facilities and recreational possibilities. These personal contacts led to additional interviews with people who were interested in Gateway planning issues.

The first phase of Gateway public involvement included six public workshops held in October 1975, one at each Gateway unit, one in Manhattan, and one in Newark. The ideas and opinions heard were incorporated into planning alternatives, as were many of the specific suggestions voiced to the team after January 1975. In April 1976 an Environmental Assessment presenting three planning alternatives that reflected the major values and opinions expressed during the public involvement process was released for public review.

The second phase of public involvement at Gateway began in February 1976 and extended to May 15. Informal public meetings were held to present the planning alternatives to citizens and community leaders with expertise in planning as well as valuable knowledge of the needs and expectations of their constituencies. These meetings provided essential information for the assessment of alternatives.

Following full public review of the planning alternatives in the Environmental Assessment, comments were evaluated and plan proposals selected. A Discussion Draft General Management Plan was prepared and released for public review in September 1976.

Analysis of the comments on the Discussion Draft Plan offered in writing or at public meetings showed that a rather representative cross section of the region's communities and organizations had become involved in the planning process.

The public comments on the Discussion Draft Plan were summarized in the Here's What We Heard paper issued in April 1977. During 1977 the plan was revised. At the same time certain subsections of the park--North and South Beaches, Sandy Hook; Great Kills and Miller Field, Staten Island; Tip Beach, Tankel Beach, and Fort Tilden, Breezy Point; and Spring Creek Park, Jamaica Bay--were given additional detailed planning (called development concept planning) to ready them for comprehensive design and construction during the early phases of plan implementation.

During 1977 a Draft Environmental Statement was also prepared, which described and assessed all Gateway proposals, whether at a policy or generalized planning level or at a more detailed development concept plan level. The Draft Environmental Statement was released in April 1978, along with a Decisions Paper explaining the reasoning behind any revisions to the draft plan proposals.

During early 1978 the Decisions Paper and the Draft Environmental Statement were the subject of a series of public meetings. They were also extensively distributed through the press, library systems, local governmental offices, and concerned citizen organizations. A Gateway telephone "hotline" was established to receive comments, and to distribute copies of the documents to all who called to request them. A year later, after thorough review and analysis of all the proposals, the Gateway General Management Plan and Final Environmental Statement were released in August 1979. It, too, was the subject of a series of public meetings and was sent out to over 8,000 individuals and groups, including all the relevant governmental and private review institutions.

This Floyd Bennett Field Development Concept Plan is a continuation of the same planning process. In October 1980, a report entitled "Environmental Inventory and Preliminary Land Use Programs" was prepared by consultants to the National Park Service. Three assessed alternative proposals for Floyd Bennett Field were included. Public meetings were held to discuss the raw data and the alternative proposals. The Advisory Council on Historic Preservation and the state historic preservation officers of New York were sent a copy of the alternatives for comment.

Based upon reactions by the public and NPS managers to these 3 alternatives, the NPS has developed this preferred alternative for review. Following the publication of the 3 alternatives, there have developed new fiscal constraints on development in the National Park Service, as in most other federal agencies. This plan reflects these new constraints.

Several informal meetings have been held with concerned groups and agencies in the past few months to discuss the proposals incorporated in this preferred alternative. Among the groups that have been represented by individuals who have been briefed on the summary of these proposals have been: the US Coast Guard, NY State Historic Preservation Officer, NY City Audubon Society and National Audubon Society, Rockaway Civic Assoc., Deep Creek Yacht Club, Marine Park Action Assoc., NY City Group of the Atlantic Chapter of the Sierra Club, Sebago Canoe Club, Mill Basin Civic Assoc., The Breezy Point Cooperative, The Gateway Citizens Committee, The Parks Council, NYS AIA, and the Mayor's Task Force on Gateway.

In addition, the Gateway Advisory Commission has been presented with the summary of this alternative and has approved its' concepts. The following agencies are being sent copies of this document for review:

Advisory Council on Historic Preservation
Environmental protection Agency
General Services Administration
Federal Energy Management Agency
US Army Corps of Engineers
US Dept of Commerce
  NOAA
  National Marine Fisheries Service
US Dept of Energy
US Dept of HEW
US DEpt of HUD
US Dept of Interior
  Bureau of Land Management
  Fish and Wildlife Service
  Geologic Survey
  Soil ConservationService
US Dept of Labor
US Dept of Transportation
  Coast Guard
  FAA
  FHA
  UMPTA
NY State A-95 Clearinghouse
NY City Dept of City Planning

Limited numbers of informational copies will be available upon request at :

Gateway NRA
Floyd Bennett Field
Building 69
Brooklyn, New York 11234

IV THE PLANNING TEAM

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Kevin Tremble	-	Transportation Planner
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APPENDIX 1 - Proposed Visitor Use

Proposed Visitor Use - Numbers of People

	Element 1 (approximate existing)		Element 2		Element 3		Element 4	
	Daily	Total	Daily	Total	Daily	Total	Daily	Total
Summer - Average Weekend Day (33)	500	16,500	700	23,100	6,000[x]	198,000	7,000	231,000
Average Weekday (67)	400	26,800	560	37,520	4,000	268,000	5,000	335,000
Spring & Fall Average Weekend Day (21)	300	9,000	420	12,600	3,000	63,000	4,000	84,000
Average Weekday (55)	300	16,500	420	23,100	2,000	110,000	3,000	165,000
Winter - Average Day (189)	30	5,700	42	7,938	1,500	283,500	1,500	283,500
Total Annual Use		±75,000		±105,000		±920,000		±1,100,000

[x]Approximately 2,000 of these visitors are using the bus shuttle to Breezy Point, thereby decreasing slightly the Marine Parkway Bridge traffic.

