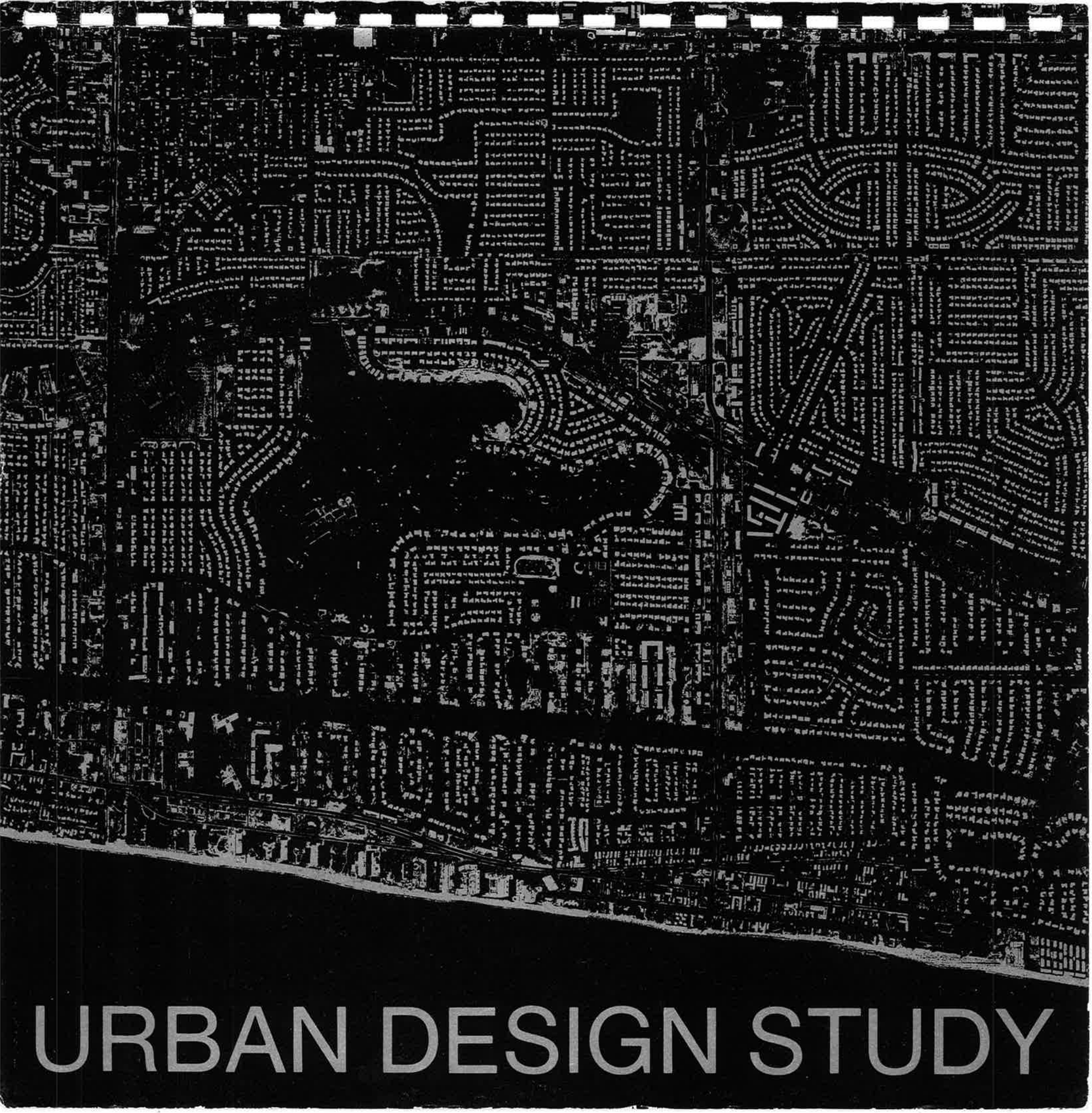

URBAN DESIGN STUDY

TITLE	Urban Design Study
AUTHOR	Reynolds, Smith and Hills Architects-Engineers- Planners Incorporated
SUBJECT	Urban Design: Urban Form and Land Use Concepts
DATE	June 30, 1972
LOCAL PLANNING AGENCY	Broward County Area Planning Board
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ABSTRACT

This report presents an analysis of Broward County's environmental quality; new alternatives and directions in urban form; and recommended action programs and procedures.

The preparation of this report was financed in part through an urban planning grant from the Department of Housing and Urban Development, under the provisions of Section 701 of the Housing Act of 1954, as amended.

URBAN DESIGN STUDY

BROWARD COUNTY, FLORIDA

FOR:
THE BROWARD COUNTY AREA PLANNING BOARD

PREPARED BY:
REYNOLDS, SMITH AND HILLS
ARCHITECTS-ENGINEERS-PLANNERS
INCORPORATED

JUNE, 1972

PREFACE

An Urban Design Study of Broward County was undertaken in order to provide a dynamic framework from which policy decisions could be rationally structured and implemented. The intended results being, quite simply, an environment which optimizes quality and orderly growth, not quantity and chaos.

The foundation for this undertaking was an analysis of all the various factors which form the physical environment experienced by the county's residents in their daily lives. Based on this analysis and the synthesis of these numerous interrelated natural and man-made determinants, recommendations as to procedures, action, and direction for the County were formulated. The study can be used to improve the life style of the Broward County residents and visitors by enriching the socio-economic and physical environment.

It must be clearly understood that this is not a Master Land Use Plan. An Urban Design/Urban Form Study is but one vital element of a comprehensive planning program where particular emphasis is placed on the visual and environmental image.

In early field trips through the County, it was obvious from the outset that the use of the land was not the critical issue in Broward County. The real problem was the quality of physical design and development that has taken place within the numerous "land use" categories. Monotonous rows of single family houses, the unimaginative design of high-rise apartments, underdeveloped open space, and commercial development at every intersection and strung out along miles of arterial roads and highways, all add up to chaotic and ugly visual pollution. This is not the best environment that man with all his knowledge and resources is capable of building.

The residents of Broward County are entitled to a better place in which to live, work and recreate. They must demand more of developers, of government officials, and most of all, they must demand more of themselves in order to improve the shape and physical environmental form of Broward County.

This study offers ideas and direction to the decision makers of Broward County in their efforts to improve the quality of environment through responsible government action. This can only be achieved by informing and soliciting wide-spread citizen support.

The study is comprised of three major parts:

PART I - deals with the evaluation of environmental problems and the framework in which environmental action and urban design occurs in Broward County today.

PART II - contains studies of alternative design concepts that development in Broward County can be directed towards based on goals and objectives.

PART III - recommends new administrative policies and procedures needed to effectuate a new urban form for Broward County. This part of the study was developed jointly with the Area Planning Board staff.

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1 ANALYSIS OF BROWARD COUNTY'S ENVIRONMENTAL QUALITY

1

FORM AND STRUCTURE OF BROWARD COUNTY

Before meaningful planning or urban design action could be recommended, an inspection of Broward County's form and structure was needed. There are two basic areas of consideration that relate to form and structure : The natural ecological setting and the history of the man-made environment. Both play an important role in our lives.

NATURAL ECOLOGICAL SETTING

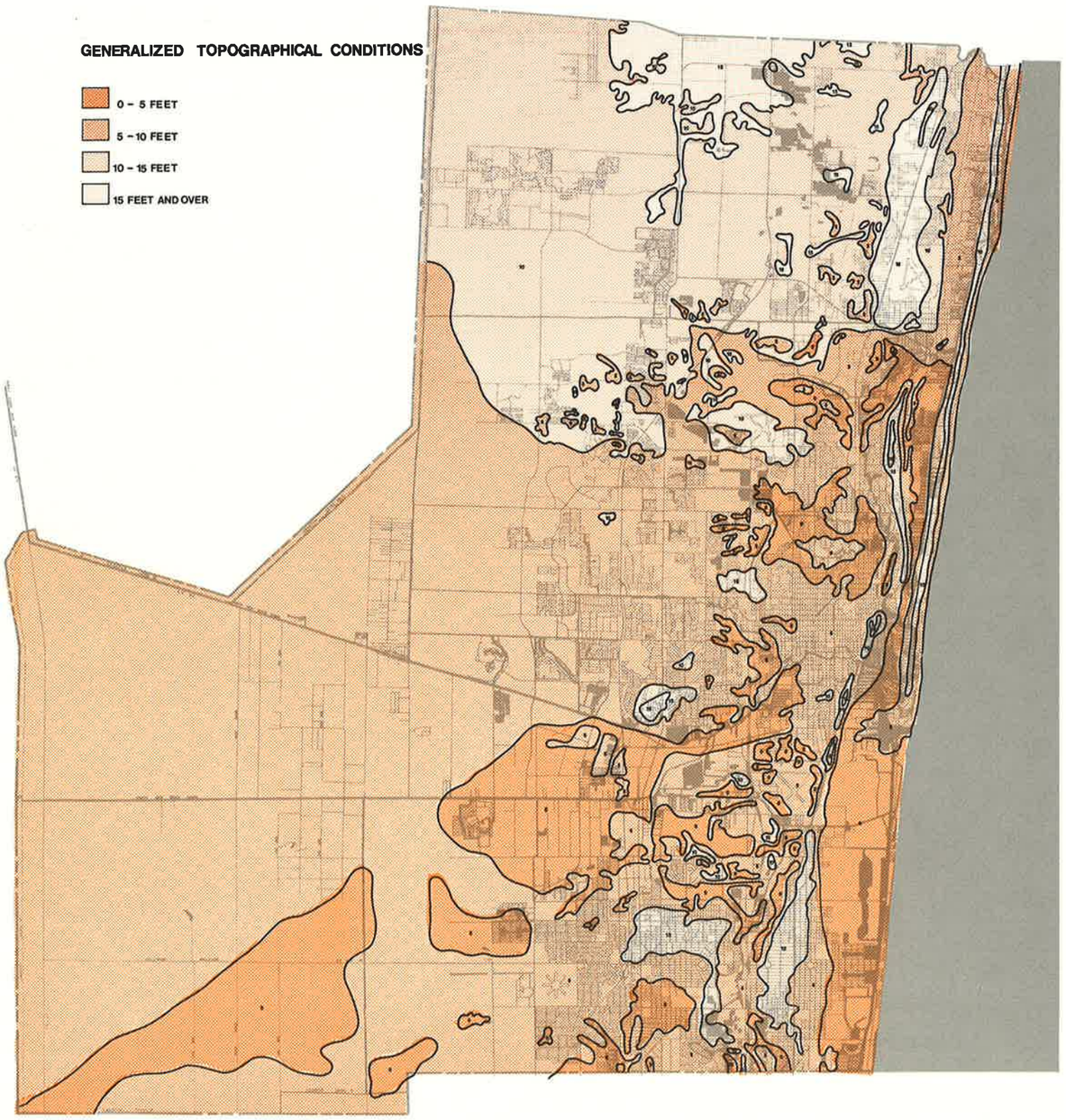
Several significant natural ecological settings occur in Broward County. The most extensive of these is the broad sawgrass marsh covering most of the central and western parts of the country. In the eastern part near the coast are numerous dry sand ridges and knolls. Broad areas of pine and palmetto flatwoods occur in the east central and northeastern parts, and a large area of low sandy wetlands extends from the south county line north of Plantation.

A clear understanding of this natural ecological setting can serve as a "footing" upon which the man-made "foundations" can develop. If foundations are placed on weak footings very serious problems materialize over a period of time. The natural environment in Broward County will be explained by looking at the elements that compose it: topography and flood zones, soils, vegetation, water quality, and climate.

A portion of southwest Broward County, looking north

TOPOGRAPHY AND FLOOD ZONES

It is clear to the casual observer that Broward County like most of Florida is basically flat. However, topography does play an important role in shaping the natural environment. The slight changes in topography, not noticeable to the human eye, are evident when a heavy rain leaves vast areas flooded. The Flood Zone Study prepared by the U.S. Corps of Engineers in 1964 shows areas of potential flooding, and the approximate duration that water will remain on the surface. To overcome flooding problems, criteria for general land fill requirements have been established as guidelines for development. The topography also affects other ecological systems such as water, both surface and underground, and vegetation. Changes in the topography cause the water level to change which in turn produces a different form of vegetation.


GENERALIZED TOPOGRAPHICAL CONDITIONS
0 – 5 FEET
5 – 10 FEET
10 – 15 FEET
15 FEET AND OVER

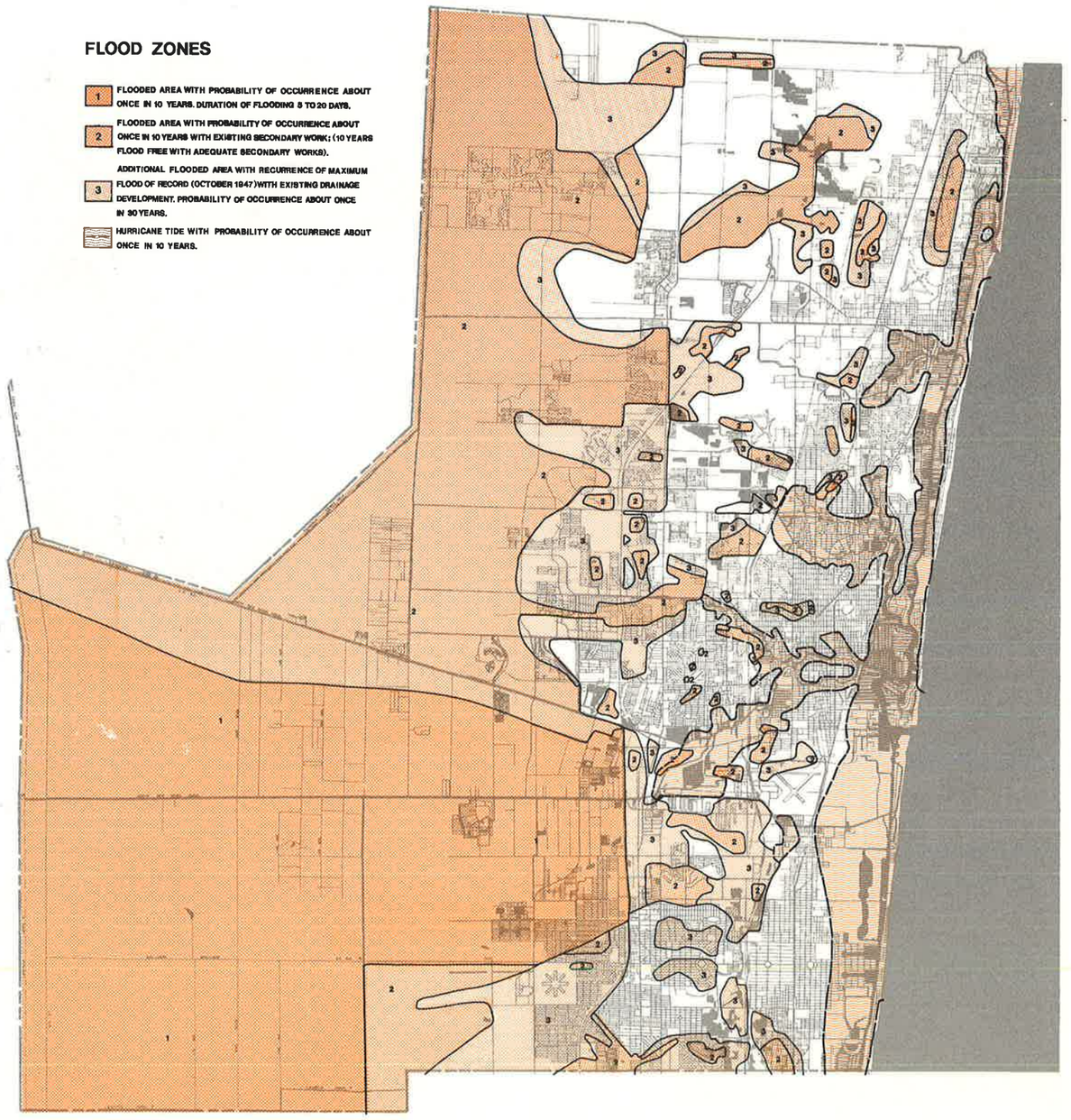
FLOOD ZONES

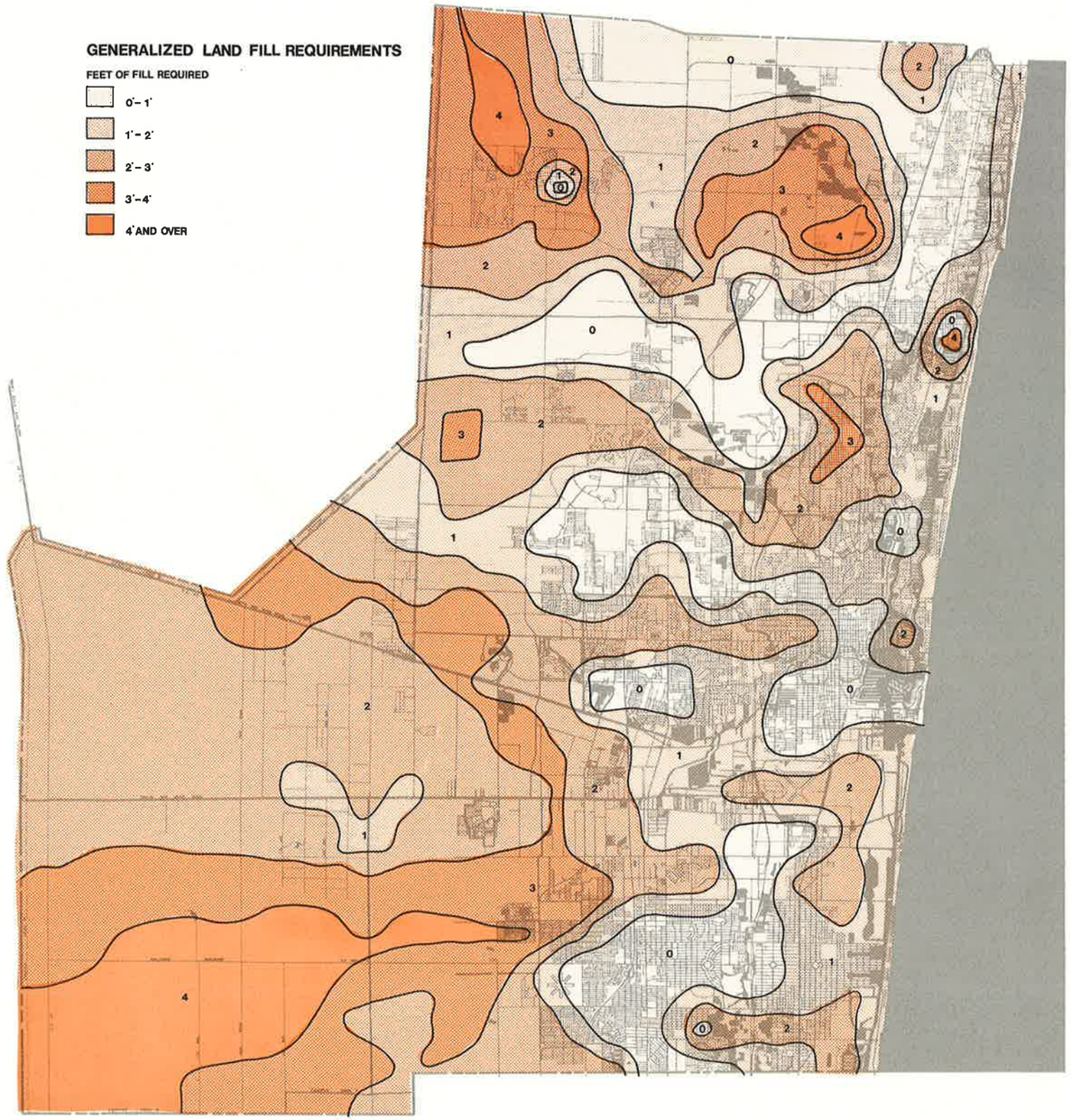
1 FLOODED AREA WITH PROBABILITY OF OCCURRENCE ABOUT ONCE IN 10 YEARS. DURATION OF FLOODING 5 TO 20 DAYS.

2 FLOODED AREA WITH PROBABILITY OF OCCURRENCE ABOUT ONCE IN 10 YEARS WITH EXISTING SECONDARY WORK; (10 YEARS FLOOD FREE WITH ADEQUATE SECONDARY WORKS).

3 ADDITIONAL FLOODED AREA WITH RECURRENCE OF MAXIMUM FLOOD OF RECORD (OCTOBER 1947) WITH EXISTING DRAINAGE DEVELOPMENT. PROBABILITY OF OCCURRENCE ABOUT ONCE IN 30 YEARS.

HURRICANE TIDE WITH PROBABILITY OF OCCURRENCE ABOUT ONCE IN 10 YEARS.




GENERALIZED LAND FILL REQUIREMENTS
FEET OF FILL REQUIRED
0'– 1'
1'– 2'
2'– 3'
3'– 4'
4' AND OVER

VEGETATION

Information on natural vegetation in Broward County has been compiled from the "General Map of Natural Vegetation of Florida", prepared for the Agricultural Experiment stations, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, by John H. Davis, Botanist. The information is very general, but does demonstrate the inter-relationship between the type of vegetation, the soils and the water level.

COSTAL STRAND. (1) A zoned vegetation on sand dunes and rock, composed of pioneer herbs, and shrubs near the shore with a scrub and forest zone further inland.

PINE FLATWOODS. (2) Open woodlands containing one to three species of Pine: longleaf, slash, and pond pines, many herbs, saw palmetto, shrubs and small trees form an under story. Included in the general flatwoods areas are small hardwood forests, many kinds of cypress and bay tree swamps, prairies, and marshes.

SOUTHERN SLASH PINE FORESTS. (3) Open woodlands of Pinus Elliott II Pensa, mostly on rocklands. Some herbs, shrubs, and hardwood trees of the understory are tropical. Small tropical and subtropical hammock forest areas are included.

SANDPINE, PINUS CLAUSA, SCRUB FOREST. (5) Mostly on excessively drained deep sandy soils. These occur on old dunes of the coastal strand (1) and on old dunes or dry sands in the interior.

CYPRESS SWAMP FOREST. (7) Mostly in depressions and bordering rivers and lakes. These forests are of many shapes, ranging from round domes to long strands. Some hardwood species are associated.

SWAMP FOREST. (8) Composed mostly of hardwoods, with some bay tree, gum, NYSSA, and titi cypress zones occur in many of these hardwood swamps.

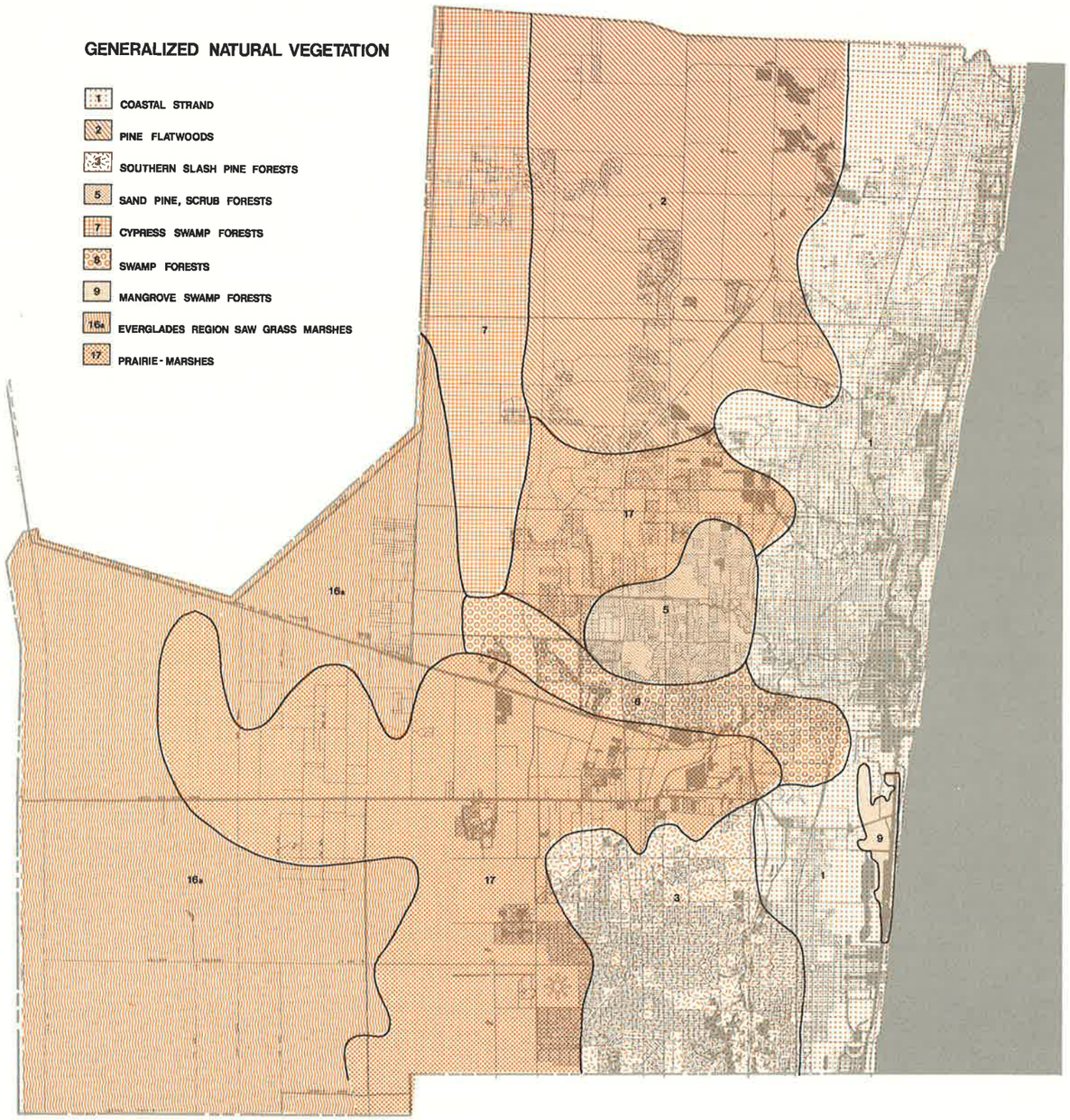
MANGROVE SWAMP FORESTS AND COASTAL MARSHES. (9) Usually occur where there are tidal conditions which vary from saline to brackish.

