

I. - STATEMENT OF OBJECTIVES

The object of this report is to indicate the types and extent of uses which are in the public interest. These elements will be measured against national or other accepted standards and will be based upon predicted population and will be analyzed in respect to the City's ability to pay.

Cooperation will be sought with agencies currently engaged in projects which affect Virginia Key, namely:

(a) The Metropolitan Dade County Planning Department with the view to coordinate this effort with the County Plan and especially such area-wide determinations affecting airports and marinas.

(b) The Dade County Port Authority with the view to ✓  
determining any needs which might be expressed  
regarding seaport activity and airfields. → WATER FACIL  
SHIPPING.

(c) The U. S. Corps of Engineers regarding beach  
erosion.

*CAUSEWAY.*  
(d) { Residents of Fishers Island seeking a causeway ✓  
connection from Rickenbacker Causeway.

(e) { The innumerable proposals for the development  
of a causeway to the upper keys.

(f) Private groups seeking to establish the following elements in the community:

1. A Marine Stadium

2. An International Center including -

- a. A Hotel and Convention Hall
- b. Executive Airport
- c. Marina
- d. Heliport

## II. - RECOGNITION OF PROBLEM

### A. HISTORICAL BACKGROUND

Virginia Key is an off-shore island containing approximately 725 acres. It lies about 2-1/2 miles east of the mainland of the City of Miami proper. The easterly shore of the island is on the Atlantic Ocean with Biscayne Bay on the westerly side.

Virginia Key has often been described as the City's most valuable undeveloped property. It was acquired partly by purchase and partly by condemnation in 1945. The cost to the City was \$417,000. Since that time there have been several exchanges of portions between the City and Dade County, until, at the present time, the City has title to approximately 525 acres; the north <sup>ownership</sup> portion, and the remaining 200 acres, more or less, at the southerly end of the island, are owned by Dade County.

Access to the mainland is by way of Rickenbacker Causeway, a County-owned toll road which crosses the southern part of the island and continues on to Key Biscayne.

The present geographical limits of Virginia Key cannot be readily defined. Due to its very low natural elevation, the area varies greatly with each tide. Nearly 3/4 of its described area <sup>3/4 525</sup> is covered at high tide. Both the City and the County hold title to rather extensive Bay Bottom areas adjacent to their properties on this Key.

That portion of the area acquired in the condemnation proceedings by the City was for the stated purpose of municipal port and airport construction. Subsequent planning on the part

of both the City and County has provided for the possibility of installing other uses on Virginia Key.

In test cases, court rulings have been favorable toward use for other municipal purposes. The deeds to the various parcels of bay bottom lands granted by the Internal Improvement Board specifically provide that those lands shall be used for municipal purposes only. As a consequence it would appear that unless these deed restrictions are rescinded, future development of much, if not all, of this property must be predicated on use for municipal purposes only.

Being directly on the ocean front, the island in its entirety will be directly exposed to the full intensity of hurricane winds and the wave action of other ocean storms. Any contemplated use of lands, whether existing or created, must take this factor into consideration.

#### B. PHYSICAL ANALYSIS ✓

There are several problems, some of prime importance and others almost inconsequential, which must be considered if this island is to be subjected to public improvements.

##### 1. BEACH DEVELOPMENT

The portion of the island which is exposed at high tide is so low that this area will require extensive filling at least to an elevation of six feet above sea level, and better to seven feet, to make it suitable for almost any use contemplated, except for conservation areas. It is estimated that the

(what remains.)

cost of dredging and filling to such a level will approximate \$8,000 to \$10,000 per acre.

Of primary concern is the rather rapid erosion now taking place on the ocean side of the Key. The easterly shore line is the only natural portion which is appreciably above sea level.

Since acquired by the City, a period of but fifteen years, there has been lost by erosion more than 150 feet of beach from the northern end and an average of 50 feet or more along the entire easterly shore. This loss is not restricted to those periods during storms of severe intensity, but appears to be a continuous, progressive erosive action.

The Corps of Engineers has presented a study of this problem, financed jointly by the City of Miami, Dade County, and the Federal Government.