APPENDIX 2

Development Cost Estimates

Element 1

1.	Stabilize Hangar Complexes 3, 4 and 6 @ $500,000 each	$1,500,000
2.	Stabilize support buildings	400,000
3.	General clean-up	300,000
4.	Programs (no development cost)	0
5.	Access and parking	
	a. Signage	30,000
	b. Signal upgrade	20,000
	Total:	$2,350,000

Element 2

1.	Remove portions of Flatbush Avenue fence	$ 80,000
	Minor landscaping	400,000
2.	a. Rehabilitate lst floor of Administration Building	100,000
	b. Stabilize Hangar Complexes 3, 4 and 6 @ $500,000	1,500,000
	c. Stabilize support structures	200,000
	d. General clean-up	400,000
3.	Programs (no development cost)	0
4.	Programs (no development cost)	0
5.	Establish sportsfields	100,000
6.	Tree nursery (trees supplied by others)	200,000
7.	Rehabilitate other structures on field (interiors by others)	1,000,000
8.	Access	
	a. Upgrade signal	95,000
	b. Establish new driveways	25,000
	c. Establish new bus stop	25,000
	d. New signage	55,000
	Total:	$4,180,000

Element 3

1.	Manage natural area, clean-up, establish tree nursery, picnic areas	$ 1,500,000
2.	Boat launch	50,000
3.	Picnic areas	300,000
4.	Upgrade Plumb Beach	100,000
5.	Dead Horse Bay (no development cost)	0
6.	Demolish derelict structures	1,500,000
7.	2 new lookout towers @ $200,000 each and boat launch	600,000
8.	Rehabilitation of Administration Building	2,000,000
9.	a. Hangar 6 (by lessee - $2,000,000)	0
	b. Hangar 5 (by lessee - $1,500,000)	0
	c. Blue Nose Hangar (by lessee - $1,500,000)	0
	d. Hangar 4	2,000,000
	e. Hangar 3	2,000,000
	f. Support structures	250,000
	g. Landscaping of grounds	1,500,000
10.	Programs by lessee	0
11.	Establish agreements with non-profit organizations (no development cost)	0
12.	Establish exhibits of Village (Hangar rehabilitation included in item 9)	1,000,000
13.	Establish theatre (Hangar rehabilitation costs included in item 9)	250,000
14.	Establish Recreational area in Hangar (Hangar rehabilitation costs included in item 9)	250,000
15.	Rehabilitate support buildings	400,000
16.	Relocate Coast Guard	0
17.	Establish institutional area	0
18.	Rehabilitate other buildings	1,000,000
19.	Access and parking	
	a. Signal upgrading	150,000
	b. New traffic lanes	250,000
	c. Signal coordination	30,000
	d. New signs	75,000
	Total:	$15,205,000

Element 4

All the costs associated with Element 3 are also included in Element 4 plus the following access improvements:

1. Improve Access

a. Ramps from Belt Parkway	$ 1,200,000
b. Ferry dock	400,000
c. Pedestrian overpass	500,000
d. Construction of shuttle road	100,000
e. Purchase bus vehicles	400,000
	$ 2,600,000
Element 3 +	15,100,000
	$17,700,000

APPENDIX 3

ESTIMATE OF PEAK HOUR VEHICLE TRIPS

This estimate of peak hour trips approaching Floyd Bennett Field is based upon the number of average daily users on summer weekends and weekdays (Appendix 1). It also assumes the percentage of visitors who arrive by auto, by bus, or by bicycle, as well as the approach direction of visitors and the vehicle occupancy.

Projected Average Summer Weekend - Element 4

Assume: Daily Usage	7,000 visitors
Assume: Modal Split	
84% Auto	5,880 visitors
14% Bus	980 visitors
2% Other (bike, walk)	140 visitors
Assume: Vehicle Occupancy	
5,880 visitors ÷ 3/car	1,960 vehicles/day
980 visitors ÷30/bus	33 bus trips/day
Estimate: Daily Traffic Volume (both directions)	
2 (1,960 vehicles + 2 cars/bus x 33 bus trips)	4,052 vehicles/day
Assume: Approach Direction	
85% Flatbush Avenue southbound (2,026 vehicles x .85)	1,722 vehicles/day
15% Flatbush Avenue northbound (2,026 vehicles x .15)	304 vehicles/day

Average Annual Daily Traffic (AADT)

Seasonal variation for Marine Parkway Bridge on summer weekends is 1.80 x AADT

1.80 x AADT = summer weekend traffic volume

4,052 vehicles/day

4,052 vehicles/1.80 = AADT

2,250 = AADT

Projected Average Summer Weekday - Element 4

Assume: Daily Usage	5,000 visitors
Assume: Modal Split	
85% Auto	4,250 visitors
14% Bus	700 visitors
1% Other (bike, walk)	50 visitors
Assume: Vehicle Occupancy	
4,250 visitors ÷ 3 people/car =	1,417 vehicles/day
700 visitors ÷30 people/bus =	23 bus trips/day
Estimate: Daily Traffic Volume (both directions)	
2 (1,417 + 2 cars/bus x 23 bus trips)	2,926 vehicles/day
Assume: Approach Direction	
85% Flatbush Avenue southbound	1,244 vehicles/day
15% Flatbush Avenue northbound	219 vehicles/day

Average Annual Daily Traffic (AADT)

For traffic on the Marine Parkway Bridge there is an approximate seasonal variation for June, July & August of 1.38 times AADT

1.38 x AADT = Daily summer traffic volume = 2,926 vehicles/day

2,926/1.38 = AADT
2,120 = AADT

Calculation of AADT for two independent visitor estimates (summer weekday and summer weekend) yields estimates of AADT which are within 7% (2,120 vs. 2,250). The following Design Hourly Volumes are the likely expected on a summer weekend.

Design Hourly Volume (DHV) 1/ (30th highest hour)

	Road Use Type
DHV_1 = .30 x AADT = .30 x 2,250 = 675 vehicles/hour	Substantially recreational
DHV_2 = .34 x AADT = .34 x 2,250 = 765 vehicles/hour	Primarily recreational

1/ Highway Capacity Manual, Highway Research Board Special Report No. 87. Highway Research Board, Washington, D.C., 1965.

SUMMARY OF MARKET & ECONOMIC FEASIBILITY STUDY FOR FLOYD BENNETT FIELD PREPARED BY BRANCH OF CONCESSIONS MANAGEMENT, PROFESSIONAL SUPPORT DIVISION, DENVER SERVICE CENTER, NATIONAL PARK SERVICE

I. Study Methodology

An on-site study was conducted by two Concessions Specialists from the DSC consisting of two trips. The first trip was for basic orientation to the area, and a preliminary feasibility report of possible revenue producing functions was submitted to the Area Planning Office. During the second trip, a limited market study was conducted which included interviews with Chambers of Commerce, Board of Education, Police Department, City Planning Board, etc.

