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Hillsborough County: Framework of the Plan Report

Hillsborough County Planning Commission

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HILLSBOROUGH COUNTY

FRAMEWORK
OF THE
PLAN REPORT

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MASTER PLAN SHELF

Extra copy

Hillsborough

County

Planning

Commission

L-8

Hillsborough County

FRAMEWORK OF THE PLAN REPORT

This report presents the findings and conclusions of a study of existing conditions affecting preparation of the Hillsborough County Preliminary Plan of Development. The study was financed in part through an urban planning grant from the Housing and Home Finance Agency, under the provisions of Section 701 of the U. S. Housing Act of 1954, as amended.

March 1962

HILLSBOROUGH COUNTY PLANNING COMMISSION
Room 274, Hillsborough County Court House
Tampa, Florida

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FOREWORD

Since its creation in October, 1959, the Hillsborough County Planning Commission, a joint city-county planning agency serving the County of Hillsborough and its three incorporated cities, has been engaged in a comprehensive research study to provide a framework for essential long-range planning at the earliest possible date. The study undertaken was three-fold: (1) analysis of the economic base; (2) analysis of existing physical conditions and development patterns; and (3) preparation of a preliminary land use and major thoroughfare plan. A report upon the first phase dealing with the economic base of Hillsborough County was presented in January, 1962. A report on the third phase - land use and major thoroughfare plans - will be completed within the next few months.

This report, the second phase study of existing physical conditions and development patterns, has been entitled "Framework of the Plan Report". It comprises an analysis and evaluation of past and present events, trends, and physical developments which will have substantial bearing upon future physical development within Hillsborough County.

Due to the comprehensive nature of the planning function, this report is concerned with a wide variety of activities, both public and private. It analyzes both strong points and apparent shortcomings within local development policy as it now exists. Throughout the study, a conscious attempt has been made to combine thoroughness with an objective viewpoint so as to crystalize those development factors and policies which constitute a framework for the long-range plans. The true measure of the value of this report will therefore be reflected in the soundness of both the plans which are developed and the public and private policies which are established to ensure plan implementation.

SUMMARY AND CONCLUSIONS

1. Hillsborough County's future physical growth will be built upon the base comprised of the existing development pattern:
 - (a) Although the geographic location of Hillsborough is unalterable, man-made improvements to the natural setting are required to adapt the land form to present and future functions. Large-scale drainage and hurricane protection improvements are essential to adequately adapt low-lying coastal sections to the expanding pattern of community development.
 - (b) Protection and proper utilization of prime agricultural, phosphate mining, and waterfront areas is also essential to the maintenance of a balanced development pattern.
 - (c) Community development occupies a relatively small proportion of the county's land area in comparison to agricultural areas; however, approximately 82 percent of the total population is contained within these areas. Present community development patterns are essentially the result of uncoordinated individual public and private decisions and actions made over the past 140 years without benefit of any effective planning.
2. Further encroachment onto prime agricultural lands by community and phosphate mining land uses is unnecessary and should be discouraged. Only by taking the appropriate steps to prevent such encroachment may the untimely dislocation of agricultural land uses and the consequent loss of agricultural income to the county's economy be avoided.
3. Phosphate mining has the least flexible land requirements of any of the three principal land uses (agricultural, phosphate mining, and community uses) found within Hillsborough County. Mining operations take place only where there are commercially developable phosphate mineral deposits. Nevertheless, certain precautions should be taken to avoid potential future land use conflicts as phosphate mining and community development extend toward one another across existing agricultural lands. Plans for reuse of mined-out phosphate sections should be prepared and carried out.

4. Remaining shoreline sections along the coastal areas, lakes, and rivers are a basic resource. More consideration should be given to their proper utilization than at present.
5. The trend toward community development is evident in the fact that such a large percentage of the total 1960 Hillsborough County population resided in urbanized areas or unincorporated communities. The existing community development pattern is characterized by a sizeable primary urban area (Tampa and urbanized fringe, the former Port Tampa area, and Temple Terrace), a smaller secondary urban area (Plant City), and five unincorporated community settlements, each with a population of between 500 and 2,000 persons. Existing conditions relating to these areas directly affect the design of a plan of future community development:
 - (a) The bulk of past growth has occurred within Tampa and its urbanized fringe areas. Approximately 76 percent of the total county population resides in this section.
 - (b) Until recent years, community development has assumed a relatively compact form with new growth taking place contiguous to the primary and secondary urban areas. Most of these development areas were connected to the central water and/or sewer systems of Tampa, Plant City, and Temple Terrace.
 - (c) Franchised private water and sewer systems are now utilized to serve new residential development throughout Hillsborough County. In general, this is contributing to a dispersed community development pattern. From the standpoint of providing necessary governmental facilities and services, this dispersion is both inefficient and uneconomical. It also contributes to the unnecessary dislocation of agricultural production.
6. Both of the two principal urban areas have a legacy of an unfortunate arrangement of existing land uses:
 - (a) The traffic-carrying capacities of arterial streets have been substantially reduced as a result of commercial land uses scattered along their lengths. Only a few sizeable commercial concentrations are discernible. The central business districts of both urban areas exhibit signs of severe physical and functional obsolescence.

- (b) Industrial land uses, in many cases, have been located haphazardly in small pockets of development which are incompatible with surrounding residential developments. Notable exceptions to this pattern are the Tampa and Plant City planned industrial parks and the growing industrial complex around the Port of Tampa.
- (c) Within recent years, urban residential sections have been developed with the use of greatly improved design standards than has been the case in prior years. However, the percentage of land area devoted to streets is still excessive due to a continued adherence to gridiron street patterns and a tendency to overlook necessary neighborhood requirements for parks and other open-space needs. Although a number of recreation areas exist to serve community populations, there remains a shortage of adequately-sized and well-located public parks. The opportunity to develop local parks in conjunction with elementary schools, thereby creating a neighborhood activity core, has for the most part been overlooked.

In general, the concept of residential neighborhood unit planning and development has not been utilized within Hillsborough County. Exceptions to this are a few large-scale subdivisions entirely developed by individual builders. However, the lack of effective subdivision review and regulation has resulted in wide-spread patterns of uncoordinated land development built to widely-varying standards.

- 7. The transportation pattern existing in Hillsborough County is in need of substantial improvement. Past improvements have been undertaken on an individual, year-to-year basis to meet immediate needs with little consideration given to long-range effects and an over-all transportation system. The need is particularly critical to develop long-range plans for major street and highway, air transportation, and port improvements so that future public investments in such areas will contribute to the economic growth of the county.
- 8. The location of major public facilities can be an important factor in promoting an orderly and efficient development pattern. Through advance selection and, in some cases, actual provision of public facilities such as schools and parks, new growth can be encouraged to locate in a proper fashion.
- 9. An impression might be gained from a review of this section that prime agricultural lands might soon disappear, that phosphate mining could run rampant to absorb and disfigure thousands of acres, and that community developments are in a hopeless state of disorganization. This would indeed be a bleak

prospect. However, the presence of such problems go hand-in-hand with the rapid rate of urban growth which Hillsborough County is experiencing. Similar problems confront all other growing metropolitan areas throughout the country. The important consideration, therefore, is to recognize these situations as serious community problems requiring coordinated action and to set about solving them as well as preventing their future reoccurrence. For many reasons, this has not been accomplished in the past and a backlog of serious community problems has been permitted to accumulate.

10. The need to coordinate existing development and to plan for future developments on a long-range basis is obvious. A complex, highly urbanized county, which potentially should more than double its population by 1980 cannot function properly by attempting to meet the challenge of growth on a day-by-day basis with reaction to individual development problems as they arise. As pointed out within the "Economic Base Report",

...the area faces strong competition in nearly every sector of its economy and concerted local action -- including careful long-range planning -- will be needed if the potential growth is to take place. Moreover, Hillsborough's growth can itself be more of a curse than a blessing if expansion needs are not anticipated and planned for.

Section I. INTRODUCTION

Section I. INTRODUCTION

A plan of development for Hillsborough County logically must be based upon the following:

1. The state law creating the Hillsborough County Planning Commission;
2. A thorough exploration of the area's growth potentials;
3. An understanding and appreciation of the historical background;
4. Physical geographic considerations;
5. An analysis of the existing development patterns.

When related to one another, these individual aspects combine to form a basic framework within which plans for future development can be structured.

Frame. To construct as a building by fitting and uniting the parts of the skeleton. 1/

The report centers around this concept. Most of the subjects outlined in the following paragraphs will be elaborated upon in subsequent chapters.

State Enabling Act

The first skeletal part giving meaning and substance to the Hillsborough County planning program is the state law (House Bill No 2027; Chapter 59 - 1363, Laws of Florida, Special Acts of 1959)

creating the City-County Planning Commission. Section 6 of this act sets forth the basic responsibility of the Planning Commission:

It shall be the duty of the planning commission to make a land use plan which shall include maps, plats and charts for the orderly growth and development of lands within the city of Tampa and lands in Hillsborough County outside the corporate limits of municipalities and of lands within the corporate limits of such other municipalities in said county as shall participate thereon. Said plan including such maps and charts shall be known as "The Hillsborough County Plan of Development". . . . Such master plan, with accompanying maps, plats, charts and descriptive matter shall show the planning commission's recommendations for the development of said area, including, but not restricted to, the following:

The general location and character of streets, viaducts, bridges, waterways, parkways, public and private parking areas and the development of a comprehensive system of arterial highways for the movement of vehicular traffic within Hillsborough County;

An overall system of storm drainage and flood control including conservation measures, and a system of removal of sanitary waste;

A system of airfields, terminals and other facilities for the orderly development and movement of air traffic;

The general location of educational facilities, and public buildings and facilities to serve the people of Hillsborough County;

A system of parks, recreational and sports areas and facilities contributing to the health and enjoyment of the people of Hillsborough County;

The general location and extent of light, water, gas and like utilities, whether publicly or privately owned and transportation or communication centers or terminals, whether publicly or privately owned;

The use of land areas for residential, commercial, industrial or other purposes, including the height of structures, size of yards or other similar restrictions; and

Recommendations relating to the removal, relocation, extension, narrowing, vacating, abandonment or change of use of any of the foregoing features of said master plan.

The state law also enables the Planning Commission to officially adopt a plan of development provided that such adoption "shall have no binding effect. . . ." Recommendations are then made to the Board of County Commissioners and to the legislative bodies of the several participating municipalities in the county. These public bodies, in turn, may adopt the recommended plan, thereby giving it official recognition and status.

Growth Potential

The growth potential of Hillsborough County -- both potential economic and population growth -- has been thoroughly explored and analyzed in a report prepared for the Planning Commission by Hammer

and Company Associates, economic and business research consultants. The research and projections accomplished as an integral phase of this work established the scale for this report and the plan of future development.

From a 1960 population of approximately 398,000 persons, it is estimated that Hillsborough County's population will grow to 580,000 persons by 1970 and to 820,000 persons by 1980. These estimates are based upon reasonable projections of economic developments expected to occur over the next two decades. If such estimates are realized, the county will increase by 422,000 residents in 20 years and will do more community building than has been accomplished within the 140 years since this area was first settled.

These figures stagger the imagination. Nevertheless, they indicate the probable magnitude of future Hillsborough development. The plan to be prepared will enable public and private organizations to more effectively cope with this growth.

Historical Background

Every community in the country has developed its own unique history. Generally, little attention is given to the past history of a community and, even less, is it used as a means for understanding existing situations and future possibilities. When, how, and why certain events occurred in past years largely explain today's achievements or, in some instances, lack of progress.

Hillsborough County has a distinct historical heritage. Unlike other major geographical sections of the Southeastern United States, plantation crops were not an important segment of the early economy. Also, unlike most Florida counties, a substantial industrial economy evolved centering around phosphate mining and cigar manufacturing. Like most regions in the South prior to World War II, however, the area's economy revolved around just a few economic activities and was far from diversified. Income levels were generally below national averages. Consequently, the opening or closing of one major employer boosted or seriously shook the local economy. The limited tax base supported only a minimum of public improvements for many years.

The Tampa-Hillsborough County area during World War II received rapid economic transformations through addition of large-scale Federal military installations and war-associated activities. It emerged after the war as a diversified industrial complex. Between the years 1945 and 1960, new developments in industry, commerce, and government took place at a rapid pace to meet the demands of new population growth and to decrease the deficit in improvements which had backlogged since the late 1920's. To a large extent this explains the present level of community achievement.

The Latin background of Tampa, particularly as it exists in the Ybor City section, is worthy of preservation and revitalization. An

interesting and vital city generally takes full advantage of its cultural contrasts as well as its similarities. A plan for future development should recognize and capitalize upon these aspects of the area's historical background and tradition.

Physical Geography

Geographic reasons played an important - if not the major - role in selection of the original Tampa townsite. Being at the mouth of a fresh water river, at the head of a sheltered bay, and on the fringe of a vast unsettled wilderness, the location was chosen for a military outpost to be known as Fort Brooke by the Federal government in 1823. Around this site the town of Tampa was to grow.

Physical geography of the region -- geology, topography, and soils -- still is a determining factor in Hillsborough County development. Factors such as areas subject to flooding, location of valuable phosphate mineral deposits, soils especially well-suited to citrus production, and poorly-drained sections of land have influenced and will continue to influence the over-all development pattern.

These physical characteristics of the county tend to fashion a mold into which most community development fits unless the natural setting is substantially altered. Realization of this and consideration of the extent and implications brought about by the composition and lay of the land definitely contribute to the framework of the plan.

Existing Development Patterns

The arrangement and present use of land and water resources in Hillsborough County is perhaps the most complex and interrelated segment of the plan's framework. Included within this phase of the report is a discussion of land use needs and the most appropriate arrangement of land uses for efficient and economical operation in relation to expected future economic and population expansion.

Existing land use is studied from the standpoint of both quantity and distribution. Adequacies and inadequacies in the amount and arrangement of land used for agricultural, residential, commercial, industrial, public and semi-public, and park purposes are evaluated. These can then be related to land and community facilities requirements for the 820,000 persons expected to reside within Hillsborough County by 1980.

Waterfront developments along bays, rivers, and lakes constitute a special aspect of Hillsborough County's development pattern. Since there is a limited supply of waterfront property as yet undeveloped, its proper utilization in future years could have a sizeable influence upon the area's economy. Also, the availability of water-oriented recreational facilities to serve more than double the 1960 population and the quality of the potable water supply are additional points of concern.

Transportation Patterns

Convenient and efficient circulation of people and goods into,

through, and around the county and its urban areas cannot be accomplished unless careful consideration is given to existing major street and transportation systems. An evaluation of their capabilities for future expansion must also be made.

Street and transportation facilities should be planned as systems, related to one another and to the total urban and rural complex. For example, if a few well-located and well-designed major streets are to carry the majority of traffic movements as they should, they have to be designed as a system. Improvement of isolated streets to certain design standards but with no relation to a planned street pattern cannot accomplish the desired objective.

Transportation systems, including routes and terminal facilities, also are brought into focus in the following study. This phase encompasses the seaport, airports, and railroads, all of which are vital to the well-being and sound growth of Hillsborough County.

Major Public Facilities Patterns

A final consideration of the existing development pattern is a study of major public facilities, including schools, parks, water and sewer services, and public buildings and grounds.

Summary

A meaningful plan for future growth must be based upon as complete knowledge of the natural setting and past and present events and

conditions in Hillsborough County as can be acquired, and upon projections of future population and its requirements for facilities and services. The aim of this report is to provide such a framework within which a preliminary plan may be prepared.

This plan when completed and presented, will furnish both an immediate general guide for future development of Hillsborough County and a basis for all further planning study. Such additional study of the Preliminary Plan should refine original recommendations and suggest definite short-range as well as long-range programs for carrying them out.

A continuing program of review, up-dating, and implementation should follow the preparation of the plan. A "planning process" should result, rather than a static, final picture of how the county might look in 1980.

The Preliminary Plan of Development will represent the first step in the establishment of this planning process.

Section II. HISTORICAL BACKGROUND

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Throughout the history of Tampa and Hillsborough County, individual events and happenings have greatly influenced the physical development pattern. A knowledge of these historical influences will provide both a depth of understanding of the existing development pattern and the basis for a sound evaluation of the area's future development.

The historical development of the county may be subdivided into seven distinct periods:

1. Pre-Civil War (before 1860)
2. Civil War and Reconstruction (1860 - 1880)
3. Railroad Building (1880 - 1890)
4. Decade of Growth and Growing Pains (1890 - 1900)
5. Twenty Years into the Twentieth Century (1900 - 1920)
6. Boom, Bust and Depression (1920 - 1940)
7. World War II and Post-War Period (1940 - 1960)

Pre-Civil War Period

(Before 1860)

Although the Spanish explorer De Narvarex made explorations of the Florida West Coast in 1528, using the Tampa Bay area as a beach-head for inland excursions, real development did not begin until 1823.

In that year a frontier outpost known as Fort Brooke was established as a base for Federal military operations against the Seminole Indians.

In 1823, Colonel Brooke... selected a site, sixteen miles square on the east side of the Hillsborough River at its junction with the east arm of the bay, as a military reservation. Up until 1830 no one could settle on the reservation except as a tenant. The Garrison was the name given to the section in the environs of the fort extending from the present location of Whiting Street to the bay. 2/

On January 25, 1834, a portion of the Florida Indian Territory was divided into the 19th county to be established and given the name of "Hillsborough". The County originally contained 8,580 square miles and encompassed the area bounded on the north by Alachua County (which then extended as far south as the present south Hernando County line), on the east by Mosquito County (now approximately the west Polk County line), on the south by Monroe County (which came as far north as the Caloosahatchee River), and on the west by the Gulf of Mexico. This territory, in addition to the Hillsborough County area, presently constitutes practically all the counties of Pasco, Polk, Manatee, Sarasota, DeSoto, Charlotte, Highlands, Hardee, and Pinellas. Plate 1 shows the County boundaries in 1839 and its relationship to the rest of Florida.

During the First Seminole Indian War (1835 - 1842), Fort Brooke became the chief supply depot for U. S. troops. During this period, as many as 3,000 soldiers were stationed there. The first roads extended



Map of FLORIDA

Exhibiting The
Post Offices, Post Roads, Canals, Rail Roads, &c.
BY
David H. Burr

(Late Topographer to the Post Office)

Geographer to the House of Representatives of the U. S.

Statute Miles

References

4	Horse Mail	Post	Coach	Roads	-----
2	D ^o	D ^o	Stage	D ^o	-----
1	D ^o	D ^o	or Sulkey	D ^o	-----
			Cross	D ^o	-----
			Rail	D ^o	-----
			Canals	D ^o	-----

Entered according to the Act of Congress, July 10th 1835

into the county were military trails radiating out from the fort to such interior points as Fort King near Ocala, Fort Gardner near Kissimmee, and Fort Dade near Bushnell. Later a road was extended to a common landing at Clear Water Harbor to enable transport of goods to and from schooners anchored in Clear Water Bay.

Needlessly long though it may have been, the Seminole War helped Tampa become established. When... the Seminole War began, Tampa was nothing but a tiny Indian trading post huddled along-side of Fort Brooke. It had a post office and was the county seat of Hillsborough County but since the county was practically uninhabited that did not mean much. Fort Brooke itself was a quite unimportant place, merely a small military outpost.... But six months later, it had become the main center of operations against the Indians. 3/

The Federal census of 1840 recorded 4,522 persons in all of South Florida, with only 96 in the Tampa Bay area outside of Fort Brooke. However, growth in the entire South Florida region was stimulated in 1842 when the U. S. Congress passed the Armed Occupation Act. This Act, in effect for only nine months, granted a settler 160 acres of land anywhere in Florida south of Gainesville for homesteading five acres for four years.

The promised free homesteads proved to be an irresistible magnet. And a large percentage of the land seekers headed toward the Tampa Bay region because of the publicity it had received during the war. 4/

When the Act terminated in 1843, settlers were unable to acquire free land until the Federal Homestead Act of 1862 was passed.

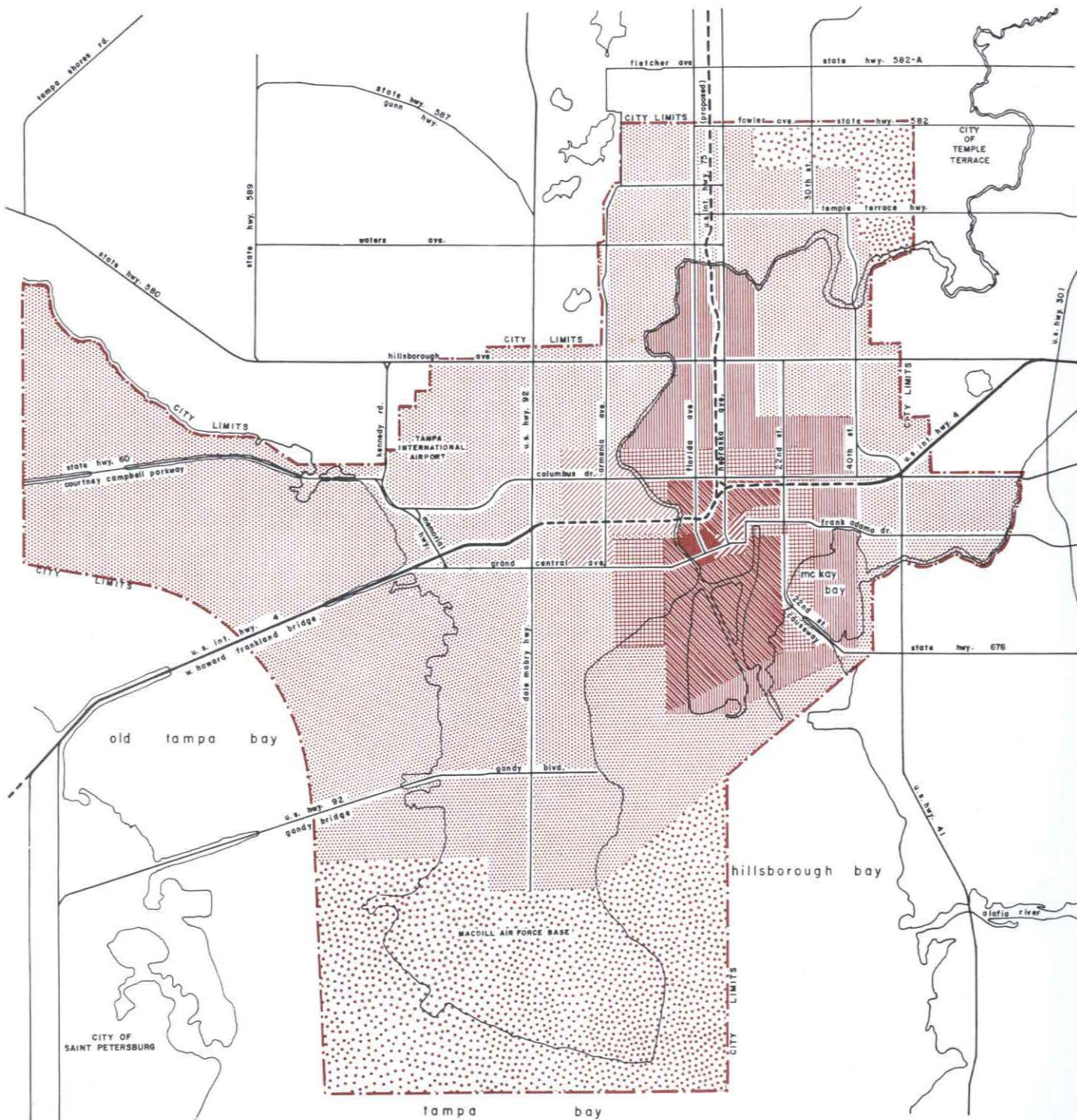
The first Hillsborough County courthouse was erected in 1847 on the block bounded by Lafayette, Franklin, Madison, and Florida. On February 12, 1849, Tampa was incorporated as a town, a move encouraged by the Federal government's grant to the County of land immediately north of Fort Brooke. However, this incorporation lasted only until 1852 when the Village of Tampa corporation was dissolved. In September of 1853 a second corporation was formed, but a city charter was not granted until years later on July 15, 1887.