EVERGLADES REGION, SAW GRASS MARSHES.(16A) Dense to sparse saw grass, a few tree island sloughs.

WET TO DRY PRAIRIE MARSHES ON MARL AND ROCKLAND. (17) Some are mostly saw grass, others are bushes and grasses.

GENERALIZED NATURAL VEGETATION

- 1 COASTAL STRAND
- 2 PINE FLATWOODS
- 3 SOUTHERN SLASH PINE FORESTS
- 5 SAND PINE, SCRUB FORESTS
- 7 CYPRESS SWAMP FORESTS
- 8 SWAMP FORESTS
- 9 MANGROVE SWAMP FORESTS
- 16a EVERGLADES REGION SAW GRASS MARSHES
- 17 PRAIRIE-MARSHES



SOIL ASSOCIATION

Soil associations play a very important role in the natural environment. There are ten soil associations recognized in Broward County and various combinations of these soil associations have a range of limitations related to land use. The information on soil associates and limitations was extracted from a preliminary report called "General Soil Map and Its Interpretation and Use in Broward County" prepared by the U.S. Department of Agriculture Soil Conservation Service, May, 1970. The ten soils are as follows:

ST. LUCIE-POMELLO ASSOCIATION (1): Land dominated by nearly level and gently sloping, excessively drained deep, nearly white sands; interspersed with moderately well-drained, deep sands with an organic stained pan.

PALM BEACH-COASTAL DUNES ASSOCIATION (2): Land dominated by nearly level and gently sloping, well to excessively drained, deep shelly sands with inclusions of sandy beaches, mangrove swamps and Made land.

DADE-POMPANO ASSOCIATION (2a): Land dominated by nearly level well to excessively drained, light colored sands moderately deep to limestone; interspersed with nearly level, poorly to very poorly drained sands.

IMMOKALEE-POMPANO ASSOCIATION (13b): Land dominated by nearly level, poorly drained, very strongly acid deep sands with an organic stained pan; interspersed with slightly lower and wetter, slightly acid to alkaline deep sands.

BROWARD-POMPANO-ROCKLAND ASSOCIATION (21): Land dominated by nearly level, poorly drained, moderately deep sand soils underlain by limestone; interspersed with slightly lower and wetter deep sandy soils and scattered areas of limestone outcrop.

POMPANO-DELRAY ASSOCIATION (23): Land dominated by nearly level, poorly drained, acid to alkaline, deep sandy soils; interspersed with very poorly drained, deep sandy soils having thick black surface layers.

SALT WATER MARSH (28): Land dominated by level, very poorly drained, saline sandy soils in low swampy areas. The soils are covered by either salty or brackish water most of the year or are subject to daily tidal flooding. The soils are unclassified because of wetness and are also inaccessible because of a dense cover of mangrove trees. Salt water marshes occur near the coast in generally small areas fringing the Intra-coastal Waterway, inlets, bays and lagoons. Most areas that were originally salt water marsh have been filled and converted to Made land. The largest remaining area occurs in Hollywood.

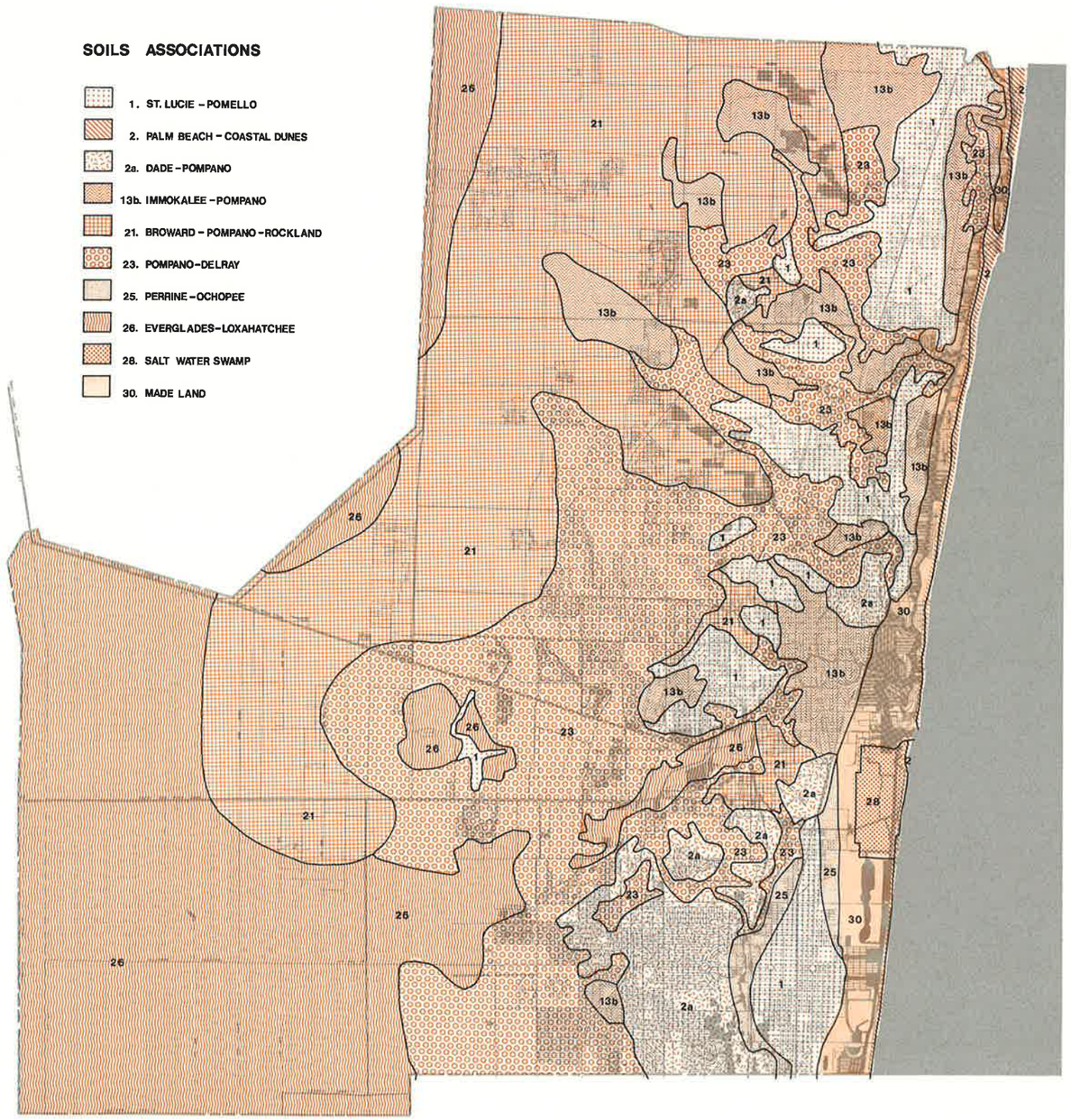
EVERGLADES-LOXAHATCHEE ASSOCIATION (26): Land dominated by level, very poorly drained, slightly acid to alkaline, moderately deep and deep peats and mucks, overlying limestone marl and sand.

PERRINE-OCHOPEE ASSOCIATION (25): Land dominated by nearly level, very poorly drained sandy and loamy marl soils moderately shallow to limestone.

URBAN AREAS AND MADE LAND (30): Land dominated by large urban developments where the density of paved areas, houses, buildings, etc., precludes the usefulness of identifying small inclusion of natural soils. Much of the land in this unit was originally low and wet and these areas were filled in with a variety of materials to make them suitable for urban development. This unit is not extensive except in the coastal areas where the major cities and towns are located.

SOILS ASSOCIATIONS

1. ST. LUCIE – POMELLO
2. PALM BEACH – COASTAL DUNES
2a. DADE – POMPANO
13b. IMMOKALEE – POMPANO
21. BROWARD – POMPANO – ROCKLAND
23. POMPANO–DELRAY
25. PERRINE – OCHOPEE
26. EVERGLADES–LOXAHATCHEE
28. SALT WATER SWAMP
30. MADE LAND



Lauderdale Lakes, 1967-1972

SOIL PROPERTIES AND LIMITATION

By assessing the important characteristics of soils and their properties, it is possible to make judgments about how various soils will respond to an activity or use. There are ten soil properties considered when evaluating soils for selected uses. These are listed below:

The relative importance of any particular soil property varies from one land use to another and must be evaluated for each land use. In the table on page 14, each soil association is rated for selected uses.

AVAILABLE WATER CAPACITY: The capacity of soils under free drainage to store water that is usable for plant growth. It is expressed in inches of available water per inch of soil. Soils having a low available water capacity will require constant irrigation to maintain vegetation in dry seasons.

WETNESS: The amount of free water in or on the soil. This is reflected in the depth to, and duration of, a seasonally high ground water table. Wetness has a direct affect upon the kinds of trees, types of plants and the rate of growth of native vegetation. Even more important, wetness restricts the stability of foundations, the effectiveness of septic tank operations, the construction of roads, railroads and airport runways, and the development of many types of recreation.

FLOOD HAZARD: The hazard of flooding is significant to almost all land uses. The frequency of flooding, duration of flooding, depth and velocity of flood water all contribute to the degree of the hazard.

DEPTH OF ROCK: Affects agricultural uses of soils by limiting the root zone of plants and free movement of water and thereby the availability of water, nutrients and anchorage. Where excavation or grading is needed, depth to rock is an important consideration for buildings, roads, railroads, and other uses. The operation of septic tanks is affected when depth to porous rock interferes with placement of tank or tile or where it permits contamination of pure water supplies.

PRODUCTIVITY: The ability of the soil to produce adapted common crops under a reasonably high level of management. Productivity also affects the growth of grass, shrubs and trees for landscaping purposes.

TRAFFICABILITY: The ease with which one can pass over an area on foot or light vehicle.

TRAFFIC SUPPORTING CAPACITY: The ability of undisturbed soils to sustain mobile loads. Methods of expressing traffic supporting capacity include the California bearing ratio , Florida bearing value, and the AASHO group index.

PRESUMPTIVE BEARING VALUE: The ability of soils to sustain dead weight. Calculated in terms of maximum allowable static load that can be supported by specified soil material, the assigned values are based on experience and specific tests, and show the ability of soils to retain their physical structure under loads. The presumptive bearing values are important in determining soil stability for building foundations.

SALINITY: The accumulation of chloride salts in soils that are affected by tidal waters.

SHRINK-SWELL POTENTIAL: A solid quality related to the change in volume of a soil with change in moisture content, a major criterion for all construction purposes.

THE RATING SYSTEM

Soils are rated for each of the selected uses on a four place system which indicates the degree of limitations, restrictions, or hazards to use. These are:

SLIGHT: Most soils of this soil association have no more than slight limitations for the proposed use. No significant area of minor soils have severe limitations. The limitations are not serious and are easy to overcome.

MODERATE: Most soils of this soil association have moderate limitations for the proposed use. Areas of minor soils with severe limitations are small or generally balanced by areas with slight limitations. The limitations need to be recognized but can be overcome or corrected by practical means.

SEVERE: Most soils of this soil association have severe limitations for the proposed use. Proposed use of the soil is questionable because the limitations are difficult to overcome.

VERY SEVERE: Most soils in this association are totally incapable of supporting the particular use without being greatly altered or removed and replaced by better soil materials.

The rating of limitations, restrictions and hazards for several land uses are shown on the facing Table and on the maps titled: Transportation Limitations and Building Construction Limitations, Sanitation Limitations and Recreations Limitations, which follow.

Soil properties that are most significant and determine the rating are shown by abbreviation symbol below the rating. However, all soil properties that affect any particular land use should be considered in the final evaluation of a site for that use.

SOIL LIMITATIONS FOR SELECTED USES

TABLE 1

◐ SLIGHT
◓ MODERATE
◕ SEVERE
● VERY SEVERE

SOIL ASSOCIATION	BUILDING CONSTRUCTION	TRANSPORTATION	SANITATION		RECREATION		
	FOOTING AND FOUNDATIONS	HIGHWAYS AIRPORTS PAVED PARKING	SEPTIC TANKS	SANITARY LAND FILL	CAMPSITES PICNIC AREAS	GOLF COURSES	PLAYGROUNDS
1 l. ST. LUCIE– POMELLO	◐	◐	◐	◐	◕ O Z	◕ O Z	◕ O Z
2 COASTAL DUNES–PALM BEACH	◐	◐	◐	◐	◕ O Z	◕ O Z	◕ O Z
2a DADE–POMELLO	◓	◐	◓ □	◓ □	◓ O Z	◓ O Z	◓ O Z
13b IMMOKALEE– POMPANO	◕ O	◓ O	◕ O	◕ O	◓ O	◓ O	◓ O
21 BROWARD – POMPANO – ROCKLAND	◕ O ■	◕ O ■	◕ O ■	◕ O ■	◕ O	◕ O	◕ O
23 POMPANO – DELRAY	◕ O Y	◕ O Y	◕ O Y	◕ O Y	◕ O Y	◕ O Y	◕ O Y
25 PERRINE – OCHOPEE	◕ O Y □	◕ O Y △	◕ O Y	◕ O Y	◕ O Y	◕ O Y	◕ O Y
26 EVERGLADES – LOXAHATCHEE	● O Y □ ▲	● O Y △ ▲	● O Y	● O Y	● O Y	● O Y	● O Y
28 SALT WATER SWAMP	● O Y □	● O Y △	● O Y	● O Y	● O Y X Z	● O Y X Z	● O Y X Z
30 MADE LAND	◐	◐	◕ O		◐ VARIABLE	◐ VARIABLE	◐ VARIABLE

● TRAFFICABILITY
■ DEPTH TO ROCK
▲ SHRINK–SWELL
O HIGH WATER TABLE AND WETNESS
□ PRESUMPTIVE BEARING VALUE
△ TRAFFIC SUPPORTING CAPACITY
X SALINITY
Y FLOOD HAZARD
Z PRODUCTIVITY

BUILDING CONSTRUCTION: This includes dwellings, churches, shopping centers, individual stores, service stations, motels, and light industrial plants where heavy machinery is installed. These uses require stable foundations on sites that are free from hazards. Where community sewage disposal systems are not available and individual septic tanks are necessary, the soil must have properties that permit absorption of septic tank effluent.

Footings and foundations for buildings must rest on soils strong enough to support the weight of the building. The bearing value, or ability to support a weight without settling, is most important in designing and constructing building foundations. Bearing values for soils vary with texture, consistency, wetness, degree of compaction, and other soil properties. On sloping sites that require grading before construction, the ease of grading and stability of the graded site is directly related to the kind of soil.

TRANSPORTATION: Highways, airports and paved parking areas for large shopping centers must be built on strong foundations and nearly level slopes. Soils differ widely in their ability to support heavy mobile loads and in the properties that affect grading operations. The preparation of a strong foundation is greatly affected by the physical properties of the soils over which they are built. Some soils provide good foundations with very little alteration while others are totally unsuited and must be replaced by better material if roads are to pass over the site they occupy. The kinds of soil present, including the slope on which they occur, greatly influence the difficulty and expense of preparing adequate foundations that are to bear heavy traffic loads. The rating also takes into consideration the ease with which vegetative cover can be established.

TRANSPORTATION LIMITATIONS and BUILDING CONSTRUCTION LIMITATIONS

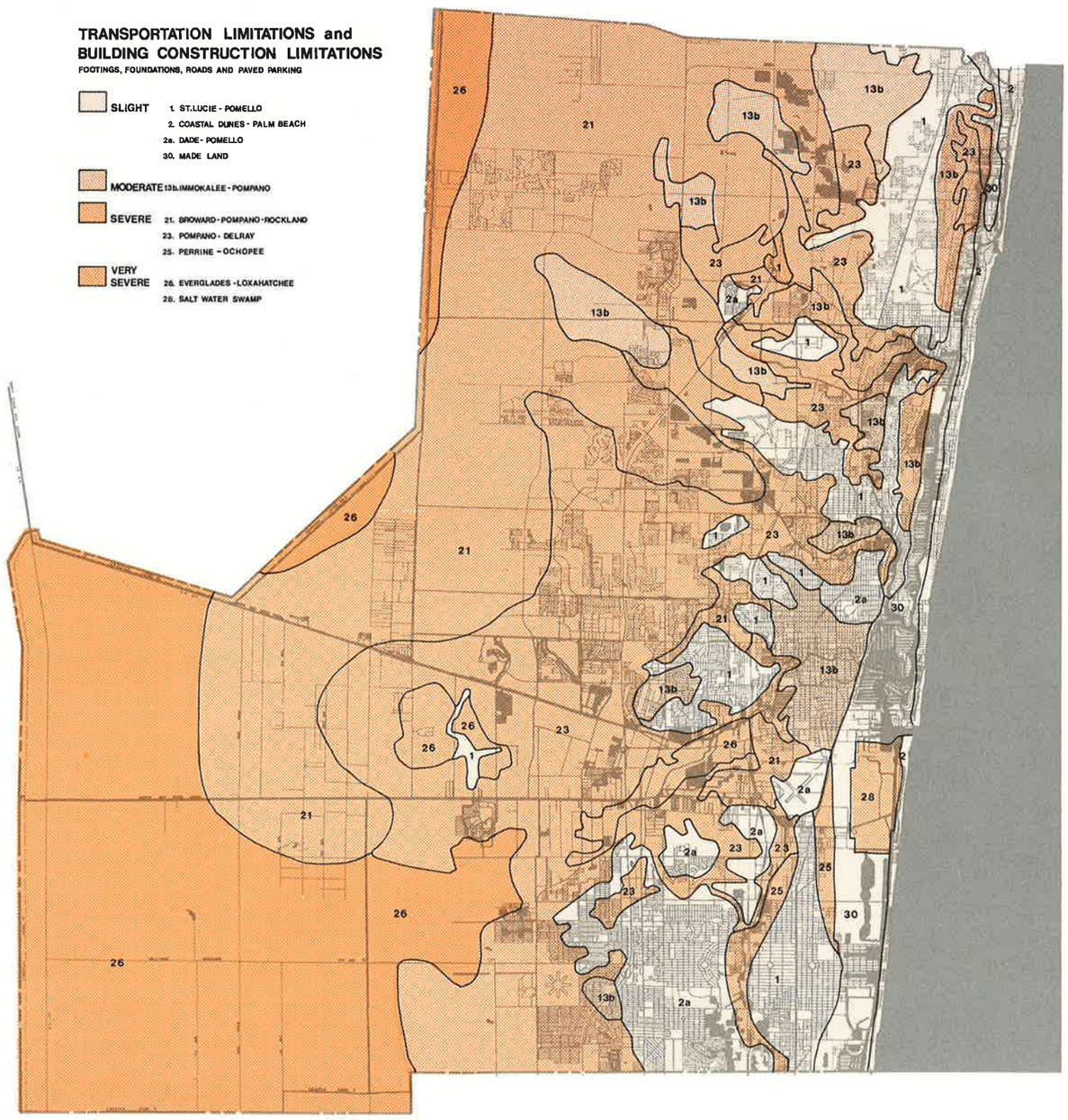
FOOTINGS, FOUNDATIONS, ROADS AND PAVED PARKING

SLIGHT
1. ST.LUCIE - POMELLO
2. COASTAL DUNES - PALM BEACH
2a. DADE - POMELLO
30. MADE LAND

MODERATE 13b. IMMOKALEE - POMPANO

SEVERE
21. BROWARD - POMPANO - ROCKLAND
23. POMPANO - DELRAY
25. PERRINE - OCHOPEE

VERY SEVERE
26. EVERGLADES - LOXAHATCHEE
28. SALT WATER SWAMP



SANITATION: Septic tanks provide a common means for disposal of sewage. They are used for isolated homes in rural sections and in some subdivisions where rapidly expanding residential areas have outgrown existing sewer lines. To function properly these systems must be installed on soils which have adequate absorptive capacity and which are not affected by a shallow water table. Though many somewhat poorly drained soils are highly permeable and absorb water rapidly when drained, they normally have high water tables that make them poorly suited for septic tanks. Septic tanks may function well on these soils in dry seasons but many fail to function when the water table rises too high in wet seasons.

Sanitary Land Fill is a means of solid waste disposal in which the refuse is placed in trenches and covered with earth. Several soil properties are important in the selection of sites for sanitary fills. The soils should be well drained and free of ground water to permit oxidation and minimize anaerobic bacterial action. The soils should be deep and free from hard rock. Soils should not have highly permeable underlying strata that connect directly to underlying water supplies.

SANITATION LIMITATIONS

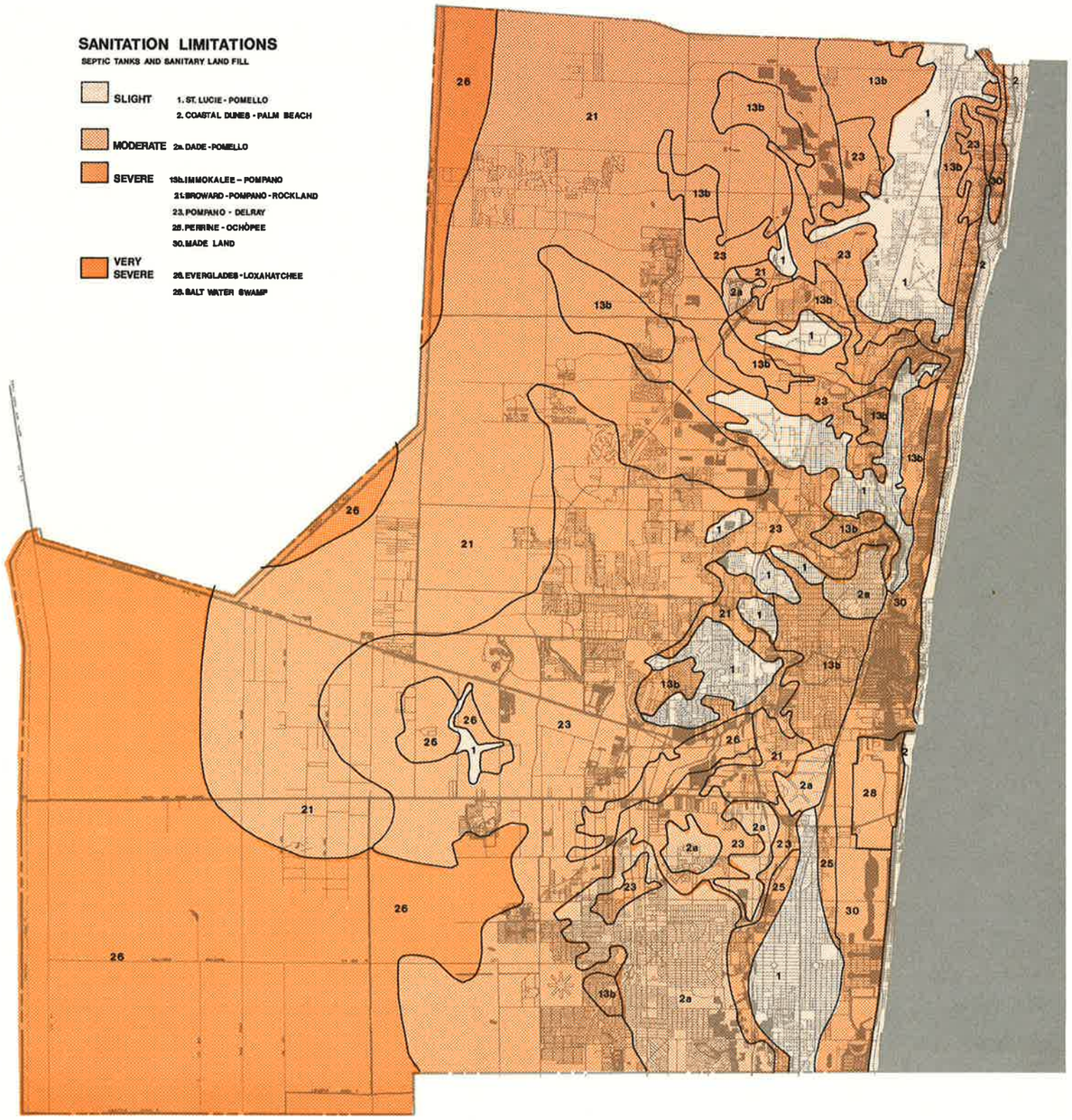
SEPTIC TANKS AND SANITARY LAND FILL

SLIGHT
1. ST. LUCIE - POMELLO
2. COASTAL DUNES - PALM BEACH

MODERATE
2a. DADE - POMELLO

SEVERE
13b. IMMOKALEE – POMPANO
21. BROWARD - POMPANO - ROCKLAND
23. POMPANO - DELRAY
28. PERRINE - OCHOPEE
30. MADE LAND

VERY SEVERE
26. EVERGLADES - LOXAHATCHEE
25. SALT WATER SWAMP



RECREATION: Well planned land use, on an overall basis, includes adequate provisions for recreation. Three broad recreational uses are considered here. They are: camp sites and picnic areas, golf courses, and playgrounds.