This study deals with hangar complexes #5 and #6 and the Blue Hangar at Floyd Bennett Field.

Hangar complex #5 is currently undergoing some exterior stabilization including a new roof. The Blue Hangar is in somewhat better condition but all of the hangars will require comple renovation of interiors.

II. Brooklyn Statistics

Brooklyn is the 4th largest city in America with a population of 2.5 million. Population is projected to remain the same in 1990. Overall population has decreased 3.9% since 1970.

Population declined in age groups under 20 and over 45. In the age group between 21 and 44 there was an increase. The basic target group for use of the facilities anticipated at Floyd Bennett Field would be 44 and under. Obviously this does not include use and interest by individuals over 44.

III. Blue Hangar Alternatives

Alternative #1-Offices/Shops

This alternative includes 54 office spaces (25' x 30'), 4 shops (50' x 20') and 12 restrooms. The offices would be arranged around a central atrium and would rise 3 levels running lengthwise on each side of the hangar. The 4 shops would be located on the side of the hangar on the first level. The end walls of the atrium includes egress. Provision would also be made for egress from the shop side of the hangar.

The entire bottom floor will be terrazzo while flooring in the offices will be left to the discretion of the leasee.

Initial Investment Costs (20 year costs)	$3,097,480
Recurring Expenses	6,494,715
Revenue (Annual)	643,200
Assuming 80% occupancy can be maintained per year	514,560

Conclusion:

The benefit/cost ratio is 1.6 over a 20 year period. This suggests a viable operation.

The Return on Investment (R.O.I.) for the first year is only 6.4% (before F.I.T.) which is not considered economically viable. It does not reach an acceptable level until year 15, but by year 20 it becomes 128%. The average over the 20 year period is 22.1% which is acceptable.

Although this appears to be a viable operation over the long run, the market study indicated that there is no demand for office space. Rental rates for office space appeared to average somewhere between $5 and $8 per square foot in already existing buildings as opposed to the $14-$15 per square foot used in the financial analysis of this operation.

A more extensive market study by a developer may uncover a demand for office space in this area. The positive aspects, i.e., free parking, etc., should not be overlooked.

(Blue Hangar)

Alternative #2 Bowling Alley

In this alternative there would be a 28-lane bowling alley. Support services would include a pro shop, snack bar, shoe rental, coat room, meeting room, office, boiler room and restrooms.

A game room would be provided in the center of the hangar with 14 bowling lanes on each side. This would include 10 pool tables, 2 billiard tables and 20 other assorted coin operated machines (i.e., pinball).

Initial Investment Costs	$2,213,700
Recurring Costs (Annually)	942,980
Revenues (Annual)	1,409,226

Conclusions:

$1,409,226 - 942,980 = 2,213,707 = 27.4% ROI

The 20.8% ROI (before F.I.T.) produced by this operation is considered economically viable.

(Blue Hangar)

Alternative #3 Exhibition Hall/Convention Center

This alternative was not market researched. However, since the Blue Hangar offers good potential for this type of service, it should be considered.

The hangar would provide 28,800 ft of clear span space which can, when necessary, be divided into any number of smaller areas. The storage (lean-to) area could be used as conference rooms.

As our initial costs indicate, the only wall to be treated would be the hangar door wall. A portion of the door would remain functional so large exhibits could be easily moved into the building. The remaining walls would be painted. In addition, the roof girders would be painted with multi-colors to add to the decor of the hall.

Air conditioning and heating must be installed to provide year round comfort.

Initial Investment Costs $ 894,472

Due to lack of sufficient time, no attempt was made to develop a pro forma which details revenues and recurring costs. Therefore, no conclusions as to the viability of this alternative can be offered.

(Blue Hangar)

Alternative #4 Roller Rink/Ice Rink Development

Neither of these developments appear to be viable for Floyd Bennett Field. A regulation size rink is 85 ft. x 200 ft.; therefore, a rink would have to be located in the Blue Hangar. To keep the energy costs beneficial, it could only operate approximately 111 days per year. Year round operation would necessitate adding a hardwood floor for such activities as basketball courts, indoor track, etc. However, these activities will not generate sufficient revenues to effect a profitable operation. At best, it would break even.

According to Frank Kohuth, an employee of Eastern Golf Co., Inc., there already are enough roller skating rinks near Floyd Bennett Field. While Mr. Kohuth felt that these rinks were doing well, a saturation point may well have been reached. Mr. Kohuth was asked about the possible use of an indoor facility of this type. There is currently an outdoor miniature golf course in the area.

Howard Butler of Sky Rink (New York) was also contacted. He formerly operated 4 ice rinks located in old airplane hangars. These rinks are owned by the City of New York, and the City is now subsidizing the private sector in their operation because the rinks are not economically feasible.

The following people were also contacted and asked about the economic feasibility of an ice rink operation:

-Gordon T. Roth, Instructor, Arena/Auditorium Management, Dakota County Area Vocational Technical Institute, Rosemount, Minnesota
-Tom Eastman, Ice Rink Manager, Denver, Colorado
-Furman Griffis, Department Chairman of Recreation, Metro State College, Denver, Colorado

They concurred that ice rink operators cannot rely on high profits. It is usually a break-even situation because of large operating costs.

From these analyses, it would seem that regulation size roller and ice skating rinks are not feasible at this time by themselves. A smaller multi-purpose area, including a recreational roller and ice skating rink is provided in one of the other hangars, however.

B. Hangar Complex Alternatives

Alternative #1 Ethnic Food Restaurants/Markets

This alternative is comprised of 12 separate food preparation and sales areas with a large common seating area in the center. The common dining area will seat approximately 310 people. The kitchen/sales area will be 750 ft with four 20 ft. entrances.

Potential ethnic foods might include: Italian, Black, Hispanic, Greek, Jewish, Chinese, Asian Indian, Thai, Indonesian, Vietnamese, Russian, British, French, German, Polish, Hungarian, Swedish and Morrocan.

Initial Investment Costs	$905,730

1. Lessee/Developer Sub Leases Restaurant Space

Recurring Costs (Annual)	230,831
Revenues (Annual)	234,000

Conclusion:

This demonstrates an unacceptable ROI which makes this type of operation totally unfeasible.