The first survey of the Village of Tampa was accomplished in 1853 by John Jackson.

The blocks were laid out in one-acre squares. Those between Franklin Street and the river front were each divided into six lots 70 feet by 105. The blocks east of Franklin Street were divided into four lots, each 105 feet square. The streets were given a width of eighty feet. 5/

At the time of the Jackson survey, Tampa's population was approximately 300 persons. Plate 2 illustrates the original townsite and subsequent annexations to the City of Tampa.

Growth and expansion of the Tampa-Hillsborough County area were relatively steady during the decade 1850 to 1860,



source: tampa public works dept.

GROWTH OF THE CITY CITY OF TAMPA

LEGEND

- | | | | |
|------------------------|-----------------|-----------------|-----------------|
| 1853 ORIGINAL TOWNSITE | 1907 ANNEXATION | 1923 ANNEXATION | 1953 ANNEXATION |
| 1887 ANNEXATION | 1911 ANNEXATION | 1925 ANNEXATION | 1961 ANNEXATION |

hillsborough county planning commission

PLATE 2



... although this growth was considerably retarded during the years 1856 to 1859 by the hostility of the Indians during what is commonly known as the Second Seminole War. 6/

During these... years (1856 - 1858) the county commissioners refused to assign any school money to school districts outside of Tampa because it was not safe to hold school while the Indians were hostile. 7/

Hillsborough County underwent a series of boundary changes beginning in 1856 when the Manatee County section was separated from Hillsborough.

The largest plantations on the West Coast were... located in the Manatee River section which in 1856 was separated from Hillsborough County. The owners of the Manatee River plantations specialized in growing sugar cane but in Hillsborough County little cane was grown... The principal crop was cotton with tobacco a close second. 8/

In 1861 the eastern part of the county was organized into Polk County; Pasco County was created in 1887; and Pinellas County was established in 1912.

Civil War and Reconstruction Period

(1860 - 1880)

The 1860 U. S. Census recorded 2, 415 whites and 564 slaves within Hillsborough County.

At the outbreak of the Civil War there were approximately one thousand residents in Tampa and its vicinity. Beginning in November, 1861, and lasting for the duration of the war, Tampa Bay was blockaded by Federal warships.

Tampa was paralyzed at the close of the War Between the States. It was almost a ghost town. More than half the inhabitants had gone into the country to live... and to get enough to eat. 9/

Federal troops occupied the city from July, 1865 until August, 1869. Capital James McKay described Tampa following the war:

After the close of the war we all returned to our homes which we found in most instances in a dilapidated condition. Tampa was a hard-looking place. Houses were in bad order. Streets and lots were grown up mostly with weeds and the outlook certainly was not very encouraging. 10/

Most population growth between 1860 and 1870 was in rural areas of Hillsborough County. Due in large measure to the Homestead Act passed by the U. S. Congress in 1862 entitling settlers to 160 acres of land, the county population increased from 2,981 persons in 1860 to 3,216 in 1870. This was in spite of the fact that the Polk County area had been formed. However, Tampa lost 89 inhabitants in this same ten-year period.

Tampa's loss of population was caused not only by lack of a railroad but by disease as well. The town was plagued

by malaria and dengue... and occasionally was scourged by epidemics of the dreaded yellow fever. 11/

During the 1870's, a further decrease occurred in Tampa's population. Only 720 city residents were counted by the 1880 U. S. Census, compared with 796 in 1870. Total population in Hillsborough County rose to 5,814 persons.

During the years from 1866, even until the early eighties, Tampa was really nothing but a small village clustered about the mouth of the Hillsborough River. Twiggs Street was well out of town though there were a few scattered houses as far north as that. Hyde Park was all wild land, full of swampy places and overgrown with a heavy growth of scrub palmetto, cabbage palms and pines, as was practically all of the land west of the river. Land, even in the downtown section, was cheap. A lot on the corner of Madison and Morgan Streets sold for twenty-five dollars. Sand was ankle deep in practically all of the streets and in many places the scrub palmetto and weeds encroached upon the highways right down to the ruts made by the ox carts of the visiting farmers. 12/

In 1879, Tampa lost the Fort Brooke military installation. The reservation area was sold at a U. S. land sale.

Railroad Building Era

(1880 - 1890)

As previously mentioned, the lack of adequate transportation facilities severely handicapped Tampa's early development. Not until

the coming of the railroads in the 1880's did the area become relatively accessible from other sections of the country.

At that time the best way for travelers to reach the county was by railroad to Cedar Keys, thence...by boat...to Tampa. From Tampa the journey to other parts of the county was by slow-moving ox carts over roads deep in sand. 13/

In 1884, the first train of H. B. Plant's South Florida Railroad (now the Atlantic Coast Line) ran over the narrow gauge line that had been extended to Tampa from Kissimmee.

Plant City had been founded a year earlier (1883) by J. T. Evers who formerly had lived at Shiloh, one mile north of the new railroad.

The railroad passed Shiloh by, so Evers purchased a large tract adjoining the tracks, had it platted and named the embryo city in honor of the railroad magnate. Evers moved his store to Plant City; other merchants soon followed and the town became an actuality. 14/

In 1885 the Town of Plant City, a one-mile-square area bounded by Calhoun, Carey, Alsobrook, and Knight Streets, was incorporated. At this time approximately 300 persons resided in the city.

The fishing industry was the first industry in Tampa to take advantage of the railroad. Fish were brought into Tampa, processed, and shipped out to various destinations.

Because of the railroad... Tampa had grown more during... three years than it had during the entire sixty years following the establishment of Fort Brooke. Tampa had become

one of the nation's outstanding boom towns. . . . The population had climbed from 720 in 1880 to 2, 376 on December 1, 1885. . . . 15/

The year 1885 also marked the cigar industry's arrival to the Tampa area and the origins of Ybor City, the cigar manufacturers' industrial town.

The nucleus of the holdings of V. Martinez Ybor and Company was thirty acres of land on which the factory and a number of houses for employees was erected. Within a year the holding of the Ybor Company had been increased to one hundred and eleven acres. . . . The total number of dwellings in Ybor City was one hundred and seventy-six, most of them two stories high, built to accommodate from two to three families. . . . The commodious three-story brick factory. . . afforded ample room for six hundred employees. 16/

The Town of North Tampa (the old Second Ward) and the Town of Fort Brooke were incorporated in 1885. The Fort Brooke settlement was located east of East Avenue and south of Fifth Avenue and was

. . . notorious for many years for its gambling joints and houses of ill fame. 17/

When in 1887 Tampa was officially incorporated, it had an area of 6.125 square miles: 3.0 square miles of land and 3.125 square miles of water area.

The railroad was extended from Tampa across the Hillsborough River at Cass Street and to a terminal at Port Tampa, the deep-water port. Development of that section of the county soon began.

The Port Tampa extension was completed February 5, 1888.... An immense wharf, nearly a mile long, was started and warehouses were constructed. Port Tampa Inn, a novel hotel extending over the water, was built. An amusement resort, called Picnic Island, was developed.... Picnic Island served as Tampa's favorite amusement park for years, excursions being run there on the railroad. 18/

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Decade of Growth and Growing Pains

(1890 - 1900)

The rapid growth of both Tampa and the county during the 1880's brought substantial problems, some of which were solved while others were neglected. A sewerage system, consisting of a collection system and discharge of raw sewage into the Hillsborough River, was not built until 1900. Although Tampa developed its first city facilities, such as a street railway, water works, organized fire department, paved streets, and electric lights during the '80's, their use was somewhat limited in the '90's.

Efforts had been made... to lift Tampa out of the sand by building wooden sidewalks and "paving" the business streets with cypress blocks and shell. But the cypress block paving had swelled and popped open, the shell paved streets had disintegrated into powdery dust, and many of the wooden sidewalks had rotted and fallen apart. Civic progress had been almost completely stopped during the 1890's by a small but influential group of large land owners who were chronically opposed to paying taxes. 20/

Cigar industry expansion in the Tampa area during the 1890's resulted in the creation of another industrial city known as West Tampa. By 1895, more than 2,000 persons were living in the newly-incorporated community.

Other community settlements, including Thonotosassa, Valrico,

Springhead, Trapnell, Brandon, Seffner, Riverview, and Turkey Creek, developed in the county but not to the extent of those in the immediate Tampa area. According to an 1895 State of Florida census, Tampa was the third largest city in Florida, exceeded in population only by Jacksonville and Key West.

In 1898, at the outbreak of the Spanish-American War, the expanding City of Tampa found itself in a strategic location for United States military operations against the Spanish in Cuba.

... Tampa was selected as a principal concentration and embarkation point for troops which would invade the island. It was chosen primarily because it was the city nearest to Cuba which had both rail and port facilities. 21/

At times during the war, there were from 23,000 to 30,000 troops and camp followers encamped in Tampa and its environs, strung out from Port Tampa to Tampa Heights. 22/

The war had stimulated further growth in Tampa and exposed the Florida West Coast to the entire nation. At the turn of the century, the 1900 U. S. Census officially recorded 15,839 persons in the City of Tampa and 36,013 in Hillsborough County. Civic progress, however, had not kept pace with this increased population.

In many respects... Tampa was still nothing but a lusty boom town which was suffering acutely from growing pains. Richard Harding Davis, famous war correspondent, described it as a "squalid sand-blighted city".... 23/

Twenty Years into the Twentieth Century

(1900 - 1920)

During the first two decades of the Twentieth Century, Tampa became an important industrial and port city. Hillsborough County also became an increasingly well-known agricultural and mining area. Two of the most significant developments in this period were the discovery of phosphate and the improvement of Tampa's port facilities. Both of these events were interrelated.

Phosphate was discovered at Dunnellon, Florida in 1899. It followed that Tampa was the most logical port from which the mineral could be shipped to world markets. Although the Port Tampa channel had been deepened to 20 feet in 1891 and a 12-foot channel dredged in Hillsborough Bay to a point 200 feet south of Lafayette Street in 1899, it wasn't until 1909 that a 20-foot channel extending to the mouth of the Hillsborough River was completed.

Before the deepening of Tampa's harbor, the principal excuse for the existence of shipping here was the export of cattle to Cuba. When phosphate was discovered in Florida, Tampa became the leading exporter of phosphate in the country. ^{24/}

The 20-foot channel made Tampa a real seaport in every sense of the word. Both coastal and foreign trade were attracted to the city's wharves. Wharves, warehouses, phosphate elevators and coal chutes were constructed to meet the demands of

Tampa's increased shipping. Lumber from the back country of the county began to come in for shipment in much greater quantities.... Railroads were extended to connect with the increased harbor facilities.... 25/

By 1910, close to one-half of Hillsborough County's population was residing in Tampa. Cigar making was the most important industrial activity serving to attract population to the city.

Tampa itself kept booming. Its population more than doubled between 1900 and 1910, soaring from 15, 839 to 37, 782. More than a hundred cigar factories had located in Tampa by 1910 and were employing 10, 500 persons. 26/

In 1911, the Tampa corporate area was enlarged to a total area of 11.72 square miles, including four square miles of water.

Speculation in Florida real estate between 1909 and 1915, partly as a result of widespread publicity given to land reclamation projects in the Everglades, also gave impetus to new development along the Florida West Coast. It was a forerunner of the big 1921 "boom".

Disastrous though the boom was, it had its beneficial aspects. The publicity given by the nation's press to the Everglades... helped make the entire country "Florida conscious". In Tampa the boomlet brought a burst of activity. While it lasted, the city got its first worthwhile real estate development, its first modern bridge across the Hillsborough, its first real skyscrapers, its first city-wide paving program, its first effective sewage disposal system, its first

union depot, and its first public library.
And the county got its first hard surfaced
highways. 27/

World War I stepped up the demand for Florida phosphate inasmuch as Chilean nitrate fields had been closed off to the United States. Though the local economy became depressed following the Armistice, the over-all Tampa population growth rate between 1910 and 1920 was a substantial 37 percent. By 1920, Tampa had 51,608 residents and Hillsborough County had a total of 88,257. This amounted to an increase of 10,000 persons for Hillsborough over the decade even though Pinellas County had been separated in 1912.

Boom, Bust and Depression

(1920 - 1940)

In the Fall of 1921, the "Big Florida Boom" was underway.

Like an epidemic the "Florida fever"
spread throughout the nation. 28/

Hillsborough County received its share of real estate speculation and development, but at the same time experienced a more substantial type of growth.

All that section of the state (Southwest Florida) was then developing with startling rapidity and, as it developed, Tampa expanded. . . . To serve the mushrooming cities of St. Petersburg, Clearwater, Lakeland, Bradenton, Sarasota, Fort Myers and other favored children of the

boom, more and more wholesale and distribution firms were established... and each firm brought new people to the city. 29/

Many land areas around Tampa were subjected to premature subdividing.

Subdivisions, consisting of cleared "piney" lands, several miles out from the centers of towns, contained the field office, street markers, and sometimes... even boasted of paved streets and sidewalks. By far the greatest developments due to the "boom" are those in the Interbay section... extending on the south to Ballast Point and Port Tampa; Davis' Islands... and Temple Terraces. 30/

A total of 9.94 square miles was annexed to the city in 1923, expanding Tampa north to Hillsborough River and southwest to the industrial area on Hooker's Point.

During the boom period, 1921 - 1926, there was a profusion of public improvements including Gandy Bridge completed in 1924; Interbay Drainage District improvements completed in 1928 to serve 250 subdivisions; a network of hard surfaced county highways costing approximately \$4,000,000; Ybor City ship channel, approved in 1922; and construction during 1925 - 26 of a new city water works which utilized water from the Hillsborough River.

In 1926, the "Florida Bubble" burst. Fortunately, the cigar industry was still a major employer in Tampa and the effects of deflated land speculation activity were not as severe as they could have been.

The fact was that Tampa had been less seriously affected by the crash than most cities in peninsular Florida, simply because it was by no means entirely dependent upon winter visitors or real estate. It had the cigar industry to fall back upon. 31/

In 1928, for example, almost one-third of the employed labor force, or some 13,000 persons, was engaged in cigar manufacturing in 159 factories in West Tampa and Ybor City.

The City of West Tampa was annexed to Tampa in 1925, bringing the total city area to 24.10 square miles. In December, 1925, another annexation was accomplished that brought in an additional 148.76 square miles; however, this annexation was dissolved in 1926.

The slackened pace of Florida development beginning in 1926 was followed shortly by the Depression of 1929, and

...being the commercial center of Southwest Florida, a section heavily dependent on tourist business, Tampa suffered acutely. 32/

Despite two economic setbacks, the City of Tampa ended the 1920's with a population of just over 100,000 persons, or a 95 percent population increase for the decade. Hillsborough County's population totalled 153,519 persons. By 1930, two-thirds of Hillsborough County's population resided in the City of Tampa.

The decade beginning in 1930 was characterized by a low level of economic activity and population growth. Although public works

projects sponsored by W. P. A. were responsible for maintaining a minimum level of employment, 16,488 persons in Hillsborough County in 1934 were certified for relief. The City of Tampa, according to the 1940 U. S. Census, had realized only a 7 percent population increase over 1930 with a total population of 108,391 registered. The growth rate of the area outside of Tampa was more significant during this decade. Close to 20,000 new residents were added to rural and suburban locations, with Tampa gaining only 7,200 persons.

World War II and Post-War Period

(1940 - 1960)

One source claims that,

The period 1933 to 1944 extended from an era of depression, stagnation, and financial stress at one extreme to an era of intensive war activity, growth and productivity at the other. This was a time in which the scope and functions of local government expanded. During this period (since 1935) the Homestead Exemption became a factor in the fiscal and tax pictures, more and more accelerated flights to and beyond the fringe, and centralized business continued to decentralize. 33/

Another source states,

During these 17 years, 1928 to 1945, . . . ward heelers gave the people of Tampa not one thing except a big municipal headache. Tampa was steadily gaining in population but during those 17 years not

one major municipal project was undertaken by the city government. The only major city-wide paving project was a WPA job on... Bayshore Drive. The only municipal addition was a small city airport, which was outmoded in three years because the big airliners could not land there.

The city water works just couldn't do the job. In dry seasons the pressure was not sufficient to lift a stream of water through a fire hose to the second story.... People couldn't water their lawns; only a dribble dampened their sinks. In wet seasons, Hillsborough River overflowed into residential sections.

Taxes kept climbing year by year. The sewer system, bursting at the seams, all but broke down. Raw sewage was pumped into Tampa Bay.... Stench from the low places in the city was terrific; streets cracked and crumbled, and public buildings were unkept.

On top of all this, a strong organized underworld was developed and eventually became the ruling element in politics. Gambling ran wide open; the bolita business was built into a \$10,000,000 a year racket.

That was beautiful Tampa in sunny Florida from 1928 to 1945.... a perfect picture of political stagnation, careless and corrupt, the happy hunting grounds of ward heelers. It was a city with all the potential of great growth but hamstrung by petty politicians. It was indeed "a city without a soul" as it was labeled by Karl A. Bickel, retired president of United Press.... 34/

Planning studies of the Tampa area began in 1941 with the Simons-Sheldrick reports. These studies pointed out a number of serious development problems confronting the municipality and recommended a series of planned solutions.

A traffic volume survey in the same year substantiated that Florida and Nebraska Avenues from the north, 2nd and 4th Avenues from the east, Bayshore Boulevard from the south, and Grand Central Avenue from the west were the principal traffic-carrying thoroughfares. Central Avenue was proposed as a major traffic relief street for Florida and Nebraska Avenues. Fourth Avenue (Adamo Drive) also was proposed for extension across the ACL R. R. tracks westward to a connection with Cass Street. A number of other streets in Tampa were proposed for improvement to major street standards in accordance with a comprehensive street system plan recommended by the planning consultants.

The 1941 Simons-Sheldrick report further recommended adoption of subdivision rules and regulations and an interim zoning ordinance. A comprehensive zoning plan was presented to the City of Tampa in 1942.

Of the ninety-two cities in the U. S. that
had population of 100,000 or more in 1940,
eighty-eight have enacted and are operating
under comprehensive zoning plans. . . .
Tampa is one of the four not yet zoned. 35/

A city zoning ordinance was eventually passed in February 1944, but county regulations were not adopted until 1950.

In 1945 another report prepared by the same consulting firm recommended that the "Scrub" area near downtown Tampa be redeveloped as a civic center. A further recommendation was that industry be restricted to the estuary section and southward on the east side of McKay Bay. Railroad tracks from Tampa to Port Tampa were to be eliminated and the Port Tampa facilities moved to the opposite side of Tampa Bay. Additional planning studies of the Tampa-Plant City-Hillsborough County area were prepared by consultants at various times after the initial Simons-Sheldrick reports. Unfortunately these reports and their recommendations were not implemented through an active local planning program of any consequence.

Construction on MacDill Field was commenced by the Federal government in 1939. At the height of activity during World War II, more than 15,000 military personnel were stationed at the base. Two other air bases, Drew Field and Henderson Field, were also located in the Tampa area. Three major ship yards employed upwards of 22,000 persons during peak periods.

The war years and post-war period in the 1940's attracted new population to the Tampa-Hillsborough County area.

Tampa prospered along with all other communities in the Tampa Bay region. The prosperity was due almost entirely to the fact that the removal of wartime travel restrictions released a flood of winter visitors. Wide adoption of pension plans throughout the nation had greatly increased the number of persons who were financially able to retire and Florida benefitted to a marked degree. 36/

In 1946, the City of Tampa changed its form of government from an aldermanic system and a series of public improvements were initiated. However,

The change of Tampa's city government from the ward heeling aldermanic system to a strong mayor with a citywide elected Board of Representatives did not automatically cure the evils of 17 years of municipal corruption. 37/

Between the 1940 and 1950 U. S. Censuses, Tampa's population had increased from 108, 000 to a total of around 125, 000 persons. The total Hillsborough County area had grown from 180, 000 to 250, 000 persons. The increase of almost 40 percent in county population, compared with the increase of 16 percent for the City of Tampa, does not accurately reflect the real growth of the Tampa urban area inasmuch as the City of Tampa had not expanded its corporate limits since 1929.

During the decade beginning in 1950, development of Hillsborough County was characterized by economic base expansion principally through the addition of market-oriented industrial and service activities. Civic progress took the form of a successful major annexation program in 1953 which resulted in 91. 7 square miles being added to the Tampa corporate area. A decision was also made to locate the University of South Florida in Hillsborough County.

During the past decade the interstate highway program began; six new bridges across the Hillsborough River and major street

improvements were constructed; a number of important public buildings, including a new courthouse, were erected; an urban renewal program was commenced and local efforts were increasingly directed toward revitalization of the central business district; airport and port facilities were expanded; and water and sewer system additions were accomplished. In effect, Hillsborough County was reducing its legacy of neglected public improvements and attempting to meet the needs posed by a rapidly growing population.

The 1960 U. S. Census indicated an increase of 148,000 more residents within Hillsborough County over 1950, making a total population of 397,788. This represented an increase of 59 percent for the decade. Owing largely to the 1953 annexation, the City of Tampa more than doubled its 1950 population figure, with a total of close to 275,000 persons counted in 1960.

Almost 70 percent of the total 1960 county population resided in corporate Tampa and another 8 percent (approximately 31,000 persons) lived within the urbanized portion of the county adjacent to the central City of Tampa (this urbanized area included Port Tampa, Temple Terrace, and MacDill Air Force Base). The corporate area of Plant City accounted for 4 percent of the total county population.

The 1960 U. S. Census clearly proved that Hillsborough County was substantially an urban county, with 82 percent of its population then residing in urban areas.