GET → The Beach Erosion Control Report on a cooperative study of Virginia Key and Key Biscayne, Florida, prepared by the U. S. Army Engineer District, Corps of Engineers, Jacksonville, Florida, September 29, 1961, has the following analysis and recommendation in the syllabus, page 1:

The problem is one of instability and recession of the shoreline in the study area due to deficiency in supply of littoral material entering the area and to loss of material into offshore waters. There is little development on Virginia Key; Key Biscayne is highly developed. The District Engineer

finds that the most practicable way of restoring the beach and protecting existing structures and upland property would be to place a sand fill by artificial means along the ocean shores of Virginia Key and Key Biscayne to form a protective and recreational beach. The improved beach would be provided by increasing the width of the existing beach by 50 feet at elevation 6 feet, mean low water, on Virginia Key, and at elevation 7 feet, mean low water, on Key Biscayne. Three groins → on Virginia Key and two on Key Biscayne would be provided subject to future determination of their actual need and justification, based on experience. Stabilization of the restored beaches would be accomplished by periodic beach fills from Biscayne Bay. He finds further that the estimated annual charges for the improvements recommended are less than the estimated annual benefits, and that improvement is justified. He recommends adoption of Federal projects to provide for (1) reimbursement of local interests of an amount equal to one-third, less post-authorization costs, of the initial costs, and of future nourishment costs for a period of 10 years, of protecting the ocean shores of Virginia Key, and (2) reimbursement of local interests of an amount equal to one-third, less post-authorization costs, of the initial costs, and of future nourishment costs for a period of 10 years, of protecting the publicly owned ocean shores of Key Biscayne. The Federal projects for reimbursement would be subject to certain provisions and conditions of local cooperation.

The District Engineer further indicates that the groins can be constructed after the sand has been placed. First costs to the City are \$112,000 for beach fill; \$103,000 for groin. Annual costs to the City are \$16,300 for nourishment of beach fill; \$4,600 for maintenance of groins.

## 2. SEWAGE TREATMENT PLANT

In 1953 a 66 acre tract in the north central section of the island was used for construction of Miami's \$10 million sewage treatment plant. This plant is well operated, physically attractive for this type of operation and is a credit to those responsible. However, as with all such facilities, there is some odor attendant with its operation and it cannot be anticipated that it will ever be made completely odor free.

An examination of Weather Bureau records based on mean daily observations at the Miami Beach Station during 1958 indicates that the direction of the prevailing wind may be expected to be in the north-easterly quadrant for about 80 of the 365 days during the year, mostly during the winter months. About one day out of every two it should blow from the south-easterly quadrant and an average of one day in six from each of the two westerly quadrants.

The sewage treatment plant is sufficiently remote from presently developed areas so that any odor is dispersed and not normally detectable in those areas. Unfortunately, this is almost certain to prove untrue for most areas on Virginia Key itself, being so close to the source of odor.

While the area to the north and west of the plant will be exposed to this condition the greater part of the time, nearly all areas of the island will be subject to that unpleasantness under certain wind conditions.

From the Metropolitan Dade County Master Plan for Sanitary Sewerage prepared for The Board of County Commissioners, Metropolitan Dade County, Florida, November 1, 1961, we find on pages 52 thru 54, "that the maximum land area needed could cause an expansion of the present site 3 times from 60 acres to 180. It must be pointed out that this expansion is only necessary if the present method of treatment, which is given top rating as probably the best method, but at the same time the most costly both to construct and operate. The other seven methods listed all require less land.

The present plant removes about 75% of the Brachene cal Oxegen demand and a like amount of suspended solids. The effluent is discharged in the Atlantic Ocean in water about 18 feet deep, about 4,500 feet off shore. Chlorination of the effluent is practiced. The operation records indicate some evidence of bacteriological degradation along the Virginia Key and Key Biscayne when chlorination is interrupted.

<sup>PRIVATE</sup>  
3. THE TATHAM TRACT

Of considerably less importance is a small parcel of submerged land at the northeastern tip of Virginia Key. Known as the Tatham Tract, and under private ownership, it could deter the development of the upper tip of the island unless acquired by the City.