Though this interpretation is concerned with the effect of soils on recreational uses, an important corollary to use of soils for some recreational purposes is the existence of some attraction that will inspire people to choose the site for recreation. The existence of coastal dunes near the ocean beaches, for instance, make the dunes desirable picnic areas despite the limitations of the soils.

Camp sites and picnic areas normally involve reasonably comfortable areas suitable for eating outdoors, setting up tents, and the activities accompanying outdoor living for periods of several days. The selection of such sites is usually limited by other than soil qualities because there must also be attractions such as beautiful scenery, good hunting, fishing or swimming to interest campers. Accessibility and desirability of camp sites and picnic areas are greatly influenced by such soil properties as wetness, flood hazard and trafficability.

Playgrounds, as considered here, include city parks, football fields, tracks and other small areas where competitive sports are played outdoors. They must be level or nearly level, free from flooding or excessive wetness, easy to walk over, and have the capability to grow sod and ornamental plants.

Golf courses can make use of a rather wide variety of soil conditions if they permit a good balance between rough areas or hazards and fairways. The requirements of the fairways are mostly limited by soil features and it is on these limitations that the ratings are made. A fairway should be able to produce a good cover of grass, be well drained, be easy to move over on foot or light motor vehicle and not have excessive slope.

RECREATION LIMITATIONS

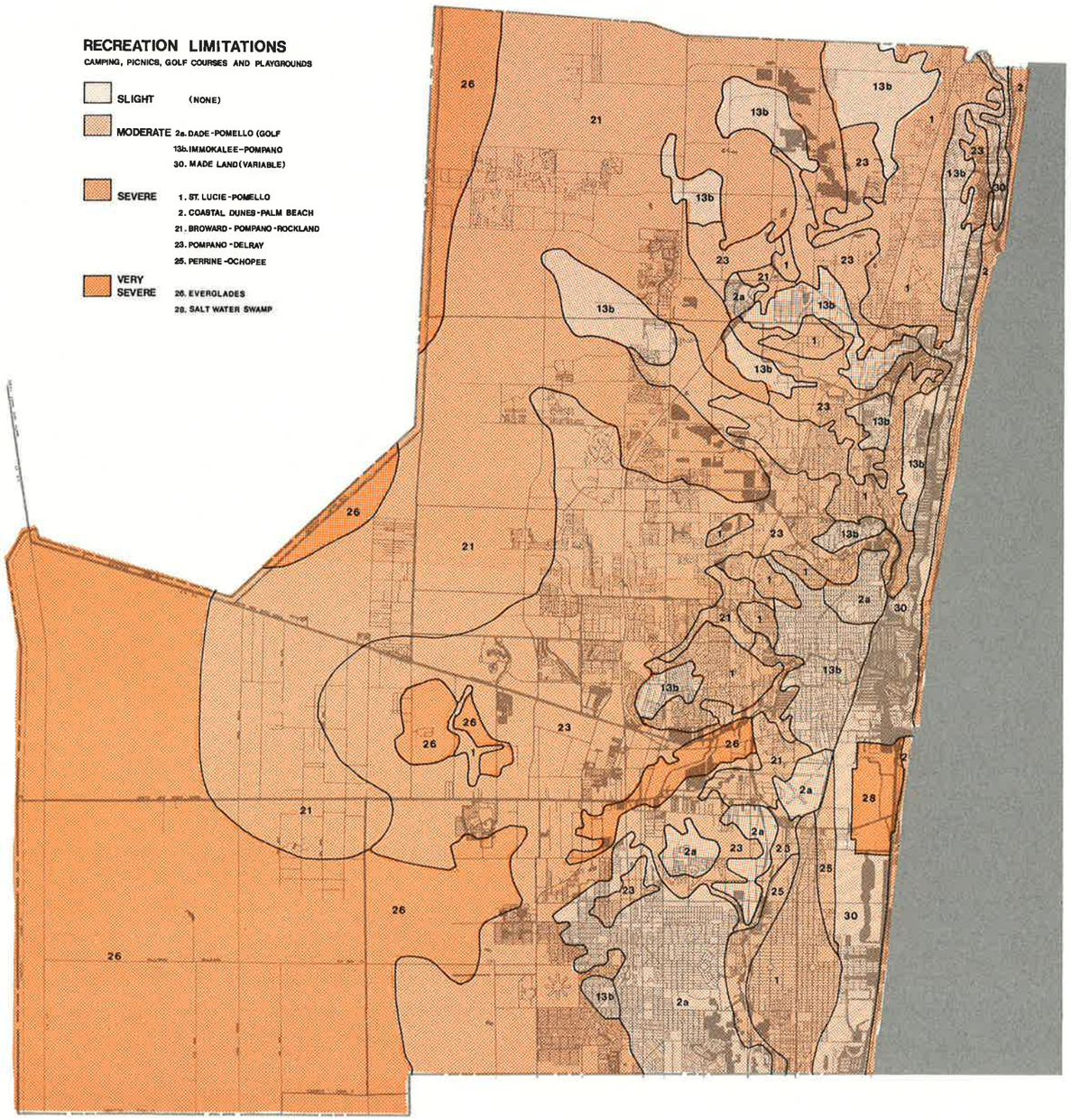
CAMPING, PICNICS, GOLF COURSES AND PLAYGROUNDS

SLIGHT (NONE)

MODERATE
- 2a. DADE-POMELLO (GOLF
- 13b. IMMOKALEE-POMPANO
- 30. MADE LAND (VARIABLE)

SEVERE
- 1. ST. LUCIE-POMELLO
- 2. COASTAL DUNES-PALM BEACH
- 21. BROWARD-POMPANO-ROCKLAND
- 23. POMPANO-DELRAY
- 25. PERRINE-OCHOPEE

VERY SEVERE
- 26. EVERGLADES
- 28. SALT WATER SWAMP



WATER QUALITY

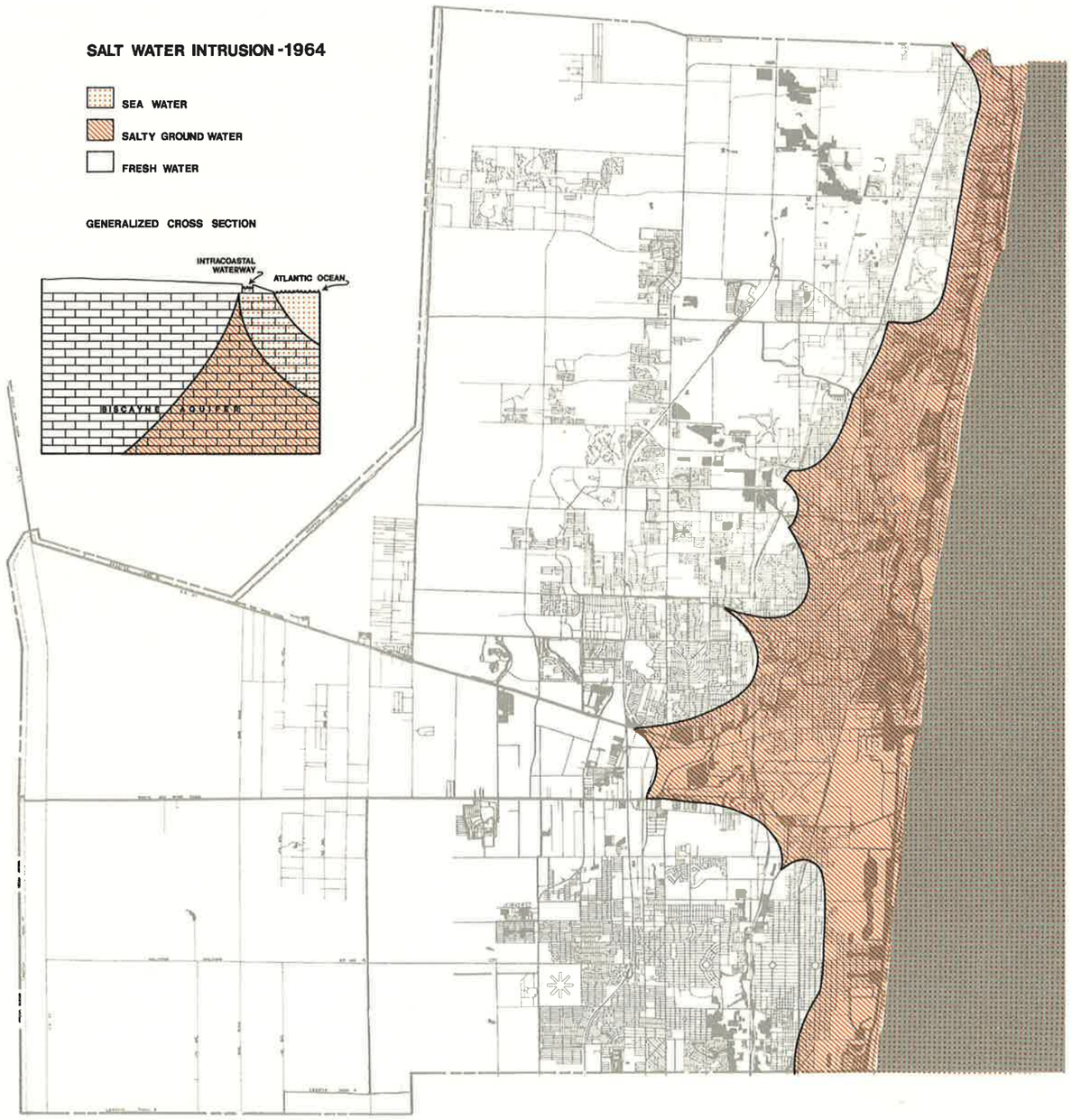
Broward County's water supply comes from the Biscayne Aquifer which underlies 3000 square miles in Dade, Broward and Southern Palm Beach Counties. This aquifer is supported primarily by rainfall, and in dry times, from canals connected to water conservation areas related to Lake Okeechobee. The water quality analysis included herein is limited; however, the County is presently developing a water management study under the guidelines of the Environmental Protection Agency.

There are two major factors that influence water quality in the Biscayne Aquifer; water pollution and salt-water intrusion. Both of these factors have direct relationships to man-made development.

POLLUTION: We are using pollution in the context of waste material from industry, untreated sewage, and fertilizer/insecticide runoff. Most of this pollution finds its way directly into the canals, and from the canals into the aquifer, the source of potable water.

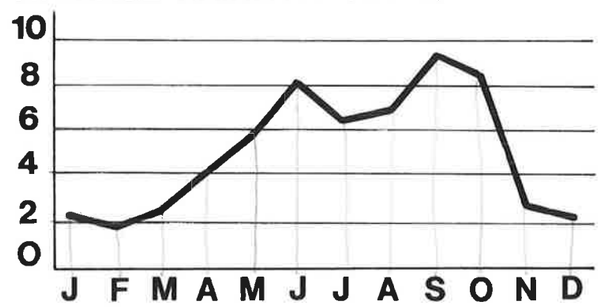
SALT WATER INTRUSION: Our explanation of salt water intrusion is summarized from Leaflet No. 5, "Water Control vs. Sea Water Intrusion," written by C. B. Sherwood and R. G. Grantham and prepared by the U. S. Geological Survey, 1966.

There are two man-made conditions which cause salt water intrusion: uncontrolled canal construction and the pumping from wells. The construction of effective drainage canals, cut far inland to reduce flooding of farms and expanding urban areas, drain off fresh water causing salt water to move upward from below and inland from the ocean. Intrusion is further increased by man's need to pump fresh water out of the ground for industry and human consumption, thus lowering the fresh water level even further and allowing the salt water to replace it.


SALT WATER INTRUSION -1964
SEA WATER
SALTY GROUND WATER
FRESH WATER
GENERALIZED CROSS SECTION
INTRACOASTAL WATERWAY
ATLANTIC OCEAN
BISCAYNE AQUIFER

AVERAGE TEMPERATURE

AVERAGE RAINFALL (INCHES)

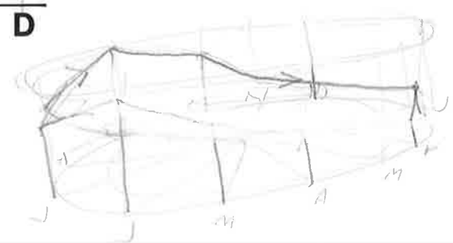


CLIMATE

Although Broward County is categorized as sub-tropical, it does have a change in climatic conditions which make it comfortable in summer and mild in winter. The average yearly temperature is about 75 degrees with a winter average of 65 degrees and a summer average of 85 degrees. These climatic conditions make the County a highly desirable resort area.

Two elements produce favorable climatic conditions in Broward County: The Gulf Stream and the Trade Winds. The Gulf Stream is that great ocean current flowing from the Gulf of Mexico around the tip of Florida and northward along the eastern coast passing close to land along Broward County. It has a strong stabilizing effect on the temperature. The Trade Winds are balmy breezes from 5 to 15 miles per hour which blow from the southeast year round, warming in the winter and cooling in the summer.

Rainfall in the area averages 50 to 60 inches annually with most precipitation taking place in the rainy season from June through October. Much of the rain is in the form of heavy showers which last only a few hours. The precipitation pattern results in a high percentage of sunny days.



SUMMARY OF ECOLOGICAL FACTORS

A summation of the ecological factors affecting development in Broward County is extremely difficult. This difficulty arises from the fact that given today's knowledge of ecological interrelationships, a recommendation of limited development potential would normally be made in an area exhibiting the many critical factors which exist in the County. However, due to the existing development in the County and the tremendous pressures being exerted for more development, most economic limitations to development resulting from ecological factors have been or can be overcome. This situation is self-perpetuating in that as marginal areas are developed at an increased cost over normal areas, the economics of the region adjust to meet this increase; then, based on this new economy, areas with more serious limitations can be economically developed. This situation can be seen particularly in the southwest part of the County where the most critical conditions of topography, soil conditions and flooding exist. This area, as a result, has experienced very little development to date, but, as the last remaining large area of undeveloped land in the County, it is experiencing increased pressure for urbanization.

In light of today's knowledge, it is known that even though it may be possible for an area to be economically developed, there are other less obvious and sometimes unknown changes which will or can result from development of marginal areas. These changes can occur in the ecological balances of existing conservation areas, increased salt water intrusion caused by changes in existing water tables, increased flooding potential, altered flood plain areas, decreased water recharge areas, andincreased damage potential to the Everglades and its numerous ecological sub-systems.

HISTORY OF MAN-MADE ENVIRONMENT

Broward County's brief history and rapid growth are significant factors in planning the future. To understand the man-made environment as it is today, we have undertaken a study of the County's historical influences and population, physical and economic growth patterns.

HISTORICAL INFLUENCE

The dawning of the 20th Century found the Broward County area brief in history, small in population, but as today, rich in golden beaches, river waters, and temperate climate.

The present-day Bahia Mar area has been the scene of existing Broward County history since 1838. It was the site of the Second Seminole Indian War fort from which Fort Lauderdale got its name. It was the romantic location, in 1875, of one of the five U.S. Houses of Refuge built to succor ship-wrecked sailors on the Florida coast. Later it was to become the home of Coast Guard Base Six.

Frank Stranahan, one of the first permanent settlers, arrived from Ohio in 1893 and established "Stranahan Camp", a series of tents which provided food and sleeping facilities for overland travelers on the New River in the vicinity of the long deserted Fort Lauderdale. New River, although only nine miles long, is the deepest river in the world for its length and width. Indian legend claims it appeared in a single night after a terrible shaking of the earth. By 1900, Stranahan had established a trading post on New River and was briskly trading with the Seminole Indians. At the turn of the Century, the emerging city of Fort Lauderdale boasted a post office, a school, Flagler's East Coast Railway, and a population of 52.

On October 1, 1915, after an unsuccessful attempt two years earlier, Broward County was formed from portions of Dade and Palm Beach Counties. The new county included the towns of Deerfield, Hallandale, Pompano, Fort Lauderdale, and Dania, as well as the communities of David, Colohatchee, and Progresso. The population was estimated at 800.

It is most appropriate that the County should be named Broward after the governor by that name, as it was during the last year of his administration (1909) that the first dredges were put to work in the Everglades. Although Broward's dream of draining the Everglades was never realized, it was the beginning of the construction of North New River Canal to Lake Okeechobee, and the County's first population boom. Fort Lauderdale soon became known as the Gateway to the Everglades, then the Venice of America.

1917 saw new roads and bridges constructed and five beaches in the County opened to the public. The opening of the road and bridge to Las-Olas-by-the-Sea was the first real attempt at tourist attraction. Florida Fever of the 1920's, new highways and Henry Ford's "Tin Lizzie" brought thousands of tourists and new residents to the area.

By 1920, Broward County's population totaled 5,135 and during the next ten years grew to 20,094, an increase of nearly 400 per cent.

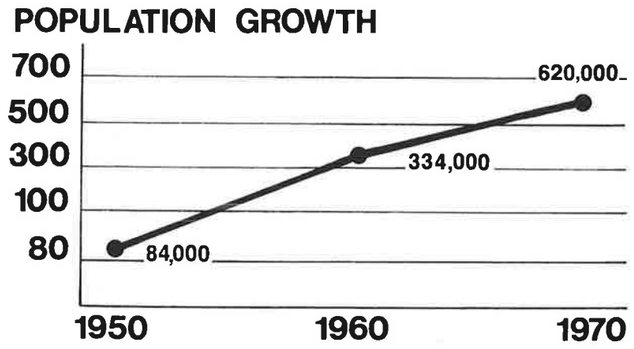
The City of Hollywood, built in 1921, is unique in that, unlike most coastal communities in Broward County, it did not grow, but rather was planned and built. Originally, Hollywood was the private dream city of Joseph W. Young. After having been involved with the development of Hollywood and Long Beach, California, he visualized the new Florida project as his crowning achievement. Hollywood was incorporated in 1925, and aptly coined, "Dream City Come True".

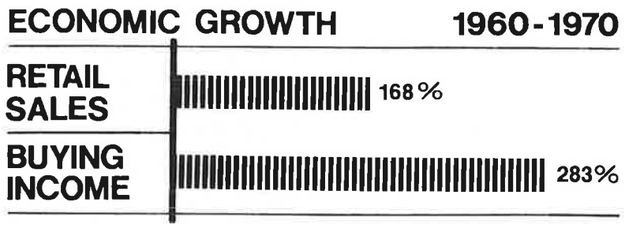
The 1930's found Broward County recovering from the Great Florida Land Boom, the hurricane of 1926, and the stock market crash of 1929, followed by the great depression. It also witnessed the development of Port Everglades, new road construction, active home building and renewed tourist attraction. The beauty of the surroundings, the healthful, vigorous climate and the undaunted determination of those first early settlers had destined Broward County's growth.

The post World War II years of the 1940's saw yet another land boom in Broward County. Unlike that of 1925, this was not a boom of speculation, but one of development. The area was vastly underdeveloped and ocean front property was in tremendous demand. It was during the 1940's that 32 1/2 acres of land and ocean front property between the Atlantic Ocean and the Intracoastal Waterway were purchased by the public. This area became Bahia Mar, the first yachting complex ever built, and an award winning national showplace when completed in 1949.

The purchase of the property was a remarkable demonstration of Broward County civic pride and initiative. One hundred twenty four individuals, companies and organizations subscribed for bonds; local businessmen, private citizens and Governor Gore spearheaded drives and donated funds to raise $600,000 in 23 days to purchase the property from the federal government. This community spirit set the stage for subsequent acquisitions of public beach property by the County. Although not as dramatic as the eleventh hour fund raising drive of the Bahia Mar property, these acquisitions were made with equal civic responsibility and foresight. There is still a projected deficit in public beach property needed to serve the County and its visitors, but a continuation of historical County pride and dedication will assure that Broward County beaches will remain one of the nation's most popular resort areas. By 1970, there were 407.5 acres of public beach open to County residents and visitors.

With a total land and water area of 1,218 square miles, two thirds of which is in conservation areas, and a 1970 population of 620,100, Broward County, today, is described in the 1972 Florida Almanac as ... "the fastest growing County in the United States".





POPULATION GROWTH

The post World War II boom marked the change of Broward County from semi-rural to the second highest populated County in Florida, surpassed only by Dade. Marinas, race tracks, parks, golf and country clubs replaced the world of Stranahan's Camp, but those seeking new horizons as a tourist, or a place in the retirement sun, now reap the benefits visualized by those early pioneers.

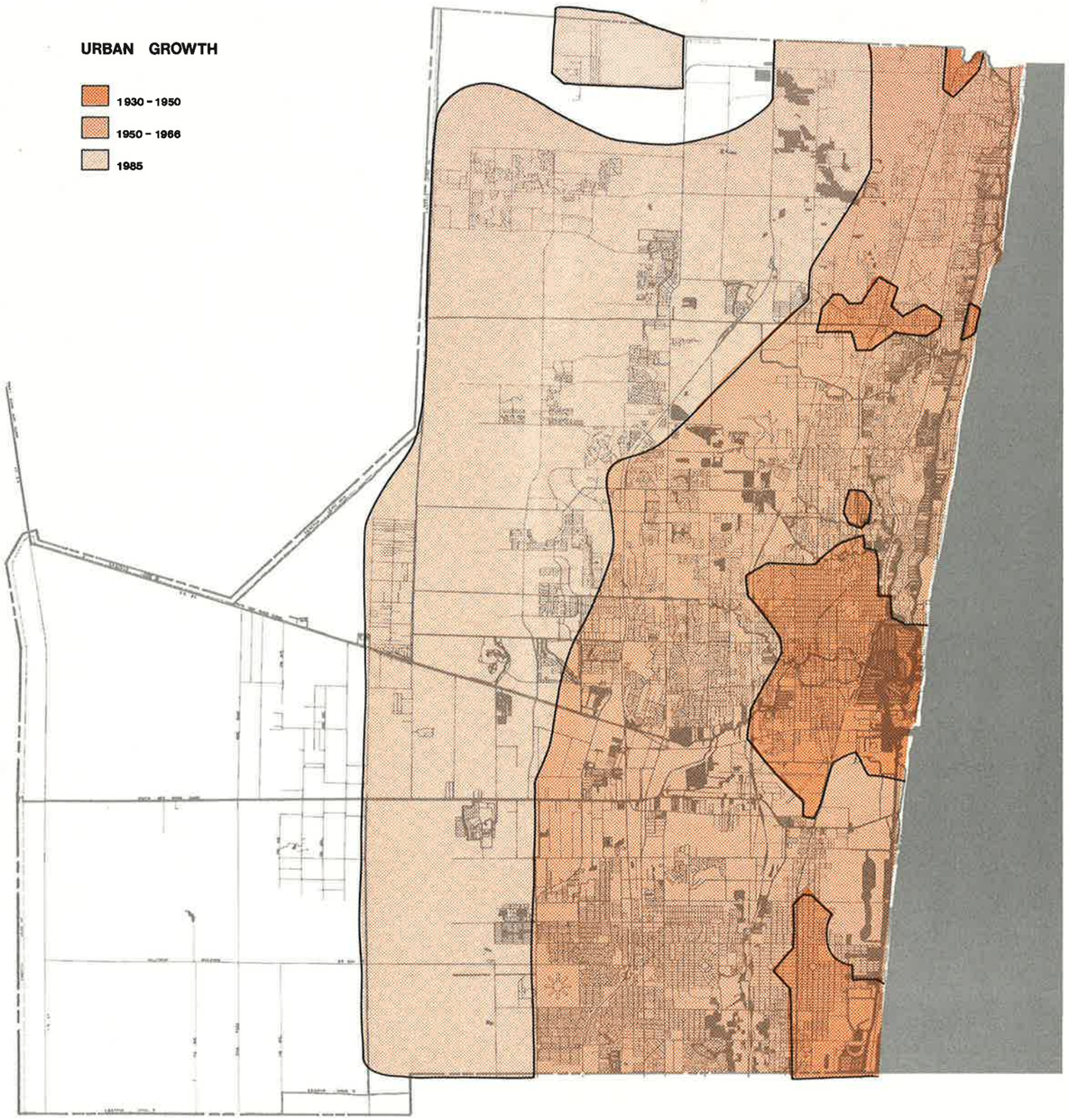
Drawn by the temperate year-round climate, extensive waterways and beautiful beaches, thousands of new tourists and residents each year make Broward County's population growth one of the most vigorous in the nation.

By 1951, only twenty years ago, the census reported a County population count of 84,000. By the end of the decade it had increased almost four times to 334,000. During the past ten years, the County's population has nearly doubled to 620,000 and by 1980, it is anticipated that Broward County will pass the one million mark.