2. Lessee/Developer Operates all Restaurants

Assuming that each shop would generate a minimum of $321,750:

Initial Investment Costs

Same as first operation + $90,000/unit for equipment $1,985,730

Recurring Costs (Annual) $3,257,336

Revenues (Annual) $3,861,000

ROI = 3,861,000 - 3,257,336 - 1,985,730 = 30.4% (before F.I.T.

Conclusion:

This alternative is economically viable.

3. Lessee/Developer Sub Leases Market Space

See costs under 1.

Conclusion:

Not economically viable.

4. Lessee/Developer Operates Market

Initial Investment Costs $1,387,380

Recurring Costs (Annual) $4,205,640

Revenues (Annual) $4,680,000

Conclusion:

The ROI is 34.2% (before F.I.T.) making this operation viable.

(Hangar Complex)

Alternative #2-Recreation

This alternative encompasses both hangar bays but each side has been costed out separately and then together.

One side would contain 14 racquetball courts, 2 saunas, lockers, showers and toilets.

The other side would have an ice-skating rink, rentals, restrooms, snack bar, and game machines. The ice rink would have a multi-purpose floor so it could be used also for roller skating. It should be emphasized that this rink could be used for recreational skating only. A regulation rink is 200' x 85' so it could not be used for hockey.

The racquetball and saunas would hopefully attract office people on their lunch hour if offices were installed in the Blue Hangar.

1. Racquetball & Sauna

Initial Investment Costs	$1,037,930
Recurring Costs (Annual)	$ 167,432
Revenues	$ 378,560

Conclusion:

This operation produces an ROI of 16.1%(before F.I.T.) which is viable.

2. Rink, Game Room, Snack Bar

Initial Investment Costs	$ 716,045
Recurring Costs	$ 246,396
Revenue	$ 388,388

Conclusion:

This operation produces an ROI of 19.8%(before F.I.T.) making this a viable alternative.

IV Conclusions:

A. A recap of the alternatives shows:

Blue Hangar

Alternative #1 Office/Shops - Not viable from the comments of the interviews. However, companies that are not dependent on foot traffic or public transportation and those that desire close proximity to the airport, might find this location advantageous.

Alternative #2 Bowling Alley - Economically viable.

Alternative #3 Exhibition Hall/Convention Center - In the absence of market research, no conclusions.

Alternative #4 Roller/Ice Rink - A regulation size is not viable.

Hangar Complex

Alternative #1 Ethnic Food Restaurants/Markets:

I. Not viable as a sublease program.
II. Restaurants economically viable with the lessee as operator.
III. Not viable as a sublease program.
IV. Markets economically viable with the lessee as operator.

Alternative #2 Recreation (Racquetball, etc.) - As a separate entity, this operation is marginal. As a part of the overall development, it becomes viable.

B. Transportation/Traffic

The assessment of the Alternatives, as listed above, indicate a probable viable development. The overlying deterrent is the present lack of adequate ingress to the park. All pro formas were based on sufficient ingress capacity to accomodate 1,300 to 1,600 automobiles on weekdays and 4,000 or more on weekends. Therefore, unless this problem can be resolved, the viability of such a development would be seriously questioned. It is further concluded that in the absence of a solution to the ingress/egress problem, chances of finding investors would be difficult if not impossible.

C. Section 2124 of the Tax Reform Act of 1976 (PL 94-455) provides for tax incentives for the preservation and rehabilitation of certain historic structures. It is possible that these provisions may be applicable to the above proposed rehabilitation/adaptive use projects. This program was administered by the Heritage Conservation and Recreation Service, whose functions are in the process of being transferred to the National Park Service. It is anticipated that these provisions will be updated in 1981.

D. Retention of Fees for Maintenance Programs

The National Historic Preservation Act has been amended to allow proceeds from any lease for use of certain historic property to be used to "defray the costs of administration, maintenance, repair, and related expenses incurred by the agency" making the lease. The administration of this provision is now under review by the NPS Washington Office.

Appendix 5

Buildings to be demolished

The following structures will be demolished in Element 3:

1.	Building 107	A steel skeleton on the northern edge of the field.
2.	Building 238	A concrete block storehouse at the north end of hangar row.
3.	Buildings 126, 232 and 233	Concrete block sheds at the south end of hangar row.
4.	2 bus shelters	No. 224 near present south entrance and the unnumbered bus shelter near the Job Corps area.
5.	Building 67	The foundations of a demolished structure near Park Headquarters.
6.	Building 95	A frame building presently being used as a recycling center, near Hangar B.
7.	Buildings 127, 92, 93, 147	Metal sheds.
8.	Metal sheds	The cluster of metal sheds near Hangar B.
9.	Building 206	A small shed over an underground oil tank. The oil in the tank must first be removed.
10.	Building 87	A dilapidated structure near Jamaica Bay Headquarters, adjacent to the swimming pool.
11.	Building 118	A former communications building.
12.	Oil Tanks	The several oil tanks near the Navy property at the dock.

Of these structures, Building 126, 238, and the fuel tank west of the Blue Hangar are within the boundaries of Floyd Bennett Field Historic District, but are not contributing elements. In addition, Buildings 118, 232 and 233 are included in the NPS List of Classified Structures. The impacts and legal and policy requirements connected with demolition of these structures are discussed in the "Impacts to Cultural Resource" section.

Appendix 6

Cost Effectiveness Analysis

The following analysis estimates the basic cost to the National Park Service of a park visitor to Floyd Bennett Field in each element or level of development.

The conclusions show that the cost per visitor decreases significantly from Element 1 to Element 4 as the visitor capacity, diversity and quality of experience go up.

The assumptions made in this analysis are:

1) The construction cost for each element is amortized or averaged over a 20 year time frame.
2) The visitor use level is also stated as an annual average. Not all visitors entering the Floyd Bennett Field complex are included in the use levels included in this analysis, only those that use National Park Service facilities.
3) Approximately 25% of the visitors in Element 3 and 4 will not use the National Park Service facilities or programs, but only the Floyd Bennett Field commercial area or the beach shuttle.