Summary

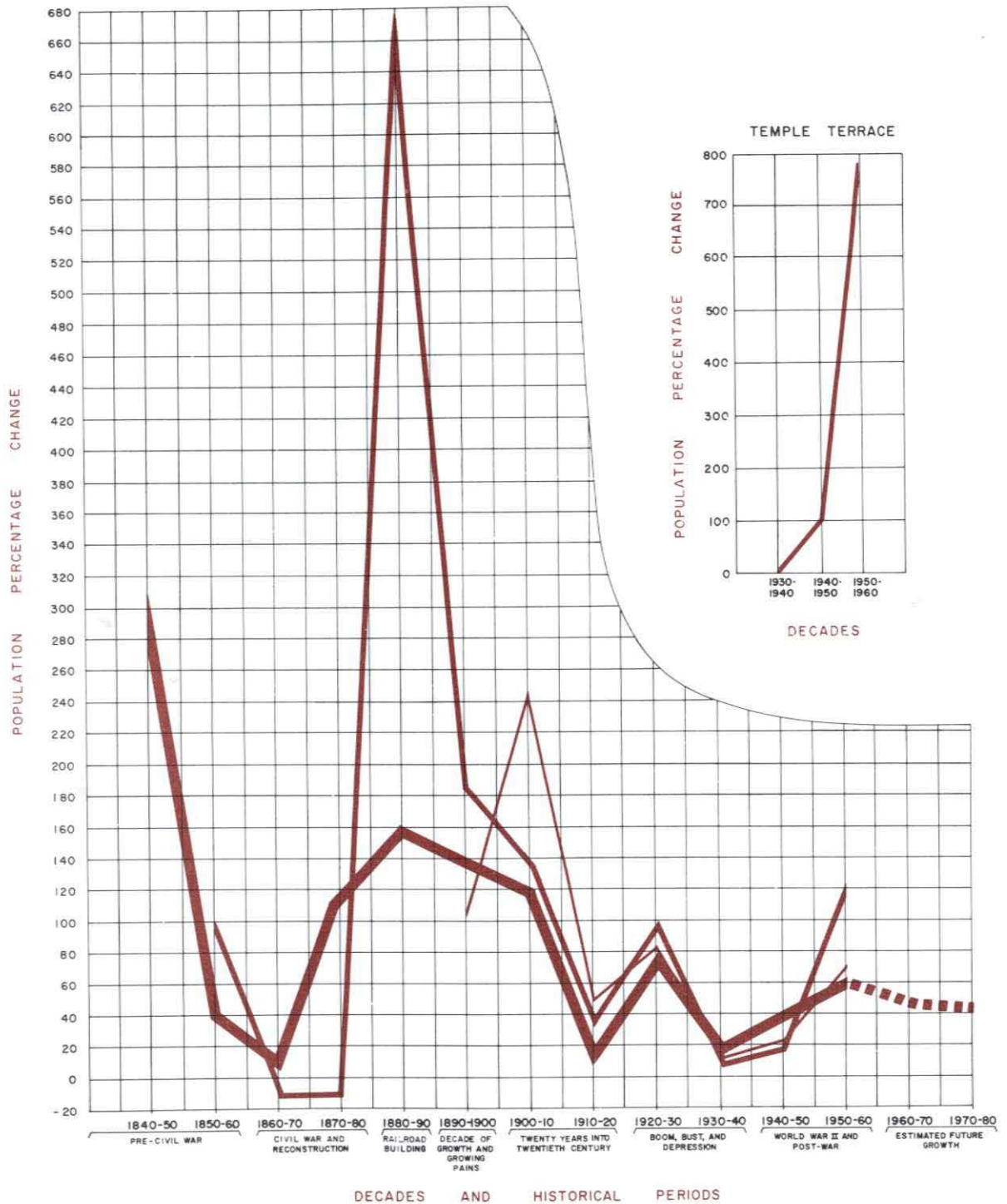
The development of Hillsborough County from its beginnings in the 1820's through the 1940 decade was closely associated with a sequence of major events brought about principally by outside rather than local influences. For the most part, these events created the economic climate for population increases, but they in no way led to steady, year-by-year growth and a flow of private and public capital investments. Establishment of Fort Brooke as a U. S. military post, the Seminole Indian Wars, the Homestead Acts, the Civil War and Reconstruction period, railroad building, location of the cigar making industry in the Tampa area, the Spanish-American War, discovery of phosphate in Florida and subsequent Federal improvements to Tampa's harbor, the 1909 and 1921 Florida real estate booms, the Depression, and World War II were some of the major events leading to extreme "peaks and valleys" in the county's growth pattern. Plate 3 illustrates past and estimated future percentage changes in the population growth rate.

Little or no local control or guidance was exercised to effectively regulate this growth. The result was that the county's resources in many instances were unwisely utilized. Inability to keep abreast of the population needs for public services and facilities is also evidenced by the area's history.

POPULATION GROWTH RATES

HILLSBOROUGH COUNTY

1840-1980



LEGEND

HILLSBOROUGH COUNTY
 TAMPA
 PLANT CITY

source: bureau of the census

The City of Tampa, as early as 1941 and again in 1951 and 1956, had comprehensive development plans prepared by a planning consultant. However, their effectiveness in the community was limited since there was no follow-through on major plan recommendations. The City of Tampa Zoning Ordinance was adopted in 1944 for the then limited corporate area. County zoning was adopted in 1950, but has not yet been related to an over-all plan of development or extended to all parts of the county.

Between 1950 and 1960, when Hillsborough County registered the greatest numerical population gain in its history (148, 000 persons), community concern became apparent for the need of more local control and guidance to be exercised over future developments and for the correction of past mistakes brought about by misguided growth. Perhaps the strongest local statement to this effect, with emphasis placed upon "orderly development over a long range of time" and not on the traditional lines of "boom and bust", was issued by a citizens' committee in 1958.

The metropolitan area of Tampa presents a classic example of a typical American Community in which the steady influx of new citizens has out-grown the physical and political capacities of city and county government to properly accommodate them and in which the rising tide of population has thrown upon them problems which have yet to be solved.

Tampa and Hillsborough County, like Topsey in Uncle Tom's Cabin, have "just growed up", without much guidance and very little planning toward the time when they might become parts of a great metropolitan community. The weight and complexity of steady population growth and urban expansion have caused them to outgrow their breeches and have created new and serious problems in our social and economic fabric which continue to increase.

... and the problems so created have been in the past, dealt with separately by city and county on the basis of crises and emergency rather than on the basis of a planned and orderly metropolitan development over a long range of time... 38/

Creation of the Chamber of Commerce "Committee of 100" and the Tampa Industrial Park, the Tampa and Plant City Urban Renewal Agencies, and the City-County Planning Commission all during the past ten years has provided further evidence of growing community concern.

With 82 percent of the 1960 Hillsborough County population being urban in character and with a 1980 county population estimate of 820, 000 persons (more than double the 1960 count) there will be an even more critical need over the next 20 years to effectively guide the utilization of local resources. In particular, the most appropriate use of land and financial resources is required. Through preparation of a plan of development and by its careful implementation, this can be accomplished to a large measure. "Peaks and valleys" of growth may be expected as in the past,

but their severity and importance to over-all county development should be considerably lessened.

If the population of Hillsborough County reaches 320,000 persons by 1980, there will be more community building in the relatively short space of twenty years than has occurred over the past 140 years. The opportunity to guide this growth into proper channels is extremely challenging. It is actually more than challenging; it is mandatory that this be done in order to protect and enhance Hillsborough County's competitive position with other metropolitan areas throughout the state and nation.

Luther Gulick, President of the Institute of Public Administration, claims:

Employment and people will shun those centers which bungle their future, and will expand in, or move into, those regions which look ahead, act with imagination, meet the expanding requirements, and give business and people a feeling of confidence. 39/

Section III. PHYSICAL GEOGRAPHY

Section III. PHYSICAL GEOGRAPHY

A basic consideration in planning for an area as extensive as Hillsborough County, with its many diverse land and water relationships, is an understanding of the regional physical geography. Physical geography -- the geology, topography, hydrology, climate, and soils and their distribution -- has been a major factor in the shaping of the existing development pattern and will be of substantial importance in the establishment of future growth patterns. An example of the influence of physical factors is the very location of the Tampa townsite itself, which was selected principally because of its proximity to a source of fresh water and its location on a sheltered and relatively navigable bay.

In many instances of town development the quality and form of the land, in effect, have created a mold into which the communities have fit with only slight room available for expansion in any direction. In such cases, large and costly improvements are generally necessary to alter natural physical characteristics.

Physical geography played an important role in the site selection and early development of most communities. Increased population densities in our cities, plus modern engineering techniques and improved technology of all types have currently minimized or, in many cases, eliminated many of the problems imposed on the community by its physical

environment. However, as the fingers of urban development continue to spread out from the original compact urban centers. . . . a new appraisal. . . . of the physical landscape is needed. 40/

The following is a brief description of Hillsborough County's physical geography together with a summary of its implications upon the future development pattern. More detailed study of related factors including agriculture, phosphate mining, urban growth conflicts, and others -- is incorporated into subsequent sections of this report.

Geology

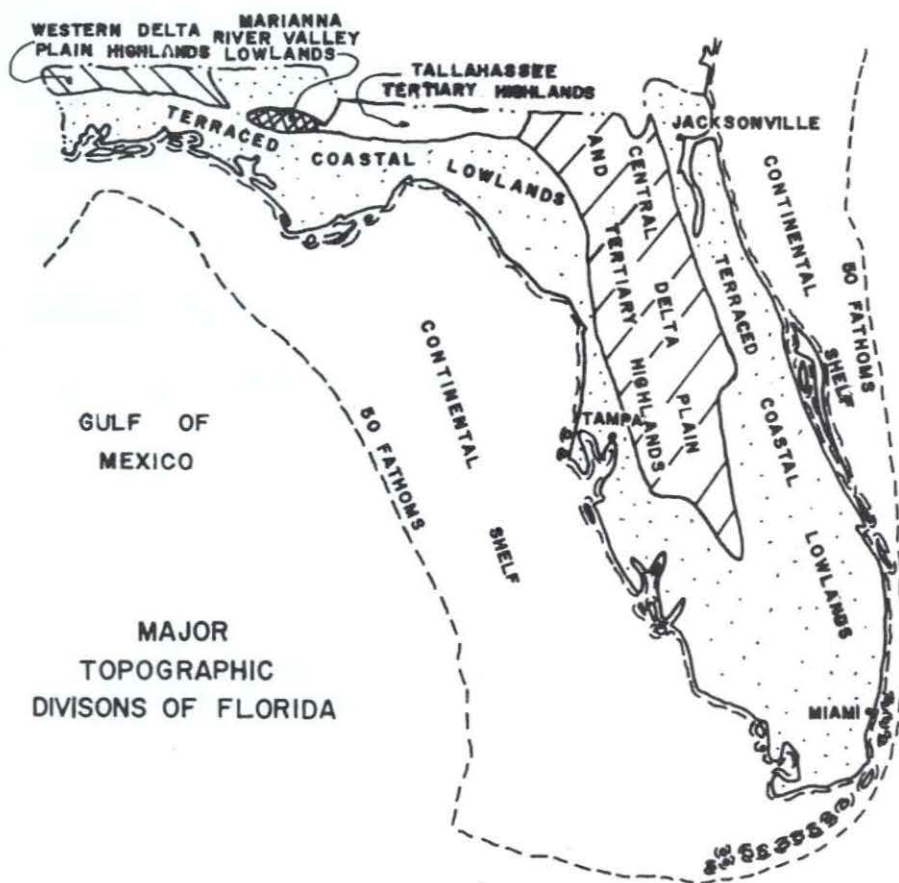
Geologic action has exerted an important influence over the development pattern of Hillsborough County. A summary of the influence of such development determinants as present soil, mineral, and water formations -- all essentially the result of early geologic occurrences -- is included within the following paragraphs. The influence of surface configurations, also shaped by geologic action, will be explored in more detail in the section on topography and surface hydrology.

Measured against time, the entire State of Florida has only recently emerged from the sea as a permanent surface entity. Geologically speaking, the Florida Peninsula has been an above-water portion of North American only since the beginning of the Pliocene epoch late in the Tertiary period of the Cenozoic era. This was approximately 12 million years ago, a comparatively short time considering the Earth's history is estimated

as extending over three and one-half billion years. The Florida emergence occurred during the development period of mammals, some 10 million

years prior to the appearance of primitive man.

Today, Florida is considered a physical part of the Gulf of Mexico Sedimentary Basin which also includes most of Cuba, the Yucatan Peninsula, and the Bahama Islands as well as other



Gulf lands. Hillsborough County is a physiographic subdivision of the Southeastern United States' Terraced Coastal Lowlands, with the extreme eastern section of the county fringing the Delta Plain and Tertiary Highlands. The accompanying sketch illustrates this relationship.

Generally speaking, a cross-section of the entire land mass of

Florida would reveal a simple picture of limestone bedrock with an overburden of sand. The surface layer was originally an alluvial deposit, essentially of coarse texture, transported from the Appalachian Highlands by streams and subsequent sea action. Although the rocks of the Cenozoic era were laid down in essentially a horizontal position, the later sedimentary deposits tilted the land downward to the southwest.

Soil Formations

Some of the factors of soil formation tend to be uniform throughout Hillsborough County. The type of parent material and the degree of drainage account for principal differences.

Five times during the Pleistocene epoch the sea level rose high enough to cover the area that is now Hillsborough County. During each of these periods, the sea left a mantle of sand over the earlier deposits. Many soils of the county were derived mainly from these materials. In places recent accumulations of organic material have covered the sand. The combined thickness of the sand layers ranges from a few feet to several hundred feet. ^{41/}

Tampa borders on the southern boundary of the Apalachicola group of the Oligocene formation. This group consists of cherty and siliceous limestone, marls, sands, sandy clay, and fuller's earth. The greater part of the surface material consists of siliceous sand uniformly fine graded and varying from a few inches to many feet in depth. It is white or yellow sand, having an impervious hardpan stratum resting upon limestone or coral rock. ^{42/}

Hillsborough County soils have not matured sufficiently to create definite horizons in a soil profile; however, the types mentioned above tend to predominate.

Mineral Formations

Florida's phosphate industry, as centered in Hillsborough and Polk Counties, in 1960 accounted for over 70 percent of total production of the mineral within the United States. Phosphate deposits are the result of geologic action.

In the eastern part of the county, the sands deposited during the Pleistocene epoch overlie materials of the Bone Valley formation, of the Pliocene epoch. The Bone Valley materials contain brown and grey nodules of phosphate. The overburden of sands ranges from a few feet to many feet in thickness. The phosphatic deposit is from 13 to 50 feet thick. This material, if mined, yields high-quality pebble phosphate. ^{43/}

Other mineral and mineral fuel deposits in Hillsborough County include peat, gem stones (agatized coral, quartz crystals and selenite), and oyster shells. In 1959 the county was the largest producer of peat in Florida, with most of the material being used for soil improvement purposes. The possibility of oil and gas deposits in the Hillsborough County - Florida West Coast area should not be overlooked.

Florida is closely associated with the geologic processes and structures that produced the islands and adjacent mainlands of the

Caribbean area. Not only do the land masses of this area have a great potential for oil production, but also the adjacent continental shelves. 44/

Water Formations

Bays, rivers, fresh water lakes, and wetland areas comprise the principal surface water formations in Hillsborough County. These are the result of geologic actions and, in the case of lakes and wetlands, solution weathering of limestone.

Tampa Bay, Old Tampa Bay, and Hillsborough Bay are underwater portions of the Coastal Lowlands area of Florida extending out to the Continental Shelf in the Gulf of Mexico. Shallow depths of the bay areas indicate that there has been only a slight emergence of the land portions of the Coastal Lowlands above the water.

Since the entire area emerged from the sea at approximately the same time in geologic history, the land form has not been complicated by a sharp relief pattern and by consequent erosion and silting problems. Rather, the three principal rivers in Hillsborough County -- the Hillsborough, Alafia, and Little Manatee -- fall from relatively low elevations with gradual flowing movements (sometimes sluggish and slow) into the bays.

Fresh water lakes in the northern and northwestern parts of the county and the extensive wetland areas to the northeast are closely related in their origins. Drainage of the low, northern section is extremely poor

owing principally to the high water table, which in some cases has risen to the surface. This surface condition drops off to the west, but the aquifer remains close to the surface all the way to the coast. Fresh water lakes were formed principally in the Lutz and Lake Fern sections by dissolution of the limestone base through chemical action of acid underground water which eventually created sink holes and springs. The following quotation partially explains this action.

In the Hillsborough River area the basement rocks are overlain by over 3,000 feet of Tertiary limestones. These limestones are capped by a thin veneer of Pleistocene unconsolidated marls or Recent sand and clay. All the limestones are permeable to, and soluble in, the humic-acid-bearing water percolating into them from the surface. As a result of that solution action, the basin contains sinks, springs, caverns and solution channels. ^{45/}

Water sources in the county, aside from surface supplies, are obtained from the upper 1,000 feet of the Cenozoic subsurface strata. Within this strata are three aquifers.

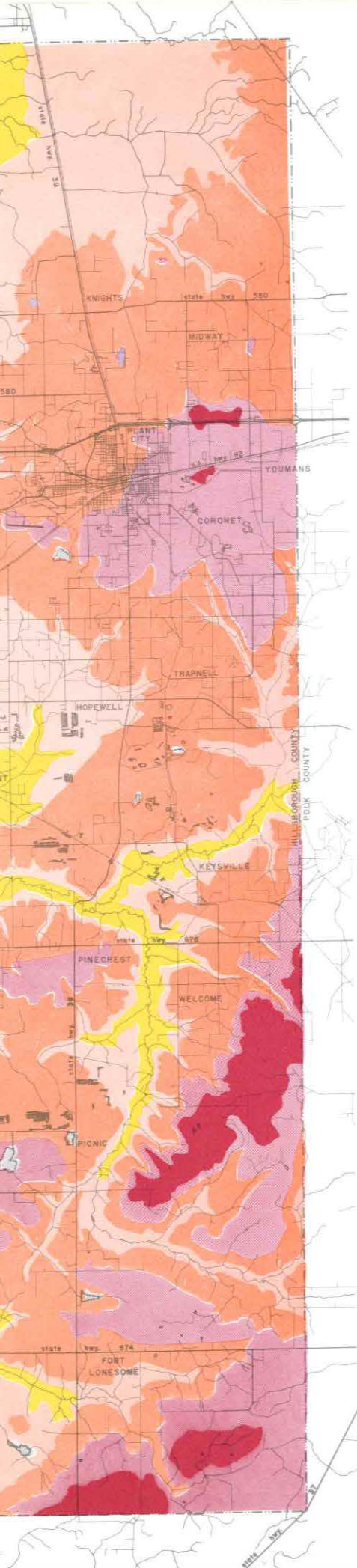
Water may be obtained from three aquifers. The non-artesian aquifer, composed of surface sands, yields up to 200 gpm (gallons per minute) per well. The shallow artesian aquifer, composed of limestone and sand beds... yields up to 500 gpm, and the principal artesian aquifer, composed of limestones... yields up to several thousands gpm per well. ^{46/}

The bulk of the 67 mgd (million gallons daily) of subsurface water used in the County comes from the principal artesian aquifer.

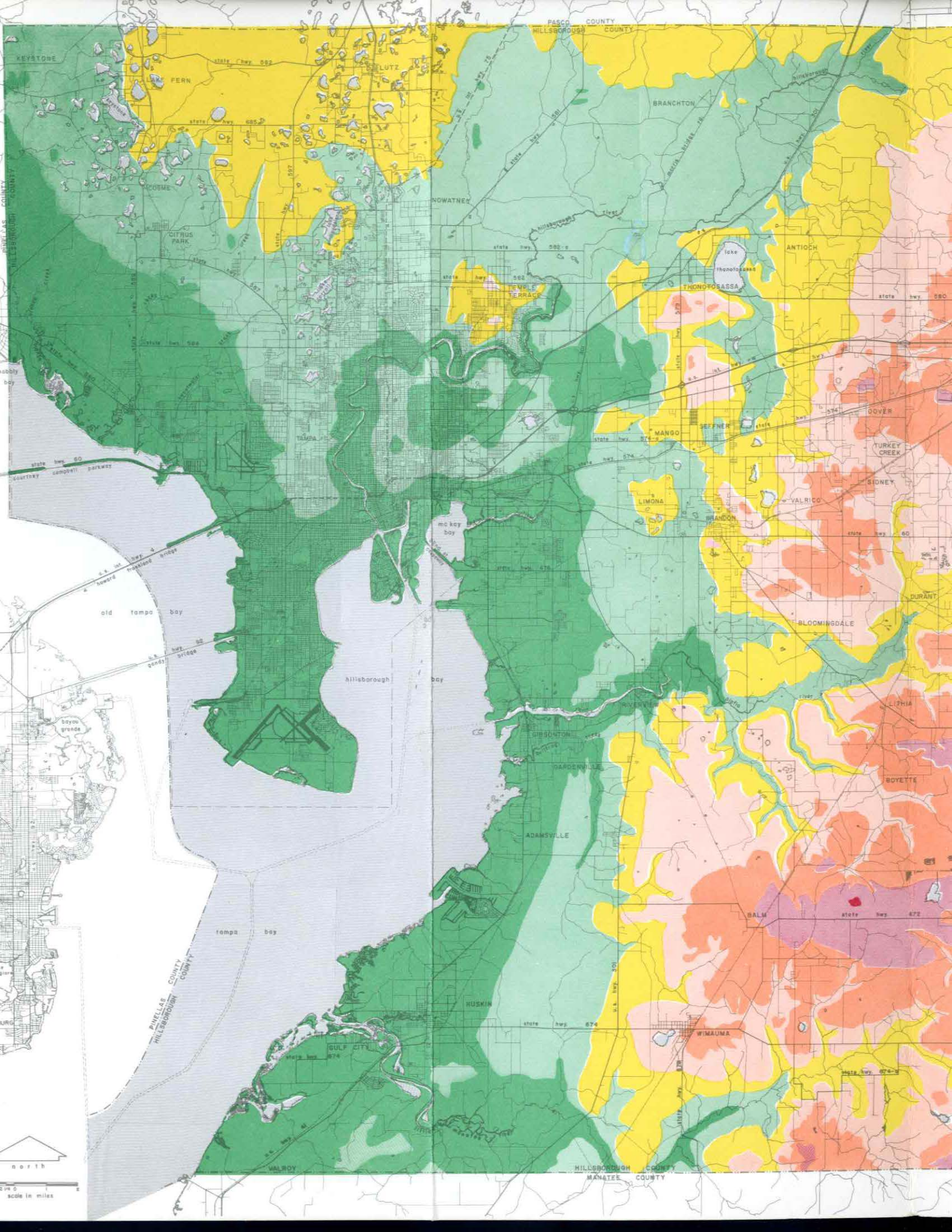
TOPOGRAPHIC CHARACTERISTICS

HILLSBOROUGH COUNTY

L E G E N D

- 
- RIVERS, LAKES, AND BAYS
 - ELEVATION BELOW 25 FEET
 - ELEVATION 25-50 FEET
 - ELEVATION 50-75 FEET
 - ELEVATION 75-100 FEET
 - ELEVATION 100-125 FEET
 - ELEVATION 125-150 FEET
 - ELEVATION 150-175 FEET

source: u.s. geological survey



The piezometric surface of the principal artesian aquifer is higher than 100 feet in the northeastern part of the county and generally slopes toward Tampa Bay. Troughs in the piezometric surface extend inland, indicating that water is discharged from the aquifer into the Hillsborough and Alafia rivers. ^{47/}

Where the piezometric surface is more than 30 feet above sea level, ground-water supplies containing less than 500 ppm of dissolved materials may be obtained at a depth below sea level not exceeding 40 times the elevation of the piezometric surface above sea level. Where the elevation of the piezometric surface is less than 30 feet, the concentration of dissolved materials varies erratically with both depth and location from about 170 to more than 11,000 ppm. ^{48/}

A maximum of five hundred parts per million (500 ppm) of dissolved materials is a standard accepted by most public health authorities for approving water supplies suitable for human consumption.

Topography and Surface Hydrology

Physical relief or topography in Hillsborough County, together with its hydrologic pattern, has had a considerable influence upon development. Existing surface characteristics such as land slope, wetlands, large bodies of water, river basins, and similar features, deserve review before a plan for future development is formulated. Generalized topographic characteristics are shown in Plate 4.

Land Slope

Absence of extremely steep slopes (a ten-percent slope is considered by most authorities as the point beyond which special development problems and costs are encountered) is a characteristic of Hillsborough County topography. A low coastal section below 25 feet elevation surrounds the entire bay area for distances of from one to three miles inland. Further inland, the slope increases almost imperceptibly to the north, rising to a maximum elevation of around 75 feet. To the east of the coastal section, however, the slope gradually becomes more pronounced, with gently undulating to rolling terrain occurring in the proximity of Plant City and lands bordering Polk County. The highest elevations in Hillsborough County are slightly in excess of 160 feet above sea level and are found in the Keyville area.