ECONOMIC GROWTH

Economic growth in Broward County has paralleled the population and physical growths. Between 1960 and 1970 there was a 168% increase in retail sales; a 283% increase in effective buying income; and a 124% increase in manufacturing employment. The tourist industry plays an important role in the economic picture as demonstrated in 1969 when two million tourists visited Broward County.

In the last few years, Broward County has experienced expanding industrial growth with new companies such as Motorola, Systems Engineering, and Westinghouse moving into the area. The Broward Industrial Board has played an important role in attracting new industry to the County, and its efforts will certainly increase in the future.


URBAN GROWTH
1930 - 1950
1950 - 1966
1985

PHYSICAL GROWTH

Physical growth in Broward County is taking place as rapidly as the population growth. The expanding population has changed and will continue to change the physical character of the County as land is developed to meet the needs of these people. The resulting physical development can be grouped into three distinct geographical areas.

The first geographical area, along the eastern coastline, is characterized by high density residential, commercial and tourist-oriented development. Following the linear north-south directions of the FEC railroad tracks, Federal Highway (U.S. 1) and the Atlantic Ocean, the earliest development in the County took place.

The second geographical area is the central strip of land extending from U.S. 1 to the Sunshine State Parkway. Development in this area followed major east-west corridors and is typified by the indiscriminate sprawling of residential and commercial development that spilled over when the coastal area became fully developed.

The third geographical area is the western part of the planning area. Though most of this land is undeveloped, it certainly will not remain so for long. A great portion of this property is owned by several large corporations and some of them are presently developing "new communities".

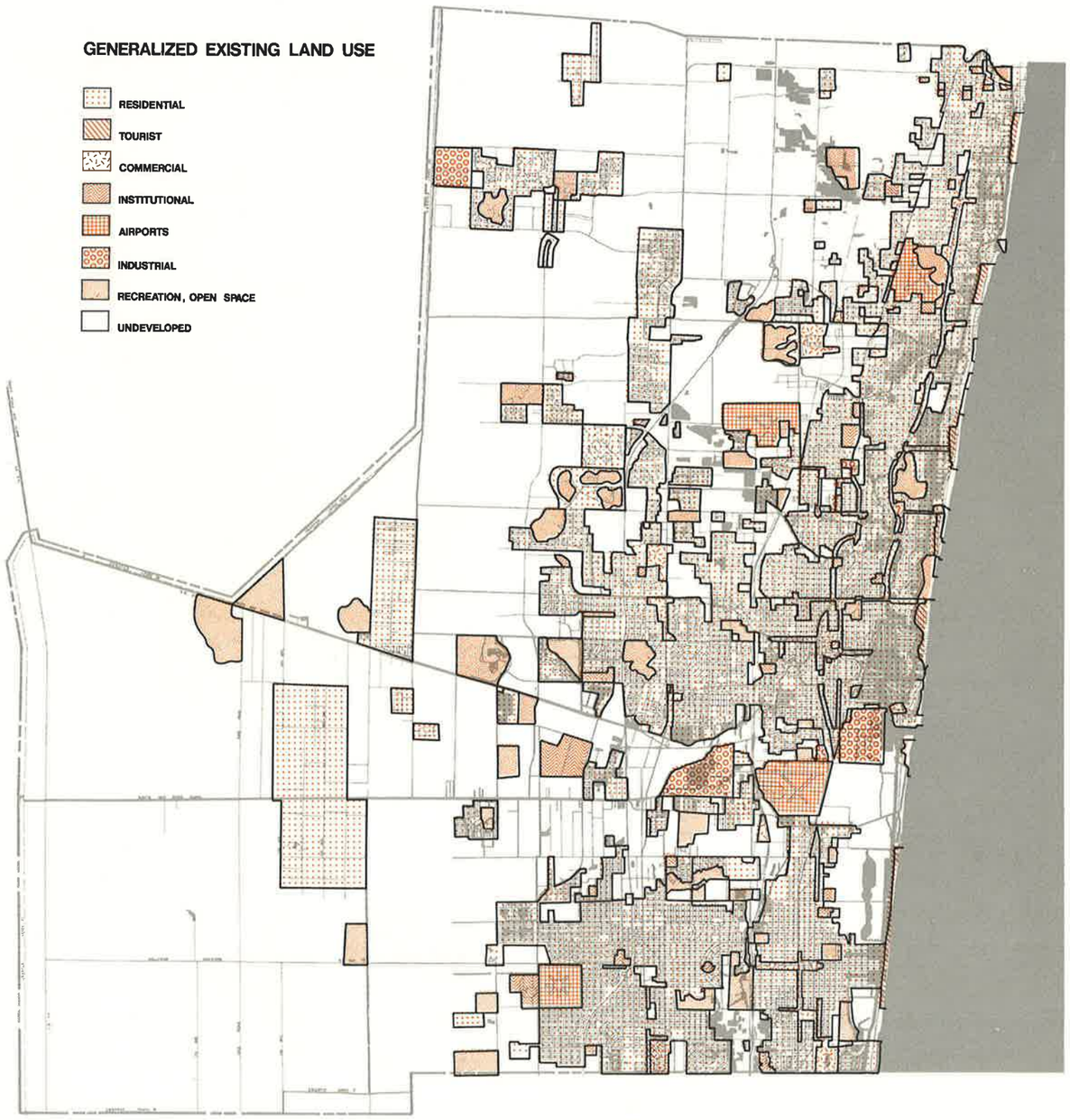
As the population continues to increase in Broward County, the western frontier will have to absorb much of the ensuing physical growth with a "filling in" process taking place in the other two areas.

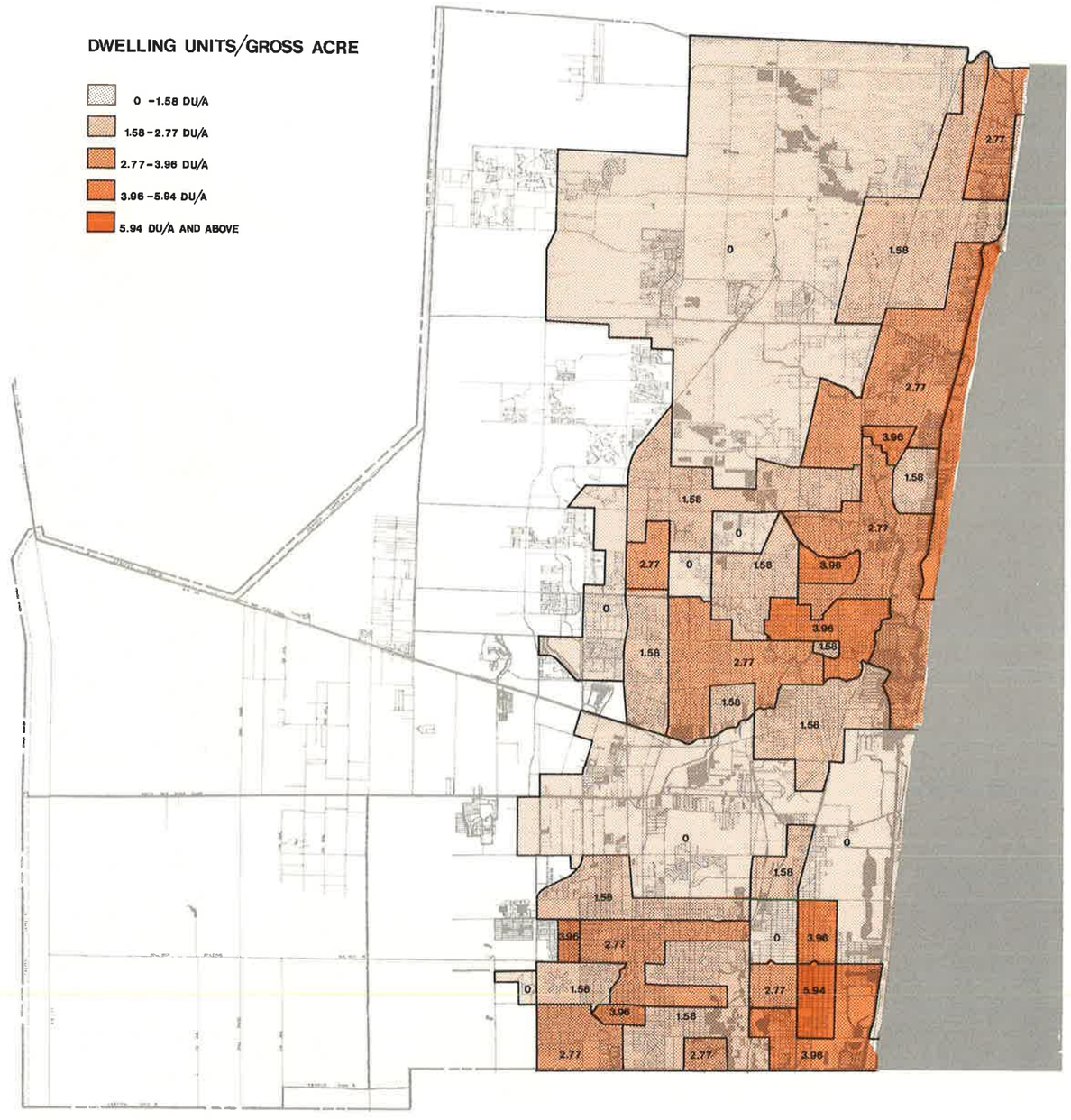
It is the intent of this study to illustrate new ways of developing and managing the land in the western portion of the planning area so that the uncontrolled sprawl that has taken place to date can be directed toward a more rational pattern of development and conservation.

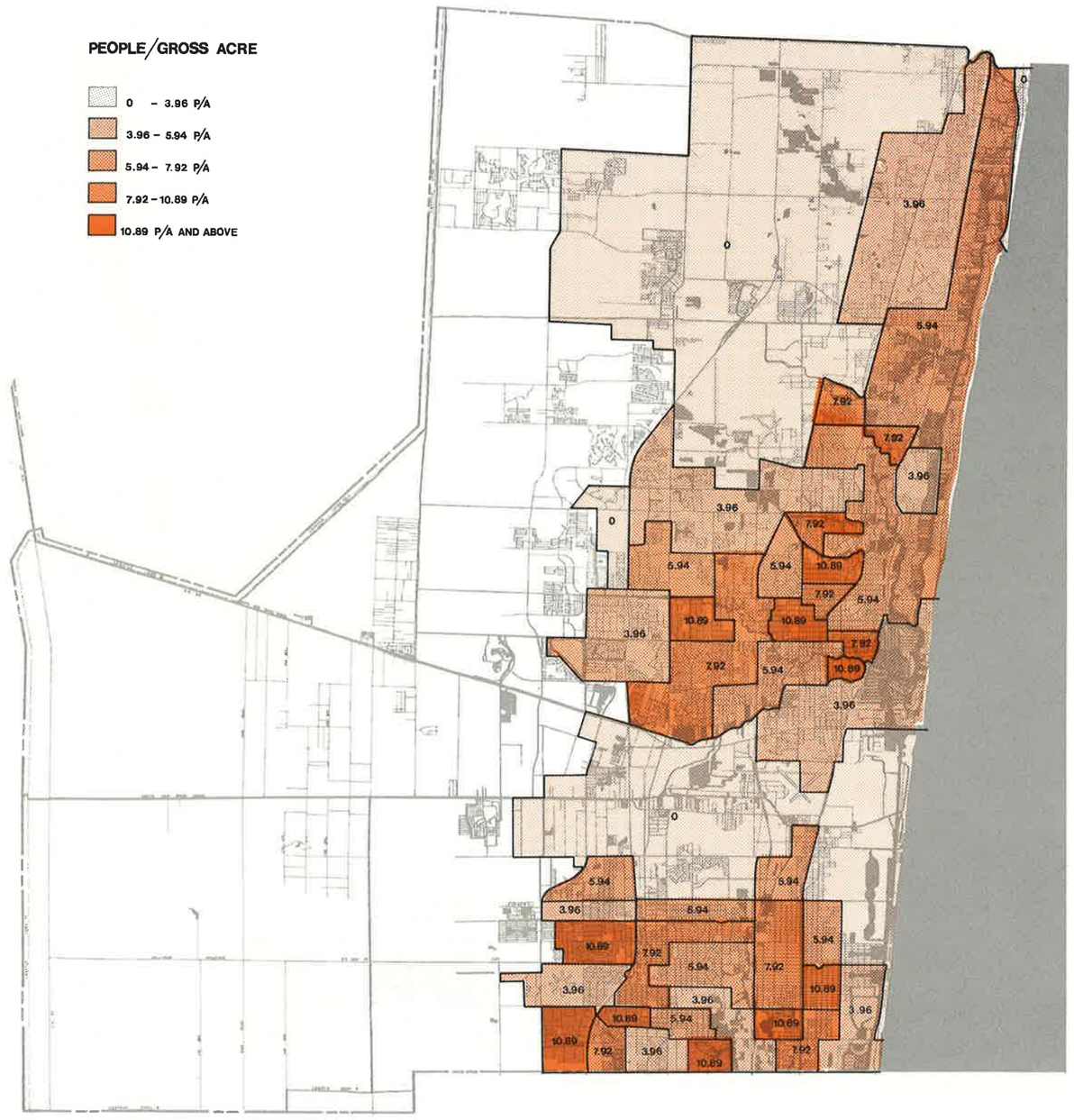
It is the further intent of this study to seek means of remedial action for the already developed areas to facilitate transportation, re-vitalize commercial activity, and provide a basis for the inevitable re-development of areas as they become obsolete or uneconomical.

GENERALIZED EXISTING LAND USE

- RESIDENTIAL
- TOURIST
- COMMERCIAL
- INSTITUTIONAL
- AIRPORTS
- INDUSTRIAL
- RECREATION, OPEN SPACE
- UNDEVELOPED




DWELLING UNITS/GROSS ACRE
0 -1.58 DU/A
1.58-2.77 DU/A
2.77-3.96 DU/A
3.96-5.94 DU/A
5.94 DU/A AND ABOVE
0
1.58
2.77
3.96
5.94


PEOPLE/GROSS ACRE
0 - 3.96 P/A
3.96 - 5.94 P/A
5.94 - 7.92 P/A
7.92 - 10.89 P/A
10.89 P/A AND ABOVE
0
3.96
5.94
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ARCHITECTURAL STYLE AND TRADITION

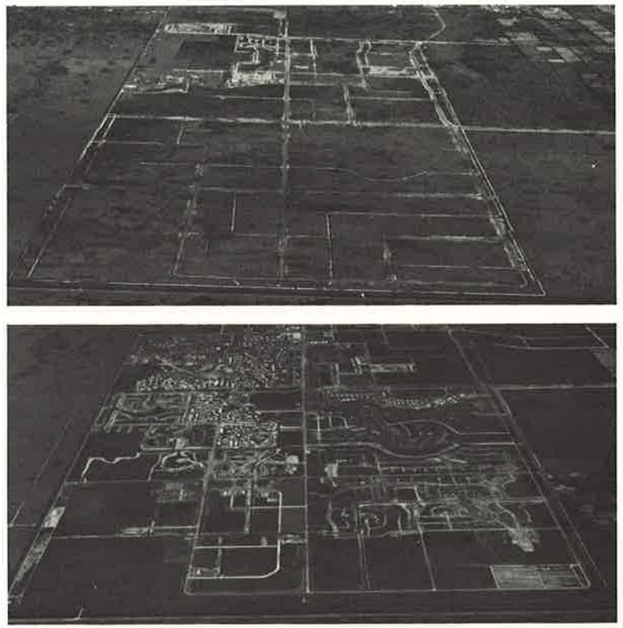
Broward County's architectural style is not of an indigenous nature; nor does it contribute to a coherent urban form. Undistinguished in character, it is similar to suburban areas in many American cities. Observation reveals a lack of concern in reflecting climatic factors in the design of most buildings; a feeling of "sameness" prevails over the great majority of the County. There are a few buildings whose architecture is worth noting; the City Hall in Fort Lauderdale, Pier 66, and the architectural theme of Inverrary. These examples fall short of excellence, but they are a marked improvement above the dull and monotonous white "boxes" which line most streets in Broward County.

DEVELOPMENT PATTERNS

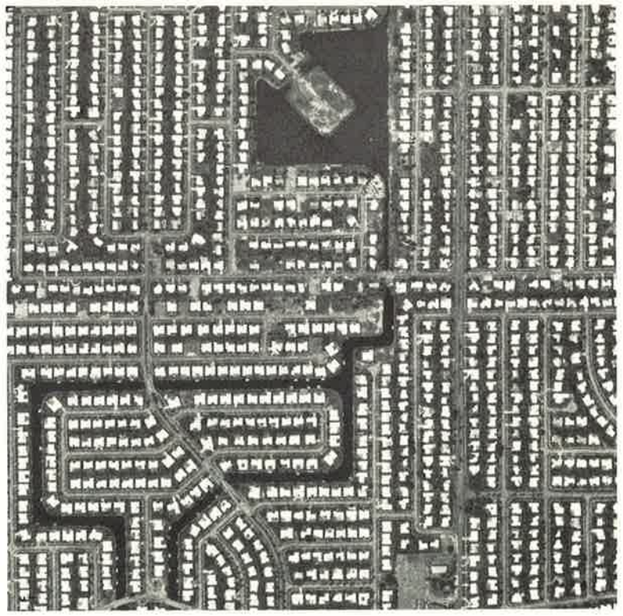
The future pattern of Broward County is being shaped right now. The continuation of land development in the western portion of the planning area, together with the ad hoc approach to municipal services, will extend urbanization to the front door of the Everglades.

Present development taking place in the western portion of the county typifies the future evolution of Broward County as it is being shaped today. The planning of some of these new areas is being done by qualified professional consultants, but Master Plans and Land Use Plans should be only the beginning of a coordinated landscaping and architectural design theme that is aesthetically consistent throughout these developments.

Beset by overwhelming "growing pains", the beauty and future potential of Broward County cannot be met with an apathetic approach. Quality of development must be proportionate to quantity and economy if present undesirable development patterns are to be redirected.



Coral Springs, 1967-1970



QUALITY OF MAJOR ENVIRONMENTAL AND URBAN DESIGN ELEMENTS

Broward County is faced with an environmental crisis. Although the County has been spared some of the problems common to urbanization, there are many areas in which opportunities to maintain or improve the environmental quality of the County have been partially or totally ignored. The following subjects are presented in the context of these unrealized or threatened opportunities. A major problem common to most areas is the indifference of residents who place less value on those things communally shared than on that which they own as individuals.

URBAN FOCAL POINTS AND COMMERCIAL DEVELOPMENT

Urban focal points should be encouraged not only to strengthen city services to developed areas but also to reverse the fragmentation which has occurred and is now occurring in many areas of the County. In evaluating the urban areas of Broward County, it becomes evident that, like urban areas elsewhere in the United States, they lack variety and individuality. Development has proceeded in a haphazard manner with little or no thought to site design, building relationships or landscaping. The resulting uniformity has led to dreary and sterile commerical development.

Opportunities to create focal points of urban development can be found in any urban setting, be it regional business centers (downtowns), shopping districts or planned shopping centers, and even in strip developments. There are several areas within the County where sound planning has led to this type of development. Pier 66 would have to be the most familar but other areas such as Pompano Fashion Square, Hollywood Fashion Square, the landscaped areas along Las Olas Boulevard and the strip commercial along the eastern portions of Sunrise Boulevard, Oakland Park Boulevard and Commercial Boulevard are all areas possessing a particular identifying quality.

RESIDENTIAL DESIGN

Residential development in Broward County has been a process of spontaneous urbanization, treating land as a commodity rather than a limited resource. Land speculation has occurred at an unprecedented level with residential design becoming a function of the market place. Developers have standarized, packaged and arranged for rapid distribution and easy financing. The "uglification" which has resulted, although especially apparent in the western portion of the county, is present in many residential areas. The major difference between the developing western areas of the county and the older developed areas is the lack of vegetation in the former; otherwise, the actual quality and style of housing is quite similar. Density patterns in Broward County are very evident even to the casual visitor. There seem to be two basic categories, high and low, with no mixing of the two. High density design unfortunately has fared no better than the low density. Control of building types, heights, facing materials as well as site design is lacking.

This is not to say that all residential areas within the county are bad. There are areas such as the Inverray development in Lauderhill, the Emerald Hills development in Hollywood, and some condominiums along the beach in Hallandale, plus others where the design and relationship of buildings and site are handled very well. The photographs on pages 37 and 38 illustrate examples of planned residential areas in other parts of the country.

PATIO HOUSES, DENSITY: 6 UNITS/ACRE
BAHL PATIO HOMES, SUNNYVALE, CALIFORNIA

These patio homes are 1-1/2 story A-frame structures and are sited on 40 and 45 foot wide lots. They provide 1,220 square feet of living space and sell for $27,000.

TOWNHOUSES, DENSITY: 6 UNITS/ACRE
UNIVERSITY PARK, LOS ANGELES, CALIFORNIA

This development consists of townhouses with garages, a 40-acre park, community centers, pools and a green belt enhancing the environment. The townhouses are priced from $27,900 to $38,000.

TOWNHOUSES, DENSITY: 7 UNITS/ACRE
THE BLUFFS, NEWPORT BEACH, CALIFORNIA

More than half the land in this development was devoted to community parks, green belts, a marina, community centers, and pools. The original site was flat and it was graded up so that all units have a view of the water. The townhouse units are priced from $30,950 to $34,000.

GARDEN APARTMENTS, DENSITY: 8 UNITS/ACRE
SIXTY-01, SEATTLE, WASHINGTON

As a focal point for the project the developers created a 10-acre man-made lake. The northern pine trees were very carefully preserved - either by planning around, or relocating them. Rentals range from $150 to $600.

GARDEN APARTMENTS, DENSITY: 26 UNITS/ACRE
OAK CREEK, SAN FRANCISCO, CALIFORNIA

The developer took great care in preserving the 300-year old oak trees and provided man-made amenities to include a central community building, five outdoor pools, lighted tennis courts, two 18-hole putting greens and a mini-shopping mart. The rental range is $180 to $370.

GARDEN APARTMENTS, DENSITY: 44 UNITS/ACRE
THE MEADOWS, LOS ANGELES, CALIFORNIA

These high density apartments show how lush vegetation and landscaping improve the environment. All of the landscaping was put in at a cost of $500 per unit. Beyond the beauty of vegetation, it also helps reduce noise and creates areas of privacy for ground level units.

MAJOR OPEN SPACE

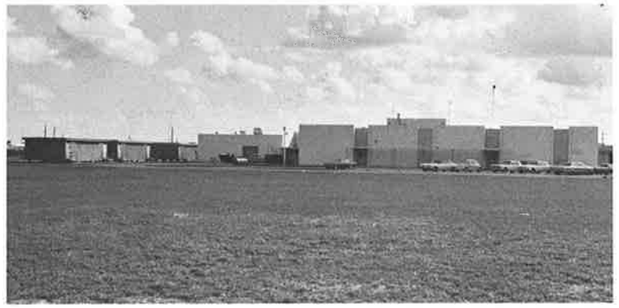
The ocean, beaches and waterways, three of the most valuable assets of the county, offer an open space and recreational potential far greater than is present in most urban areas. They have been utilized, however, only to a limited degree. Those individuals enjoying easy access to these major forms of open space represent only a small portion of the total population. Instead of viewing open space as a system relating to the living patterns of the entire community, open space and recreational areas in Broward County consist of many small unrelated parcels scattered throughout its 400 square miles, a situation fostered in part by the many jurisdictional boundaries within the County.

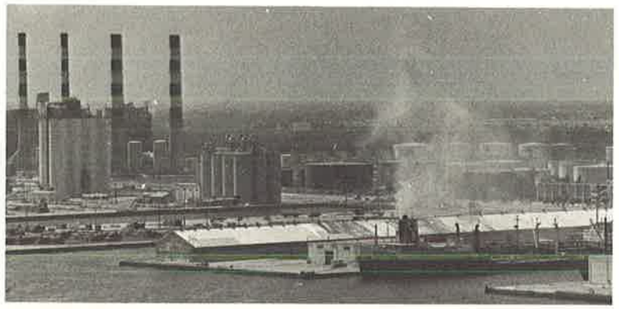
The open space plan prepared by the Broward County Area Planning Board recognizes that these deficiencies must be corrected and that recreation and open space must be considered for its own sake, reflecting the increase in time and investment in leisure time pursuits of the area's residents.

EDUCATIONAL AND COMMUNITY FACILITIES

The locational, functional and architectural standards of educational and community facilities of Broward County suffer from the same "business-as-usual" look shared by most communities throughout the County. Functionally, and architecturally, the shared elements of public life, such as schools, churches, libraries, medical centers, and theatres should be active forces within the community.

Broward County, with its rapid growth rate, has many opportunities for imaginative design and construction of educational and community facilities. The Nova educational park in West Broward County, the new schools in Cooper City and Lauderhill and the medical complex south of downtown Fort Lauderdale are steps in the right direction to achieve excellence in the public environment.





INDUSTRIAL DEVELOPMENT

Industrial development in Broward County is noticeably lacking, a situation resulting in the fact that manufacturing represents only 10% of the jobs in the County compared to a national average of 25%. The industrial development that does exist is heavily concentrated within two areas located in the central portion of the County. Several Industrial Park areas are at other locations. The Port Everglades area, containing several hundred acres controlled by the Port Everglades Authority, is primarily devoted to heavy industries which rely upon adjacent port facilities. The second area is located to the west of the port slightly west of the Ft. Lauderdale-Hollywood International Airport. It is those two areas people relate to when they think of industrial development within Broward County.