Element 1 - Cost-Effectiveness (based on annual average during 20 years)

Costs

· Construction (Stabilization) annual portion of cost (Gateway Village Complex)

Hangar 6	-	$ 25,000
Hangar 5	-	5,000
Blue Hangar	-	5,000
Administration Bldg	-	5,000
Hangar 4	-	25,000
Hangar 3	-	25,000
Other Structures	-	5,000
(Rest of Floyd Bennett Field)		28,000

$123,000 per year subtotal

· Maintenance - repair per year

Hangar 6	-	$ 5,000
Hangar 5	-	5,000
Blue Hangar	-	5,000
Administration Bldg	-	5,000
Hangar 4	-	5,000
Hangar 3	-	5,000
Other Structures	-	5,000

$ 35,000 per year total

· Operations - approximately $700,000 per year subtotal
$858,000 per year total

Benefits

Approximately 75,000 visitors, the existing use level, will continue to enjoy Floyd Bennett Field.

Therefore, the NPS cost per visitor may be estimated as $858,000/75,000 = $11.44.

Element 2

Costs

· Construction (Stabilization) Annual portion of cost for 20 years (Gateway Village Complex)

Parking & Access	- $	5,000
Hangar 6	-	25,000
Hangar 5	-	7,000
Blue Hangar	-	7,000
Administration Bldg.	-	20,000
Hangar 4	-	25,000
Hangar 3	-	25,000
Other Structures	-	5,000
(Rest of F. Bennett Field)		87,000

$206,000 per year subtotal

·

· Maintenance - repair per year

Hangar 6	-	5,000
Hangar 5	-	10,000
Blue Hangar	-	10,000
Administration Bldg.	-	10,000
Hangar 4	-	10,000
Hangar 3	-	5,000
Other Structures	-	5,000

$ 55,000 per year subtotal

· Operations - 15% increase to $805,000 per year subtotal

$1,066,000 per year total

Benefits

Approximately 40% more visitors will use the field because of expanded programs and improved access and parking. Therefore 105,000 people will visit Floyd Bennett Field (See proposed visitor use chart)

Then, the NPS cost per visitor is estimated $1,066,000/105,000 = $10.15.

Element 3

Costs

- Construction (preservation and adaptive use) annual portion of costs per 20 years.
  (Gateway Village Complex)

Parking & Access	-	$ 15,000	
Hangar 6	-	5,000	(remainder by lessee)
Hangar 5	-	5,000	(remainder by lessee)
Blue Hangar	-	5,000	(remainder by lessee)
Administration Building	-	75,000	
Hangar 4	-	100,000	
Hangar 3	-	100,000	
Other Structures	-	50,000	
Landscaping & Towers	-	100,000	
(Rest of Floyd Bennett Field	-	300,000	
		$ 755,000	per year subtotal

- Maintenance - repair per year

Parking & Access	-	15,000	
Hangar 6	-	0	(by others)
Hangar 5	-	0	(by others)
Blue Hangar	-	0	(by others)
Hangar 4	-	50,000	
Hangar 3	-	80,000	
Other Structures	-	30,000	
Landscaping & Towers	-	20,000	
		$ 275,000	per year subtotal

- Operations - approximate 40% increase over Element 2 = $1,127,000

	$2,157,000	NPS gross costs annual average
Less revenues from lessee	- 500,000	
	$1,607,000	NPS net costs annual average

Benefits

The total annual visitor use level of the field is estimated at 920,000, of which 690,000 (or 75%) will visit the public exhibits and cultural events under the non-profit organizations, while the rest of the visitation will be drawn to the commercial recreation and dining in hangars Blue, 5 and 6. There will be much dual usage between the commercial and public functions.

For purposes of NPS cost-effectiveness analysis, 690,000 annual visitors are project (credited) to the public functions.

Therefore the NPS cost per public visitor is estimated at $1,607,000/ 690,000 = $3.33.

Element 4

Costs

- Construction

  All facility costs will be the same as in Element 2 ($755,000 per year.)

  Additionally access improvements will cost $2,600,000 ($130,000 per year on the 20 year basis)

  In sum, construction costs will be: $885,000 per year

- Maintenance - 10% more than in Element 3, approx. $300,000 per year

- Operations - 10% more than in Element 3, approx. 1,240,000 per year

	$2,425,000 NPS gross costs annual average
Less revenues from lessee	- 500,000
	$1,925,000 NPS net costs annual average

Benefits

The total annual visitor use level is estimated at 1,100,000, of which 825,000 (or 75%) are assumed to be public visitors attending the non-commercial facilities. While there will be dual usage of commercial and public facilities by many visitors, those attending or using the public facilities are included here.

Then the NPS net cost per public visitor is $1,925,000/825,000 = $2.33.