Lakes, Intermittent Ponds, and Wetlands

Water areas and wetlands are numerous throughout the county, owing to relatively heavy precipitation, gentle slope, and high water table. Marshland and wetlands occur along the coastline and in association with several rivers and streams. Concentrations of lakes and ponds occur principally in the northwestern and north-central sections, but are also found with irregular frequency in practically every other portion of the county. Keystone Lake and Lake Thonotossasa are the two largest lakes. Many small natural springs exist within the county, the principal springs being Buckhorn, Eureka, Lithia, Purity, Palma Ceia, and Sulphur Springs.

A special feature of the local topographic pattern is a result of phosphate mining operations. Tailing excavations, the majority of which are water-filled, occupy some 7,000 acres and generally are located south of Plant City in the phosphate mining area of west-central Hillsborough County.

River and Stream Basins

Due to the relatively level character of Hillsborough County as a whole, watershed boundaries are not particularly distinct. In several instances, for example, the course of two or more streams flow from their head-water origins through a common wetland area. Nevertheless, the river basins are pronounced features of the landscape.

Ten rivers and major streams drain most of Hillsborough County. These include the Anclote River, Brooker Creek, Rocky Creek, Sweetwater Creek, Hillsborough River, Palm River - Sixmile Creek, Alafia River, Bullfrog Creek, Little Manatee River, and Peace River. The three main surface drainage basins include the Hillsborough, Alafia, and Little Manatee River systems.

Three rivers, the Hillsborough, Alafia, and Little Manatee rivers, have an average combined flow of 508 mgd and drain about 70 percent of the county. The average flow of the Hillsborough River is 173 mgd, of which about 23 mgd is used by the City of Tampa for its municipal supply. The average flow of the Alafia River is 220 mgd and of the Little Manatee River is 115 mgd. ^{49/}

Fourteen percent of the water is carried off by the other seven rivers and streams mentioned above, while the remainder of the land (16 percent) is drained by numerous small streams, canals, ditches and sewers in close proximity to Tampa Bay. Of the total flow, Hillsborough Bay receives approximately 77 percent, Tampa Bay receives 17 percent, and Old Tampa Bay receives 6 percent.

Surface water runoff into the three principal river basins is an important element of the surface hydrologic pattern.

Runoff is generally high in the southern part of the county, moderate in the north-eastern part, and low in the northwestern part. . . . An exception is the Palm River Basin. Although this basin is in the central part of the county, its runoff is high (24 inches). The yearly average runoff for the county is 15.6 inches. 50/

The sandy soil and permeable limestone base indigenous to Hillsborough County absorb a generous proportion of storm water. However, when the surface is subjected to a heavy rainfall, it becomes saturated and runoff is greatly pronounced. The river basins are triangular in shape, with the base of the triangle at the headwaters and the apex at a river's mouth, resulting in an increasingly concentrated downstream flow. Flooding generally results when runoff exceeds the normal rate.

Climate

A physical factor related to the geography of Hillsborough County is the area's climate. A general description of the climate follows.

The climate of Hillsborough County is sub-tropical. The temperatures are modified, however, by winds that sweep across the peninsula from the Gulf of Mexico. The . . . summers are warm and humid, but thunder-showers occur almost every afternoon and prevent temperatures from becoming extremely high. Winters are short and mild; many of the days are bright and sunny, and little rain falls. Cold spells, accompanied by cold winds, can be expected only a few times during the year, and they last for only a few days. Occasionally, thin ice forms, and a few flakes of snow fall at long intervals. 51/

The average annual rainfall in Tampa is 49.94 inches, and 50.21 inches at Plant City. Sixty percent of the annual precipitation generally takes place during the four-month period extending from June through September. From August through November the county is subject to tropical weather disturbances of varying intensities with accompanying high winds and heavy rains. It is during this hurricane season that the potential hazard of wide-spread flooding and devastation is greatest.

Surface-water problems in Hillsborough County are caused by the distribution of water. . . . When flood conditions exist, the problem becomes one of eliminating excess water that might cause damage and inconvenience. 52/

Annual average temperatures (based upon a 59-year record) vary from 71.5 degrees at Plant City and 72.2 degrees at Tampa and contribute to a long growing season for these two locations of 301 and 348 days, respectively. Although frost damage to some tender vegetation and fruit trees occurs from time to time, the area supports an abundance of subtropical growth.

Tampa, situated around three bays in the mid-Florida region, has a unique growth condition. It lies within a relatively small change belt between the deep south vegetation of magnolias, azaleas, and dogwood, and the tropical world of hibiscus, bouganvillea, royal palms, and banyan trees. Both types of plant material flourish in the Tampa Bay area. 53/

Soils

Soils in Hillsborough County are the result not only of geologic physical transformations, as outlined previously, but also are the result of chemical action. An example of this chemical action deals with the natural pine growth which originally covered a major portion of the county. This original timber has now been largely cut, and the second and third growth pines are generally shorter and of poorer quality. Existence of these coniferous trees together with the rapid leaching of their pine needles on the ground largely accounts for the acidity of many county soils, particularly the more permeable types.

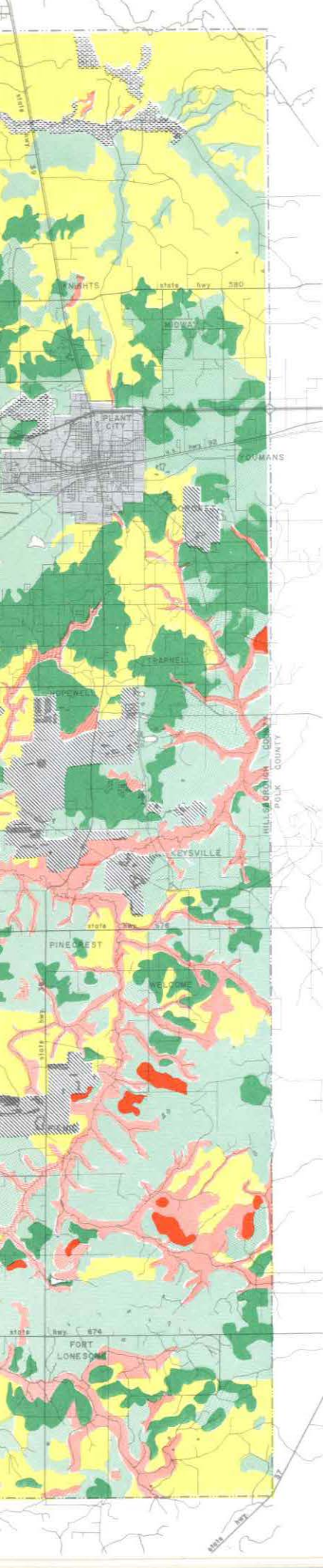
... the factor which more than any other determines the acidity or alkalinity of the soil is the degree of leaching. . . . Humid regions have in general acid soils. . . 54/

... a forest litter of resinous pine needles. . . . This spongy material on the forest floor retains water, becomes highly acid as the result of fermentation and the downward-moving soil solutions are made acid by it. 55/

Despite these inherent difficulties, however, proper management and added nutrients have made a significant portion of the county's soils highly productive for certain crops.









Drainage and plant nutrients are the major limitations of Hillsborough County soils. Most of the soils have not been seriously altered by erosion, but the highly porous texture of the soil and heavy rainfall encourages serious leaching. Owing to this leaching process, the acid reaction of the soils has to be neutralized with applications of lime if they are to be productive. Low clay content and general lack of organic matter, combined with the high permeability of the sandy base, also leave little opportunity for intensive farming unless the soils are continuously revitalized by artificial means. Fertilizer has to be applied as a substitute for natural nutrients.

In some instances certain soils requiring irrigation during the dry season may require a drainage system during the wet season to effectively sustain a crop.

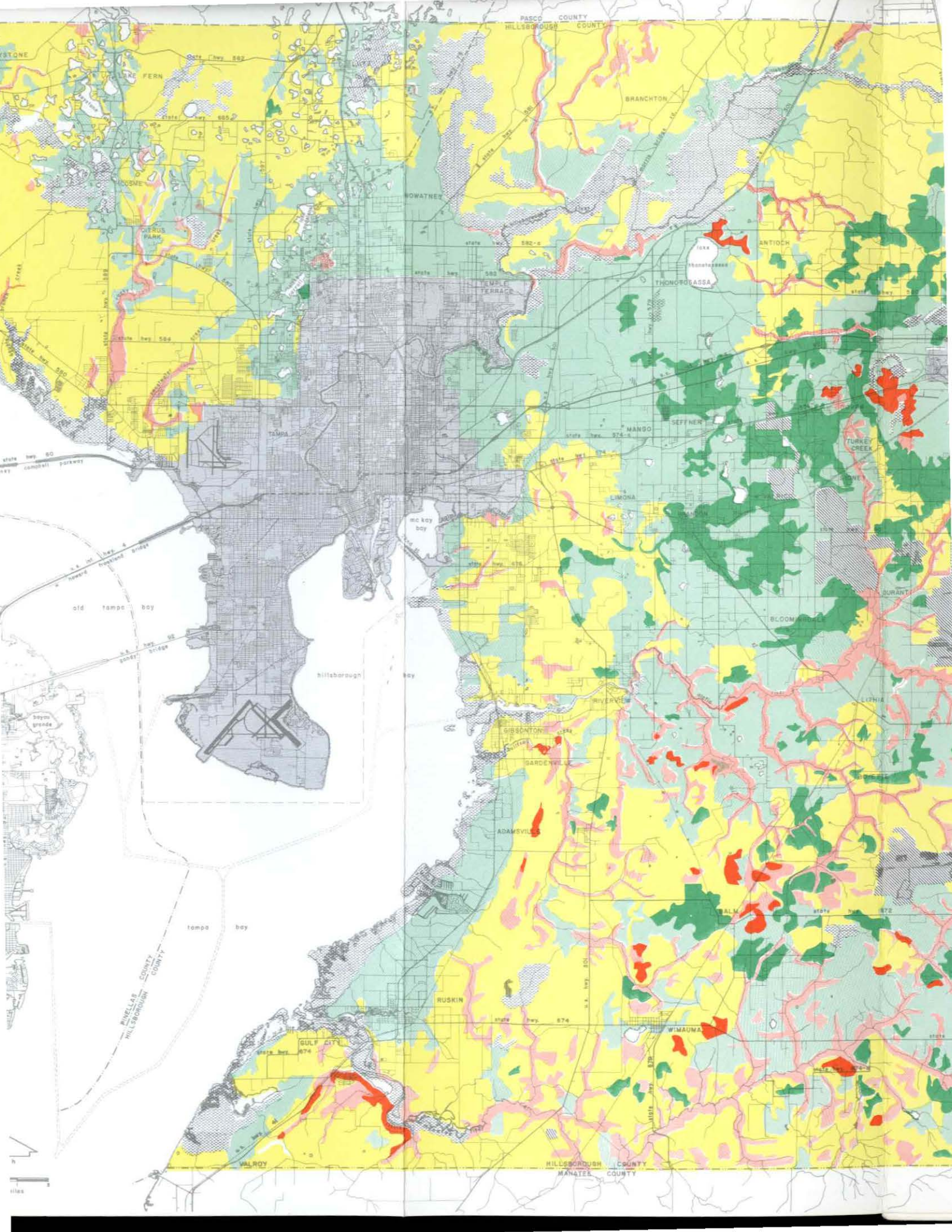


GENERALIZED SOIL CAPABILITY CLASSIFICATION HILLSBOROUGH COUNTY

L E G E N D

-  **CLASS II**
SOILS SUITABLE FOR REGULAR CULTIVATION; MODERATE LIMITATIONS
-  **CLASS III**
SOILS SUITABLE FOR REGULAR CULTIVATION; SEVERE LIMITATIONS
-  **CLASS IV**
SEVERELY LIMITED SOILS; SUITABLE FOR ONLY OCCASIONAL CULTIVATION
-  **CLASS V**
SOILS NOT SUITED FOR CULTIVATION; FEW LIMITATIONS FOR GRAZING OR FORESTRY
-  **CLASS VI**
SOILS UNSUITABLE FOR CULTIVATION AND SEVERELY LIMITED FOR GRAZING OR FORESTRY
-  **MUNICIPALITIES**
-  **MINES, PITS, DUMPS**
-  **UNCLASSIFIED**
SWAMPS, MARSHES, MADE LAND, ETC.

source: hillsborough county soil survey, 1958



Soil Classes and Capability Categories

Hillsborough County soils include Classes II, III, IV, V and VII, as defined by the U. S. Department of Agriculture. There is also a separate group of unclassified soils with practically no agricultural use, including soils within municipalities, airports, open-pit mines, and tidal lands. Each soil class has varying capabilities for agricultural use, and varying agricultural practices are required for proper use and maintenance of the soils. The distribution of these capability categories is illustrated by Plate 5.

There are three broad soil capability categories apparent in Hillsborough County. Within each of these categories certain specific soil classes are generally found. These classes and their characteristics are summarized below:

1. The first capability category contains soils in Classes II and III, which are considered suitable for annual or periodic cultivation. Locations of these soils range from the eastern section of the county northwesterly across to the lake district. There are a great variety of soil types in this category, but only a few stand out prominently. In Class II, Ona and Scranton fine sands occur most often and are found in the intensively-cultivated portion of the county around the Plant City area. Class III soils occur in close proximity to Class II soils with Felda, Rutledge fine sands, and Blanton fine sand, level phase appearing to be the most common types.

2. Class IV soils are in an intermediate capability category and should only be cultivated occasionally under careful management. The greater part of Hillsborough County soils is in this category and underlie sections in practically every part. This is the pattern particularly found in the northern and southern sections, in close proximity to the bay areas, and in the drainage basins of the Alafia and Little Manatee Rivers. In most instances Class IV soils act, in effect, as a buffer or transitional group between Class III soils and the other classes basically unsuited for cultivation. Class IV soils are severely limited for agriculture, owing to either low moisture capacity or low fertility. Leon fine sand, by far, is the major soil type found in this class and probably the one soil type most common throughout the county. Plummer fine sand also occurs quite frequently.

3. Soils in Classes V and VII are in the third capability category. These classes should not be cultivated, but used only for forest or pasture. Since alluvial soils have obvious connections to flowing water, pronounced examples of Class V Alluvial land exist principally in the immediate vicinity of streams. This type is particularly evident in the southeastern part of the county along the headwaters of the Alafia and Little Manatee Rivers. Leon fine sand, light colored surface phase and Pomello fine sand are the other two soil types in Class V, both occurring adjacent to or near Alluvial lands. St. Lucie fine sand is the single soil type within Class VII. Not only

is this soil unsatisfactory for cultivation, but is also severely limited for anything else including forestry.

Man-made land such as fills and mines, tidal lands, and swamps are included in an unclassified soil grouping since they have practically no value for agricultural purposes. Although a unique project for reclamation of mined-out phosphate lands through leveling and citrus planting has been undertaken in neighboring Polk County, there has been little such activity to date within Hillsborough County.

Soil - Agricultural Use Relationships

Four dominant agricultural areas stand out in Hillsborough County. For the most part, these areas are extensions of agricultural sections also found in Pasco and Polk Counties and are closely related to soil types in the first two capability categories.

The soils of Hillsborough County are similar in some characteristics and qualities, but vary greatly in others. As a consequence, they have a wide range of suitability for agricultural use. 56/

The principal agricultural production areas are listed below:

1. Production of vegetables and truck crops is generally concentrated within a twelve-mile radius of Plant City and along Tampa Bay near Ruskin. The former and larger area in the east section of the county consists of small farms on Scranton, Ona and Blanton fine sands (soils suited for regular cultivation and which yield higher production

per acre). Larger agricultural tracts are located in the Ruskin area. Three features making this latter coastal section well suited to agriculture are the existence of good soils, availability of artesian water from wells 400 to 600 feet in depth near the mouth of the Little Manatee River, and the tempering influence of the bay upon northwesterly winds.

2. Citrus production occurs principally in an irregular belt extending from Plant City northwestward to Lake Fern. This belt includes the groves around Plant City, Thonotosassa, Brandon, Valrico, Tampa, Lutz, Citrus Park, Keystone, and Lake Fern. Although good soil drainage is essential for citrus trees and most of this belt overlies well-drained sands such as Arrendo, Blanton, Eustis, Fort Meade, Gainesville, Lakeland, and Orlando types,

... some areas of well-drained soils are not well suited to citrus fruits **because** cold air settles on low, level areas and damages the foliage and occasionally the fruit. A "cold" area of this kind extends from Lutz to south of Brandon. 57/

More recent citrus grove developments have been taking place around Balm.

3. Poultry-raising activity is found in the better drained soil areas principally east of Tampa near Mango, Seffner, Valrico and Plant City.

4. Beef and dairy cattle raising is found in several sections of the county. Most dairying activity is carried on between the two major

milk products consumption centers of Tampa and Plant City and south to the Alafia River. Cattle and other livestock are raised in the northwestern, northeastern and southern sections of Hillsborough County on soils generally unsuited or severely limited for cultivation. In some cases, soils previously planted with vegetables have been allowed to revert to pasture.

The most intensive agriculture in Hillsborough County is presently being carried on in the region north of the Alafia River, but south of the Hillsborough River and Cypress Creek flood plains, as well as along a narrow coastal area near Ruskin. The majority of the soils in this wide-ranging belt are suitable for cultivation. Although there are Class III soils in the southeastern section of the county, their utilization is limited due to this area's relative inaccessibility.

The relationship of agricultural use to soil capability is only one aspect of the land utilization pattern in Hillsborough County to consider in framing a plan for future development. Other aspects, such as urban and phosphate mining land requirements, will be considered in the following section.

Soil and Non-Agricultural Use Relationships

Previous soil surveys and studies in the county have been primarily concerned with agricultural needs. However, increasing recognition should be given to the importance of soil studies for non-agricultural land uses.

Understanding soils and their properties assumes greater importance as our economy continues to expand and society becomes more complex. Knowledge of soil characteristics serves an increasing variety of professional fields. . . . It is involved in such varied functions as land appraisal, highway, planning, airports, foundations for all types of buildings and structures, and public health in relation to the installation and operation of septic tanks and wells. 58/

A full study of soil and non-agricultural use relationships is beyond the scope of this report. In general, it would appear that the extremely well-drained soils -- although good for most agricultural activity, particularly citrus -- are not entirely satisfactory for septic tank installations serving urban uses. Such soils permit a more rapid underground seepage of ground water and septic tank effluent than is desirable for proper filtration. This problem becomes aggravated where steep slopes and/or proximity to water areas are involved. On the other hand, soil types which quickly become water-logged offer a different problem to successful septic tank operation.

Relative capabilities of various soil types for the absorption of storm water in an urban area is still another aspect of this overall relationship problem. A detailed and thorough study of all drainage in the county would be required to adequately appraise and attempt to solve this problem.

Summary

This evaluation of Hillsborough County's physical geography is not presumed to constitute a thorough treatment of the subject, but is intended only as an initial survey of the major geographic factors and is based upon available reference sources. At a later date, a more thorough study and analysis of all factors connected with local physical geography should be undertaken. There are, however, several conclusions to be derived from the preceding outline.

1. The bulk of past community development, as centered around the City of Tampa, has taken place in the low coastal sections of Hillsborough County. This means that the water flow of several major streams must traverse the urban complex enroute to the bay outlets. Periodically this situation has resulted in severe flooding of large areas in and around Tampa. Provision for more adequate drainage and flood protection than presently exists is essential. This need will be more obvious as urban development becomes intensified, more complex, and extends further along the coastal sections of Hillsborough County and into natural flood and wetland areas.

2. Although flood problems exist during periods of heavy precipitation and runoff, the problem at other times may be finding suitable water to satisfy needs. Assuming a 1980 population of 820,000 persons, Hillsborough County's water supply appears adequate for at least the

20-year planning period if suitable water management improvements are accomplished.

It will be necessary to reclaim and re-use water or to import water when the population of Hillsborough County exceeds the number of persons that may be supported by the available water. An average of about 1,400 mgd is potentially available. This is enough water to supply 1,250,000 persons if all of the flood waters could be stored for use. At present 400 mgd of this water enters the county from adjoining counties. 59/

Preliminary work of the newly-created Southwest Florida Water Management District is directed toward solving the area's water problems on a comprehensive basis. Certainly such a program should look even beyond the 20-year planning period in its water management and control improvements. Only by such advance planning can future generations be assured of an adequate water supply.

3. Despite efforts to control flooding along the numerous rivers and streams in Hillsborough County, the threat of a natural disaster caused by a tropical disturbance such as a hurricane or a tidal wave will continue to be a problem. Though such phenomena are infrequent in the Tampa Bay Area they are always a threat. Perhaps in the long-run, this threat may be partially or totally removed by scientific advancements in weather control on a large scale. However, the immediate implication of such a problem is to determine the extent further development

should be encouraged in the coastal sections. If it is to be encouraged, provisions should be made to provide some degree of protection and relief from a possible future natural disaster.

4. An unknown quantity in the development of Hillsborough County at this time is the possibility of extensive and productive oil and gas deposits being discovered. Certainly the geological formations underlying the Florida West Coast are potentially capable of exploitation in much the same manner as those found in the coastal regions of Texas, Louisiana, and Mississippi. Substantial development of this nature could profoundly alter the local economy and development pattern. However, at this time, it would be premature to speculate on this subject in formulating a plan of development.

5. An established and relatively well-known quantity in the county is phosphate deposits. Two problems associated with future exploitation of these deposits are reduction of the severity of phosphate mining conflicts with other major land uses, including agriculture and urban, and the possible reclamation of phosphate tailings.

6. There are several topographic limitations to development in the county. The large open water areas, although a prime asset, have limited the direction of growth outward from Tampa to the north, east, southeast, and the Interbay Peninsula. Drainage patterns also have affected the direction of urban growth especially in flood plains of several rivers and

streams and in the northeast wetlands section. Future developments must recognize these physical limitations to some extent; however, land fill and drainage improvements could reduce such limiting effects of the natural landscape.

7. Soil types suitable for extended agricultural use predominate in the region toward and into which both the urban complex and phosphate developments are moving. Possible eventual loss of considerable productive acreage should be realized and efforts should be directed toward making agriculture sufficiently competitive with the other major land uses. An alternative solution might be to accommodate agricultural developments in other sections of the county which although not containing favorable natural soil and drainage conditions, could be improved to higher productive standards through advanced agricultural technology.

8. More study should be given to desirable relationships between soil types and non-agricultural developments in order to reduce or eliminate polluting effects of such urban facilities as septic tanks. The load-bearing qualities of soils and their capacity to absorb increasing amounts of runoff water brought about by urban concentrations are also in need of further study.

Section IV. EXISTING DEVELOPMENT PATTERNS

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






With few exceptions, the future development pattern of Hillsborough County will be based upon and will be greatly influenced by the pattern of development existing within the county and its cities today. A full understanding of the existing pattern and the reasons behind its development are therefore requisite to the preparation of a sound pattern of growth for the future. Within Hillsborough County today, as within many fast-growing urban areas throughout the nation, are land use arrangements that have evolved primarily through the supply and demand process to meet the needs of the present population. These arrangements consist of varying amounts of single-family residential, apartment developments, commercial areas, industrial land, streets, and public use areas. In general, the amounts of land devoted to these uses are in proportion to the population's needs and desires, even though their actual physical arrangement may leave much to be desired.