Since these areas offer all the facilities required by most industrial firms, it is likely that future industry will also choose these general locations. To promote the visual and environmental quality of the County, as well as to lessen the depressing effect upon adjacent land uses, new industry should be planned industry no matter what location is chosen. Planned industrial areas should continue to be encouraged, and in some cases obligated, to control odors, dust, noise and other undesirable conditions they may create. The addition of open spaces, screened loading and storage areas, off-street parking, planting and similar amenities may be added to make industrial areas more human working environments, as well as buffers to adjacent land uses. Attractive well-planned industrial areas will not only contribute to the economy but will also have a desirable effect on Broward's environmental quality.

WATER RESOURCES

Broward County abounds in both fresh and salt water. The Biscayne Aquifer underlying the county is a highly productive fresh water bearing system of limestone, sandstone, and sand which extends from land surface to depths of 200 feet near the coast. Although the aquifer yields tremendous quantities of fresh water to municipal well fields in the area, its porous nature also makes it vulnerable to salt water intrusion. Careful management is a prerequisite to an adequate supply of fresh water for present and future needs. A Water Management Study is currently being proposed by the County and it will outline what steps are needed to insure a fresh water supply for the future.

The ocean not only serves as a boundary for Broward County, but along with the Intracoastal Waterway and the County's many canals, it becomes part of the area's climate and way of life. Together they serve as open space, a focus of major views, and a place of human activity. Unfortunately, the treatment of these water assets has discouraged their use by the general public. Much of the population looks upon the canals as private waterways to be enjoyed by a select few. Water resource development, recreation and open space should be integrated with design concepts that will develop public awareness of Broward's water resources and provide a new range of recreation for all to enjoy.

PUBLIC UTILITIES

Public roads, open spaces, buildings, utilities and signs account for over 50% of the built environment. The public sector thus has greater control over the quality of what is built than any other single participant. Unfortunately, its standards for achievement often fall far below these expected from the private sector. Before it can influence private development, Broward County must first look to what it builds for itself. Standards of quality, performance and visual appearance must share equal priority with the concerns of maintenance and cost. Greater emphasis on planning and design elements of the public environment such as street rights-of-way, utility hardware, street lights and signs, sidewalks, street furnishings, and landscaping will contribute greatly toward ensuring an aesthetic quality within the urban fabric.

MOVEMENT AND CIRCULATION SYSTEMS

The movement system of a city or county, to a great extent, dictates its physical form. It unifies the urban pattern, provides vistas and open space, and determines the character of development. Since the majority of citizens view the County while in motion, accessibility to its various parts is necessary to give the citizen the opportunity of exposure to all the diversity and excitement the County can offer. To accomplish this, the movement system should be strongly and logically designed and should offer various modes of travel.

Broward's existing circulation pattern is firmly established and any attempt to change movement channels already built would more than likely be accomplished by changing a two-way street to one-way, or widening existing streets. However, a well thought-out movement system, utilizing standards which recognize the many types of urban landscapes, can be applied to the developing portions of the County, as well as to those street improvement projects which will take place in the existing system. Such a system can provide perceptual pleasure to the citizen as well as being a means of transportation. The County is served by a bus system, but a stronger form of mass transit is clearly needed.

COMPOSITE URBAN FORM IMAGE OF BROWARD COUNTY

URBAN FORM IMAGE INTERVIEWS

An important part of a physical environment analysis includes the image of the County as viewed by its citizenry as well as the image as viewed by the Urban Designers. The methods used to obtain these images are described in the book, The Image of the City, by Kevin Lynch.

COMPOSITE URBAN FORM

Although the number of persons interviewed (55) represent only a small sample of the County's total citizenry, an attempt was made to include a fair cross section of age, employment and interest groups. Length of residency and locations of employment and residency were also widely represented.

The residents of Broward County are very cognizant of their image as a tourist-oriented community and concerned about unfavorable impressions visitors may have. The results of rapid growth and development, especially on the eastern coast area, are of great concern and the word "crowded" is dominant in their observations.

An overwhelming majority are mostly concerned about the condominiums and high-rises looming over the beach area, especially in the Hallendale and Galt Ocean Mile areas. The words "bad" and "horrid" are typical descriptions of the architecture of these buildings, but the larger objection is based on the fear that these structures threaten the beach areas, the most popular and one of the most important assets of the County.

Downtown Fort Lauderdale is considered "fair" to "bad" by 95% of those interviewed. "Should be torn down and started all over" was the general consensus about the downtown area, although the City Hall and new bank buildings were generally considered excellent or good examples of architecture. The Kennan Building often described as the "round" building, is a very

popular structure and was mentioned frequently as a favorable landmark. The 27th Street ghetto area is considered an "area to avoid".

Birch State Park, in particular, and other parks such as Holiday and Snyder are very popular retreats from the city and the only objection is that there are not more of them. The Everglades, Sawgrass and Loxahatchee conservation areas are treasured by the inhabitants as attempts to preserve nature in the County.

North-South traffic congestion on State Road 7, U.S. 1, and A1A is a "nightmare" to the drivers. Lack of traffic organization, sign proliferation and overcommercialization is an overwhelming cry from all groups. The same objections hold true of the major east-west thoroughfares of Commercial and Sunrise Boulevards. Las Olas Boulevard, however, was frequently referred to as "distinctive", "attractive", "well landscaped", and "a pleasure to drive on". Oakland Park Boulevard is also considered a "good image" as a thoroughfare with the exception of "too many signs" again being an objection.

The Las Olas Boulevard area and Pompano Fashion Square are the most popular shopping areas of the residents as well as noted points of interest. The downtown areas of the County were never mentioned as a pleasant place to shop.

Frequent general objections to over-commercialization pointed more directly to an overabundance of car lots on U.S. 1 and Sunrise Boulevard. King Car Sales, in particular, showed up often on the maps marked as "very objectionalbe", as were the bars and blighted commercial areas of Dania.

The Intracoastal Waterway, rivers, and canals in the area are considered a "good image". There is great concern however, especially among the younger groups, over pollution of the waterways and offensive odors from the canals. "Pollution prohibiting swimming" overshadows comments of "beautiful boat trips" and "scenic Florida". Waterfront communities, however, are considered the most desirable residential areas.

Coral Springs, Las Olas Island and the new communities of Inverrary and Plantation are exceptions to the attitudes toward housing in the County generally. The north end of Pompano, northwest section of Fort Lauderalde and areas west of 441 are most frequently referred to as "single family chaos", "urban sprawl", and "shacks".

Landmarks such as Pier 66 (unique architecture); Bahia Mar (resort atmosphere); and the Fort Lauderdale-Hollywood airport (vital), were easily identified and accurately located for the most part. Concem for the environment was readily apparent, also, in the mixed emotions displayed toward Port Everglades, for instance, second only to the beaches in popularity as a landmark and point of interest. Although the Port is considered "vital" and "a good tourist attraction", 59% of those commenting on the area once again expressed concern over the pollution problems resulting, specifically from the F. P. & L. smoke stacks.

Broward County residents love their scenic atmosphere, their beaches and their waterways. They are concerned about their ghetto areas, traffic congestion and sign proliferation of the major thoroughfares. They view air pollution, water pollution and condominum and housing congestion as threats to all those things they treasure in their environment.

IMAGE DIAGRAMS

Image diagrams represent a summary of the environmental image projected by the sampled citizenry of Broward County, as well as the urban design image observed by the Consultants. These images, or physical forms, can be classified into five types of elements: paths, edges, districts, nodes and landmarks. These elements are defined as follows:

PATHS: Channels along which people customarily, occasionally, or potentially travel. Typical paths are streets, transit lines, canals, and railroads.

EDGES: linear elements not used or considered as paths by the observer. They are boundaries or barriers between two areas such as shoreline, freeways (elevated), and dikes.

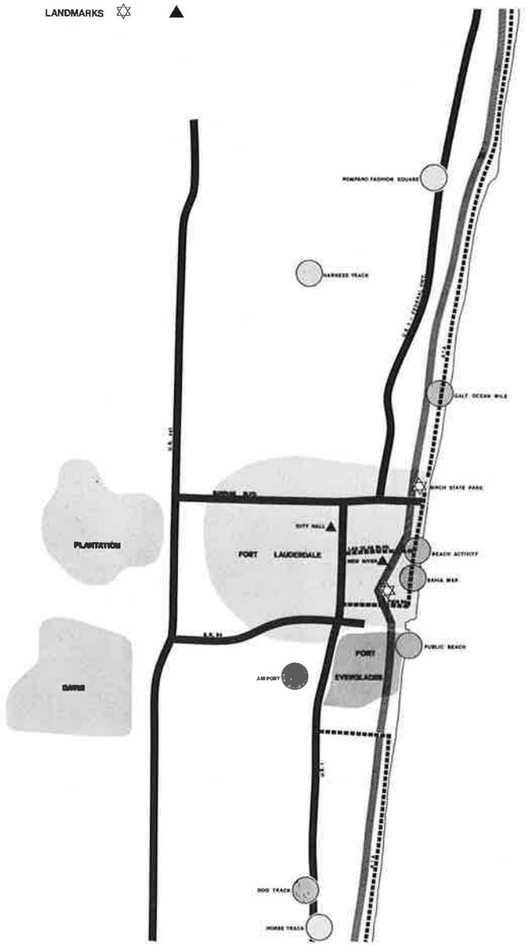
DISTRICTS: Sections of a city or county which persons mentally enter "inside of", and which are recognizable as having some common identifying character.

NODES: Points which a person can enter and which are intensive activity centers to and from a specific destination. Some examples of nodes are major street intersections, a campus, medical centers, or shopping centers.

LANDMARKS: Another type of reference point, but one in which the observer does not enter. They are external, and are usually simple physical objects; buildings, signs, stores, or a mountain.

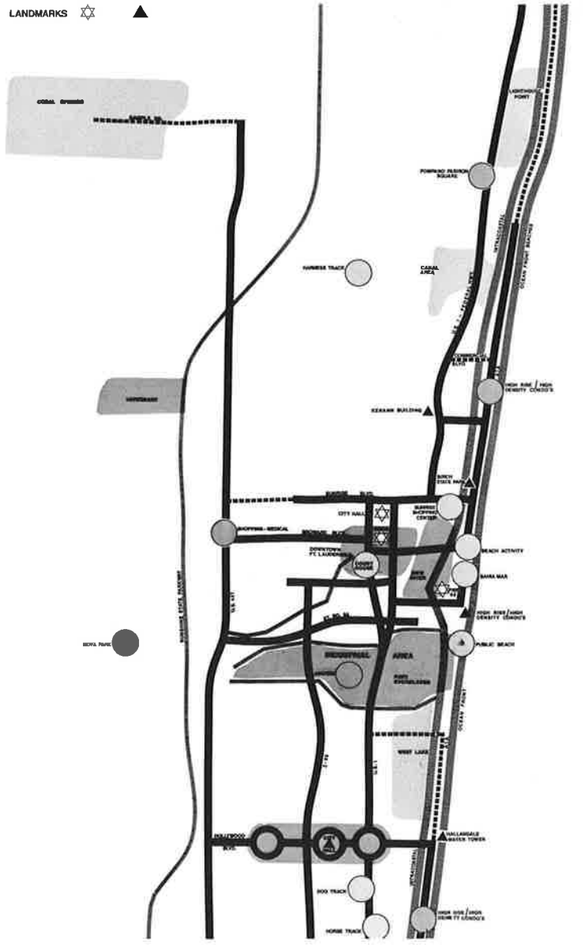
PUBLIC IMAGE

	MAJOR	MINOR
PATHS	▬	▬
EDGES	▬	▬
NODES	◉	○
DISTRICTS	▭	▭
LANDMARKS	✡	▲



URBAN DESIGN IMAGE

	MAJOR	MINOR
PATHS	▬	▬
EDGES	▬	▬
NODES	◉	○
DISTRICTS	▭	▭
LANDMARKS	✡	▲



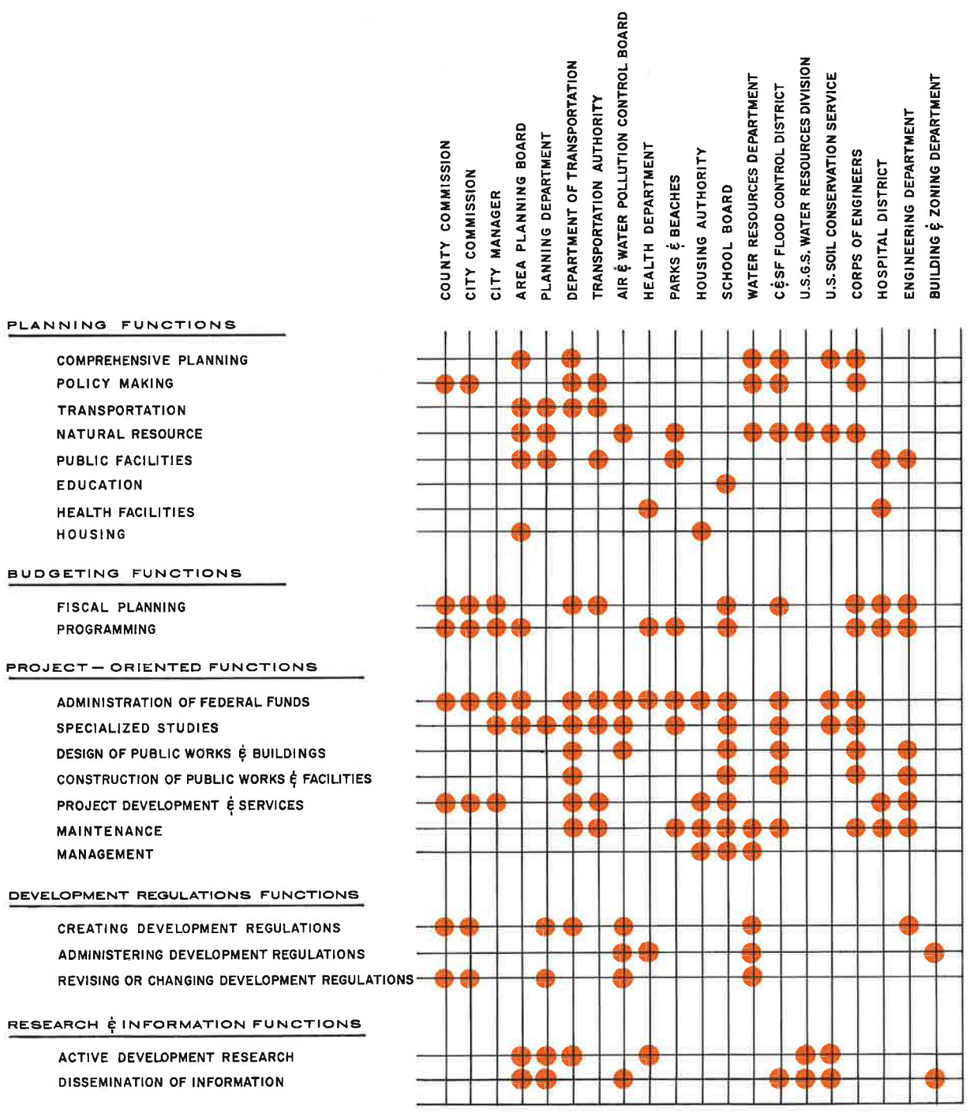
EVALUATION OF ENVIRONMENTAL AND URBAN DESIGN RESPONSIBILITIES RELATED TO THE PUBLIC AND PRIVATE SECTOR

PUBLIC DEVELOPMENT RESPONSIBILITY AND PROCESS

Planning, design and development processes are formulated in Broward County by various public agencies and departments. The following written summary and illustrative matrix show where these various planning and development decisions are made.

EXISTING PLANNING FUNCTIONS

TABLE 2



COUNTY COMMISSION

They are the chief administrative officers of Broward County and serve as its administrative and fiscal representatives.

The powers and duties of the Board are prescribed by the Constitution and State Legislature. They have the authority needed to effectuate the powers vested by Florida law and also have the right to levy taxes and maintain the Broward road system. County Commissioners can act only as a Board and they cannot delegate any of their governmental powers.

BROWARD COUNTY PLANNING DEPARTMENT

1. Maintains complete set of section tracings of unincorporated territory for use by Building Department, Engineering Department, Planning Department and the public.
2. Maintains City Limits maps and records, also records of annexations.
3. Maintains maps and records for a complete Street Naming System in Broward County.
4. Maintains maps and inventory records of County owned property.
5. Prepares and maintains a Master Plan for the unincorporated area.
6. Investigates and coordinates recommendations on requests for acquisition of land.
7. Analyzes and coordinates recommendation on preliminary subdivision plats for County Commission.
8. Maintains maps and index to records of zoning districts in unincorporated territory.
9. Receives and processes petitions for change of zoning districts and regulations and maintains records thereof.
10. Provides staff services, technical and clerical, for Zoning Board and County Commission of Zoning Petitions.
11. Receives and processes petitions for zoning text changes.
12. Prepares and maintains a coordinated plan of trafficways for unincorporated Broward County.
13. Prepares studies on Base Building Line requirements of future traffic ways for incorporation into the Zoning Regulations.
14. Makes miscellaneous studies and reports as requested by the County Commission, pursuant to Resolution creating the Department adopted March 15, 1960.
15. Provides liaison between the Board of County Commissioners and other governments and agencies concerning zoning.

BUILDING AND ZONING DEPARTMENT

This department enforces rules governing the construction of, alteration, addition or repair to any building or structure within the unincorporated areas of the County. The department determines zoning allowances for the property and issues building permits for new buildings, changes or alterations. It also conducts inspections of buildings and other structures.

ZONING INSPECTION: Certifies that proposed new construction will be sited in the correct district (zone) and in response to roving inspections or complaints received, acts to correct illegal uses of land.

BUILDING INSPECTION: Inspects the plans and actual construction for compliance with plumbing, electrical, and building codes.

EXAMINING BOARDS: Issues certificates of competency to electrical and mechanical, plumbing and general contractors.

HEALTH DEPARTMENT

The Health Department maintains a watch over infectious, contagious and chronic diseases, toxic substances and conditions which threaten the public health. Services are provided by physicians, dentists, engineers, nurses, sanitarians, and others via health centers and mobile units. Charges are limited to birth and death certificates and health cards. Law requires that it inspect public places with respect to sanitation, food service and threats to public health. Its staff works closely with private, professional, and community leaders in solving mental and physical health problems. It maintains records of births and deaths and data vital to the prevention of disease. It informs the public and supervises and administers a program that includes specially federally-funded projects, a capital program and other services.

DEPARTMENT OF PARKS AND BEACHES

This department's responsibility includes the acquisition planning, physical development, maintenance and operation of all parks and recreational facilities under the direction of the County Commission.

It submits its budget to the County Commission annually. It can enter into contracts for consultant or construction services.

WATER RESOURCES DEPARTMENT

Protecting the natural water resources of Broward is the prime job of this department. A comprehensive water management program, with strong emphases on salt water intrusion, grading and drainage, is a major activity. The department reviews all construction on platted land to assure proper elevation of roads and buildings.

ENGINEERING DEPARTMENT

The Engineering Department makes surveys, prepares plans and specifications and inspects road and bridge projects for the County. It also issues water and sewer permits and inspects work regarding County roads and rights-of-way. The Traffic Division erects and maintains traffic control devices and signs. The Special Assessment Division processes road improvements and assesses property owners for the improvements. The Lot Clearing Division issues orders to clear offending pieces of property. Engineering also handles orders for maps, plats, aerial photos and plans.

AREA PLANNING BOARD

The Area Planning Board was created by special Legislative action in September, 1959, with the primary objective of guiding the growth and development of Broward County in accordance with long-range plans.

The role of the Area Planning Board has been to formulate plans and proposals for the betterment of the total Broward area and to transmit such plans to the respective local government units. In addition, the Area Planning Board has the important duty of suggesting ways and means whereby the objectives of these plans and proposals may be realized, including cost estimates and methods of financing recommended projects.

The Area Planning Board has also been designated as a "clearinghouse review agency" by the Federal Office of Management and Budget. Local governments or governmental agencies filing applications for federal grants in all but a few excepted cases must have Area Planning Board approval of their projects. In granting approval, the Area Planning Board must determine, and state in the review report, that the project is consistent with comprehensive planning for this region, that it is consistent with functional planning to which the project relates, and that environmental, social and other factors are considered in granting project approval. In this capacity, the Area Planning Board fulfills a vital responsibility to examine constantly and evaluate all facets of long-range planning.

CITY COMMISSIONS

(Excerpts from Ft. Lauderdale Code Sec. 21)

"The Commission shall have the power to pass ordinances adopt resolutions, appoint by resolution all appointive officer, boards, and employees specified in this Charter as not being in the classified services, and exercise all other powers herein provided."

"The Commission has the authority to establish priority for public actions and expenditures."

CITY MANAGERS

(Excerpts from Ft. Lauderdale Code Sec. 61)

"The City Manager shall be responsible to the City Commission for the proper administration of all affairs of the City coming under his jurisdiction, and to that end he shall:

1. Exercise control, direct, and supervise all activities of the municipal government, except as otherwise provided in this chapter.

2. See that all terms and conditions imposed in favor of the City or its inhabitants in all contracts including leases and public utility franchises are faithfully kept and performed; and upon knowledge of any violation thereof, to call the same to the attention of the City Attorney and the City Commission, and it is hereby made the duty of the City Attorney to take such legal steps as may be necessary to enforce the same when so directed by the City Commission. (Ch. 63 - 1335, & 13).

3. Recommend to the City Commission for consideration such measures as he may deem necessary or expedient in the interest of the City. (Ch. 63-1335 &14).

4. Keep the City Commission fully advised as to the financial conditions and needs of the City, and at such times and in such detail as may be specified submit to the City Commission for its consideration an annual budget. (Ch. 63-1335, & 15).

5. Advise and consult with all officers and official heads of the several departments of the City relative to the affairs of such departments, and to make recommendations to the City Commission respecting such department.

6. Permit no contact to be let for the construction of public improvements, unless same is approved by the City Commission after public advertisement for bids, except emergency construction as provided by section 160 (b). (Ch. 57-1322, &61 (j); Ch. 59-1281, & 6, Laws of Florida, Special Acts 1957, 1959).

7. Prepare and submit to the City Commission, after the close of each fiscal year, a complete report of the operation and business of the City for the preceding fiscal year (Sp. Acts. Ch. 67-1384, & 9).

8. Sign all bonds, contracts and agreements of the City of Ft. Lauderdale.

9. Perform such other duties as may be prescribed under this Chapter, or may be required of him by motion, direction ordinance or resolution of the City Commission. (Laws of Fla., Ch. 65-1540, & 16).

BROWARD COUNTY HOUSING AUTHORITY

The Broward County Housing Authority was established by the Board of County Commissioners to provide low-rent public housing in the unincorporated area of the county for low-income families and senior citizens. The Authority can apply for Federal funds in order to proceed with its public housing program. Policies of the Housing Authority are made by five unpaid commissioners, who are appointed by the Governor with the approval of the County Commissioners.

BROWARD COUNTY TRANSPORTATION AUTHORITY

1. Serves as the representative of Broward County in promoting the Planning and Development of a comprehensive public transport system in Broward County.
2. Satisfies the transport needs of the residents of Broward County through operation and management of related transportation facilities.
3. Serves as a monitor of all transportation projects (regardless of their development stage) undertaken in Broward County, to insure compatability with overall transportation plans; and that future demands for movement of people and commodities are satisfied.
4. Keeps abreast of transportation developments on the Federal, State and County level to evaluate properly and advise of new methods for funding transportation and traffic projects.
5. Establishes, operates and manages mass transportation facilities (all modes) within Broward County and provides for their proper operations with contiguous counties on a regional basis.
6. Develops, operates and manages ancillary facilities for mass transportation such as, but not limited to, transfer terminals, parking, service and maintenance facilities.
7. Coordinates the operation, management and maintenance of a regional traffic signal control system within Broward County.
8. Provides peripheral traffic and computer service to other county and city agencies, as requested and when feasible.
9. Establishes, operates and manages parking lots and garages at the locations recommended by the BCC or as required to provide efficient traffic operations.
10. Develops, operates and manages transfer facilities for the efficient movement (transfer) of cargo, such as inter-modal truck terminals and bulk terminals for transport related commodities.
11. Provides liaison between Department of Transportation and all county and city functions, related to transportation and traffic.

BROWARD COUNTY AIR AND WATER POLLUTION CONTROL BOARD

The Broward County Air and Water Pollution Control Board consists of nine (9) Board Members appointed by the Board of County Commissioners, having a staff of a Pollution Officer with technical and enforcement personnel to administer the rules, regulations and policies of the Board, and the State Department of Pollution Control. The purpose and prime objective is to work with the people and industry of Broward County to reduce pollution in all areas of Broward County while reserving the right to penalize any recalcitrant violators who fail or ignore their obligations to correct the determined pollution problem in the time allotted for disposition.

Other objectives are to develop an inventory of air and water quality and to monitor solid waste disposal and noise pollution.