4. INLAND WATER AREAS

There are two small lakes or lagoons within the low water limits of the island, which combined contain about forty acres. These offer no serious problem as they may be filled or permitted to remain, whichever appears advisable for the most effective land use.

5. FLORIDA POWER AND LIGHT TEST STATION

East of the treatment plant and adjacent to the easterly shore of the island, the Florida Power and Light Company has established a test station to determine the corrosive effect of salt laden ocean air on selected equipment. This is not an elaborate facility and may readily be removed to some other location if desirable. To enable trucks and other vehicles to reach the area, approximately 1400 feet of access road has been constructed, about two-thirds of which is asphalt surfaced.

C. POTENTIAL USES

The following uses for Virginia Key have been considered at various times:

1. SEAPORT

At the time the island was acquired one of the primary



the need for the airport could be demonstrated to obtain Federal participation.

The feasibility of an airport of this type is discussed in a report prepared by the Department of Engineering titled "A Preliminary Feasibility Study of a General Aviation Airport at Virginia Key", dated June, 1959.

Certain other aviation facilities might be provided at much less expense, such as a seaplane base, heliport or a blimp base. However, the public need or use of these facilities would be extremely limited.

3. MARINE

Local interests would without a doubt welcome additional marine facilities. These could include a yacht harbor for small sailing craft, a marina, a ramp or hoist for launching small boats from trailers, berthing for charter boats and local sight-seeing cruise boats, and provision for boat servicing and fueling. At the present time some commercial fishermen (mostly shrimpers) are permitted to berth their boats along an existing bulkhead near the Treatment Plant. Whether Marina use for this location would be feasible is subject to an area-wide study by Metropolitan Dade County. This would involve a study for purposes of determining location and extent of use.

4. PUBLIC RECREATION

According to desirable standards, Miami, like most other cities, is somewhat deficient in developed

recreational areas. As Virginia Key is no longer essential for the purposes originally intended, it appears that the populace would probably be best served if it were developed for recreational purposes.

For those interested in physical recreation or sports, the development could include a golf course, even though it seems ill-advised to use ocean fronting property for a purpose which requires so much land when inland areas are equally suitable, the amenities are enhanced with the installing of such a use; bathing beaches, picnic areas, camp-out facilities, children's playground, tennis, handball and shuffleboard courts, a baseball or softball diamond, a sports arena, a dance pavilion, a beach club, an ocean-side fishing pier, and other like facilities.

For those who desire a more cultural type of recreation, parks, zoological gardens, an amphitheater for dramatic presentations, a bandshell which could be integrated with the amphitheater, an auditorium for similar use in the event of inclement weather, and a museum might be considered.

5. CONSERVATION

It must always be kept in mind that much of the charm of the off-shore key areas comes from the native setting: the beach, the swamp-mangrove, and the upland dunes. Thus, it is conceivable part of the key should be set aside for such purposes. These conservation areas would

provide the land necessary for future facilities if comprehensive planning designated proper uses of a better nature.

6. CIVIC USE

The Interama dream, in a modest form, seems closer to reality today than ever before, and seems pointed toward location on the Graves Tract north of the City. Until it does attain reality, it would seem advisable to keep in mind that Virginia Key emerged as the best alternative location and plans for the development of the island probably should not exclude that alternative form consideration.

7. COMMERCIAL OR INDUSTRIAL USE

In spite of Deed Restrictions, it might be possible to use some or all of the area for commercial or industrial purposes. However, because of the complete lack of either rail or port facilities, it is not particularly suitable.

Further, it is considered most probable that very severe public criticism should be expected for even proposing such use of the City's only ocean front property.

8. PRIVATE USE

In the event that existing Deed Restrictions were rescinded or declared invalid, permitting the City to legally lease the area to private interests, it

is conceivable that such interests would not be interested in providing the optimum of use for public. Reversionary provisions for returning such facilities to the public are usually subject to long term provisions.

It is certain that most of the island would prove highly desirable for ocean front hotel, motel, apartment or residential use, with attendant restaurants, bars, night-clubs, and other business enterprises, but this type of use is not that which should be considered for public lands.