This Section comprises a survey and analysis of the significant aspects of the existing development pattern which will bear heavily upon the future development pattern. Careful and thorough study of present land uses and their spatial distribution will point up any serious defects in the existing pattern which need to be corrected within future land use proposals. Also, through comparison of the amount of land used and present population,



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HILLSBOROUGH COUNTY

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SOILS SUITABLE FOR REGULAR CULTIVATION; SEVERE LIMITATIONS
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SEVERELY LIMITED SOILS; SUITABLE FOR ONLY OCCASIONAL CULTIVATION
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-  **MUNICIPALITIES**
-  **MINES, PITS, DUMPS**
-  **UNCLASSIFIED**
SWAMPS, MARSHES, MADE LAND, ETC.

MAJOR AGRICULTURAL AREAS-1960

-  **GENERAL AGRICULTURAL AREA**
(INCLUDES CROPLAND, IMPROVED PASTURE, ETC.)
-  **AREA PREDOMINANTLY DEVELOPED IN CITRUS GROVES**

source: hillsborough county soil survey, 1958

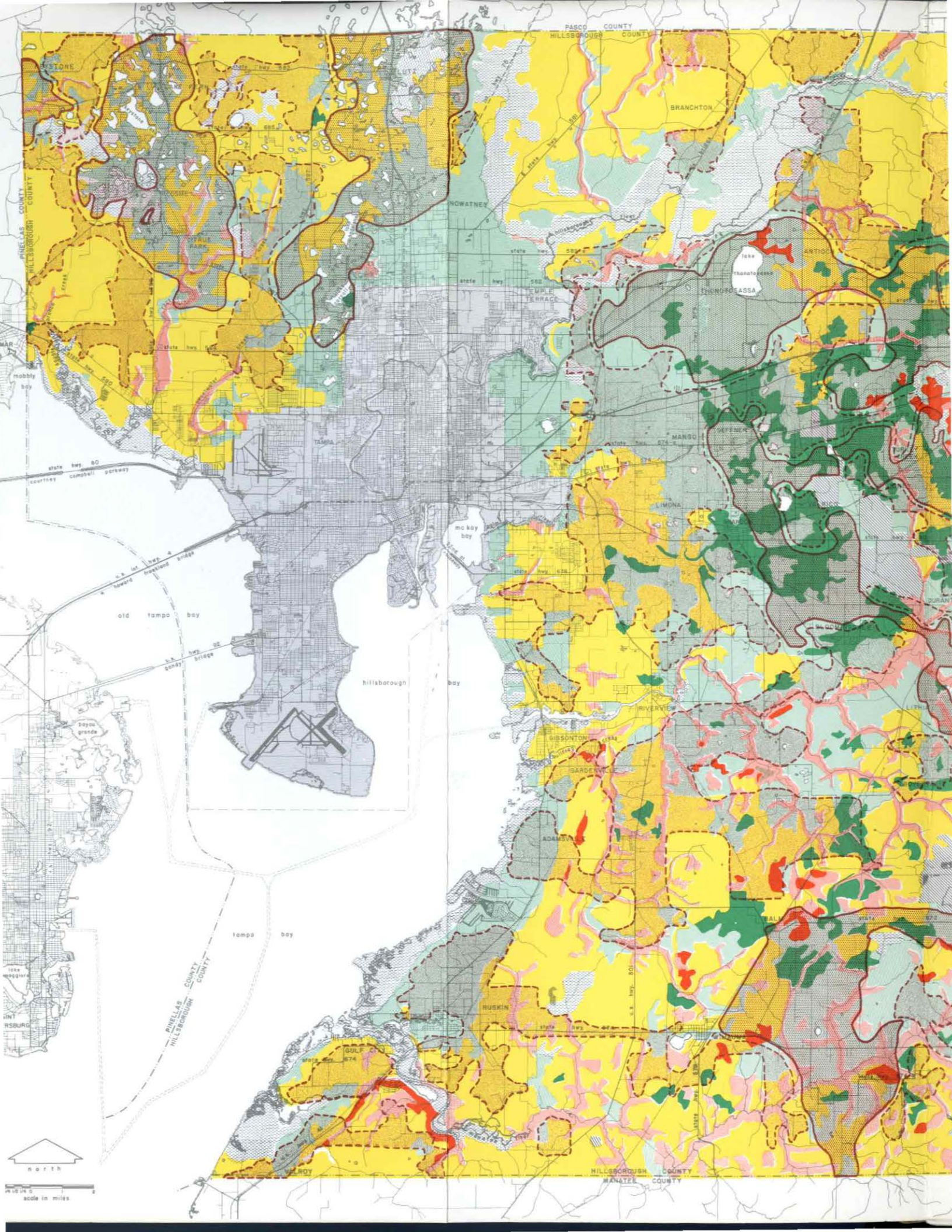
PLATE 6

hillsborough

county

planning

commission



a ratio of various land use areas to population can be determined. Such a ratio provides an important basis for estimating future land use needs. Four major categories of land use must be carefully considered in determining future land development patterns within Hillsborough County:

(1) agricultural development; (2) phosphate mining; (3) community development; and (4) waterfront development. Each of these land use categories, their interrelationships, and their implications upon the future growth of the county will be discussed in the following sub-sections.

Agricultural Development Pattern

Agricultural land uses account for the greatest areal coverage in Hillsborough County, with approximately 199,000 acres (or 31 percent of the county) included within this land use category in 1960. The significance of agricultural production to the local economy was emphasized in the "Economic Base Report". The implications this land use element has on the plan of future development must also be explored.

Areas devoted primarily to agricultural production are scattered throughout all of Hillsborough County, but with less spatial frequency in the north-central, northeast, and extreme southern portions. Needless to say, phosphate excavations and the several municipalities have little or no agricultural use areas.

There is a close relationship between the location of Class II and III soil types (those soils suitable for regular cultivation) and areas

of relatively intensive agricultural production. Plate 6 graphically portrays this relationship. The better soil types are distributed in a large belt commencing at the northwest corner of Hillsborough County and gradually broadening out as it extends eastward across the county. Two smaller concentrations of prime soil types are located along the east shore of Tampa Bay (between Bullfrog Creek and the Little Manatee River) and within an area east of Wimauma extending to the Polk County line.

Citrus groves, representing about one-third of the total agricultural acreage, are concentrated in nine principal areas throughout the county. For purposes of identification, these areas may be defined as follows: the Lake Fern-Cosme area; the Lutz area; the Thonotossasa area; the Brandon area; the Cork Academy-Knights area; the Turkey Creek-Sidney area; the Trapnell area; the Welcome area; and the Balm-Wimauma area. Locational aspects of citrus areas also include the relationship of such areas to well-drained ground and to lakes, which have a tempering influence on cold temperatures.

The changes that have taken place and that continue to occur in agriculture on a national and local level (including increased farm mechanization, higher per-acre yields through improved agricultural technology, market-oriented and market-limited agricultural production, and decline of the subsistence farming operations) have a pronounced influence upon

the county's future land development pattern. In the past, agricultural land has been considered expendable and its transition into another use has been accepted as a foregone conclusion. In effect, agricultural land within all but the most remote areas of the county have been considered basically as "holding areas", ready for immediate transition into more intensive use. A good bit of this transition has been necessary and has resulted in a proper and logical growth pattern. In more recent years, however, this transition has produced a haphazard pattern and has directly contributed to the disruption of commercial agricultural enterprises and the loss of highly productive land.

Some of the loss of good cropland... through nonagricultural encroachment is unnecessary. There is plenty of other land not suited to crops available for many of these uses. In some affected communities the question constantly arises as to whether zoning ordinances could be used effectively to protect... good cropland from being diverted to other uses. Attendant with the actual breaking up of farms is higher taxes and labor costs for remaining farms and other dislocations which affect agricultural production. 60/

The successful long-term role of agriculture in the economy of Hillsborough County will center around expanded commercial farm operations and increased activity in transportation, processing, and packaging of agricultural products. However, if this role is to be assumed, considerable community understanding and action is required.

Transition from a pattern of small-scale, individual farms of a subsistence type to extensive commercial agricultural operations will not develop immediately but can only be expected to take place over a considerable number of years. In the meantime, however, continued loss of the agricultural land base and strategic soils may disrupt this transition so effectively that it will never run its full course.

A second example of a disruption which could occur in local agriculture may be found in the Federal Fair Labor Standards Act (also referred to as the Federal Wage-Hour Law) which exempts workers within an "area of production" from both the minimum wage and overtime provisions "who handle, pack, store, gin, compress, pasteurize, dry, prepared in their raw or natural state, or can agricultural or horticultural commodities for market. . . ." An "area of production" is defined as follows:

[An area within which] the establishment is in the open country or in a community of less than 2,500 population and receive[s] its raw products from within certain distances. The distance limit varies--15 miles for fresh fruits and vegetables; . . . 50 miles for operations on poultry or eggs and 20 miles for . . . operations on all other commodities. 61/

Such a wage exemption feature may or may not be the deciding factor in influencing location of an agriculture-oriented industry. However, movement of new population growth into an established agricultural

area or rural community could decidedly limit its continued economic attractiveness as a center of an "area of production". An unfavorable competitive situation for certain agricultural operations could be a possible result. Citrus packing plants, for instance, in citrus centers such as the Lutz and Thonotossassa areas could be disrupted by growth of the urban communities in those directions.

The attractiveness of citrus grove land for future urban residential developments is a factor that has to be considered in Hillsborough County. Generally, these groves occupy the best-drained, most cultivatable soils in the county.

... orange groves, which once produced for the breakfast table, have been uprooted to provide space for more breakfast tables... Pressure from urban developers for land now in citrus groves has become especially evident, because the areas best suited to citrus are some of the most congenial for winter or year-round residence. Should the greater part of such locations in California and Florida, for example, become permanently given over to... houses, and if the enlarging demand for citrus products continues to mount, it is conceivable that the considerable potentialities for citrus production in Central America may be developed. 62/

Phosphate mining operations also compete for agricultural land. In some cases, they may even contaminate existing productive agricultural areas.

Agricultural activities. . . suffer from air pollution. Damage to vegetation from airborne pollutants was reported in six counties. The majority of damage to agricultural operations was reported in Polk and Hillsborough Counties. Fluoride emission from the phosphate industry has been alleged to "burn" gladioli and tomatoes, decrease the yield of citrus groves, and damage the health of cattle which eat contaminated forage. . . . There is another air pollution problem associated with the phosphate industry which is increasing in importance in Polk and Hillsborough Counties and which already surpasses the flouride problem in the neighborhood of production facilities at Jacksonville and Pensacola. This problem is due to emission of sulfur dioxide and sulfuric acid mist from sulfuric acid manufacturing plants operated at all superphosphate and triple superphosphate plants in Florida and emission of nitrogen oxides from plants using the chamber process to make sulfuric acid. 63/

The State Board of Health claims that "Air pollutants arising from two phosphate rock processing operations in the county have caused severe agricultural damage near Coronet and Ruskin." 64/

The solution or regulated control of these air pollution problems is not simple. Additional research at the several levels of government involved will be required in addition to programs being carried on by the phosphate industry itself. This situation may necessarily result in changed agricultural practices or perhaps even eventual abandonment of agricultural production in certain sections.

Phosphate Mining Development Pattern

Three distinct mineral areas, each having different dominant material of surface formation, are located in Hillsborough County. These include deposits of phosphate in the eastern section; sand, clay, and limestone to the north; and sand, shell, and marl to the south and west. By far the most commercially important formation is phosphate.








The principal phosphate resource area is generally located east of U. S. Highway 301 (except for a section near the Riverview community), south of State Road 574, and within the region surrounding Plant City. Phosphate company land holdings within this resource area substantiate the existence of phosphate in quantities sufficient for commercial mining operations. These holdings are north of the Fort Lonesome community, south of Plant City and east of Riverview. The phosphate mining pattern is shown upon Plate 7.

Four phosphate processing plants (including plants operated by Smith-Douglas Co. ; Inc. , Coronet Division; American Cyanamid Co. ; American Agricultural Chemical Co. ; and Tennessee Corp. , U. S. Phosphoric Products Div.) are supplied basically by open-pit mines near the communities of Coronet, Sidney, Valrico, Hopewell, Keyville, and Picnic. Within the past 13 years (1948-1961), land area being mined or in mined-out tailings increased from approximately 5,200 acres to 13,200 acres. This represents an increase of 8,000 acres devoted to

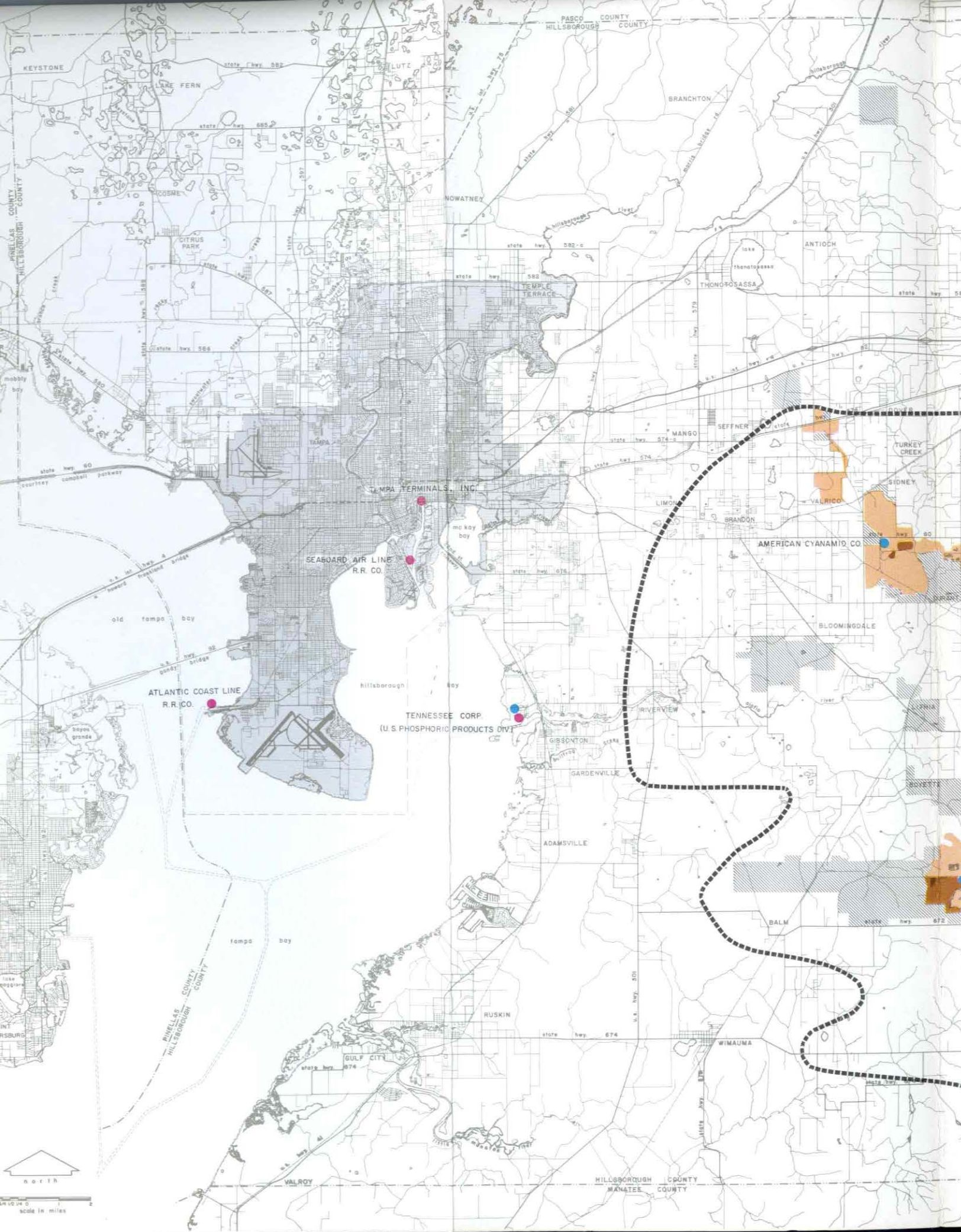
PHOSPHATE MINING DEVELOPMENTS

HILLSBOROUGH COUNTY

L E G E N D

-  EXTENT OF PHOSPHATE MINING, 1948
-  EXTENT OF PHOSPHATE MINING, 1961
-  PHOSPHATE COMPANY LAND HOLDINGS, 1957
-  MUNICIPALITIES
-  PHOSPHATE LOADING TERMINAL
-  PHOSPHATE PROCESSING PLANT
-  APPROXIMATE LIMITS OF LAND-PEBBLE PHOSPHATE MINERAL DEPOSITS

source: u.s. department of agriculture 1948 aerial photographs.
hillsborough county planning commission 1961 aerial photographs.
smedley's 1957 "land ownership atlas of hillsborough county".
florida geological survey "bulletin no. 39, 1957.



KEYSTONE

PIKE COUNTY
HILLSBOROUGH COUNTY

state hwy 60
countryside camellia parkway

ATLANTIC COAST LINE
R.R. CO.

PIKE COUNTY
HILLSBOROUGH COUNTY

north
scale in miles

state hwy 582

state hwy 665

state hwy 582

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phosphate mining activity, a 154-percent increase over the 1948 figure. Mining operations in the vicinity of Sidney and Valrico are new; the operations elsewhere in the county represent areas expanded since 1948.

Several far-reaching problems are associated with continued expansion of phosphate mining operations in Hillsborough County:

1. Phosphate mining operations have the least flexible land requirement of any of the three major users of land (agriculture, community development, and phosphate mining). Agriculture and community development can be accommodated in many sections of the county, but phosphate mining is naturally limited to the specific area in which the resource has been discovered and is commercially and competitively developable. This means that in order to reserve known productive land for eventual mining, phosphate companies have had to either purchase or option extensive tracts of land. In some cases, this has resulted in land being taken out of agricultural production and being held in a dormant state.

2. Establishment of mining operations have had in the past and could have increasingly more adverse and limiting effects upon continued agricultural production and community expansion. For example, growth of Plant City to the southeast and southwest is effectively limited by large blocks of land owned by phosphate companies. Croplands between Hopewell and Coronet also could conceivably be lost through phosphate expansion, thereby reducing the importance of that productive agricultural segment of East Hillsborough County's economic base.

Mining operations are making inroads into land sections relatively close to Tampa, just east of Seffner. A large tract between the communities of Bloomingdale and Riverview is presently owned by American Agricultural Chemical Co., presumably for future phosphate mining operations. For the most part, however, phosphate is presently being mined in sections where possible complications to community growth requirements are almost nil.

3. Following extractive activities, land used for phosphate mining is completely unsuitable for other uses unless reclaimed. In most cases to date, reclamation has not taken place, and the land has been left in an unproductive and unattractive state. In one or two instances tailings (the often - innundated land residuals) have been stocked with fish and converted to recreation areas. In one case, land has been reclaimed for future agricultural or residential use. However, any reclamation or reuse work which has been carried out has been done strictly on a voluntary basis; a general public policy governing reuse of mined-out phosphate lands has not yet been adopted.

4. As pointed out previously, phosphate processing activities have created pollution problems in certain sections of the county. Shipments of processed phosphate by rail to loading terminals in the Tampa area have created a number of rail-highway traffic conflicts. The loading process at the terminals, in some situations, has created air pollution and dust problems. Appropriate land use planning for the proper development of adjacent land must take all such factors into account.

Suffice to say, phosphate mining in Hillsborough County undoubtedly will continue to result in major land use problems, transportation conflicts, land reclamation, and pollution when its relationship to agriculture and community growth needs are taken into account. However, since phosphate mining is an essential element of the county's economy and a legitimate although somewhat complex use of land, this activity must be recognized and accommodated in the plan for future development.

If land devoted to phosphate mining expands at approximately the same rate during the next 20 years as has been experienced during the past 13 years, most mining activity could conceivably be accommodated within present phosphate company land holdings. At the same time, new land acquisitions could be expected for future expansion. Past expansion rates, however, are not definite indications of the future mining potential, and more intensive mining activity may develop that could absorb larger quantities of developable land. Careful examination must be undertaken of all future major land use needs in Hillsborough County and a reasonable balance achieved. Serious use conflicts should be defined and reduced to a minimum.









Community Development Patterns

Hillsborough County has a total land area of 1, 040 square miles. In 1960, 311 square miles were used for agricultural purposes and slightly under 97 square miles (or 9 percent of the total county area) were used for

COMMUNITY DEVELOPMENT PATTERNS

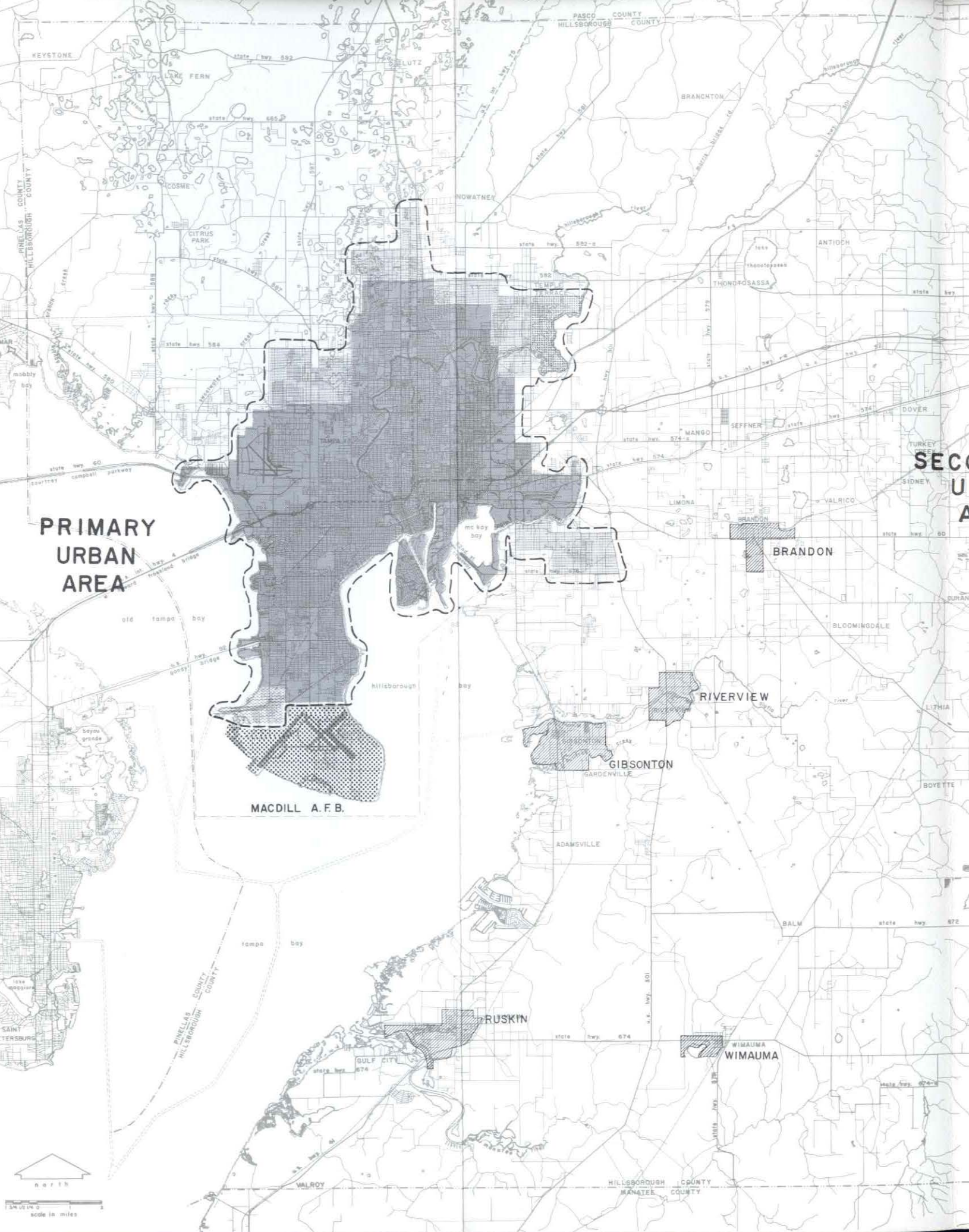
HILLSBOROUGH COUNTY

L E G E N D

- 
-  CITY OF TAMPA
 -  TAMPA URBANIZED FRINGE AREA
 -  CITY OF PLANT CITY
 -  CITY OF TEMPLE TERRACE
 -  CITY OF PORT TAMPA*
 -  UNINCORPORATED COMMUNITY
 -  MACDILL AIR FORCE BASE
 -  PRIMARY URBAN AREA
 -  SECONDARY URBAN AREA

* CITY OF PORT TAMPA ANNEXED TO TAMPA IN 1961

source: u.s. bureau of the census— 1960 census



**PRIMARY
URBAN
AREA**

MACDILL A.F.B.