HOSPITAL DISTRICT

The District establishes, contracts, operates, and maintains such hospital or hospitals as may be established or constructed by said district; authorizing and providing for the issuance and sale of bonds for said district; authorizing and empowering such Board to borrow money upon the note or notes of said district; authorizing and providing for the levy and collection of taxes and providing for any other lawful taxation for the payment of the said bonds and the interest thereon, and the payment of said notes or interest thereon, and authorizing and providing for the levy and collection of additional taxes for the repair and maintenance of said hospital or hospitals; authorizing and providing generally the powers and duties of said Board on its behalf; and authorizing the establishment of a hospital staff and nursing school; and providing for a referendum.

SCHOOL BOARD

(Excerpted from Ch. 230 of Florida Code)

PRESCRIBE MINIMUM STANDARDS - The School Board shall adopt such minimum standards as are considered desirable by it for improving the district school system.

CONTRACT, SUE, AND BE SUED - The School Board shall constitute the contracting agent for the district school system.

CONTROL PROPERTY - Retain possession of all property to which title is now held by the School Board and to obtain possession of and accept and hold under proper title as a body corporate by the name of "The School Board of Broward County, Florida", all property which may at any time be acquired by the School Board for educational purposes in the district; manage and dispose of such property to the best interests of education.

SCHOOL PLANT - Approve plans for locating, planning, constructing, sanitating, insuring, maintaining, protecting, and condemning school property as prescribed in Chapter 235, and as follows:

(a) School building program- Approve and adopt a district wide school building program, indicating the centers at which school work is to be offered on the various levels, the type size, and location of schools to be established, and the steps to be taken to carry out the program. This program shall be a part of the long-time program for the district and, insofar as practicable, shall be based on the recommendations of a survey made or approved under the direction of the department of education.

(b) Sites, building and equipment -

1. Select and purchase school sites, playgrounds and recreational areas located at centers at which schools are to be constructed, of adequate size to meet the needs of pupils to be accommodated;

2. Approve the proposed purchase of any site playground or recreational area for which district funds are to be used;

3. Expand existing sites;

4. Rent building when necessary;

5. Enter into leases or lease-purchases;

7. Provide for the proper supervision of construction;

8. Make or contract for additions, alterations and repairs on buildings and other school properties;

9. Insure that all plans and specifications for buildings provide adequately for the safety and well-being of pupils, as well as for economy of construction by having such plans and specifications submitted to the department of education for approval; and

10. Provide furniture, books, apparatus and other equipment necessary for the proper conduct of the work of the schools.

(c) Maintenance and upkeep of school plant - Provide adequately for the proper maintenance and upkeep of school plants, so that children may attend achool without sanitary or physical hazards and provide for the necessary heat, lights, water, power, and other supplies and utilities necessary for the operation of the schools.

CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT

Purposes of the District are: (1) Water conservation; (2) Water supply, for urban areas, wildlife, and agriculture; (3) Flood control; (4) Preservation of desirable levels of fresh water in the ground; (5) Prevention of salt water intrusion from the ocean; (6) Preservation and enhancement of fish and wildlife -- accomplished by preserving large tracts of wilderness and marshes in a natural state; (7) Public recreation; (8) Navigation.

The District operates and maintains an extensive system of primary canals and levees; pumping stations; spillways, dams, and salt water barriers; plus hundreds of smaller structures. The Army Corps of Engineers constructs the works, and the FCD takes them over, as they are completed, for permanent operation.

The District and the cities, counties, drainage districts and individuals who have their own secondary water management facilities work closely together. The FCD provides means of removing and storing flood waters in rainy seasons, and re-supplies fresh water as needed in dry times.

FLORIDA DEPARTMENT OF TRANSPORTATION

The Department of Transportation serves the cause of intermodal transportation by developing or stimulating the advancement of all forms of modern transportation within the state.

The department is responsible for the planning design, construction, maintenance, and traffic engineering of state owned highways and all structures related thereto. In liaison with federal, county, and the city highway and public works agencies, it sustains their respective engineering and construction projects with varying degrees of responsibility depending upon right-of-way ownership and the applicable regulations. It has the authority to acquire rights-of-way and enter into contracts for services.

U. S. ARMY CORPS OF ENGINEERS

The U.S. Army Corps of Engineers in Florida is the leading federal agency in Florida which is responsible for major resources development. Peninsular Florida extending westward to the Aucilla River near Tallahassee is under the direction of the Jacksonville District of the corps, while the Panhandle area of Florida is the responsibility of the Corps' Mobile, Alabama District.

In addition to the development of water resource projects designed to meet specific localized problems, the Corps undertakes planning for long-range coordinated development of water resources of entire river basins, when directed to do so by Congress.

Corps studies are comprehensive in scope and include consideration of navigation, flood control, water conservation, domestic and industrial water supply, water quality, management and improvement, protection of fish and wildlife, recreation, protection and enhancement of environmental quality and other potential uses of water. The Corps also has a responsibility for beach erosion control and has done extensive studies on flood plain zoning.

Each Corps study is fully coordinated with local, state and federal agencies with expertise in specialized fields. Preparation of Environmental Impact Statements, as required by the National Environmental Policy Act of 1969, is also a function of the Army Engineers office in connection with all federal civil works projects.

The Corps also is responsible for issuing and denying permits for any type work in the navigable waters of the United States and for identifying and requiring federal permits for any type industrial effluent which is deposited in the nation's navigable waters. At the Corps' discretion, an Environmental Impact Statement can be required as a requisite for a federal permit for any type activity associated with use of the navigable waters.

U. S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION

The U. S. Geological Survey undertakes:

1. Preparation of topographic, geologic, and hydrologic maps.
2. Inventory of national water resources and study of areas of special water problems.
3. Classification of the Federal lands for minerals and water-power potential.
4. Supervision of mining and oil and gas development on Federal and Indian lands.
5. Fundamental research in topography, geochemistry, hydrology, geology, geophysics, and related sciences.
6. Publication of maps and reports giving the results of these investigations.

Through its Water Resources Division, the Survey is responsible for appraisal of the quantity and quality of our water resources, for interpretive studies of areas of existing or potential water problems, and for research in the field of hydrology and related sciences.

The National Water-Resources Data Network maintained by the U. S. Geological Survey in cooperation with the States and other Federal agencies is the chief source of basic water data in this country. The stream gauging network consists of about 7,400 stations on rivers all over the United States. The groundwater network consists of about 3,500 observation wells. More than 1,300 water-quality stations are maintained to determine chemical properties, sediment content, and temperature of surface waters. The water facts collected by these networks are used by other Federal agencies, State and County officials, engineers and economists, community planners and civic organizations as the basis of plans for use, development, and conservation of water resources.

As water problems have multiplied, overlapped, and grown extremely complex, data collection, interpretive studies, and research are increasingly necessary to solve problems of water and management. The Survey's water research programs are concerned with such problems as: effect of dam construction on downstream river channels; control of evaporation and evapotranspiration; land subsidence due to withdrawal of ground water; depletion of ground water and falling water tables; encroachment of sea water into fresh water; and sediment debris introduced into river channels by urban construction activities.

Modern computer techniques have been successfully applied to the collection of water data and to water research. Some aspects of both quantity and quality of water can now be automatically and continuously recorded, and the results are brought together in the computer to produce a variety of significant data.

Many different operations and skills are involved in water investigations. In the appraisal of underground water supplies geologists determine the character and extent of the rock formations in which water occurs. Engineers measure and study streamflow, floods, and changes in stream channels. Chemists analyze the water to determine its chemical quality and suitability for particular uses. Mathematicians, physicists, electronic engineers, ecologists and other scientists participate in many aspects of water research.

U. S. SOIL CONSERVATION SERVICE

It is the Soil Conservation Service's policy to work with people, including groups and units of government, on projects related to soil and water resources.

SCS helps them plan and implement conservation decisions as rapidly as their resources will permit, and encourages them to make conservation decisions as far in advance as is reasonable and feasible.

SCS assistance is normally channeled through soil and water conservation districts, such as Palm Beach-Broward Soil and Water Conservation District.

PRIVATE DEVELOPMENT RESPONSIBILITY

The private developer in Broward County must assume a major responsibility in insuring a quality environment. Broward County is fortunate to have several large developers who have retained qualified planning consultants to develop their programs for future growth. These developers also work closely with local governmental agencies and departments in order to gain community support for their efforts. The quality of their developments may be questioned on a personal basis, but overall they do make a conscious effort to build a quality environment.

On the other hand, Broward County, because of its size and growth rate, has a great many "land speculators" who want to make the quick dollar and get out before the problems they have created become evident.

It is usually the individual who suffers from the action of such land salesmen. Purchasers of the land are not aware of the problems; it may be subject to flooding, roads and utilities may not be built for several years, road crowns and house floor elevations have to be built to County standards.

The County is presently working on certain controls and regulations which hopefully will put a halt to this practice and insure that developers present a clear picture of their plans. These controls and regulations will be outlined in Part III of this report.

CONCLUSION

The Broward County area and indeed most of the southern tip of Florida constitute a paradox. The paradox stems from the existence of two highly diverse and contradictory conditions. First given the results of the studies of the existing soil conditions, topography, surface and subsurface water, and vegetation which are used today by planners, architects, and engineers for the evaluation of property and which form the basis for recommended land uses, a recommendation of only limited potential would be made. This recommendation would further state that prior to any development, additional research and detailed studies would be required in order to evaluate more accurately the potential impact of development on conservation areas, flooding, water supply, salt intrusion and possible effects on the Everglades. In addition, if these conditions existed anywhere else, the area would in all likelihood be by-passed for development due to the adversely high development cost which would be encountered.

The second element of the paradox is the region's development. This element is also a result of the natural conditions effecting the area, namely, a highly favorable climate and the breathtaking beauty of the region.

These two conditions thus comprise the paradox. Should development be encouraged in an area which, based on today's knowledge, should not be developed, or should development be discouraged in an area which, based on incomplete knowledge, has nonetheless overcome the economic constraints of development and is experiencing a strong demand for additional growth.

This paradox not only faces the planners but also the public officials and the existing and future residents of the area. The final solution will come from not only the planners but from the County's residents and their elected officials.

Development has been the overriding force which has shaped the physical form of Broward County. The rate at which this development has taken place has not allowed for planning and design decisions to catch up. Presently, as in the past, comprehensive planning has not been an important issue in the County. This is not to say that as the public becomes more aware of a need for action that elements of planning such as densities, water quality, and traffic problems have not made the headlines, but rather that there has not been a real commitment to long-range comprehensive planning. Pressures which have been building for twenty and thirty years have driven public officials to seek immediate and short-range solutions to these pressures.

In Broward County, an area characterized by this prodigious rate of development and limited land areas, a normal commitment to the future will not suffice. The County must make a real commitment of both time and money and provide dynamic leadership if the bright promise of the future is to be realized and the County is to be all that it can be and should be.

The recommendations, goals, objectives and concepts which are contained in the next two parts of this report constitute an Urban Design and Urban Form direction for the County. This report is not an end in itself, but rather a conceptual framework and point of departure for future policy decisions, and a guide to a continuing effort and a basis for future direction of the County's growth. These efforts and this direction must be backed up by a major commitment by the County's residents and their elected officials.

LIMITATION OF STUDY

A study of the soil and flood zone information presented in this report indicated that a more detailed investigation of ecological factors must be done before a physical plan for the southwestern portion of the County could be realized. This detailed study was not a part of the Consultant's work program and would have to be made at a future time. Based on this conclusion, it was recommended that no physical planning or urban form studies should be made for this portion of the County until such a detailed study was completed.

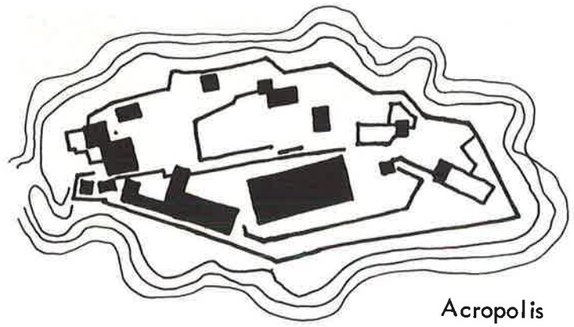
This recommendation was rejected by the Area Planning Board and the County Commissioners. It was their opinion that the area would be developed regardless of the soil limitations and flooding problems. It was their further opinion that developers are willing to pay the dollar price to improve the land by removing poor soil (muck and peat) and replacing it with good soil to insure the proper road and floor elevation to overcome flooding.

The Consultants, as professional planners, are of the opinion that the impact this type of development policy could have on the conservation areas, the flood zones, the water supply, and even the Everglades, should be studied in depth.

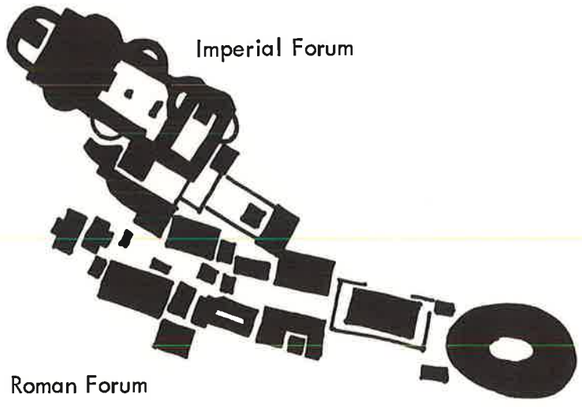
In order to complete the work program, the Consultants have taken the position that any land use and urban form concepts presented in this study DO NOT reflect detailed natural ecological factors, but are based primarily on alternative patterns of physical growth.

2 NEW ALTERNATIVES AND DIRECTIONS IN URBAN FORM

APPRECIATION OF URBAN FORM



Acropolis



Imperial Forum

Roman Forum

The analysis in Part I develops a picture of Broward County today in terms of its physical environment and the administrative process that created that environment. Part II studies the alternative design concepts of Urban Form which can give direction to development in Broward County.

Urban Form has played an important role in the planning of cities throughout history. The historic civilizations of the Egyptians, Chinese, Greeks, and Romans, all developed and planned their cities with an acute awareness for Urban Form.

The Egyptions, with their massive pyramids, created urban form at a scale not repeated in history. The Chinese Forbidden City of Peking is an expression of harmony with nature, not dominance over it.

The Greeks were the first people to make a conscious effort to organize space by the placement of important religious and governmental buildings at prominant locations. Acropolis in Athens is probably the best known example of urban form in the history of Greek architecture and planning. Careful attention was given to the placement of the buildings in relationship to each other as well as the composite image the grouping created. The proportions and sizes of spaces were based primarily on human measurements.

While the Greeks related their architecture and spaces to the human scale, the Romans related their architecture and planning to the political power and organization it served.

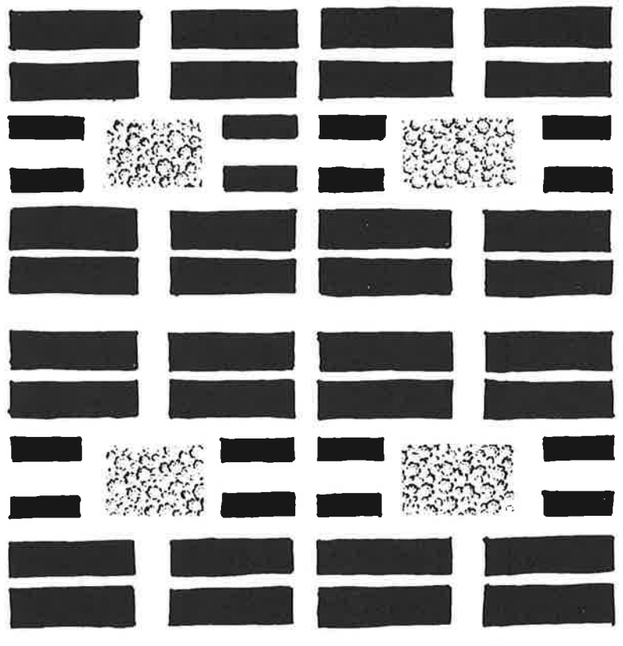
The basic theme of Roman urban form is evident in the Imperial Forum. The buildings that comprise the Forum are individual objects connected by colonnades. These buildings and colonnades were used to form a series of large rectangular spaces along a northwest axis. The concept of enclosed space played an important role in all Roman planning, not only in Italy but in their colonies throughout the world.

The past few paragraphs briefly illustrate the concern that urban form has played in the planning

of historic cities. The role urban form and design has played in the early history of city planning in the United States should also be pointed out. Cities like Washington, D. C., Philadelphia and Savannah are distinguished examples. Washington, D. C. and Philadelphia are well known for their historic buildings, linked by tree lined boulevards and open space. The design principals and concepts around which these cities were originally planned are still being followed today. Savannah differs from Washington and Philadelphia not only in size but in the fact that it was not a governmental center. For this reason and others, the plan and urban form of Savannah deserve further comment.

The city's urban form, or three-dimensional expression, is seen in the cellular units of family houses which in turn make up the larger cell of the square and related blocks. The grid of the major streets divides the city physically into four square-centered communities. These communities, in turn, are visually linked by a web of green spaces (the squares) and green links (the tree lined boulevards) which overlie the street system. This simple concept of urban form has allowed Savannah to grow by <u>design</u> through the integral relationship of architecture and land planning.

It is in the spirit of this historic background that we will develop goals, objectives and alternative urban form and land use concepts for Broward County.



Savannah

GOALS AND OBJECTIVES

URBAN FORM GOAL AND OBJECTIVES

It is evident that urban form in Broward County has several problems. A three-dimensional environment is being built in the County, but the parts and pieces do not add up to a qualitative whole. The problems of visual disorder and chaos are, for example, evident to anyone driving along U.S. 1 -(Federal Highway.) The urban form goal and inter-related objectives attempt to direct a physical form which will facilitate the ability of a person to comprehend the organization of the County's physical pattern.

The comprehension of urban form in Broward County combines five closely interrelated, but distinct, functions:

Orientation

Legibility

Imagery

Site Uniqueness

Variety and Exposure

The following urban form goal and interrelated objectives are developed to meet the above functions.

GOAL: URBAN FORM

To create the highest order of human environment in Broward County by realizing an urban form that arranges and treats major form-giving elements and determinants like buildings and structures, paths of circulation and open space, through creative urban design using variety, contrast, change and preservation of natural amenities.

OBJECTIVE: ORIENTATION

A well structured urban environment will guide a person to and from any point in the County with a minimum of confusion and mental stress.

OBJECTIVE: LEGIBILITY

A person should be aware of entering and leaving the urban area. A strong differentiation should exist between the urban environment and the rural environment. An unnatural break is not wanted, but at the same time, endless sprawl is undesirable.

OBJECTIVE: IMAGERY

After leaving or entering the urban area the observer should be able to recall a clear image of the County's form. This image may also be desired for the various cities within the County. The overall image must be maintained in order to allow full orientation and location of the observer at any point.

OBJECTIVE: SITE UNIQUENESS

Certain natural or man-made site characteristics should be identified and retained to create and maintain the image of the County. These characteristics are the physical determinants to which the urban design goals and objectives respond to in order to achieve an urban form which emphasizes their uniqueness and enhances their existence.

OBJECTIVE: VARIETY AND EXPOSURE

The County should consist of a variety of environments and these environments should be expressed to increase their exposure to residents and tourists and, in turn, generate a desire to experience that variety.

URBAN DESIGN GOALS AND OBJECTIVES

Urban Design goals and objectives follow the Urban Form goal and objectives. These goals and objectives relate to design and planning that must take place within the various land use elements, as analysed in Part I, in order to strengthen the visual and functional character of Broward County.

URBAN FOCAL POINTS AND COMMERCIAL DEVELOPMENT

GOAL

To develop urban focal points that strengthen the visual and functional identity of existing and future commercial areas and lessen the fragmentation of such development.

OBJECTIVES

Encourage the revitalization of existing downtown areas (Ft. Lauderdale, Hollywood, Pompano Beach).

Encourage quality design and location of planned shopping centers to strengthen existing and future development.

Encourage a more efficient and attractive use of highway commercial land areas.

Encourage the location of major buildings of community importance in highly visible sites.

Encourage the clustering of large, taller building, or important activity centers, expressing the functional importance of these centers.

RESIDENTIAL DESIGN

GOAL

To encourage residential design and planning which offer a variety of identifiable neighborhood and community living environments.

OBJECTIVES

Encourage the design and distribution of residential housing types throughout the community.

Encourage residential developments which place design controls and design review procedures on all development within it, so as to insure quality and visual continuity over the long range development period.

Encourage more interest, individuality and character in the planning and design of residential areas.

Encourage street tree planting and landscape design for the purpose of identifying and improving neighborhood and community environment.

Encourage quality architectural design that considers climatic and ecological factors.

DETACHED HOUSES
205 ACRES
1427 D.U.
6.9 D.U./GROSS ACRE

TOWNHOUSES
205 ACRES
1431 D.U.
7 D.U./GROSS ACRE

VARIED HOUSING TYPES
205 ACRES
1445 D.U.
7 DU/GROSS ACRE
DETACHED HOUSES
SEMI-DETACHED HOUSES
TOWNHOUSES
TOWNHOUSE APTS.

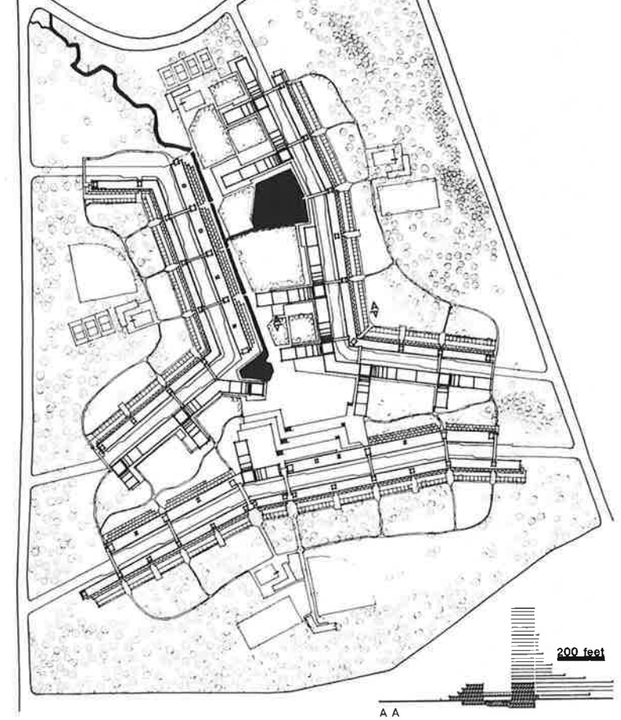
HOUSING CLUSTERS AND APARTMENTS

205 ACRES
2800 D.U.
13.7 D.U./GROSS ACRE
PHASE 1 (UPPER)
SEMI DETACHED & DETACHED HOUSES
TOWNHOUSES
PHASE 2 (LOWER)
MAISONETTE (4 STORY)
TERRACED APTS (6 STORY)

200 feet

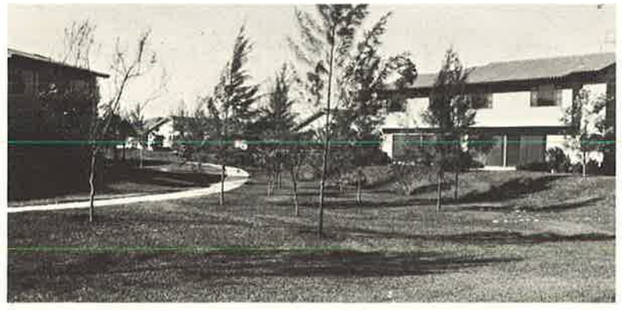
APARTMENTS

205 ACRES
4500 D.U.
22 DU/GROSS ACRE
TOWNHOUSES
MAISONETTES
5·6&7 STORY TERRACED APTS.
HIGH RISE



200 feet

A A



MAJOR OPEN SPACE

GOAL

To preserve and provide an open space system by recognizing both its aesthetic and functional value in the natural and urban environment.

OBJECTIVES

Encourage the comprehensive design and location of new parks and recreation areas showing the visual and functional importance of these elements in the neighborhood and community.

Encourage landscaped pathways which visually and functionally link larger open spaces to neighborhoods.

Encourage the use of landscape planting on certain streets and open spaces to strengthen and enhance the visual structure of the County.

Encourage the preservation of natural open spaces such as marshes, swamps, and unique vegetative resources.

Encourage the development of plazas and public open spaces in office and commercial centers.

EDUCATIONAL AND COMMUNITY FACILITIES

GOAL

To promote the coordinated location and design of community facilities by strengthening their visual and functional importance in the neighborhood and community.

OBJECTIVES

Encourage the development of focal points for neighborhood and community identity.

Encourage the location of neighborhood and community facilities (schools, libraries, churches, clinics, fire and police stations) in or adjacent to parks and pathways.

Encourage the development of planned educational centers, located in the existing developed areas.

Encourage the clustering of major medical facilities into identifiable centers.

INDUSTRIAL DEVELOPMENT

GOAL

To encourage quality design and planning of industrial development by minimizing its physical impact on the natural and man-made environments.

OBJECTIVES

Encourage the programming of design standards for controlling the appearance of industrial areas.

Encourage design and planning of industrial development which provides continuity between it and residential or commercial development.

Encourage development of industrial location criteria to eliminate possible environmental and functional conflicts with other land uses or the natural environment.

WATER RESOURCES

GOAL

To provide for increased public use of water resources by respecting both its aesthetic and ecological contribution to man and his environment.