APPENDIX 7

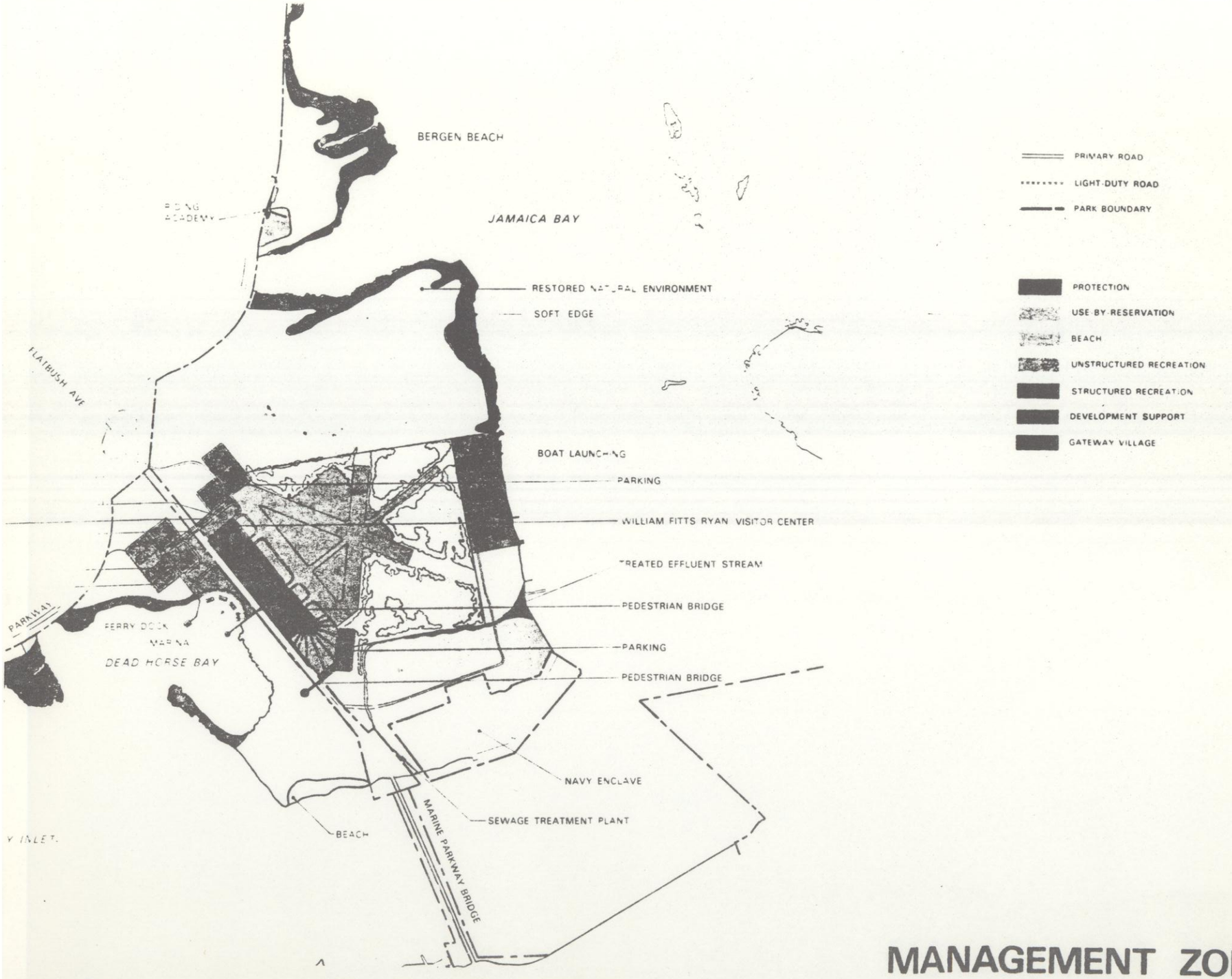
ZONING AND THE OTHER ALTERNATIVES

Page 72 - The Management Zones of the Gateway Final Environmental Statement

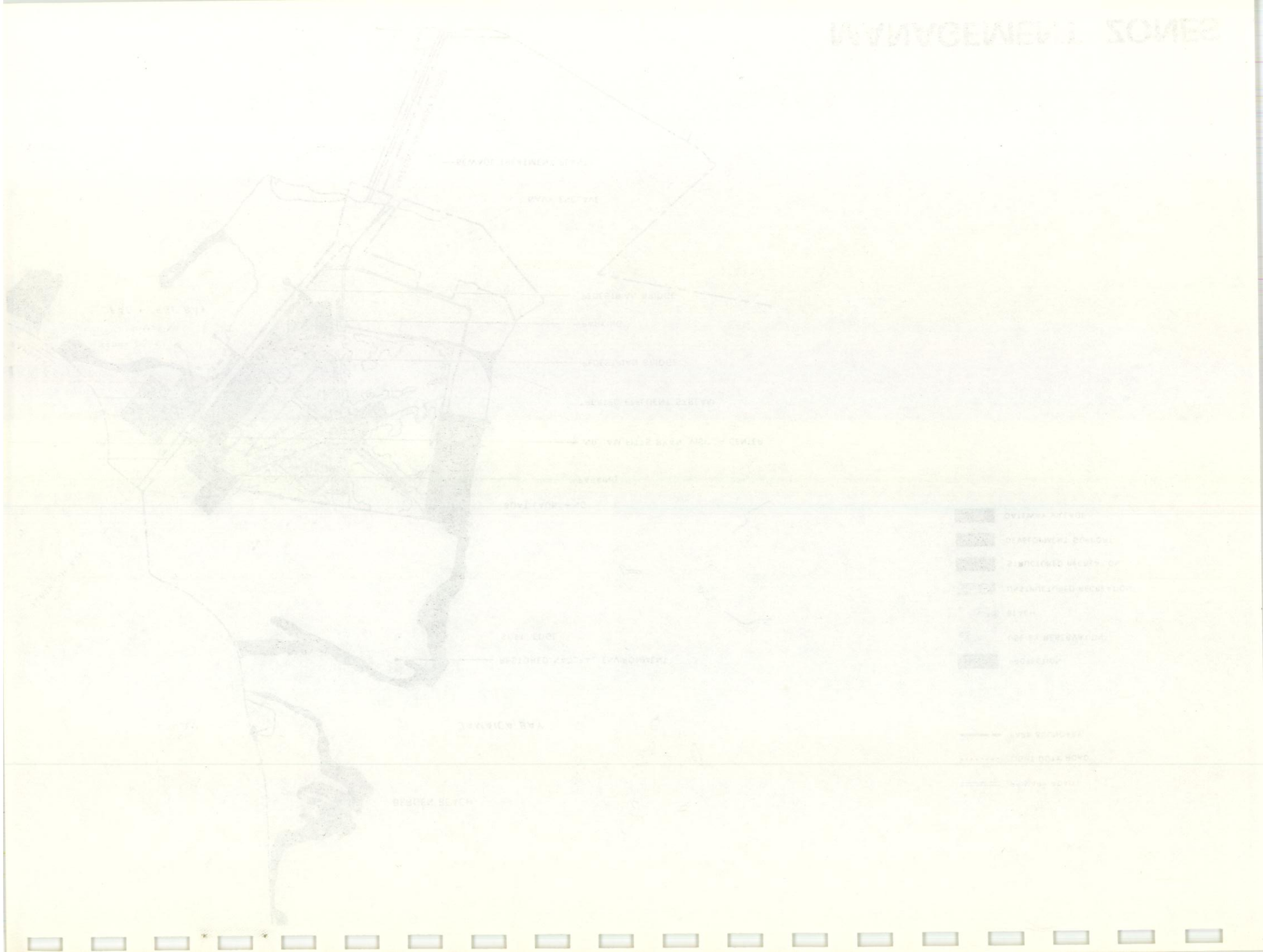
Page 73 - Alternative "A"