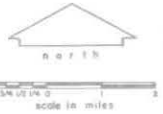
BRANDON

RIVERVIEW

GIBSONTON

RUSKIN

WIMAUMA



urban community developments. These urban areas included Tampa and its urbanized fringe, Plant City, Temple Terrace, and Port Tampa. In 1960 these areas contained a population of 317,500 persons. Another 6,400 persons resided in five unincorporated communities (Brandon, Gibsonton, Ruskin, Wimauma and Riverview), the population of each exceeding 500 persons. Personnel stationed on MacDill Air Force Base accounted for another 4,100 persons in 1960. Community development patterns (1960) are illustrated on Plate 8 and listed in the table below.

1960 COMMUNITY LAND AREAS AND POPULATION

Hillsborough County

<u>Name of Area</u>	<u>Number of Acres</u>	<u>Percent of Total Land Area</u>	<u>Popula- tion</u>	<u>Percent of Total</u>
<u>Primary Urban Area</u>				
City of Tampa	45,186	6.79	274,970	69.13
Tampa Unincorporated Urbanized Fringe	9,433	1.42	21,244	5.34
City of Temple Terrace	1,430	0.21	3,812	0.96
City of Port Tampa	1,028	0.15	1,764	0.44
Subtotal	57,077	8.57	301,790	75.87
<u>Secondary Urban Area</u>				
City of Plant City	4,958	0.75	15,711	3.95
<u>Unincorporated Communities</u>				
Brandon Community *	870	0.13	1,665	0.42
Gibsonton Community *	1,960	0.30	1,673	0.42
Ruskin Community *	1,470	0.22	1,894	0.47
Wimauma Community *	410	0.06	583	0.15
Riverview Community *	1,060	0.16	566	0.14
Subtotal	5,770	0.87	6,381	1.60
<u>MacDill Air Force Base</u>	5,285	0.79	4,145	1.04
<u>Remainder of County</u>	592,510	89.02	69,761	17.54
<u>Totals</u>	665,600	100.00	397,788	100.00

* Unincorporated community as delineated by the Census Bureau.
Source: U. S. Bureau of the Census (1960 Census).

From the standpoint of land use area, Hillsborough County is primarily a rural area. Thirty-one percent of the area is in agricultural or rural use whereas only 9 percent is in urban community use. The population ratios, however, are substantially reversed, with approximately 81 percent of the 1960 county population residing in an urban or non-rural environment.

General Community Development Pattern

The basic community development pattern in Hillsborough County is composed of a relatively large consolidated and compact urban area on the western extreme of the region (the Primary Urban Area) and a smaller, independent urban concentration on the eastern fringe (the Secondary Urban Area). A number of unincorporated communities are found in scattered locations, primarily adjacent to extensive agricultural sections. Plate 8 shows these relationships.

The effect of wetlands and lakes in the northern section of Hillsborough County upon Primary Urban Area development is readily apparent. Although the Hillsborough River water barrier has been bridged by thoroughfare crossings in 17 places in the Tampa area, thereby providing a continuity of urban development to the west, southwest, and north, the natural wetlands in the north-central and northeastern sections have not been altered to any extent and are practically devoid of community improvements.

Limited development has also occurred around the shorelines of lakes in the northern and northwestern areas. Owing to a number of factors, a low-density, non-urban development pattern has been formed. Lutz, Citrus Park, Lake Fern, and Thonotosassa are the principal community settlements in this region.

Proximity to water courses such as the Alafia and Little Manatee Rivers has been sought not only for obvious recreational and open space purposes but also because land along these streams is more easily drained than land farther inland. The communities of Gibsonton, Riverview, and Ruskin and certain sections bordering Sweetwater and Rocky Creeks are examples of this type of development.

Extensive fill operations have transformed segments of former tidal marshes and mangrove swamps around the bays into made-land areas suitable for residential and industrial improvements. Imposition of bulk-head lines has set a definite limit to possible extension of this artificial land-making process. Thus, the large bodies of open bay waters, for the foreseeable future will remain as effective natural barriers to growth of the Primary Urban Area to the south and southwest.

Community settlements such as Wimauma, Fort Lonesome, and Pinecrest have developed at the crossroads of major highway routes principally to serve the dispersed agricultural population and through-highway traffic. Brandon, formerly a crossroads community, in recent years has

broken away from this pattern and assumed the characteristics of a suburban segment of the Primary Urban Area. A high-speed highway, existence of certain basic community services and facilities, and availability of large tracts of open land have contributed to this transformation.

A more complex land development relationship exists in the 12-mile stretch of territory between Tampa and Plant City and between Interstate Highway 4 and the main line of the ACL Railroad. Important in the past as sub-centers for agricultural products shipped via rail, the communities of Mango, Seffner, and Dover have in more recent years grown for different reasons:

1. Existence of three highway transportation corridors (Interstate Highway 4, U.S. Highway 92, and State Route 574) makes employment centers in Tampa and Plant City equally and easily accessible.
2. Large volumes of east-west traffic traversing this region have been conducive to attraction of a variety of highway service facilities.
3. Existence of land suitable for regular cultivation, particularly citrus and truck crops, has encouraged settlement by persons engaged in seasonal agricultural work, such as packing plant employment. These persons also supplement their incomes through cash sale of crops.

Plant City is the secondary urban concentration in Hillsborough County. It functions as the principal marketing, processing, and shipping center for the population living and working in the extensive surrounding

agricultural and mining areas. The community's development pattern has been strongly influenced first by railroad line locations and later by phosphate company land holdings. Developing independently of Tampa, Plant City began its growth in the 1890's when a railroad was extended westward toward Tampa. In more recent years development has been west and north toward Interstate Highway 4, with growth to the south and southeast being retarded by the holding of large sections of land for future phosphate company mining activity.

More detailed analysis of the Primary and Secondary Urban Areas is provided in the following section. Table 1 gives a summary of 1960 land use data for these areas.

Primary Urban Area Development Pattern

The City of Tampa, its urbanized fringes, and the City of Temple Terrace comprise Hillsborough's Primary Urban Area. An otherwise simple and straight-forward development pattern (residential land uses concentrated around a central commercial core with a nearby industrial complex) is complicated by existence of the open waters of Hillsborough Bay and McKay Bay to the south, Old Tampa Bay to the west, and the winding of the Hillsborough River through a major portion of Tampa itself.

1. Residential. From the initial Tampa townsite located east of the Hillsborough River and north of Hillsborough Bay, residential developments subsequently were extended in a compact form northward

toward Seminole Heights and easterly into Ybor City. As bridgings of the river were made, urban development also progressed along compact lines into Hyde Park and West Tampa to the west and Sulphur Springs to the north. Later urban residential growth moved into and almost completely filled Davis Islands, the Interbay Peninsula area, Drew Park, Temple Terrace, and the Forest Hills section. Until recently, further intensive residential development to the south and west has been blocked by the major public land holdings comprising MacDill Air Force Base and Tampa International Airport. Areas primarily to the northwest and southeast, built up generally since 1950, have formed a more scattered pattern with a sizeable number of unrelated subdivisions and unconnected thoroughfares.

Other sections of the Primary Urban Area, particularly the eastern segment situated east of U. S. 301 between the ACL Railroad and the Hillsborough River, have not received a proportionate share of recent residential growth. This can be partially attributed to lack of adequate and direct major street connections leading into the central business district, proximity of the area to industries and railroad yards, and inadequate drainage.

Two-family and multi-family residential land uses are concentrated within an arc around the central business district extending from Bay-to-Bay Boulevard and Armenia Street on the west to Buffalo Avenue on the north and to Ybor City on the east. Several large-scale public

TABLE 1

SUMMARY OF 1960 URBAN LAND USES
IN PRIMARY AND SECONDARY URBAN AREAS

HILLSBOROUGH COUNTY

Land Use Category	City of Tampa	Temple Terrace	Port Tampa	Tampa Urbanized Fringe	Primary Urban Area ⁽¹⁾	Secondary Urban Area
		AREA	IN	ACRES		
Single-Family Residential	12,897	409	106	1,973	15,385	838
Two-Family Residential	354	-	3	3	360	9
Multi-Family Residential	492	-	2	1	495	40
Subtotal	13,743	409	111	1,977	16,240	887
Public and Semi-Public	4,147	217	12	115	4,491	200
Parks and Recreation Areas	832	4	9	-	845	33
Subtotal	4,979	221	21	115	5,336	233
Commercial	2,090	12	12	209	2,323	126
Industrial	1,888	-	106	104	2,098	64
Railroads	341	-	33	92	466	91
Subtotal	4,319	12	151	405	4,887	281
Streets and Alleys	9,846	178	263	1,309	11,596	1,339
TOTAL DEVELOPED AREA	32,887	820	546	3,806	38,059	2,740
PERCENT OF TOTAL DEVELOPED AREA						
Single-Family Residential	39.21	49.88	19.41	51.84	40.42	30.58
Two-Family Residential	1.08	-	.55	.08	.95	.33
Multi-Family Residential	1.50	-	.37	.03	1.30	1.46
Subtotal	41.79	49.88	20.33	51.95	42.67	32.37
Public and Semi-Public	12.61	26.46	2.20	3.02	11.80	7.30
Parks and Recreation Areas	2.53	.49	1.65	-	2.22	1.20
Subtotal	15.14	26.95	3.85	3.02	14.02	8.50
Commercial	6.36	1.46	2.20	5.49	6.11	4.60
Industrial	5.74	-	19.41	2.73	5.51	2.34
Railroads	1.03	-	6.04	2.42	1.22	3.32
Subtotal	13.13	1.46	27.65	10.64	12.84	10.26
Streets and Alleys	29.94	21.71	48.17	34.39	30.47	48.87
TOTAL DEVELOPED AREA	100.00	100.00	100.00	100.00	100.00	100.00
ACRES PER 100 PERSONS						
Single-Family Residential	4.69	10.73	6.01	9.29	5.10	5.34
Two-Family Residential	0.13	-	0.17	0.02	0.12	0.06
Multi-Family Residential	0.18	-	0.11	-	0.16	0.25
Subtotal	5.00	10.73	6.29	9.31	5.38	5.65
Public and Semi-Public	1.51	5.69	0.68	0.54	1.49	1.27
Parks and Recreation Areas	0.30	0.10	0.51	-	0.28	0.21
Subtotal	1.81	5.79	1.19	0.54	1.77	1.48
Commercial	0.76	0.32	0.68	0.98	0.77	0.80
Industrial	0.69	-	6.01	0.49	0.70	0.41
Railroads	0.12	-	1.87	0.44	0.15	0.58
Subtotal	1.57	0.32	8.56	1.91	1.62	1.79
Streets and Alleys	3.58	4.67	14.91	6.16	3.84	8.52
TOTAL DEVELOPED AREA	11.96	21.51	30.95	17.92	12.61	17.44

(1) Includes 1960 areas of Cities of Tampa, Temple Terrace, and Port Tampa and Tampa Urbanized (Fringe) Area as defined and delineated by the U. S. Bureau of the Census in 1960.

(2) Includes the City of Plant City.

SOURCE: 1960 Land Use Survey by City-County Planning Commission.

housing developments are found outside this inner-perimeter grouping. Davis Islands and Drew Park also have smaller concentrations of medium and higher-density residential development.

2. Commercial. Most commercial developments have followed the outward movement and growth of residential areas. In the older areas they have intermixed with residential land uses. This latter situation is basically the result of lack of zoning control for many years. Strip commercial development has extended along major arterial thoroughfares with only a few sizeable concentrated business areas emerging; these include:

- (a) Central Business District.
- (b) Ybor City commercial section.
- (c) Intersection of Dale Mabry Highway and Henderson Boulevard.
- (d) Intersection of Dale Mabry Highway and Gandy Boulevard.
- (e) Britton Plaza.
- (f) Intersection of Hillsborough Avenue and Armenia Avenue, including Hillsborough Shopping Plaza.
- (g) Intersection of Hillsborough Avenue and 22nd Street, including East Gate Shopping Center.

- (h) Intersection of Florida Avenue and Temple Terrace Highway, including Northgate Shopping Center.
- (i) Intersection of Temple Terrace Highway and 56th Street.

3. Industrial. Industrial land uses, for the most part, are oriented to available water and rail transportation facilities. This use predominates in the following general areas:

- (a) Along the east coast of Old Tampa Bay south of Gandy Boulevard to MacDill Air Force Base.
- (b) In scattered locations in Drew Park.
- (c) Adjacent to the SAL R. R., spur line north of Hillsborough Avenue and Tampa International Airport.
- (d) Along the ACL R. R. spur track principally along Rome Avenue from Swann Avenue to Spruce Street.
- (e) On the east bank of the Hillsborough River from North Boulevard to the mouth of the river.
- (f) Land south, east, and southeast of the Tampa central business district near Garrison, Ybor, and Sparkman Ship Channels, including Hookers Point.
- (g) Seddon Island.

- (h) North and south of the ACL main line and Adamo Drive from 22nd Street to slightly beyond the intersection of U. S. 301.
- (i) In the vicinity of the ACL rail line extending north and northeast from Broadway Avenue to just north of Hanna Avenue.
- (j) Along the SAL R. R. line between Hillsborough Avenue and Hanna Avenue.
- (k) Tampa Industrial Park.
- (l) Land along the east coast of Hillsborough Bay from Black Point south to the Alafia River.

This profusion of scattered industrial concentrations has created a number of inharmonious land use arrangements and has impeded the efficiency of the transportation network. For example, the Rome Avenue industrial section is in conflict with nearby residential developments. The rail traffic generated by the industries provides additional conflict with vehicular traffic moving along Rome Avenue and at all crossstreet intersections.

4. Public and Semi-Public. Lands occupied by Tampa International Airport, MacDill Air Force Base, and the University of South Florida represent the most significant public and semi-public uses in the Primary Urban Area. Since the air base and university are both off-center

with respect to the principal urban development pattern, their presence has not seriously impeded the logical extension of this pattern. In fact, they have served as major attractions drawing growth in their direction. The exception to this is a small tract within the MacDill runway pattern south of Interbay Road.

On the other hand, Tampa International Airport's expansive land holdings, combined with the inimical influence of commercial jet aircraft operations, have deterred more intensive residential development from taking place in proximity to the field. Improvement of the area's major street system through construction of high-speed arterial routes around the airport should substantially reduce the blocking effect of this large public land holding. However, the noise factor continues to be a difficult problem.

Primary Urban Area Land Uses

The developed portion of the Primary Urban Area comprises approximately 6 percent of the entire county land area and is inhabited by over three-fourths of the total population. A definite relationship exists between the number of persons in this area and the amount of land used for urban purposes. This relationship is conveniently expressed by the number of acres of land used for every 100 persons. Such an analysis is presented in the following section.

1. Residential uses take up by far the greatest proportion of developed land in the Primary Urban Area. Single-family land uses represent the largest segment with a total of 15, 385 acres, or 40 percent of developed land. This amounts to slightly over 5 acres per 100 persons.

Two-family and multi-family land uses within the Primary Urban Area do not constitute a very significant amount of total residential land. Their combined percentage represents only a little over two percent of the developed area.

PRIMARY URBAN AREA

Residential Land Uses - 1960

<u>Land Use</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres per 100 Persons</u>
Single-family	15, 385	40. 43	5. 10
Two-family	360	. 95	0. 12
Multi-family	<u>495</u>	<u>1. 30</u>	<u>0. 16</u>
<u>Totals</u>	16, 240	42. 68	5. 38

Within the individual incorporated parts of the Primary Urban Area it is important to recognize certain residential land use area distinctions.

(a) Tampa. Tampa is no exception to the general rule that more of the developed area of a city is devoted to residential use than to any other use. Of the 32, 887 developed acres within the 1960 Tampa city limits, 13, 743 acres (42 percent) were developed for some residential use.

Tampa's residential land can be classified into four categories: single-family, two-family, multi-family, and individual trailers.* Because less than 0.02 percent of developed land in the city is devoted to individual trailer uses and since this type of residence is obviously designed for one-family occupancy, it was incorporated into the single-family classification and figures.

CITY OF TAMPA

Residential Land Uses - 1960

<u>Land Use</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres per 100 Persons</u>
Single-family	12,897	39.21	4.69
Two-family	354	1.08	0.13
Multi-family	<u>492</u>	<u>1.50</u>	<u>0.18</u>
<u>Totals</u>	13,743	41.79	5.00

The single-family use category occupies the greatest proportion of Tampa's territory. The sizeable acreage devoted to this use is not a characteristic unique to Tampa. It has been found that single-family developments represent the greatest percentage of any land use within the developed areas of most U. S. cities. However, Tampa has about

* Individual trailers on private lots as distinguished from trailer courts.

twice the amount of single-family acreage in relation to population (4.69 acres per 100 persons) as many cities of equal size. This situation is partly attributable to rapid post-war developments which followed generous area standards. Although Tampa's single-family land use to population ratio exceeds the general average for cities of comparable size, residential land use as a whole conforms closely to an average norm of 40 percent of the total developed area.

The percentage of total land in residential use increased by almost three and one-half times during the twenty years since 1940, whereas population increased around two and three-quarter times. The imbalance between the percentage population growth and the residential land use increase can be attributed to a variety of factors such as increased home ownership, the trend toward larger lot sizes, and city annexations.

CITY OF TAMPA

Residential Land Use Trends, 1940-1960

<u>Land Use</u>	<u>Acres</u>		<u>Percent of Developed Area</u>		<u>Acres per 100 Persons</u>		<u>Percentage Change (1940-1960) in Acreage</u>
	<u>1940</u>	<u>1960</u>	<u>1940</u>	<u>1960</u>	<u>1940</u>	<u>1960</u>	
Single-family	2,766	12,897	36.55	39.21	2.55	4.69	+366
Two-family & Multi-family*	<u>309</u>	<u>846</u>	<u>4.09</u>	<u>2.58</u>	<u>0.29</u>	<u>0.31</u>	<u>+174</u>
<u>Totals</u>	3,075	13,743	40.64	41.79	2.84	5.00	+347

* In 1940, no distinction was made in the Real Property Survey between two-family and multi-family land uses.

Land in Tampa zoned for particular residential uses far exceeds the amount of land actually used for such uses. It must be taken into account, however, that many public and semi-public uses and street areas are zoned residential, thereby, somewhat distorting these figures.

CITY OF TAMPA

Comparison of Residential Land Uses and Zoned Areas - 1960

<u>Land Use Category and Zoning District</u>	<u>Acres in Land Use</u>	<u>Acres Zoned</u>	<u>Percentage Relationship of Zoned Area in Excess of Use Area</u>
Single-family	12, 897	24, 220	88%
Two-family	354	3, 286	827%
Multi-family	<u>492</u>	<u>2, 586</u>	<u>525%</u>
<u>Totals</u>	13, 743	30, 092	119%

(b) Temple Terrace. Temple Terrace is unique among the cities of Hillsborough County in that its total residential land use area in 1960 was composed entirely of single-family dwellings. Duplex or multi-family structures did not exist.

In all, 409 acres were developed for residential use. This represented 50 percent of the total developed area, the highest proportion of any community in Hillsborough County. The ratio of residential land to population was 10.73 acres per hundred persons.

(c) Port Tampa. The City of Port Tampa (as it existed in 1960) had 111 acres devoted to residential land use, occupying only 20 percent of total developed area. This use represented a relatively higher-than-average ratio of developed land to population, with 6.3 acres per hundred persons.

CITY OF PORT TAMPA

Residential Land Uses - 1960

<u>Land Use</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
Single-family	106	19.41	6.01
Two-family	3	.55	0.17
Multi-family	<u>2</u>	<u>.37</u>	<u>0.11</u>
<u>Totals</u>	111	20.33	6.29

(d) Tampa urbanized fringe. The unincorporated, urbanized fringe areas immediately adjacent to the 1960 City of Tampa corporate limits included a considerable amount of residential land use acreage. In 1960 almost 2,000 acres, representing over 50 percent of the total developed area, were devoted to various residential land uses. A comparatively high proportion of residential land to population (9.29 acres per 100 persons) also existed.

TAMPA URBANIZED FRINGE

Residential Land Uses - 1960

<u>Land Use</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
Single-family	1, 973	51. 84	9. 29
Two-family	3	. 08	0. 02
Multi-family	<u>1</u>	<u>. 03</u>	<u>- Nil -</u>
<u>Totals</u>	1, 977	51. 95	9. 31

The low amount of land in multi-family use is characteristic of most suburban areas where there is no significant economic advantage to high-density residential uses in initial development stages.

2. Commercial land uses in the Primary Urban Area totaled 2, 323 acres in 1960 and accounted for approximately 6 percent of the total developed area, or 0. 77 acres per 100 population. The following table illustrates the breakdown of commercial land use in the Primary Urban Area by component sectors.

PRIMARY URBAN AREA

Commercial Land Use - 1960

<u>Area</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
Tampa	2, 090	6. 36	0. 76
Temple Terrace	12	1. 47	0. 32
Port Tampa	12	2. 20	0. 68
Tampa Urbanized Fringe	<u>209</u>	<u>5. 49</u>	<u>0. 98</u>
<u>Totals</u>	2, 323	6. 11	0. 77

The percentages of total commercial land development in Port Tampa and Temple Terrace were rather low when compared with Tampa and its urbanized fringe. This was true in Port Tampa largely because of the relatively higher proportion of land area in industrial, railroad, and street uses than in the other communities. In Temple Terrace, more than half of the main commercial area was located outside the corporate limits existing at the time of the land use survey. For this reason the "acres per 100 persons" figure was low. The same statistic was rather high in Tampa's urbanized fringe owing to the high proportion (35 percent) of trailer parks in the commercial category.

In comparing 1960 commercial land use areas in the City of Tampa with those existing twenty years ago, it should be noted that there has been a proportionate increase of over fifty percent in developed area.

CITY OF TAMPA

Commercial Land Use Trends, 1940-1960

<u>Year</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
1940	315	4.17	0.29
1960	2,090	6.36	0.76

This significant increase can be attributed to the trend toward extensive commercial development during the 20-year period. The growth is also evidence of population increase and expansion of the service segment of the local economy. Areas annexed by the City since 1940 included many vacant tracts suitable for the large-scale commercial developments with ample off-street parking that subsequently took place. Sizeable commercial areas include shopping centers, department stores, bowling alleys, drive-in theaters, motels, and trailer courts. Trailer courts alone comprise almost ten percent of the total commercial area.