OBJECTIVES

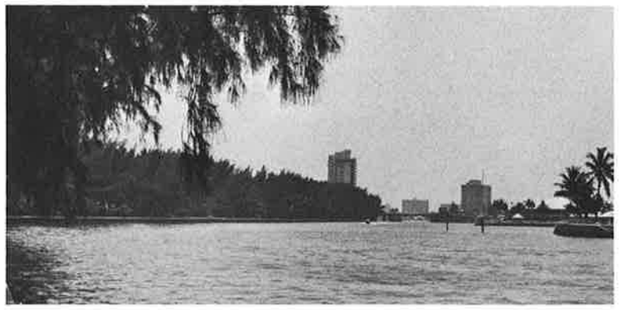
Provide visual access to water resources, such as the ocean and the Intracoastal Waterway.

Provide parks and other recreational activities along the shoreline.

Encourage greater public access to the shoreline beaches.

Provide the development of public parks and pathways along major canals as part of the total open space system.

Provide for the protection of water recharge areas from uncontrolled development.



PUBLIC UTILITIES

GOAL

To coordinate the collective design and location of public facilities and utilities by eliminating the unorganized single purpose approach to design and location of these elements.

OBJECTIVES

Provide programs for the undergrounding of existing and future utilities.

Provide for the collective design of street furniture such as signs, traffic signals, street lighting, curbs and sidewalks.

MOVEMENT AND CIRCULATION SYSTEMS

GOAL

To promote a visual and functional hierarchy of movement and circulation systems at various levels which reflect the distinct purpose of each.

OBJECTIVES

Encourage the functional classification of streets through traffic volumes, right-of-way and land use into a hierarchical system of streets, each serving a distinct purpose.

Encourage varying street trees and other landscaping along street rights-of-ways according to the hierarchical street system plan.

Encourage various street lighting fixtures and illumination indicating the purpose of the street in the hierarchical street system plan.

Encourage the coordination of street intersection design and landscaping with the design and location of street furniture.

Encourage the design and planning of public transit routes, stops and transfer points that are distinctively identified by signs, landscaping and lighting.

Southwest Broward County, looking east 1959-1966-1972

Central

ALTERNATIVE URBAN FORM AND LAND USE CONCEPTS

This section of the study presents two alternative urban forms and related land use concepts. These concepts are broad policy guidelines which should serve to assist the County in developing a design framework for future urban growth and redevelopment.

URBAN FORM DETERMINANTS

This urban form and land use concepts developed in this section incorporate certain physical determinants. These determinants were used as guides in developing the concepts. Some of the determinants are existing; some are proposed by private developers and public agencies. The following determinants, as defined, are shown on the Composite Urban Form Determinants map.

MAJOR COMMERCIAL AND BUSINESS CENTERS: Major retail and service commercial areas such as downtown, regional and community shopping centers are strong urban form determinants.

MAJOR INSTITUTIONAL CENTERS: Institutional facilities include educational, medical and cultural centers, such as Nova Park and Broward County Medical Complex.

MAJOR INDUSTRIAL CENTERS: Industrial centers are defined as major employment centers. They may be a single center such as Motorola, or a complex or industrial park such as Port Everglades or Westinghouse.

MAJOR TOURIST CENTERS: Major tourist centers consist of hotels and condominiums along the ocean, as well as entertainment centers such as dog tracks and horse race tracks.

MAJOR AIRPORTS AND NOISE CONTOURS: Major airport determinants include existing airports, as well as two alternative sites (9 & 14) for the new South Florida Jetport. Site #9 falls within a major portion of southwest Broward County. Noise contours represent a composite noise exposure forecast (NEF) used by HUD. The contours are computed from the perceived noise level in decibels, the frequency of take offs and landings, and the time of day. The NEF for the contour shown is 30, and any over 30 is considered undesirable for residential use.

OPEN SPACE, PARKS, AND GOLF COURSES: Parks, golf courses and canals make up the major open space system for Broward County.

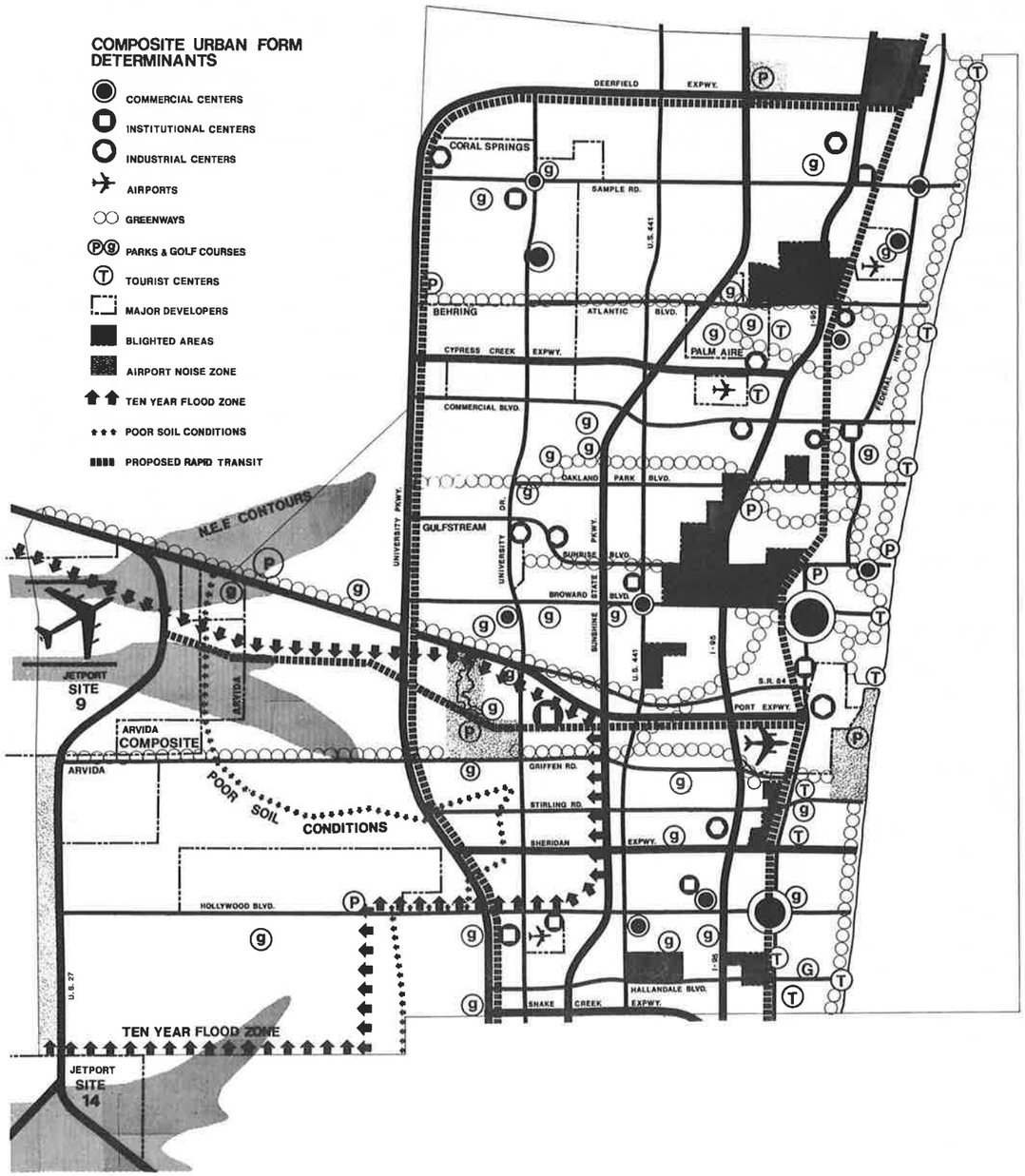
MAJOR ROADS AND FUTURE MASS TRANSIT: Expressways and arterials make up the major transportation network for Broward County. The proposed mass transit corridors, if realized, can play an important role in reshaping the urban form of the County.

MAJOR DEVELOPERS: Major developers and landowners such as Gulfstream, Arvida, Westinghouse, Behring Corp. and Hollywood Inc. will have a strong influence over future physical development patterns.

MAJOR BLIGHTED AREAS: The major blighted areas of the County offer an opportunity to develop new urban design concepts for revitalizing strategic points in the county.

MAJOR FLOOD ZONE: Areas designated as Major Flood Zones indicate a probability of occurrence about once in ten years with a duration of flooding from 5 to 20 days.

POOR SOIL CONDITIONS: Poor soil conditions in the southwest portion of the County are of a very severe nature. Limitations on development in the area should be considered until more detailed information is available.


COMPOSITE URBAN FORM DETERMINANTS
COMMERCIAL CENTERS
INSTITUTIONAL CENTERS
INDUSTRIAL CENTERS
AIRPORTS
GREENWAYS
PARKS & GOLF COURSES
TOURIST CENTERS
MAJOR DEVELOPERS
BLIGHTED AREAS
AIRPORT NOISE ZONE
TEN YEAR FLOOD ZONE
POOR SOIL CONDITIONS
PROPOSED RAPID TRANSIT
DEERFIELD
EXPWY.
CORAL SPRINGS
SAMPLE RD.
U.S. 441
BEHRING
ATLANTIC
BLVD.
CYPRESS CREEK
EXPWY.
PALM AIRE
COMMERCIAL BLVD.
OAKLAND
PARK
BLVD.
GULFSTREAM
UNIVERSITY PKWY.
UNIVERSITY DR.
SUNRISE
BLVD.
BROWARD
BLVD.
SUNSHINE STATE PKWY.
I-95
S.R. 84
PORT EXPWY.
FEDERAL HWY.
GRIFFEN RD.
STIRLING RD.
SHERIDAN
EXPWY.
HOLLYWOOD BLVD.
HALLANDALE BLVD.
SNAKE CREEK
EXPWY.
N.E.E CONTOURS
JETPORT SITE 9
ARVIDA
ARVIDA COMPOSITE
ARVIDA
POOR SOIL CONDITIONS
TEN YEAR FLOOD ZONE
JETPORT SITE 14
U.S. 27

URBAN FORM AND LAND USE CONCEPT: A

HIGH-ACCESSIBILITY CORRIDORS CONCEPT

A high-accessibility corridor is a linear concentration of land uses requiring accessibility to all or large sections of the metropolitan area which is organized along one or more high speed and high capacity transportation routes. A corridor must satisfy certain criteria.

It must contain high speed and high capacity transportation facilities for private motor vehicles and for public transit.

Land use within the corridor must require levels of accessibility compatible with the levels of accessibility provided by the transportation facilities and must be of such intensity as to support but not hinder the efficient operation of these facilities.

The corridor must be planned and programmed to maximize desirable relationships between transportation facilities and land uses.

The corridor must function as a part of a total system of high accessibility corridors.

Not all high accessibility corridors or corridor segment in a system are identical nor should they be.

1) Corridors will differ by the area they serve: regional, inter-metropolitan or suburban.

2) The trip-generating characteristics of a corridor will make it different from others. Residential developments are termed trip-producers and non-residential development is termed trip attractors. In other words people produce trips to attractions. A corridor's trip-generating characteristics are further differentiated by trips with origin and destination outside the corridor or internal trips with origin and destination within the corridor or a combination of both.

3) The predominant land-use in a corridor will give it an identity: Residential, commercial industrial, institutional and recreational.

Corridors play different roles in the functioning of a city or county. However, a few basic principles should be applied throughout the system of corridors and are essential to the concept. The function of a system of high-accessibility corridors is to:

Provide optimum accessibility for people and goods to places and activities throughout the system by creating the best possible relationship on a county-wide basis between trans portation facilities and land use activities requiring high-accessibility and minimizing conflict between transportation facilities and all land use activities, especially those not requiring high accessibility.

Provide a frame work (structure) for stimulating accommodating, and guiding change, growth and redevelopment in the physical plant of the county and for minimizing the undesirable effects of such change.

Provide a principal means of visual and perceptual order, as well as functional and physical organization of systems and places, within the county so that the individual may be oriented to the county as a whole at all times.

The physical form of the system should be guided by the following principles:

Corridors should be located so as to enhance the function and identity of communities by not physically dividing them: generally a community should be entirely within or entirely outside of a corridor.

Land use activities requiring moderate to high levels of accessibility should be located within or immediately adjacent to high accessibility corridors.

In general, development within corridors should be more intense than development in adjacent areas.

Transportation facilities throughout the system are subject to the following principles:

All high accessibility corridors should contain as a minimum an expressway or primary arterial and public rapid transportation.

A feeder bus system should focus on the corridor system.

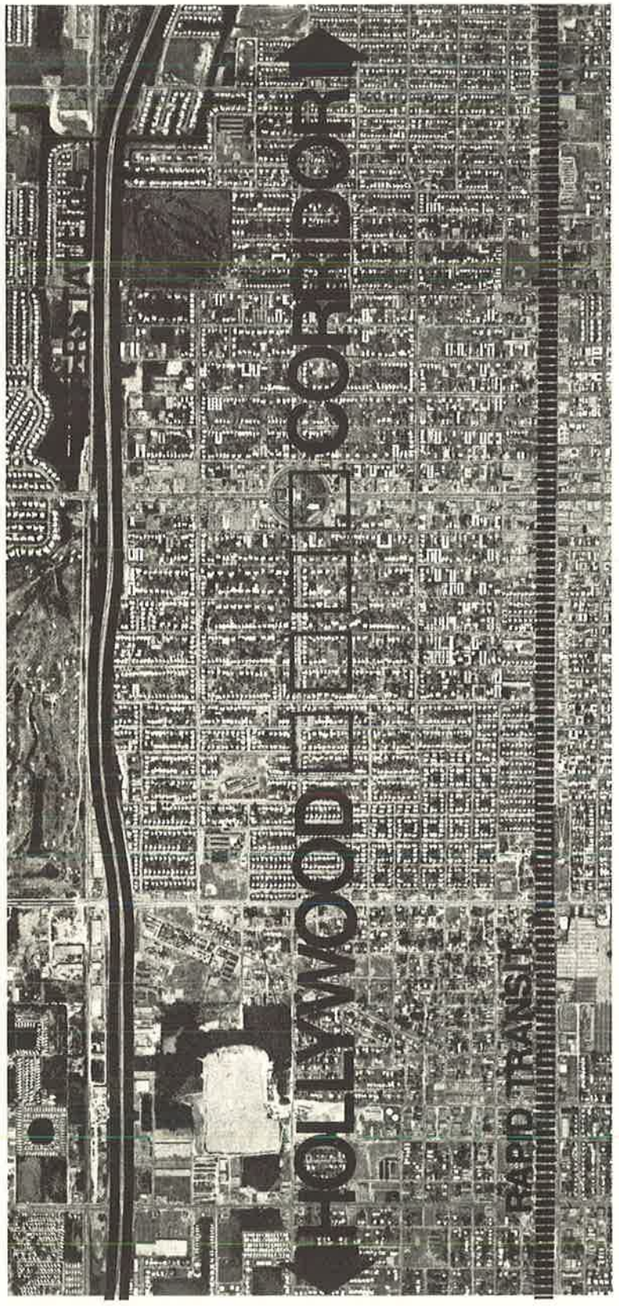
Expressways which do not fall within the corridors should be located well away from corridors so as to serve independent areas and not conflict with the corridor service area.

APPLICATION OF HIGH-ACCESSIBILITY CORRIDORS CONCEPT TO BROWARD COUNTY

Urban form and land use concept shows conceptually how the corridor concept applies to Broward County. There are four major corridors:

1) A north-south corridor focusing along a proposed rapid transit line sharing the Florida East Coast Railroad right-of-way and Interstate 95. This would be a regional and inter-metropolitan corridor not only connecting the major cities of Hollywood, Fort Lauderdale and Pompano Beach, but the three counties Dade, Broward, and Palm Beach. The sub-corridors would be a mixture of high and medium density residential, commercial and institutional.

2) A north-south corridor along University Drive and a proposed rapid transit line sharing or adjacent to the University right-of-way. This corridor would be basically inter-metropolitan and residential linking such new and proposed developments as Coral Springs, Behring, Gulfstream, Nova Park, and the Florida State Hospital in South Broward County.



3) An east-west corridor along the proposed Deerfield expressway and rapid transit line connecting Coral Springs and Deerfield Beach. The basic land use would be medium density residential.

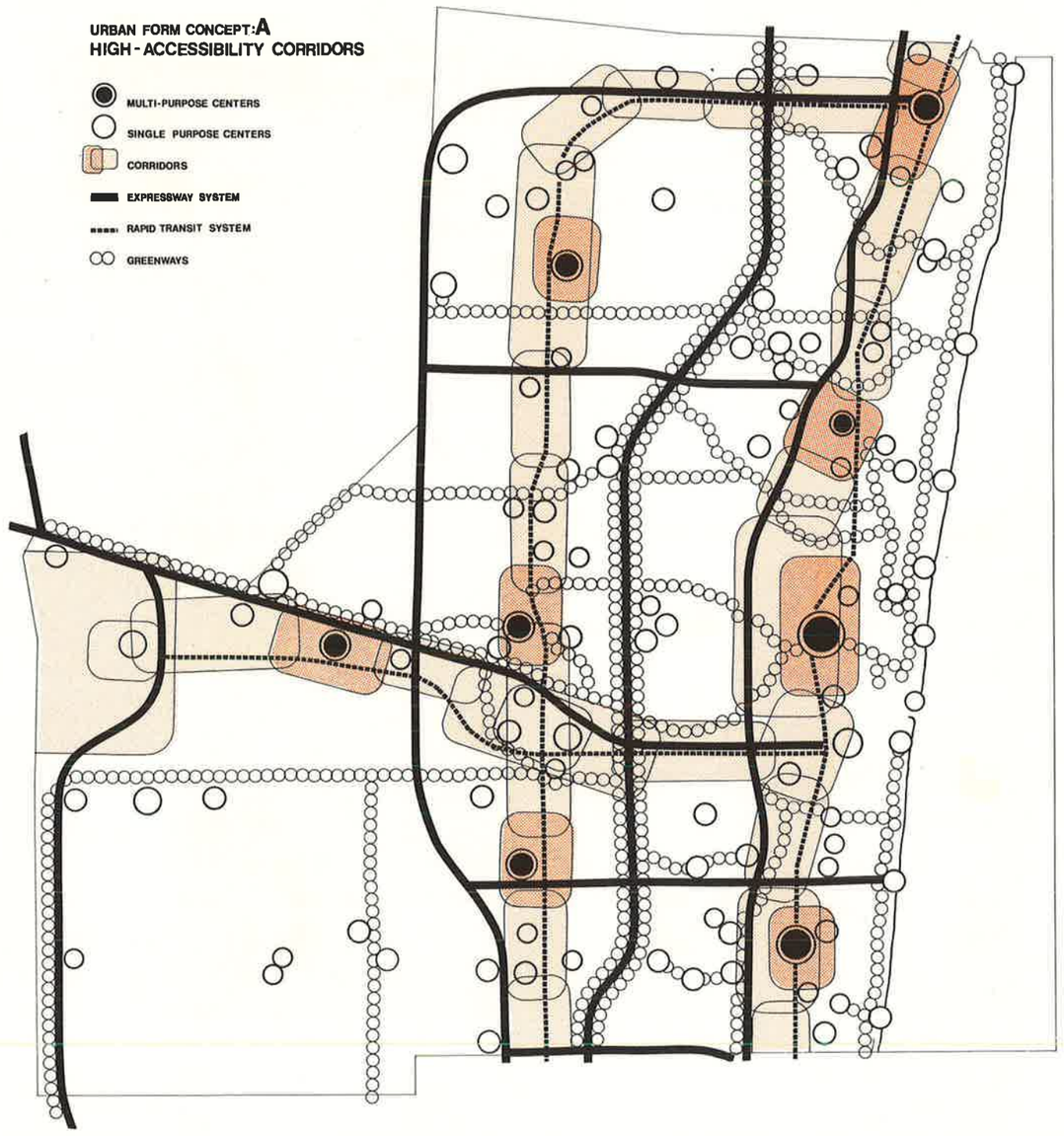
4) An east-west corridor focusing along the port expressway connecting to State Road 84 and a rapid transit line from the proposed Jetport (site 9) to Port Everglades. This would be primarily an attraction corridor with predominent industrial and recreational land uses.

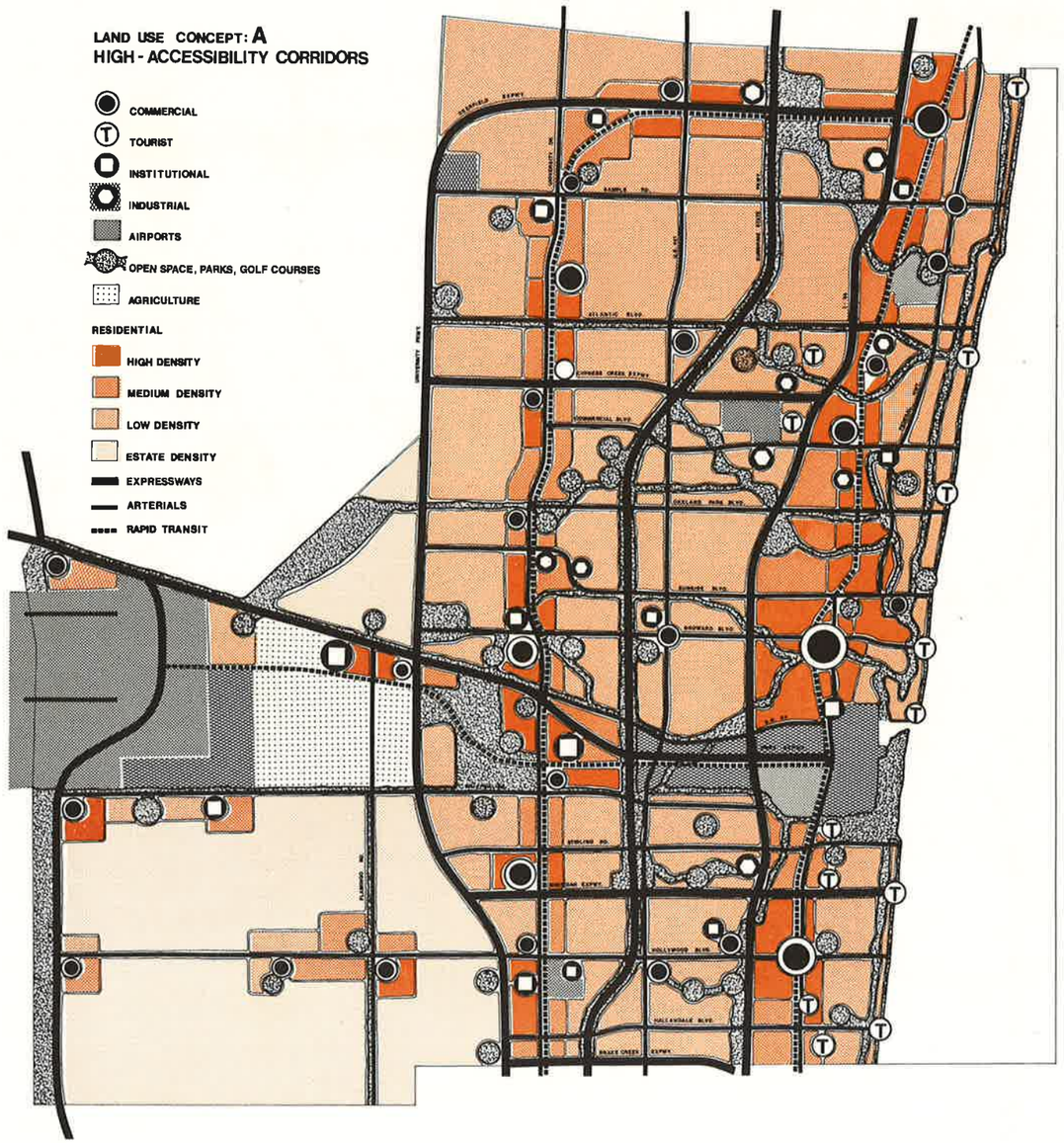
The high-accessibility corridor concept and its rapid transit system would have a dramatic affect on existing and future development patterns in Broward County. In existing areas it is possible that areas which are today single family developments may in fact change character and the development of medium and high density apartments may materialize due to the economic influence of the rapid transit line. Examples this can be seen in Toronto, Chicago, and the San Francisco Bay area.

The corridor concept is more than a land use concept it would be a major determinant for the basic urban form and structure of Broward County. As development occurs and intensifies within corridors it can strengthen the visual appearance of the county. The total system would be easily comprehended by its users, and the multi and single purpose centers within corridors would provide the users with a strong sense of orientation. The intensification of corridors can delineate and identify large areas (mostly residential) between corridors, while also uniting these areas by locating certain community level facilities serving more than one neighborhood in the corridors.

A concept like this would require a high level of public and inter-governmental coordination. The benefits that this concept would give Broward County in solving some of its urban form and land use problems are far reaching and would be worth the required effort.