In addition, with certain types of recreational development it could be attractive for the establishment of small business and carnival type concessions.

9. MIAMI BEACH-KEY LARGO CAUSEWAY

For a number of years there has been in the minds of some a vehicular causeway connecting Miami Beach with the upper keys. Numerous suggestions have been advanced as to how it might be accomplished, one idea proposing a tunnel between Miami Beach and Fisher Island immediately to the south.

At the present time no definite route has been determined, but it appears logical that, should the project become a reality, the route selected would extend across the easterly end of Fisher Island and southward along the easterly shore of Virginia Key,

probably joining Rickenbacker Causeway either on Virginia Key or Key Biscayne.

10. VIRGINIA KEY-FISHER ISLAND CAUSEWAY

Of more immediate concern is the proposal of certain private interests who desire to develop their properties on Fisher Island. They propose to extend the access road to the sewage treatment plant and construct a causeway and bridge across Norris Cut to Fisher Island. The selected location follows closely the same route considered logical for the Miami Beach-Key Largo Causeway.

III. PLAN PROPOSALS

A. RECOMMENDATIONS BASED UPON COMPARATIVE OR ACCEPTABLE STANDARDS

1. DAY USE - Recreational activities to be conducted on Virginia Key are judged to be of a character which can be consummated during a 24-hour period or do not involve domicile or overnight facilities. Such activities are considered day use even though many events or uses happen after daylight hours. The reasons for such a consideration are based on the following:

Existence of sewage treatment facilities which, although operated in an excellent manner and according to the best engineering practices, do offer a positive odor condition.

This threat is mostly psychological but could be of such persistent nature as to be depressing. Uses of periods of less than 24 hours offer no hazard.

All domicile or sleeping uses would consume space to such an extent that no original character could be retained.

The reservation of space for the future dictates large areas of unused land and water.

- (a) MARINE STADIUM - a specific day use facility proposed, meets the requirement of large open space. The water area involved will be in excess of 200 acres. Thus a feeling of openness will be retained. The oval water area fits neatly into an existing fringe of land. Much of the nature vegetation can be retained. It can be developed to fit the natural setting without much difficulty.

There can be little question regarding the need: (1) there is no similar facility in tropical America where a year 'round program can be conducted; (2) the only competing facilities in existence are successfully operated areas in Minneapolis, Minnesota and Seattle, Washington, which are both in areas

Although this report must be objective and does not concern itself with whether the facilities or uses proposed are city operated or run by concession or lease, we must evaluate the chances of success for such a venture. In this case the sponsors seem to have demonstrated that with efficient management a marine stadium can be successful. Our only valid comparison is the Seaquarium which is close by on county property. Here we have a facility developed and operated by a private company under a long term lease given by Metropolitan Dade County as an amusement attraction. The Seaquarium has proven itself based on the criteria set up in the above-mentioned feasibility study.

Finally, let us say that a search of Metropolitan Dade County offers us site with the comparable opportunities. It will adequately serve the entire metropolitan area.

- (b) BEACH DEVELOPMENT - This proposal calls for a typical barrier key, bathing, swimming, cabana development. There is about a mile of beach to be improved. It must be nourished as indicated in the Corps of Engineers Beach Erosion Report referred to previously.

The need by any standard is desperate.

We quote from the Existing Land Use Study,  
Metropolitan Dade County, Florida, January,  
1961, as follows:

"Water oriented park and beach  
facilities are in great demand  
in Metropolitan Dade County.

Presently there are not enough to  
accommodate both the permanent  
residents and the millions of  
tourists. It is a double barreled  
challenge. While eliminating  
present deficiencies, we must  
provide for future needs".

The Generalized Land Use Plan, 1960-65  
edition, of the Miami Comprehensive Plan,  
published October, 1959, states on page 73  
that a major park is proposed on Virginia Key  
including a beach and golf course.

MASTER  
PLAN

As a further development of the Miami  
Comprehensive Plan, the Phase II, part one,  
of the Community Facilities Plan, Parks &  
Recreation, May, 1960, we find the following:

"5. VIRGINIA KEY - It is recommended that  
an additional large park be developed at  
Virginia Key.....The frontage on the ocean  
side is suitable for beach purposes.