In Tampa, 5,887 acres (or about one-eighth of the total 1960 area) were zoned for commercial use. Only 2,090 acres (or about 36 percent of this zoned area) were actually used for commercial purposes. Of course, not all of the remaining 3,797 acres is immediately available for future commercial use, some of it having recently been developed with other uses.

3. Industrial land use in the 1960 Primary Urban Area totaled 2,098 acres. This was about 5.5 percent of the total developed area and

represented 0.7 acres per 100 population. A breakdown of industrial land uses by component areas follows:

PRIMARY URBAN AREA

Industrial Land Use - 1960

<u>Area</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
Tampa	1,388	5.74	0.69
Temple Terrace	--	--	--
Port Tampa	106	19.41	6.01
Tampa Urbanized Fringe	<u>104</u>	<u>2.73</u>	<u>0.49</u>
<u>Totals</u>	2,098	5.51	0.70

Most of the industrial land use in the Primary Urban Area was located within Tampa's city limits. The greatest single concentration of the remaining area was in Port Tampa. The port facilities at Port Tampa, which have attracted industrial development, accounted for the large proportion of total land use in the industrial category for that community. The City of Temple Terrace had no industrial development in 1960, further illustrating the primary function of this community as a residential community.

A comparison of 1960 industrial acreage in Tampa with that of 1940 reveals that the industrial classification has retained about the same percentage

relationship to total developed area. However, the ratio of industrial acreage to population almost doubled owing to new industries which located in Tampa during and since World War II and the trend toward more spacious area developments.

CITY OF TAMPA

Industrial Land Use Trends, 1940-1960 *

<u>Year</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
1940	495	6.53	0.46
1960	2,229	6.78	0.81

Of the 9,207 acres zoned for industrial use in Tampa (representing about 13 percent of the total City area) only 1,888 acres were industrially developed. However, a large proportion of the remaining area, including Tampa International Airport and Rogers Park, are located within industrial zones.

4. Public and semi-public land uses in the urban complex of Tampa and environs totaled 4,491 acres. This amount was about 12 percent of the developed area.

* Figures include railroad uses.

PRIMARY URBAN AREA

Public and Semi-Public Land Uses - 1960

<u>Area</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
Tampa	4, 147	12. 61	1. 51
Temple Terrace	217	26. 59	5. 69
Port Tampa	12	2. 20	0. 68
Tampa Urbanized Fringe	<u>115</u>	<u>3. 02</u>	<u>0. 54</u>
<u>Totals</u>	4, 491	11. 80	1. 49

An average of 1. 49 acres per 100 persons of population was found in the total urban area. This rate compares favorably with the average figure for other metropolitan areas. The particularly high percentage figure and acreage-population ratio of Temple Terrace can be accounted for by the considerable areal extent of the golf course and Florida Christian College. Conversely, Port Tampa's low public-semi-public area figures are the result of a relatively high proportion of industrial land use. The earlier development of residential land use in advance of extensive public developments is typical of fringe areas and is a factor contributing to the lower statistical relationships.

One source claims that,

Institutions such as churches, clubs, schools,
police and fire stations, government buildings,

and other public or quasi-public establishments classified as public and semi-public property occupy an average of almost 11 percent of the developed area of the city. 65/

However, it should be realized that 11 percent of developed area in public and semi-public land uses is only an average of a number of American cities. Surveys have found that a sizeable range exists with respect to percentage of land in this category.

The following table illustrates changes in public and semi-public land uses in 1940 compared with 1960. Total area in this category increased 70 percent, exclusive of MacDill Air Force Base.

CITY OF TAMPA

Public and Semi-Public Land Use Trends, 1940-1960

<u>Year</u>	<u>Acres</u>	<u>Percent of Total Developed Area</u>	<u>Acres Per 100 Persons</u>
1940	516	6.82	0.48
1960	4,147	12.61	1.51

The phenomenal rise in acreage devoted to public and semi-public use can be accounted for by annexations which encompassed a large golf course, state hospital, and Tampa International Airport. In the 1960 survey, cemeteries and golf courses alone constituted over ten percent of total public and semi-public land uses. Even with this consideration, a substantial rise in public and semi-public use has been experienced over the past twenty years.

5. Approximately thirty percent of Hillsborough County's total park and recreation areas were found in the Primary Urban Area in 1960. This area constituted 845 acres and 2.2 percent of the total developed area. The following table illustrates the statistical relationships of the several component areas.

PRIMARY URBAN AREA

Park and Recreation Areas Land Uses - 1960

<u>Area</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
Tampa	832	2.53	0.30
Temple Terrace	4	0.49	0.10
Port Tampa	9	1.65	0.51
Tampa Urbanized Fringe	<u>--</u>	<u>--</u>	<u>--</u>
Totals	845	2.22	0.28

Total figures reveal somewhat lower ratios of park uses than would be considered average. In the case of Temple Terrace, public park areas are offset by the large "green areas" of the golf course and college. The absence of parks in the urbanized fringe also lowers the overall average. Nevertheless, land used for parks in all areas is definitely low in comparison with accepted national averages.

Available statistics indicate that the City of Tampa, although relatively low in park acreage, experienced growth in this category over the past two decades. (A 233-percent gain in acreage was registered).

CITY OF TAMPA

Park Land Use Trends, 1940-1960

<u>Year</u>	<u>Acres</u>	<u>Percent of Total Developed Area</u>	<u>Acres Per 100 Persons</u>
1940	250	3.41	0.24
1960	832	2.53	0.30

The loss evidenced in percentage of parks to developed area between 1940 and 1960 can be attributed to annexations and greater areal land coverage by other categories of land use.

Secondary Urban Area Development Pattern

The City of Plant City comprises the Secondary Urban Area in Hillsborough County. Since this community is physically removed by distance from Tampa and the other coastal settlements, development has followed a different growth pattern. One of Plant City's distinctions is the influence railroad lines and highway routes, rather than natural features such as river and bays, have had over direction of growth. The exception to this is the phosphate deposits to the south.

In recent years Plant City's residential pattern has broken away from a traditional cluster around a commercial core to a lateral expansion.

This has been particularly pronounced to the west adjacent to improved highway and major street routes. Developments in the vicinity of Thonotosassa Road, U. S. 92, State Road 39, and Reynolds Street are examples of this trend. The low, poorly-drained land in the northwestern sector of the city has served to deter growth in that direction.

Unfortunately in many newer developments the original gridiron street pattern, characterized by short, square blocks, has been continued. The result has been that an inordinate amount of streets serving residential areas has been platted and improved.

Single-family dwellings constituted the principal residential land use in 1960. Two relatively large areas of multi-family development were located in the southeast quadrant and several small parcels were so improved north and west of the business district. There was a negligible amount of two-family residential land use.

As could be expected in a relatively small urban area, commercial uses in Plant City have been principally concentrated in the central business district. More recent commercial developments have been stripped along major thoroughfares, particularly Thonotosassa Road and U. S. Highway 92 to the west, Reynolds Street (U. S. Highway 92-East) to the east, and South Collins Street (State Road 39) to the south. Commercial uses along Laura Street in the southeast sector serve the population in that area. Both highway and local neighborhood shopping needs are serviced by commercial establishments situated along these thoroughfares.

Plant City industrial land uses for the most part are stretched out along the rights-of-way of the two railroads in all directions from the central business district, but principally to the south and west. In a number of cases these uses are intermixed with residential and commercial uses and contribute to an overall haphazardly arranged industrial development pattern.

Owing to their placement and limited extent, public and semi-public land uses have not created any significant problems to community growth. The exception to this is the cemetery area north of the city through which State Road 39 passes.

The two railroad lines and SAL R. R. spur track to the southwest, however, have affected past development and still pose problems to future growth. The orderly expansion and efficient functioning of the downtown business district to the east and south has been hampered by the railroad lines and rail traffic. The fact that all rail and street crossings are at grade also impairs the orderly flow of vehicular traffic into and through downtown and has created numerous dangerous intersections.

The location of Interstate Highway 4 north of Plant City has implications as far-reaching to the future development pattern of Plant City as the railroad and conventional highway route locations have had upon past and present patterns. For example, cross-expressway access is limited to four points in the Plant City area. This situation coupled

with the low, wetland area to the northwest and phosphate company holdings to the south of Plant City, should serve to encourage further growth of Plant City to the east and/or west on a lateral basis or to an area north of Interstate 4 on either side of State Road 39.

Secondary Urban Area Land Uses

An analysis of residential development in Plant City reveals that in 1960, the percentage of developed area and land acreage to population ratio was typical of other communities of the same population size. Slightly over 32 percent of the developed territory was residential. The 887 acres in this land use represented 5.65 residential acres per 100 population.

PLANT CITY

Residential Land Uses - 1960

<u>Land Use</u>	<u>Acres</u>	<u>Percent of Developed Area</u>	<u>Acres Per 100 Persons</u>
Single-family	838	30.58	5.34
Two-family	9	.33	0.06
Multi-family	<u>40</u>	<u>1.46</u>	<u>0.25</u>
<u>Totals</u>	887	32.37	5.65

Plant City also had a total area of 126 acres, or 4.6 percent of the total developed area in commercial use. For each 100 persons of population, there were 0.8 acres of commercial land use.

Industrial acreage in Plant City constituted 2.34 percent of the City's developed area. In comparison, this was one-half of the industrial proportion indicated for Tampa and may be partly attributed to the fact that streets constitute such a large share of Plant City's total development. The ratio of 0.41 acres of industrial acreage per 100 persons was also considerably lower than Tampa's ratio.

Two hundred acres of public and semi-public use accounted for 7.3 percent of Plant City's 1960 developed area. The land use-to-population ratio was 1.27 acres for every 100 persons.

Plant City had 33 acres in parks by 1960. This was 1.2 percent of the total developed area and represented 0.21 acres per 100 persons.

Waterfront Development Patterns

Including thousands of small islands, the State of Florida has over 8,000 miles of shoreline. The U. S. Coast and Geodetic Survey has calculated 112 miles of general shoreline for Hillsborough County, including Egmont, Davis, and Seddon Islands. Other smaller islands, bridge causeways, inlets, and bays could easily account for an additional hundred miles of shoreline, if not considerably more. Approximately two hundred lakes (exclusive of ponds) having a perimeter upwards from about a thousand feet to Lake Thonotosassa with over 20,000 feet also add shoreline areas to the county total. The main courses of Hillsborough County's three major

BULKHEAD LINES AND FUTURE FILL AREAS HILLSBOROUGH COUNTY

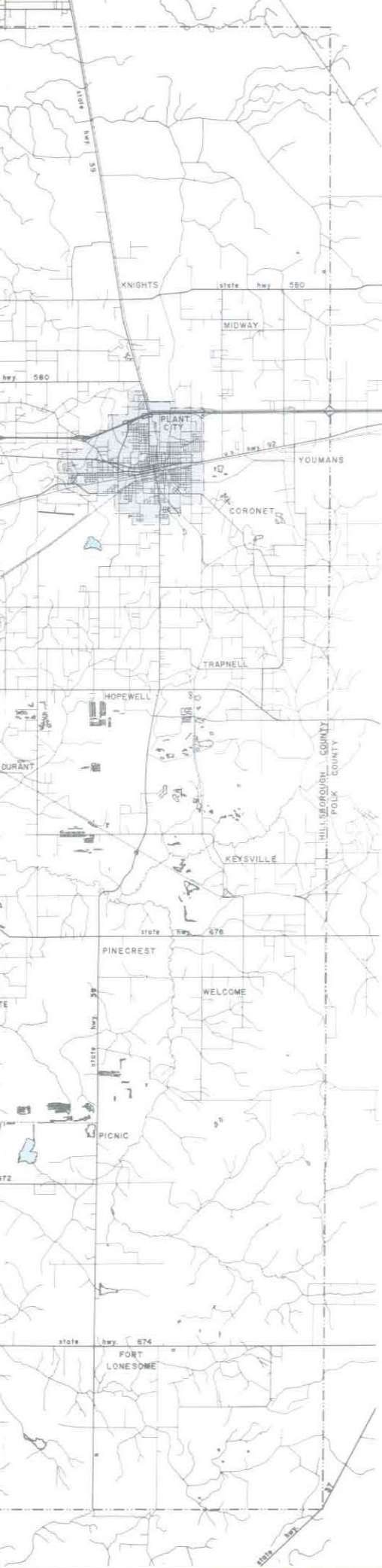
L E G E N D

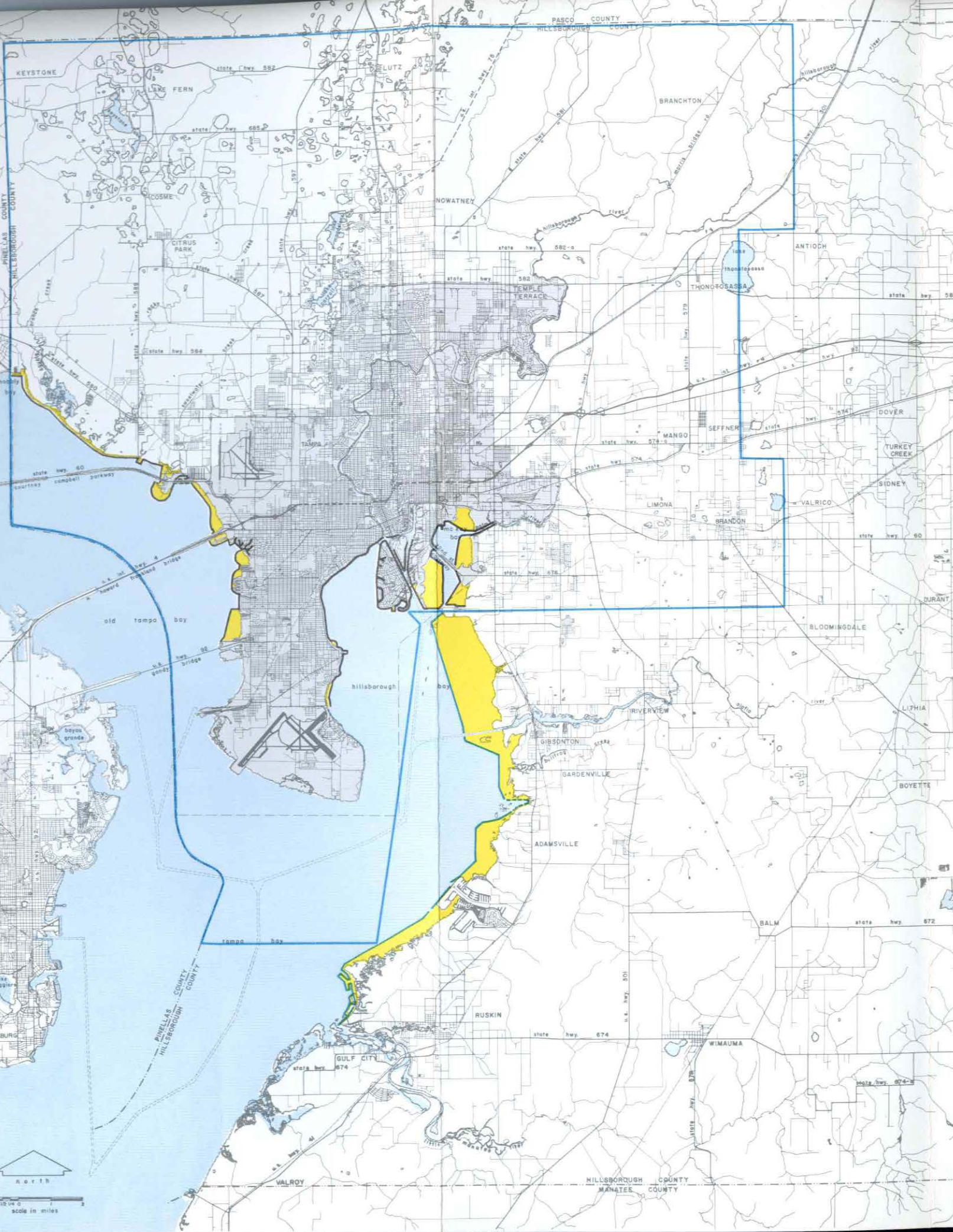
- APPROVED BULKHEAD LINE
(HILLSBOROUGH COUNTY PORT AUTHORITY)
- - - - - TENTATIVE BULKHEAD LINE
(HILLSBOROUGH COUNTY PORT AUTHORITY)
- APPROVED BULKHEAD LINE
(HILLSBOROUGH COUNTY BOARD OF COUNTY COMMISSIONERS)
- - - - - TENTATIVE BULKHEAD LINE
(HILLSBOROUGH COUNTY BOARD OF COUNTY COMMISSIONERS)
- HILLSBOROUGH COUNTY PORT AUTHORITY'S AREA OF JURISDICTION
- MUNICIPALITIES
- MAJOR WATER AREAS
- FUTURE FILL AREAS

source: hillsborough county port authority
hillsborough county engineering department

PLATE 9

hillsborough county planning commission





rivers (Hillsborough, Alafia, and Little Manatee) afford upwards of 200 miles of potentially developable shoreline.

These shoreline figures are high in the sense they involve a considerable amount of submarginal shoreline; yet conversely, they are conservative because all water bodies in and around the county are not included. Nevertheless, a reasonable estimate is that over four hundred miles of coastal, lake, and river shoreline exist in Hillsborough County. The importance of this shoreline to community development cannot be overlooked.

Florida's waterfront has always been the most significant geographical factor in the growth and development of this state. 66/

Florida's coastline is about 20 percent developed. 67/ Approximately the same percentage relationship exists along Hillsborough County's shoreline.

Coastal Shoreline Development Pattern

1. Legal framework. The State of Florida has specific legislation designed to encourage and regulate waterfront development.

Statutory authority dating back to 1856 made it possible for riparian land owners to acquire title to adjoining submerged areas by the act of filling. In 1913, provisions were enacted to permit shallow bay bottoms not associated with any true upland to be obtained from the state and filled. 68/

Most recent legislative action in this direction was the 1957 Florida Bulkhead Law. Along with upholding submerged-land ownership rights of the

Internal Improvement Fund as well as requiring dredge and fill permits, the law sets up a procedure for establishing bulkhead lines.

Subject to the formal approval of the Trustees of the Internal Improvement Fund, the board of county commissioners of each county or governing body of any municipality. . . are hereby authorized on their own initiative to locate and fix a bulkhead line or lines offshore from any existing lands or islands bordering on or being in the navigable waters of the county. . . . 69/

The Hillsborough County Port Authority and the Board of County Commissioners both have established bulkhead lines. These are graphically illustrated in Plate 9, together with probable future fill areas.

2. Existing conditions. In a natural state, the coastal shoreline in most sections of Florida is generally unattractive and unsuited for development.

For all of its well-publicized beaches, much of Florida's shoreline especially on intra-coastal tidewaters is low, marshy, or covered with mangrove, and is fronted by expansive areas of flats and shallow water. 70/

The above description applies to a large portion of Hillsborough County's Coastal shoreline. Only those man-made shoreline alterations deviate from this pattern. Natural sandy beaches do not exist.

A major geographic feature of Florida's Gulf Coast is the barrier islands formation, more essentially a mangrove ridge. Considerable

improvement has been necessary in the scattered development of these lands. By far, the greatest proportion of coastal development occurs in the Tampa area along the western shore of Interbay Peninsula and around the northern limits of Hillsborough Bay, including McKay Bay.

The Florida Water Resources Commission reports that, "Along the Florida shorelines there is little natural protection". ^{71/} As a consequence, wave action has a strong influence over the character of coastal shoreline, particularly beaches. Beach erosion and littoral drift annually remove an estimated 300 to 500 acres of beach. ^{72/} However, Hillsborough County's coastal waterfront, although lacking a beach shoreline, faces protected bodies of water where wave action plays a relatively minor role. Diurnal tidal currents are the major natural mechanical agents influencing the coast. There is little marine erosion problem in this county in comparison to the "disappearing shoreline" situations in Pinellas County and other counties fronting the Gulf of Mexico and Atlantic Ocean.

Coastal-oriented industrial development is concentrated in the general vicinity of the Hillsborough River estuary as well as east and south around McKay Bay to approximately Black Point. Another industrial area exists at Port Tampa. Commercial developments along the waterfront relate directly to maritime needs such as fishing camps and marinas. Residential development around the shorelines has been limited almost exclusively to subdivision efforts rather than individual home sites. The

high cost of improving the existing submarginal coastline practically precludes any private endeavor for single residences. Subdivisions, however, in a number of instances, have proven economically feasible in several places along Old Tampa Bay shoreline and Tampa Bay between the Alafia and Little Manatee Rivers.

Two distinct groups of young, waterfront subdivision developments have been established along Hillsborough County's Coastline. These groups are summarized below. Both types, however, have utilized dredged canals in order to intensify water frontage. In effect, the waterfront has been extended inland in contrast to "finger" extensions out into the body of water

1. The upper coastline of Old Tampa Bay has three subdivisions in early growth stages that have begun canal-type improvements considerably inland (one-half to one mile) from the shoreline. These are all past the coastal marshlands. Ultimate development is designed to expand through this submarginal zone to the off-shore bulkhead line. If such plans are realized these subdivisions would be virtually complete and compact waterfront communities.

2. There is also one large subdivision and several smaller ones incorporating the waterfront concept along the southeastern shoreline of Tampa Bay. One obvious difference between these and those around Old Tampa Bay is that initial growth began in the submarginal coastal lands.

Expansion has been both outward toward the bulkhead line as well as inland by means of canals.

The Florida Development Commission, in a study of all Florida beaches, estimated that only 12.5 miles of shoreline in Hillsborough County now were suitable for beach use. ^{73/} These areas are along the man-made causeways in Tampa Bay, principally Courtney Campbell Parkway. This minor amount of beach area points up the obvious need for additional beaches in Hillsborough County.

Lake and River Shoreline Development Pattern

Development along fresh water bodies has occurred primarily in the lake district of northwest Hillsborough County. Waterfront developments, primarily residential, in this district are found surrounding about two-thirds of the lakes. Many of these lake areas still have substantial shore portions potentially available for development. Also, a good number of the smaller lakes are held in private ownership, either for individual residential or agricultural purposes.

1. Lake development. Residential development is considerably more advanced around lake shorelines than along the coastline. By far, most inland waterfront development is concentrated in northwest Hillsborough County. Better land development features account for this greater density inland. Few improvements generally are necessary to develop land abutting on lakes. Growth along lake shores has been on an individual

basis and with no truly definitive pattern. Recently, however, there is evidence of a gradual trend toward more, though small, subdivision developments. Through filling and dredging processes, developers have added to the total amount of waterfront properties.

2. River development. The banks of the Hillsborough River have relatively complete residential development from the upper edge of the central business district to Tampa's northeast city limits. The river's west bank in Temple Terrace is about half developed; only a minor portion on the opposite bank is developed for residences. Northward from Temple Terrace, riverfront use declines rapidly and is practically non-existent above Fletcher Avenue, or the beginning of the swampy, submarginal region prevalent in northeastern Hillsborough County.

The banks of both the Alafia and Little Manatee Rivers are relatively unimproved. Distance from existing major employment centers in Tampa appears to be one obvious reason. Nevertheless, residential growth at the mouth of each river has begun to increase. Improved accessibility provided by U. S. 301 and U. S. 41 probably accounts for a substantial pattern of waterfront residences in the vicinity of the highway bridge crossings. These rivers offer a great potential for future waterfront development.