Galt Ocean Mile, 1960-1972


URBAN FORM CONCEPT:A
HIGH-ACCESSIBILITY CORRIDORS
MULTI-PURPOSE CENTERS
SINGLE PURPOSE CENTERS
CORRIDORS
EXPRESSWAY SYSTEM
RAPID TRANSIT SYSTEM
GREENWAYS


LAND USE CONCEPT: A
HIGH - ACCESSIBILITY CORRIDORS
COMMERCIAL
TOURIST
INSTITUTIONAL
INDUSTRIAL
AIRPORTS
OPEN SPACE, PARKS, GOLF COURSES
AGRICULTURE
RESIDENTIAL
HIGH DENSITY
MEDIUM DENSITY
LOW DENSITY
ESTATE DENSITY
EXPRESSWAYS
ARTERIALS
RAPID TRANSIT

URBAN FORM AND LAND USE CONCEPT: B

DISPERSED CENTERS CONCEPT

The Dispersed Centers Concept has as its core the creation of several concentrated areas of intense activity usage surrounded by larger expanses of relatively low activity usage; the purpose being the desire to foster sever contained communities rather than one large ill-defined urban area. The concept embodies the principle of duplicating basic community services in each center so that all residents live relatively close to their community service area.

Since a number of services can only be provided on a metropolitan scale, it is recognized that a degree of cross-communication and interdependence between centers will occur. The characteristics inherent in the locale and population of the various centers will likewise generate unique service needs and specialized community service programs. Residents of each center thus have a close proximity to their basic services and the opportunity for specialized activities in adjacent centers.

The transportation implications in the Centers Concept are a direct result of the duplication of activity centers. Since basic services are provided within a short distrance of all residents, major traffic buildups are lessened and mass transportation needs are minimized. However, the circulation system within each center increases in importance and demands a higher degree of refinement than that which exists in typical suburban sub-centers. Moreover, good transportation access between centers is still critical recognizing the reality of numerous residents living and working in different centers.

Strong relationships between the governing and operative bodies of each center are demanded if a coordinated, regional scale community is to be established embracing all the centers. In addition, a body which oversees the problems affecting the centers collectively must exist and have the cooperation of the individual agencies it administers. The Centers Concept thus intends to promote individual community identity but within the framework of mutual goals and reciprocal support.

APPLICATION OF DISPERSED CENTERS CONCEPT TO BROWARD COUNTY

The application of the Centers Concept to Broward County involves both the recognition of existing centers and the determination of future centers. It attempts to define their various spheres of influence and anticipates probable growth patterns affecting each. Likewise, design decisions regarding functional as well as aesthetic problems were made establishing an Urban Form for the study area of the county.

The greater center of intense activity remains the immediate Fort Lauderdale area reinforcing the existing role this area serves in the county. This center is envisioned as having the greatest variety of high intensity usage offering many of the services which can only occur on a metropolitan scale. Fort Lauderdale remains the Urban Center of Broward County.

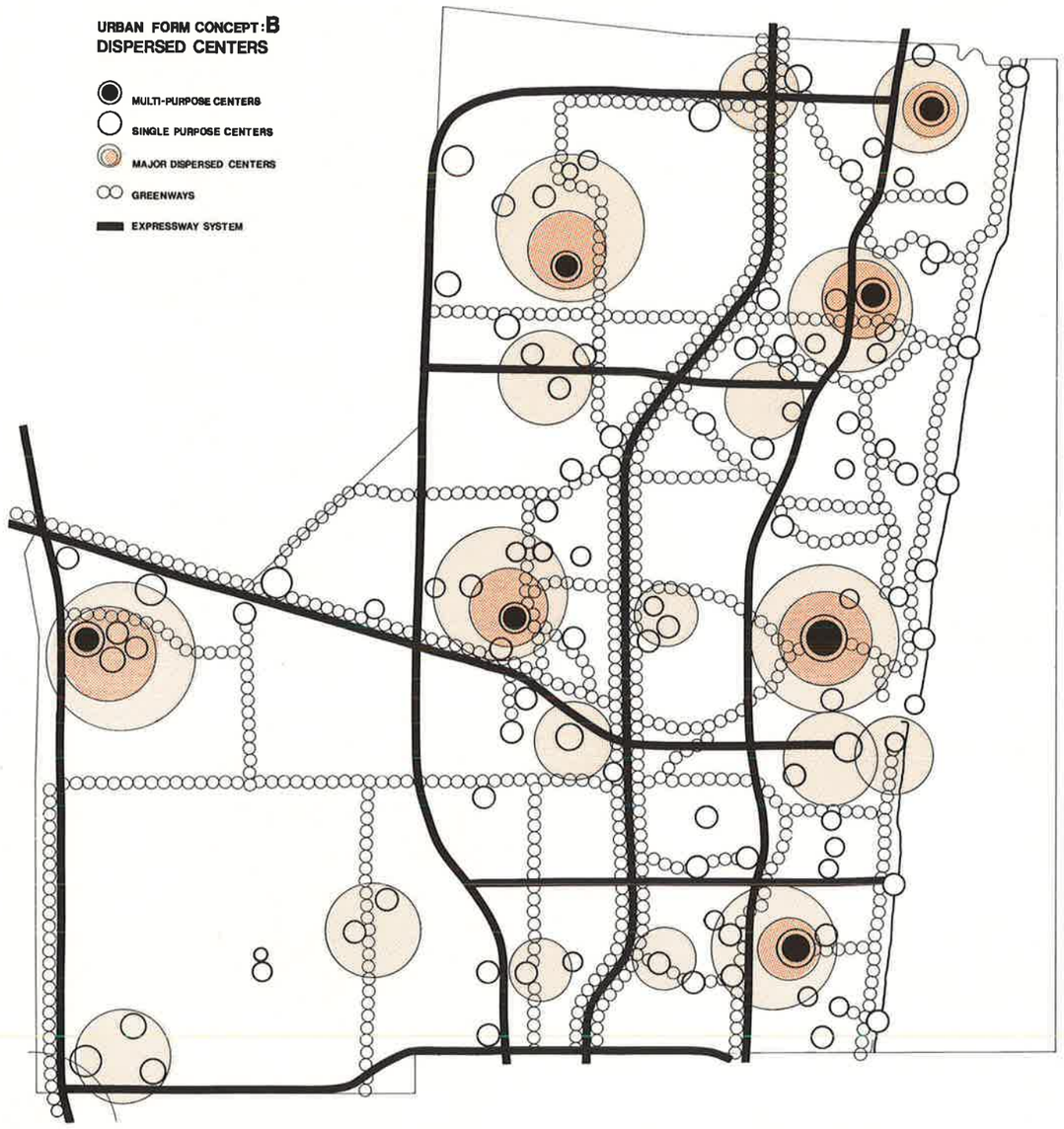
A number of Satellite Centers offering a similar variety of high intensity, multi-purpose usage but to a lessor extent are also located. The Hollywood and Pompano Beach areas presently serve in this capacity and would continue to do so under the Dispersed Centers Concept. New developments currently in their initial phases are recognized for their potential and included as satellite centers. Coral Springs, the Gulfstream holdings, and the Arvida property in the western part of the study area are envisioned as developing into multi-use centers with a high degree of activity occurring within each. Another Satellite Center is located in the Deerfield Beach area in response to the probable natural growth along the U.S. 1 corridor.

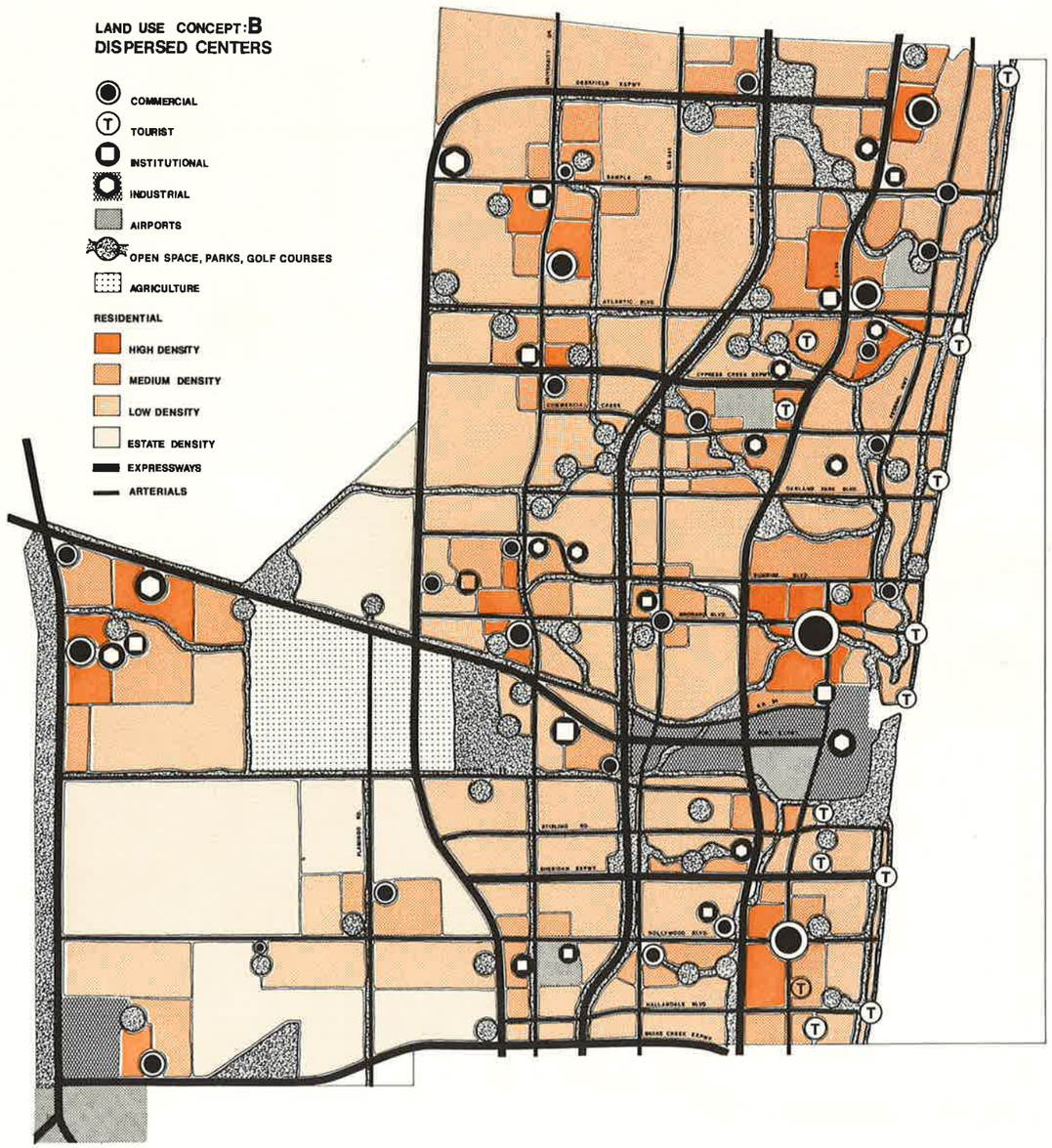
Specialty Centers relating to single purpose community service uses, such as Medical Centers and Educational Parks, are also applied to Broward County. The Port Everglades area, transportation nodes, and existing single use concentration areas are envisioned as becoming the nuclei for new development within the county. The location of the proposed new South Florida Jetport at Site 14 in the northern part of Dade County is anticipated in the Dispersed Centers Concept.

A Specialty Center relating to this facility is shown in the southwestern corner of the study area. The expressway system is also adjusted in response to this facility's location.

The Dispersed Centers Concept for Broward County does not incorporate a mass transit system serving the movement of people within the county. A regional system could, of course, be incorporated as needed to serve primarily intercounty travel. However, a sophisticated movement system of people within each center must be developed for the effective functioning of the Dispersed Centers Concept. The Greenways system which is shown schematically for the entire study area could be the martix for this people movement. The scale of transportation required for intracenter travel is quite harmonious with a greenway's purpose.

The application of the Dispersed Centers Concept to Broward County requires a high level of communication between local levels of government. It requires, as all applications of a concept to a real situation, an administrative body which translates the intent of the concept into feasible solutions. Of extreme significance, it requires the recognition by all parties concerned that the concept is valid, desirable, and mutually beneficial.


URBAN FORM CONCEPT: B
DISPERSED CENTERS
MULTI-PURPOSE CENTERS
SINGLE PURPOSE CENTERS
MAJOR DISPERSED CENTERS
GREENWAYS
EXPRESSWAY SYSTEM
8


LAND USE CONCEPT: B
DISPERSED CENTERS
COMMERCIAL
TOURIST
INSTITUTIONAL
INDUSTRIAL
AIRPORTS
OPEN SPACE, PARKS, GOLF COURSES
AGRICULTURE
RESIDENTIAL
HIGH DENSITY
MEDIUM DENSITY
LOW DENSITY
ESTATE DENSITY
EXPRESSWAYS
ARTERIALS

3 RECOMMENDED ACTION PROGRAMS AND PROCEDURES

INTRODUCTION

In order to effectuate a new urban form concept for Broward County it will be necessary to develop new administrative policies and procedures, and even new environmental authorities, to improve environmental quality.

In dealing with land use and urban form problems, and attempting to find new ways and means of alleviating problems, it is helpful to deal with concepts rather than specific terms. Few, if any, techniques for controlling development toward logical goals can be implemented immediately; the legal machinery may not be available, public fiscal resources may prove inadequate, and public attitude may not be receptive to measures which might appear to infringe upon "property rights".

The present governmental system, however, is already rich in opportunities for meaningful development policies. Existing are regulatory devices such as zoning, subdivision regulations, building and housing codes, and public works. It is essential to evaluate existing devices, along with their applicability, efficiency, and potential to influence development along lines of conscious community policy. In all cases, consistency with public policy and desires is essential. Zoning is perhaps the strongest existing regulatory power. It is recommended that variances, attempts at spot zoning, and wholesale zoning changes be considered in light of the community purpose. Can public services be provided? Will the intensity strain existing or planned facilities such as schools, roads, sewers, parks, police and fire?

To change the character of development and provide the interrelated, human environment necessary for modern living, various techniques are possible. One approach which may find acceptance is that of incentives and bonuses. Our nation's system is based upon competition and the profit motive. It may be that new arrangements between government and the individaul will emerge; incentives for the promotion of aesthetics, better relationships, environmental attributes and open space for public good may become possible. Tax incentives may be the spur to rehabilitate blighted areas and to rid the community of inferior housing.

Public acquisition of key tracts of land to control development effectively, while preserving open space, can play a significant role. In Broward there are a number of strategically located sites, as presented in the Area Planning Board Open Space Plan, which, if retained for public use, can influence the type and nature of development desired.

Political consolidation to gain control over large, logical areas could tend to reduce conflicting municipal policies and provide sufficient tax base to generate revenue needed for public improvements. By providing visually attractive roads, aesthetically pleasing public buildings and plentiful community facilities, proof may be offered as to the public desires. Accelerated development of public projects directed toward controlling development might possibly be investigated. Planned Unit Development offers many advantages over a conventional subdivision. Encouragement of this form of zoning, with the creation of a design review committee of professionals who would advise on aesthetics and site development, is essential in an area where land is held in large tracts and the pressures for development are so great.

To change the patterns of the past and present, the County must consider making bold changes. Attitudes have to change regarding a person's "property rights'; the change must be in favor of the community benefit as a whole. People have rights. One of them is the right to own property, but property itself is not given all rights, per se. Public support of any program is vital for its success. With the current concern for environmental issues, the time appears right to sample public opinion regarding future. development policies; however, care must be exercised to avoid a backlash reaction against the mistakes of the past. Opinion should be weighed carefully against factual information.

Carrying out a broad public policy on a countywide scale usually means that administrative tasks, personnel and expenditures increase. Politically, the citizens of Broward County should be prepared to investigate the possibility of a consolidated government or services to increase the chances of success. The multitude of governments in Broward simply cannot cope with the scale of the problem. The problems of housing, transportation, open space, industry, air and water pollution, conservation and development in general, can only be solved through a broad scale long range, attack. Economically, the individual cities cannot keep pace; collectively, in a regional approach, perhaps there is a chance.

There are, of course, many legal ramifications to the ideas presented. Some form of legislation will be required to expand the scope of the potential solutions to the problem. Constitutional issues may be raised; individual rights versus community rights may be challenged; but the search must continue to find ways to provide a creative legal basis for solving the problems for the betterment of Broward County and the healthy life of its citizens. Immediate benefits probably will not be forthcoming; this is, however, a starting point. Perhaps it will stimulate rational discussion on the problems and begin to focus attention toward community goals, and develop the apparatus for solutions.

DEVELOPMENT REGULATIONS

Broward County should, if necessary through legislative action, prepare a comprehensive and uniform series of Development Regulations to be effective throughout the planning area. All existing regulations of the county and each city should be reviewed and evaluated in the preparation of a new, single document to include the following:

ZONING ORDINANCE

1. The Area Planning Board is currently drafting a proposed Uniform Zoning Standards Manual. The standards included in this manual should be adopted by the County Commission, and the Commission should urge all cities to do likewise to avoid conflicting definitions and standards.

2. The County should undertake the revision of its zoning ordinance to incorporate Land Use Intensity provisions based on floor area ration to allow for greater flexibility, diversity and creativity in development, and urge all cities to act similarly.

The Meaning of Land Use Intensity: *In FHA's Minimum Property Standards for Multifamily Housing, Land Use intensity means the overall structural-mass and open space relationship in a developed property. It correlates the amount of floor area, open space, livability space, recreation space, and car storage space of a property with size of its site, or land area.

*Land Use Intensity, U. S. Department of Housing and Urban Development Land Use Intensity is somewhat similar to density-living units or people per acre, but its approach is different. It covers a broader field of planning factors as indicated above and correlates them.

3. The County should establish, by ordinance a flood hazard zone as an addition to its Zoning Ordinance in accordance with a report prepared in 1964 by the U. S. Army Corps of Engineers for and at the request of the Broward County Commission. The

data and maps presented in 1964 are still applicable, particularly in southwest Broward, and should be used together with any updated material from the U. S. Soil Conservation Service to delineate the boundaries of the Flood Hazard Zone. Specifications for the type of development, engineering date and specifications for various construction techniques for flood proof construction should be developed and applied to all construction within the Flood Hazard Zone for the protection of the health, safety and welfare of those persons residing or employed in the zones. Specifications to minimize flood danger and loss of life or property should be prepared with information from the Central and Southern Florida Flood Control District, U. S. Army Corps of Engineers, and the U. S. Water Resources Council.

The U. S. Water Resources Council has recently published Volume I, Parts I-IV, Regulation of Flood Hazard Areas to Reduce Flood Losses. Regulations and specifications of this type will be required by the Federal Government as a prerequisite to maintaining eligibility in the Federal Flood Insurance Program. Broward County presently is in the program on an emergency basis, but will lose eligibility unless adequate control measures are adopted and enforced. As a secondary measure, all plats affecting land with in a Flood Hazard Zone should be stamped with a statement such as: "This land is in a zone subject to periodic floods on a 100 year frequency (or other frequency) in accordance with a report entitled, Flood Plain Information - Broward County, Florida, 1964, prepared by the U. S. Army Corps of Engineers". In this manner, all persons would be made aware of the hazards and could inform themselves regarding construction requirements.

SUBDIVISION REGULATIONS

1. A uniform series of Subdivision Regulations with provision for flood hazard areas must be prepared and adopted by the County and all cities. The County Commission should initiate legislative action, if necessary.

2. The County, with legislative action if necessary, should establish an ordinance requiring any property subdivided into two or more lots, regardless of size, to be platted when subdivided as a prerequisite to the issuance of construction permits.

3. The County should establish a committee to review all proposed subdivision and give this same committee the authority to require changes in subdivision plans when deemed necessary. The committee should include, but not be limited to:

(a) Planning Department

(b) Area Planning Board

(c) Engineering Department

(d) Planning and Zoning Department

(e) Transportation Authority

(f) Utilities Department

(g) Sheriff Department

(h) School Board

(i) Air & Water Pollution Control Board

(j) Flood Control District

(k) Water Resources Board

(l) Municipal Representatives

(m) Professional Societies, AIA, ASLA, AID

PLANNED UNIT DEVELOPMENT ORDINANCE

1. The county should, as an interim step, enact and promote a Planned Unit Development Ordinance separate and apart from its zoning ordinance, which would be applicable to all categories of land use. It should further promote the establishment of a uniform Planned Unit Development Ordinance throughout the County. With much of the vacant land in Broward County held in large ownership patterns, this form of development appears to be the most desirable for both property owner and community.

2. The County should create, by ordinance, a Planned Unit Development Zone which would coincide with the boundaries of flood hazard areas as defined previously. In this zone only Planned Unit Development, or single family homes on large lots such as one acre or more, or agriculture would be permitted. Planned Unit Developments can and should include uses other than residential, and should be permitted to be built in other zones as well as the Planned Unit Development Zone.

3. An example of a Planned Unit Development Ordinance is included in the Area Planning Board's Uniform Zoning Standards Manual, to be completed June 30, 1972.

4. Owners of small parcels of land who appear to be penalized by these recommendations should be encouraged by the County to assemble a larger tract, by either purchase or partnership arrangements, to permit large areas to be planned at the same time as a cohesive unit; however, development of the complete tract need not take place at the same time.

HOUSING AND BUILDING CODES

As part of a comprehensive set of Development Regulations, the required South Florida Building Code and Minimum Housing Code should be included.

TRANSPORTATION

Any development regulations, to be effective, should include specifications for road right of way and construction for various classifications of roads. These must be made uniform throughout the planning area to provide for free flowing, safe routes.

The five topics should be incorporated by the County into a single document. All efforts, including legislative action if necessary, should be made to require that the Development Manual Standards be applicable and uniformly applied throughout the County, including the cities.

CAPITAL IMPROVEMENTS PROGRAMMING AND DESIGN STRATEGY

Capital Improvements Programming for public facilities and services, based on realistic five-year plans with yearly revisions, can begin to establish an orderly, rational series of priorities for public spending. Public investment accounts for a substantial portion of all development in a community. The timing and location selected for capital expenditures will greatly influence private development decisions and, in conjunction with appropriate regulations, can effectively channel growth along conscious policy directions.

Less emphasis should be placed upon a land use plan and more emphasis upon a design strategy and plan for the County. A design strategy which incorporates capital improvement program concepts, long range economic and social objectives, and policy guidelines for publicly assisted development programs, are the kinds of strategies needed to improve the quality of environment desired.

This design strategy should deal with the design and distribution of public facilities including schools, public buildings, parks, and open space, streets and highways, public transit, sewer and water systems, drainage networks and other public works. As mentioned before, the design strategy through control of geographic distribution, site selection, and architectural and landscape treatment of public facilities, should be an influence for well designed and distributed private investment and construction.

The County and its operating and development agencies concerned with each type of service and facility, should undertake comprehensive systems plans and development programs for such functional facility systems as circulation and transportation, drainage, water supply, sewerage schools, recreation and open space, conservation, publicly assisted housing, and other community social and cultural services of a public or publicly assisted character. These studies should be directly coordinated with the capital programming operation, and with policy planning and development review with respect to urban renewal, housing, zoning, and subdivision approvals, industrial, and business area promotion and other major environmental decision making.

DIRECTOR OF COMMUNITY DEVELOPMENT

It is recommended that the County create the position of Director of Community Development. This can be achieved in one of two ways:

1. Expand the duties of the Planning Director

2. Create a new position under the County Administrator.

The person occupying this position should be professionally trained and experienced in planning and urban design. The proposed responsibilities assigned to this position are as follows:

1. Establish and maintain effective communication and coordination among the several departments responsible for administering development regulations, planning and programming operations, and those involved in design and construction.

2. Assume responsibility for the preparation of a comprehensive design strategy and plan for the County jurisdiction through the Planning Department, as specified in the legislation establishing the Planning Department.

3. Assume responsibility for the establishment of procedures for and coordination of all capital improvements programming on a five year basis among the several departments involved in urban developments to assure that expenditures are timed so as to avoid conflict; direct urban growth along specific policy directions; and provide fiscal data for all capital expenditures for the five year period. Programming would be on an annual five year projection basis.

4. Chair any committee established for the purpose of reviewing zoning requests and subdivision plats and report the findings to the Zoning Board and County Commission.

5. Initiate a system of environmental reviews of proposed County construction projects, and assign persons of special expertise to prepare environmental impact statements.

6. Review all plans and construction projects of local municipalities for conformance with countywide policies, goals, objectives, and plans.

7. Recruit professionally trained, experienced planners and urban designers to staff the Planning Department to provide it with the capability to exercising its legal obligation, which is comprehensive planning for unincorporated areas of Broward County.

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BROWARD COUNTY AREA PLANNING BOARD STAFF
Col. W. W. Wilson, Planning Administrator
Robert Colavolpe, Chief Planner
Durward Caudill, Chief Planner
Barbara Troxel, Administrative Assistant

REYNOLDS, SMITH AND HILLS
ARCHITECTS - ENGINEERS - PLANNERS
INCORPORATED

PLANNING DIVISION
Roger C. Steffens, Vice President
R. Glen Mitchell, Head, Department of Urban and Development Design

URBAN DESIGN TEAM
Joseph Ehardt, Jr. Planner-in-Charge
Dale Eberhardt, Project Planner
Richard C. Rome, Project Planner
Nance Sanders, Research Assistant

EDITING AND GRAPHICS
Ray White, Editor
Gene Bebermeyer, Editor
Joyce Dyer, Graphics
Beatriz Mendez, Graphics
Bill Richburg, Graphics
Jack Pike, Graphics

URBAN DESIGN STUDY