Service facilities, such as water, sewage, roads, trails, parking spaces, concessions, bath houses, and cabanas, could be provided. It is recommended that 256 acres be set aside for this purpose which will allow 150 acres for a golf course considered elsewhere in this report".

- (c) GOLF COURSE - This is another of the amenities which is stressed in our opening statement expressing the standard to be used - "plenty of open spaces and local character".

A golf course not only serves the active recreational needs of the participant but also serves the passive needs of many thousands who will enjoy the open, palm fringed, seaside, barrier key character of the setting.

Again quoting from the previously mentioned Parks and Recreation section of the Miami Comprehensive Plan, we find on page 8 the nationally accepted standard of "one 18-hole golf course for each 54,000 persons". Using the 282,000 population figure (since updated 291,688),

1960 census, the plan further develops on page 15, as follows:

"The City of Miami currently maintains a golf course at Miami Springs. Development will soon be under way at the Le Jeune Tract at N.W. 14th Street ..... The Planning Board recommends the development of an additional course at Virginia Key. That leaves three courses needed....." (The Le Jeune Course is now under development).

2. CONSERVATION AREA - This proposal calls for a reserve area which can be kept in its native condition allowing extensive buffer areas to the three active uses. This allows approximately 1000 acres of land and water for this purpose. It provides further for the amenities - open, palm-fringed, seaside, barrier key setting. Finally, it allows a reserve for future development. It is possible that real determinations based on valid project could at some future date show a need for a marina, an airport, added sewage facilities, etc.
3. MUNICIPAL USES - These uses are at present limited to those foreseeable needs for the expansion of the

sewage treatment plant - this is provided for in the conservation area - and the proposals for public access. The Master Plan layout shows the access necessary to Fisher Island over Norris Cut. This should be ample to care for access to Fisher Island and to care for the proposed Miami Beach-Upper Keys Causeway.

No other municipal uses are compatible. Care should be taken in the development to fill only those areas necessary for use at specific times. Undeveloped areas should remain unspoiled.

B. REVIEW OF OTHER PROPOSALS

1. BISCAYNE BAY INTERNATIONAL CENTER

- (a) EXECUTIVE AIRPORT - A description of the Executive Airport facility proposed by the Biscayne Bay International Center group is quoted as follows, as a description of the facility proposal we wish to review:

"Use of executive aircraft is expanding so rapidly that it is difficult to predict the ultimate demand. Presently, however, over 95% of the traffic is in single and twin engine craft which can be landed on 4400-foot runways without violation of their insurance regulations. Traffic conditions and the apparent demand would rule out larger aircraft in the proposed development, without impairing its primary purposes.

Planning of the proposed airport emphasizes the prestige accommodations which are expected and demanded by owners and crews. The airport terminal building will provide well-appointed meeting rooms, pilot's lounge, snack bar, telephone and secretarial service.

The Control Tower will be interlocked with the Miami International Tower and manned by F.A.A. personnel. Traffic would be limited to radio-equipped aircraft.

Field services, in addition to fueling, would include light overhaul, plane tie-down and storage hangars, heliport, helicopter, and fixed-wing sales and service, air charter and rentals.

Executive and advisory personnel of the Biscayne Bay International Center represent more than 100 years of experience in aviation, both in operations and airport management.

The approach pattern would be over the northern tip of Key Biscayne, with a right turn pattern over Biscayne Bay. No aircraft would overfly residential or business buildings on landings and take-offs."

The same report indicates a need for accommodating 50 Miami-owned executive aircraft now based in Broward County for the lack of facilities.

Recent developments indicate that the Port Authority will soon have in operation the former Marine Corps-Naval Air Station at Opa-Locka with the following facilities:

- 1830 acres of land
- Runways
  - 1 - 8,000 feet, east-west
  - 1 - 6,000 feet
  - 2 - 5,200 feet
  - 1 - 4,800 feet
- Scores of buildings including
  - 1 - hangar - 171,000 square feet
  - 3 - hangars- 65,000 square feet each
- Moderately priced rentals for hangars, warehouses, offices, parking space, etc.