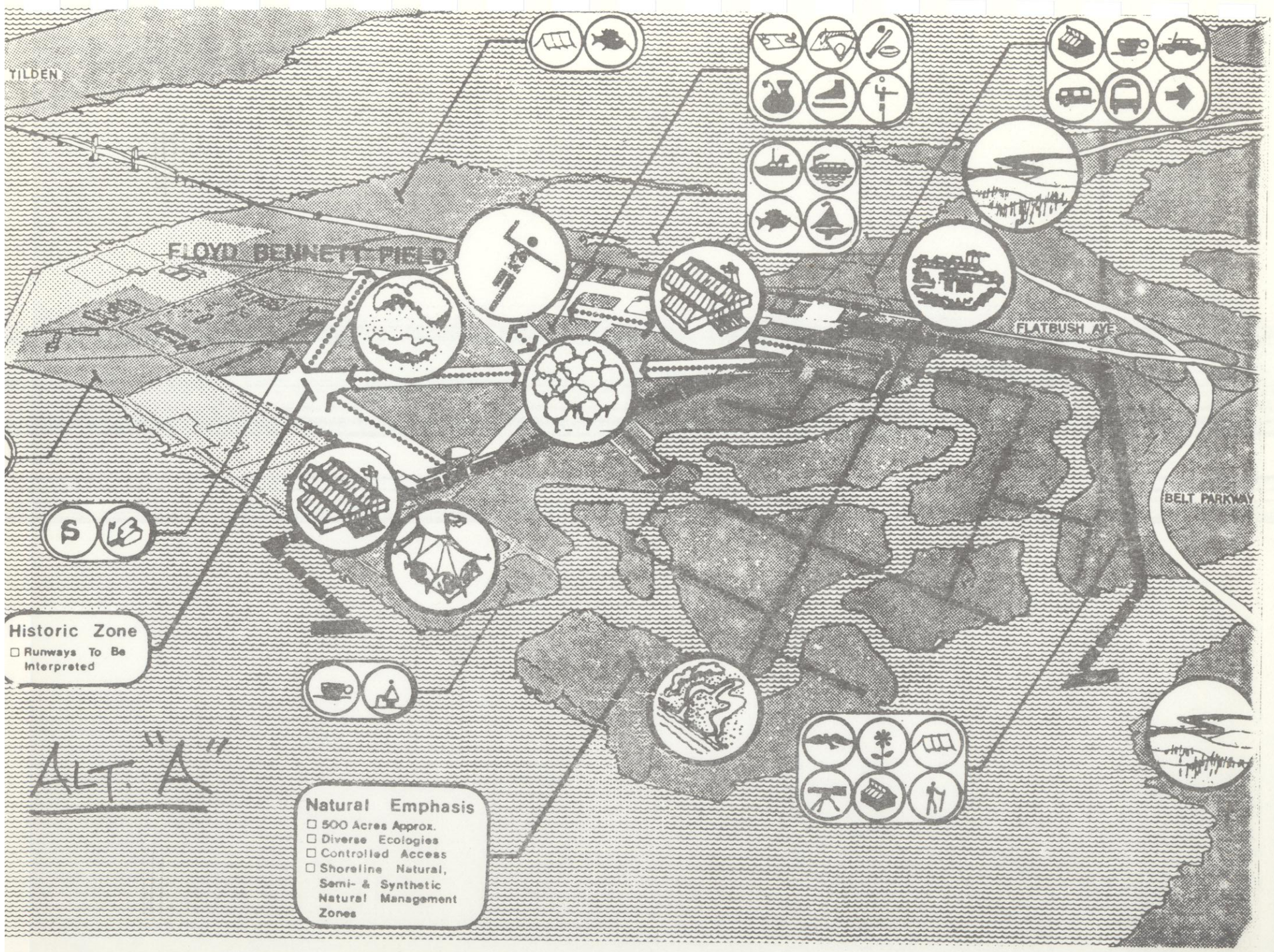
Page 74 - Alternative "B"

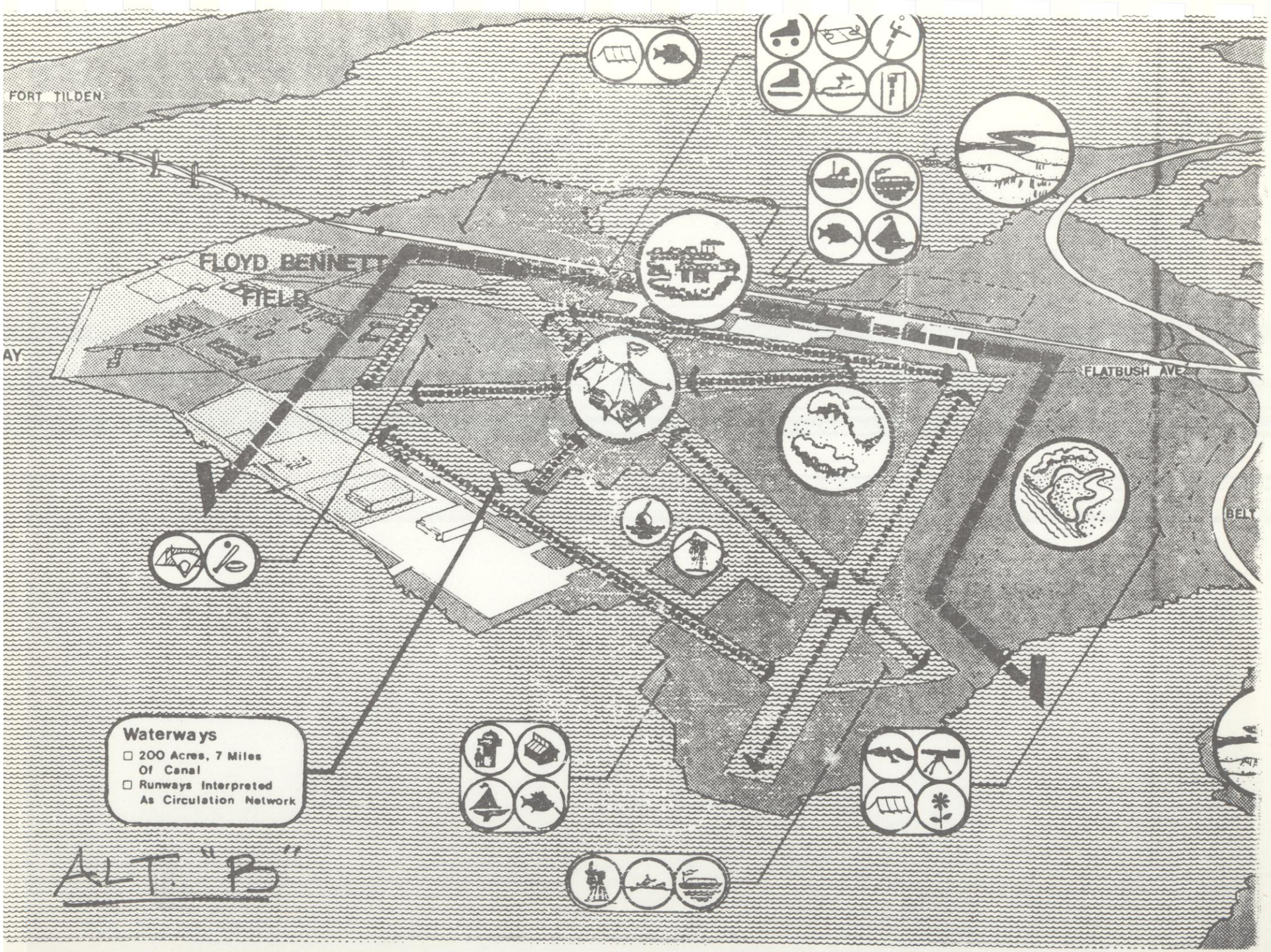
Page 75 - Alternative "C"