It is doubtful if "exclusive" use can be justified on public land where the "greatest good for the greatest number" must rule. In this sense, it would be necessary to prove that the revenues would finance some other facility which the general public could enjoy. It is doubtful that such revenues would accrue in competition with general airport facilities at Opa-Locka, listed above, and at the 36th Street Airport. At 36th Street Airport, "luxury" accommodations include the following:

- 2 - 18 hole golf courses
- Miami International Hotel with 270 rooms with
  - roof top restaurant and lounge
  - 3 large meeting rooms
  - number of parlor suites
- Congress Airport Inn with boating and water skiing from its own dock
- Skyways Motel with pool, restaurant, cocktail lounge, barber shop, beauty parlor, 150-seat banquet hall and 2 meeting rooms
- Miami Springs Villas with 150 rooms, 16 "executive" houses, Olympic-size swimming pool, 12 dining rooms, 12 banquet halls seating a maximum of 1200 and eight cocktail lounges

Regardless of all this evidence of competing facilities, it is recognized that the location is ideal and should it be proven by acceptable measurement of needs drawn up comprehensively by an over-all metropolitan agency and approved as policy by the proper governing bodies, the land is available in the large conservation area which is part of this plan.

Information shown regarding Opa-Locka and the Miami International Airport and its environs was drawn from articles in the January, 1962, issues of

Airlift and Skyways, magazines published by American Aviation Publications, 1001 Vermont Avenue, N.W., Washington 5, D.C.

- (b) MARINA - In order to best review the impact of the proposed facilities and measure the apparent need, we quote the section on Marina from the proposal of The Biscayne Bay International Center:

"Modern marina development of the scope planned in the proposed plan is not now available in the State of Florida.

A major feature of the design are the three filled, bulkheaded and paved areas over 600 feet long and 80 feet wide which fan out toward the yacht basin. These provide car parking for boat owners directly at their slip, without interrupting two-lane traffic. These areas, plus slips on the bulkheaded mainland side of the marina, provide dockage for up to 340 boats. Lengths up to 75 feet may be accommodated in the slips, with accommodations for the largest yachts afloat at the T-heads.

Depth of the channels and marina will be 16-foot minimums. The solid bulkheading of the slip areas provide complete protection from rough water, assuring the comfort of a quiet slip.

Plug-in power service for both 110-V and 220-V; dial 'phone service jacks; fresh water connections; fire protection and gear lockers are provided with each slip.

Other features include ship-chandlery and general provisions store; swimming pool and recreational terrace; restaurant, bar and lounge; dock masters office and control tower; covered marina entrance and water taxi, fueling dock, barber, beauty shop and auxiliary service and supply.

The channels planned include a northeast course to government cut and the gulfstream; the other to the northwest to Fisherman's channel and the inland waterway.

The northwestern side of the yacht basin will be protected by breakwater moles.

A marina facility on Virginia Key would be in direct competition with existing and planned facilities on nearby Crandon Park on Key Biscayne.

Existing facilities provide for about 150 boats, with slips 40' long. There is accommodation for parking 200 cars. The approach channel is 10' deep at mean low water. Electric service, fresh water, and



storage lockers are available. There is adequate fire protection. There is a ship chandler and provision supply. Other features include a restaurant, dock master's office, and a fueling dock.

Long range plans call for doubling this capacity. The master plan also calls for a sailboat anchorage with lift and land storage area and related services at the south end of Crandon Park with sailboat facilities about equal to those at Dinner Key.

Therefore, it is apparent that the proposed facilities are in direct competition with existing facilities. It would seem that an area-wide study of the problem is necessary. Again our conservation area includes sufficient land for the purpose.

2. HOTEL AND CONVENTION HALL - There is a definite proposal for these hotel and convention hall facilities which includes "a 400-room hotel, 1700-seat convention hall, shops, and other services on 20 acres of land between the golf course and the marina.

Primary market, which the proposal seeks, is the highest status of international meetings and conventions, particularly the diplomatic missions