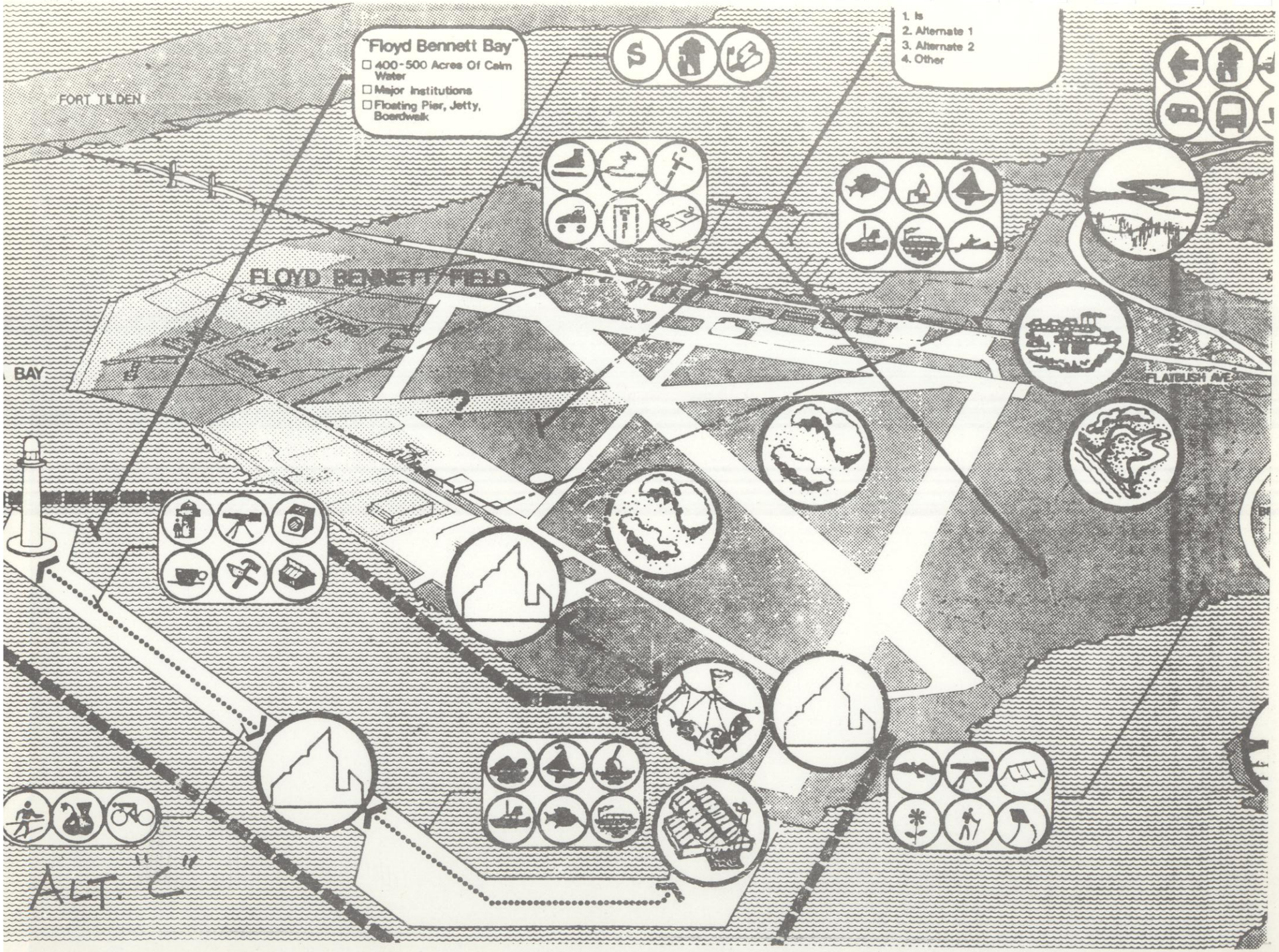


MANAGEMENT ZONES




TILDEN
FLOYD BENNETT FIELD
FLATBUSH AVE
BELT PARKWAY
Historic Zone
☐ Runways To Be Interpreted
ALT. "A"
Natural Emphasis
☐ 500 Acres Approx.
☐ Diverse Ecologies
☐ Controlled Access
☐ Shoreline Natural, Semi- & Synthetic Natural Management Zones


FORT TILDEN
FLOYD BENNETT FIELD
AY
FLATBUSH AVE
BELT
Waterways
☐ 200 Acres, 7 Miles Of Canal
☐ Runways Interpreted As Circulation Network
ALT. "B"


"Floyd Bennett Bay"
☐ 400-500 Acres Of Calm Water
☐ Major Institutions
☐ Floating Pier, Jetty, Boardwalk
1. Is
2. Alternate 1
3. Alternate 2
4. Other
FORT TILDEN
FLOYD BENNETT FIELD
BAY
FLATBUSH AVE.
ALT. "C"