Although the greater portion of the coastal shoreline has an established bulkhead line, river and lake shorelines are not now subject to such

control. However, since the Hillsborough River is a navigable waterway, alterations of its banks are first subject to approval of the U. S. Corps of Engineers.

Hillsborough County's two largest lakes, Thonotosassa and Keystone, are the only lakes where adjacent property owners do not have riparian rights; the State of Florida Internal Improvement Fund has title to bottom land. On all other multi-owner lakes, owners of property abutting the water have theoretical additions to their actual property lines extending out into the water to a point where they join with other extended property lines.

Summary

Pertinent land use statistics for the entire Hillsborough County area are summarized on Table 2. Detailed 1960 land use maps of Hillsborough County and Tampa and Environs are on display in the Court House offices of the City-County Planning Commission.

Based upon the preceding study, it is clear that Hillsborough County has a complex physical structure. Simple and dramatic solutions for the land use problems and conflicts that have built up over more than one hundred years are not foreseen. Gradual but steady improvement in accordance with a comprehensive plan of development is more feasible and practical.

TABLE 2

SUMMARY OF 1960 TOTAL LAND USES

HILLSBOROUGH COUNTY

Land Use Category	Area In Acres		
	Urban Areas	Non-Urban Areas	All Areas
Agricultural			
Citrus Groves	557	62,910	63,467
General Agricultural (1)	1,152	134,152	135,304
Subtotal	1,709	197,062	198,771
Extractive	-	13,200	13,200
Residential (2)	17,127	11,873	29,000
Public and Semi-Public	4,691	9,177	13,868
Parks and Recreation	878	3,783	4,661
Subtotal	5,569	12,960	18,529
Commercial	2,449	1,572	4,021
Industrial	2,162	1,164	3,326
Railroads	557	2,474	3,031
Subtotal	5,168	5,210	10,378
Streets and Highways	12,935	15,260	28,195
Water Areas			
Water Courses	(1,547)	7,543	(17,000)
Lakes	()	7,910	()
Salt Water Areas	28,928	76,517	105,445
Subtotal	30,475	91,970	122,445
Vacant	17,978	332,549	350,527
<u>TOTAL AREA</u>	<u>90,961</u>	<u>680,084</u>	<u>771,045</u>

NOTES: (1) "General Agricultural" figures for Tampa area were incorporated into "Vacant" category.

(2) Includes camps, single trailers, two-family, multi-family, and single-family land uses.

SOURCE: 1960 Land Use Survey by Hillsborough County Planning Commission.

A first step in such a long-range program is identification of basic problems. These are reviewed below:

1. The agricultural land base is gradually being reduced through expansion of phosphate mining and community developments. Unnecessary dislocations to the agricultural pattern have occurred in many cases through premature subdividing and/or absence of adequate rural zoning controls.

Recognition of productive components of existing and potential agricultural development and their importance to the present and future economy is essential to preparation of the plan of future development. Eventual conversion of agricultural land should be viewed from the standpoint of estimated future non-agricultural land use requirements and the appropriate timing of such conversion.

2. Phosphate mining activity has expanded to such a point in the county that a number of problems exist. These include large tracts of land being held in an unproductive state, need for proper reclamation of mined-out land, and potential land use conflicts through uncontrolled mining activity extending into community and prime agricultural areas. In the future, a better balance should be struck among total land needs of phosphate mining, agriculture, and the community complexes.

3. By far the most complicated land use problems exist in the two urban communities in Hillsborough County--Tampa and environs, and Plant City. The amount of land now used for various community purposes,

such as residential, commercial and industrial, provides a basis for determining future land use requirements. These will be presented in the report upon the Preliminary Plan of Development. The most serious area deficiency is the limited amount of park land available and large quantities of street areas found in several parts of the urban areas.

Distribution of existing land uses in the urban areas is more perplexing than actual acreage amounts. The existing locational pattern of land uses in many instances does not provide a sufficient basis for extension. Strip commercial, scattered industrial, and inter-mixed residential areas are the result of uncoordinated growth. Inappropriate waterfront developments have also occurred. Although these patterns will continue to exist in the future, they should not be emulated in new developments. An improved community land use pattern can be achieved through adherence to a well conceived and implemented plan of development.

4. There are at present three major land use classifications in Hillsborough County -- agricultural, phosphate mining, and community uses. These uses are all necessary to satisfy the economic and social needs of the population. Adaption of the land to meet the area's natural needs, principally storm water run-off, has not been accomplished to the degree necessary to assure adequate future protection. Therefore, a water management use area, a fourth major land use, would appear to be on the immediate horizon.

Section V. TRANSPORTATION PATTERNS

Section V. EXISTING TRANSPORTATION PATTERNS

The efficient flow of people and goods both within Hillsborough County and between the county and other sections of Florida, the United States, and points in foreign countries is essential to the county's economic well-being and future growth. Streets and highways accommodate the circulation of vehicular traffic of all kinds. Rail and water facilities furnish the means for mass transportation of raw materials and finished products so essential to maintenance of a sound economy. Movement of large volumes of air traffic also has become increasingly important to community development.

A planned arrangement of future land uses has to be related to the numerous transportation channels and terminals as now exist and as will be needed to accommodate estimated future traffic requirements. Such a plan should also encourage a land use arrangement that will reduce conflicts between land uses.

In this section, existing streets and highways, rail, port, and airport facilities will be studied and evaluated. Present or potential inadequacies in the transportation pattern that may detrimentally affect future development will be outlined.

Major Street and Highway Pattern

The primary function of a major street or highway should be to facilitate vehicular movement from origin to destination. Secondary functions include furnishing access to adjacent property, providing for pedestrian movement, providing space for public utilities, and insuring an adequate supply of light and air to adjoining property. Unfortunately, this conception of a major street's basic function has been fully recognized only in more recent years and has been implemented very sparingly throughout the nation. Hillsborough County has not yet developed an adequate system of major streets and highways based on this principle.

Principles of Major Street Planning

The original gridiron street patterns characteristic of many American communities were laid out prior to the advent of the automobile. The automobile brought about the need for improved street design to accommodate large volumes of vehicular traffic moving at higher speeds. Experience has proven that traffic can be better moved by developing a few streets with wide pavement, direct alignment, and with traffic control devices arranged to favor traffic flow on the principal artery. These streets are known as "major streets" and constitute only 20 percent or less of the total street mileage.

With the great majority of traffic moving on a few streets, remaining streets can be improved with narrower and less expensive

pavement. A street system developed in this manner presents the following advantages: (1) less expense is involved because only a few streets require costly pavement; (2) greater safety can be provided through modern traffic controls; (3) vehicular traffic is better accommodated; and (4) residential areas can be protected from intrusion of heavy traffic movements.

The need to develop a major street system in Hillsborough County cannot be overemphasized. Several past attempts to achieve such a system in accordance with long-range plans for the Tampa area have resulted only in minor success.

Fundamental characteristics of a major street system are outlined below:

1. A major street system should connect residential areas with the central business district and other principal work areas within the county. In one way, this network may be visualized as comprising the spokes in a wheel. Residential areas and commercial and industrial areas should be connected with each other and with major highways entering the city by a series of cross-town or distributor streets. Other major streets should be provided to allow traffic to bypass the entire urban area or to avoid

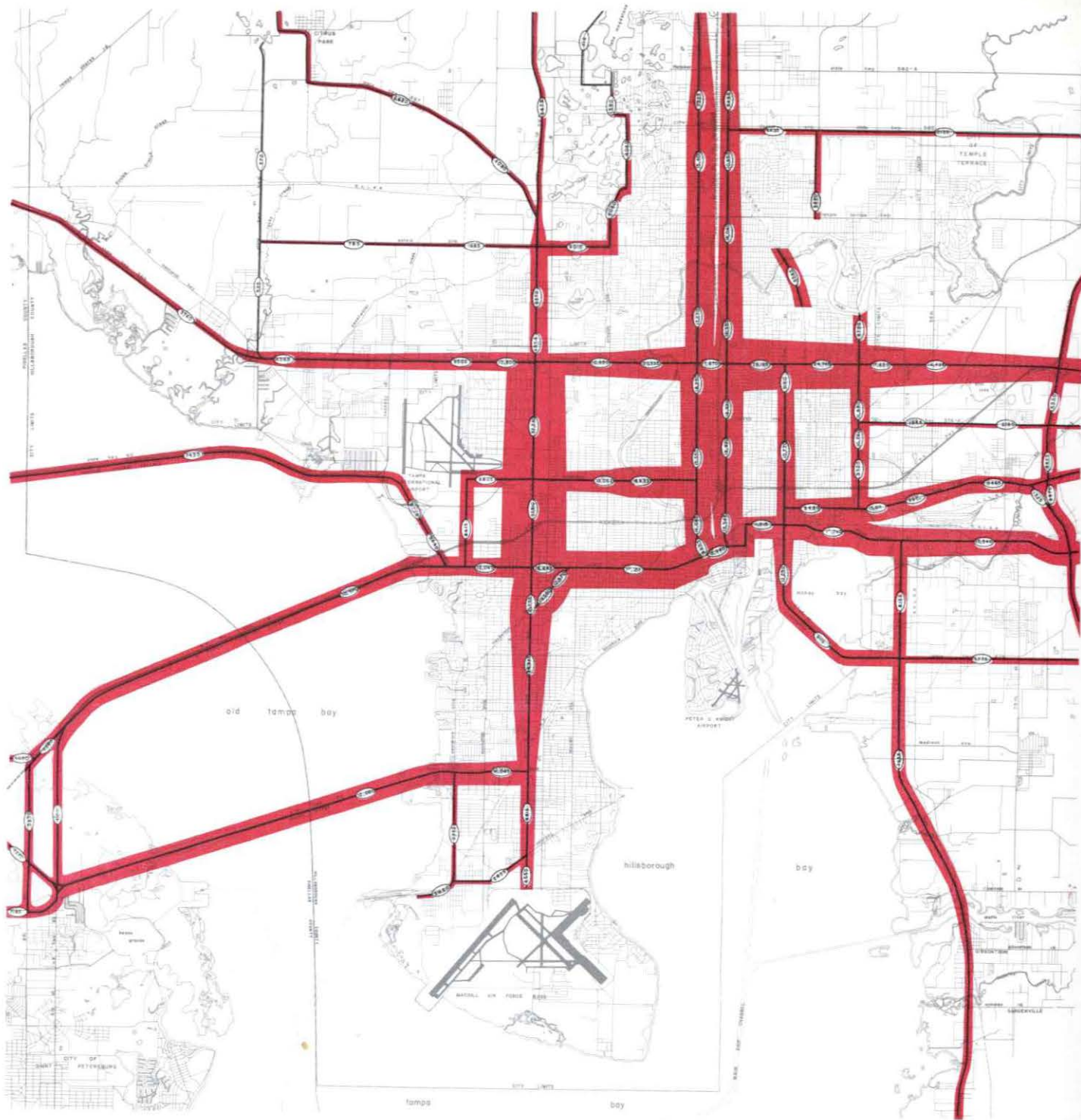
sections of intense congestion such as the central business district.

2. Major streets should be developed wide and direct in order to invite and accommodate vehicular traffic flow. The width of a major street should be related to the volume of traffic (especially at peak periods) expected to use it. For example, on an average surface major street a single traffic lane can usually accommodate about 500 vehicles per hour. At the peak hour, one-half to two-thirds of the traffic is moving in one direction so a street with two moving lanes could carry 750 to 1000 vehicles in an hour and a street with four moving lanes could carry between 1500 and 2000 vehicles per hour.
3. There should be a minimum of intersecting streets along a major street route so that numerous traffic friction points are not encountered. Where possible, limited or controlled major street access should be incorporated into all highway and subdivision designs.
4. Theoretically, the development of a major street system would result in major streets spaced one-quarter

mile apart in heavily concentrated sections to one mile apart or more in less-densely populated areas. This arrangement would divide residential districts into a number of neighborhood units.

To develop a major street system on a comprehensive basis requires the understanding and cooperation of governments on a regional basis. Land use and transportation plans (including a plan of major streets and highways) which have been jointly agreed upon by the governing bodies involved can effectively serve as ways to achieve cooperative efforts. Several ways of bringing about coordinated thoroughfare improvements are outlined below.

In nearly all metropolitan areas no adequate governmental machinery exists for compelling the nature and rate of metropolitan change to follow an overall plan. Three general classes of means are presently available. . . . The first of these is by inter-governmental agreement among municipalities to carry out aspects of a commonly developed plan. . . . The second means is effectuation through some special purpose metropolitan agency, such as an authority. . . . The third means, and perhaps the strongest, lies in the hands of State Highway Departments; for many believe that the pattern of major highways laid down in metropolitan areas will be the strongest force determining the form and rate of development of their various parts. 74/



1960 AVERAGE DAILY TRAFFIC FLOW

TAMPA AND ENVIRONS

source: florida state road department
city of tampa traffic engineering department
(1961 counts for columbus drive)

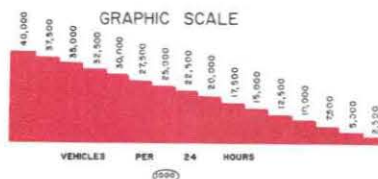


PLATE 10



Existing Hillsborough County Major Streets and Highways and Traffic Movement

Five governmental authorities are presently responsible for street and highway improvements in Hillsborough County. These include the Cities of Tampa, Temple Terrace, and Plant City; the Florida State Road Department; and the Hillsborough County Board of County Commissioners (both collectively and individually). A sixth, the Florida Turnpike Authority, may be added in the not too distant future.

For the most part the several governments within the county have worked separately over the years with varying road design standards, radically different concepts of needed improvements, and limited financial resources. This has resulted in an uncoordinated system of major streets and highways. In many cases road improvements have had disruptive effects upon existing land uses and future development possibilities.

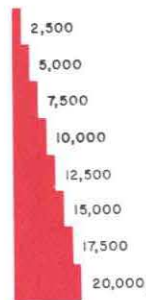
Existing street and traffic patterns in various sections of Hillsborough County are summarized below. Plate 10 illustrates the pattern of traffic flow in Tampa and environs and Plate 11 shows the Plant City and general Hillsborough County patterns.

1. Tampa. The Tampa street system has been developed along the lines of a basic gridiron pattern, but with many irregularities. This type of street pattern is typical of Florida cities and is indirectly a result of the section-township surveying system used throughout the state.



AVERAGE DAILY TRAFFIC FLOW 1960 HILLSBOROUGH COUNTY

GRAPHIC SCALE



VEHICLES PER 24 HOURS

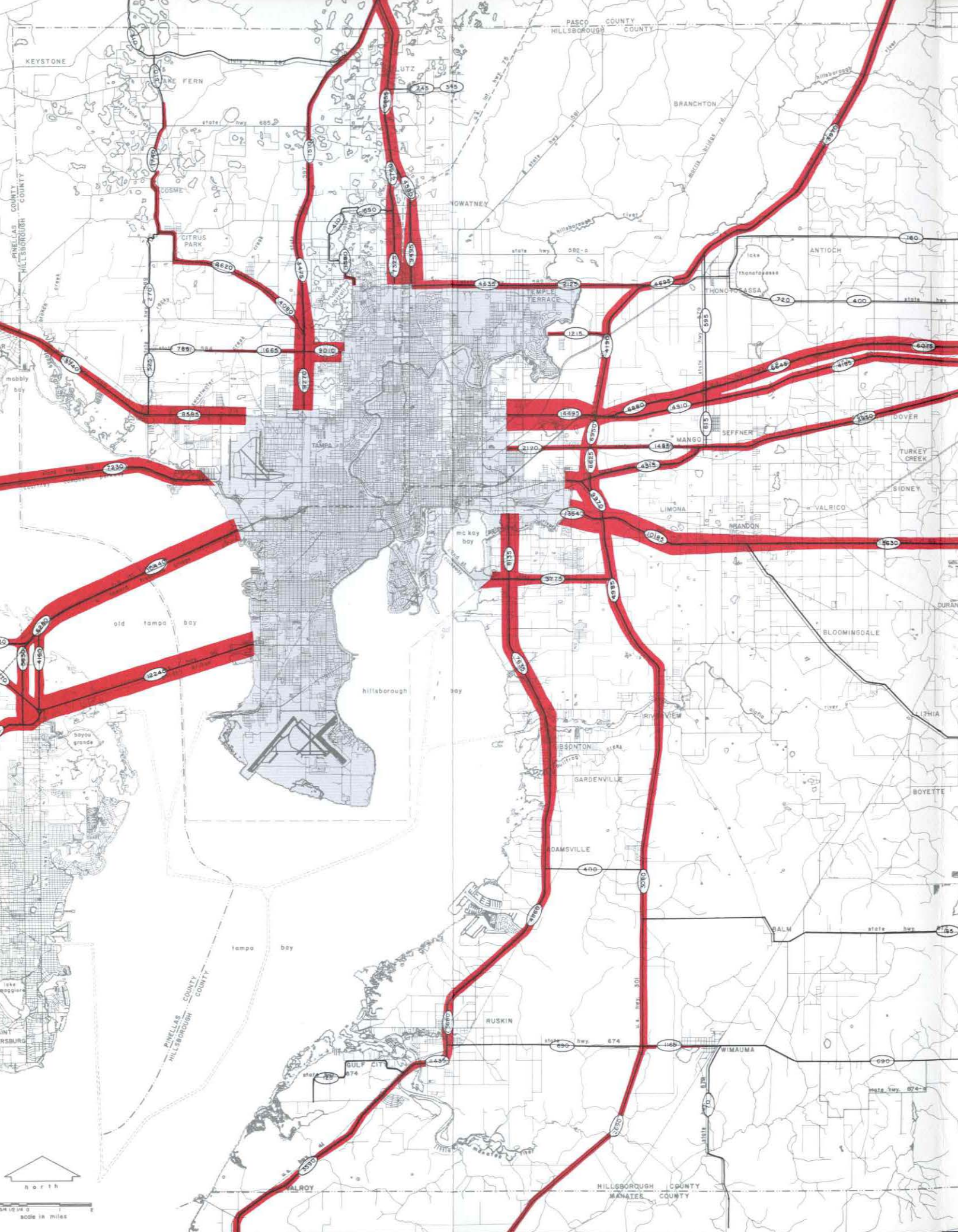
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MUNICIPALITIES

source: florida state road department

PLATE 11

hillsborough county planning commission



Many of the early streets and roads of Tampa were laid out along section lines to take advantage of existing surveying reference points. Since the flat topography presented no particularly difficult engineering problems, these early roads were later improved as modern streets and highways.

A gridiron street system has certain advantages. However, its greatest functional disadvantage is that it is inconvenient and indirect for travel between points located diagonally from each other. Where the pattern is carried into the local street system it will tend to result in dispersion of through traffic into residential areas rather than limiting it to major thoroughfares. The most efficient street system for effective traffic movement is the radial-circumferential type. It consists of major streets radiating from the center of a city supplemented by a series of circumferential streets which encircle the city.

Tampa has only five major streets which function as radials. From the central business district, Grand Central Avenue leads to the west, Frank Adamo Drive to the east, and Florida and Nebraska Avenues to the north. These streets are also the principal highway routes into the city. Bayshore Boulevard, which leads southward along the west shore of Hillsborough Bay is the only radial not a part of the gridiron pattern.

Crosstown streets in a gridiron system must perform the function of circumferentials. These thoroughfares permit travel from one outlying point in a city to another without passing through more congested

central areas. The two most heavily traveled streets in Tampa are cross-town routes. Hillsborough Avenue carries the greatest volume of east-west traffic (28,000 vehicles per day between Nebraska Avenue and 22nd Street in 1960). Dale Mabry Highway, the primary north-south arterial, carries more traffic (37,510 vehicles in 1960) between Interstate 4 and Columbus Drive than any other single stretch of highway. The 1960 State Road Department sufficiency ratings classify segments of both streets as "critical". Although the expressway system when completed may relieve traffic congestion along portions of several major cross-town arteries, its greatest benefit will be as relief routes for radial streets and for through-highway traffic.

2. Plant City. Even though Plant City's population and urban area are not comparable in magnitude with those of Tampa, the community has mounting traffic problems. The street system is basically a gridiron pattern, but contains a number of wide variations from such a pattern. The primary east-west arterial is U. S. Highway 92, which highway joins with State Road 574 in the eastern part of the city to form a one-way pair of streets running through the central business district to the west. State Road 39 functions as the main north-south arterial. Most sections of the Plant City arterial system are classified as "poor" in State Road Department sufficiency ratings. State Road 39, from the center of town south to Alsobrook Street, is considered in "critical" condition.

One of the major problems in Plant City is the conflict between its vehicular and rail traffic movements. The town is divided into four quadrants by the Seaboard Air Line Railroad running north-south and the Atlantic Coast Line Railroad extending east-west. Many streets are interrupted by these railroad lines and others abruptly terminate at the railroad. There are four major street grade crossings of rail lines in the central business area.

3. Hillsborough County. The highway and road pattern of Hillsborough County performs two specific functions. These improvements are intended primarily to connect population centers within the county and to connect the county with the rest of Florida. Minor or local roads provide principal access to private property. With one exception, however, all highways also serve the function of providing access to private property. The two Interstate highways under construction will have access completely limited to interchanges spaced at intervals along their lengths. No direct access to abutting property is permitted.

The highway system converges on Tampa as the primary hub. Plant City functions as a secondary hub. The east-west highway pattern is oriented on an axis which passes through these two cities. This dominant transportation corridor consists of Interstate 4, U.S. 92, and State Highways 60, 574, and 580. The principal north-south arteries, U.S. Highways 41 and 301, enter the county from the north, pass through the

Tampa area, and continue south in the vicinity of the east coast of Tampa Bay. Upon completion of Interstate 75 and construction of a proposed expressway from Tampa southward to Ft. Myers and eventually to Miami, the importance of this north-south transportation corridor should increase. State Road 39 provides north-south connections to and beyond Plant City.

The local road pattern of Hillsborough County has been strongly influenced by the section-township property surveying system. These roads were generally constructed along property boundaries, particularly on section, half-section, and quarter-section lines. The resulting grid-like pattern is found in and around the rural communities throughout the county. It occurs more frequently in the area between Tampa and Plant City and, in particular, south of the latter city.

Traffic movements in other sections of Hillsborough County flow generally in east-west and north-south directions with very little diagonal movement. The east-west movement predominates over the north-south movement by approximately a three-to-one ratio. The trend has been for this ratio to increase over past time periods. Heaviest inter-county traffic movement is between Hillsborough and Pinellas Counties, particularly toward St. Petersburg. Increasing social and economic activity between the two counties accounts for the 7,500 average daily traffic volume increase registered between 1957 and 1960.

Although not as great numerically, traffic volumes between Hillsborough and Polk Counties are increasing at a slightly faster rate than those between Hillsborough and Pinellas Counties. Pasco County traffic has also been increasing. Increased movements to and from Manatee County have not been particularly significant.

Proposed Controlled Access Highway Routes

A severe limitation to development of a comprehensive major street and highway system has been a failure to recognize that the basic function of a thoroughfare is to move traffic and to design and construct streets accordingly. To move the large volumes of traffic that are continually building up in Hillsborough County along direct and uninterrupted routes requires a special facility known as a controlled access thoroughfare.

Except for Bayshore Boulevard and the several causeways which have access effectively controlled by natural features, this street type in the past has been unknown to Hillsborough County. However, construction of two segments of the interstate highway system in the county as well as possibility of a segment of the Florida Turnpike will alter this situation. These routes will have far-reaching effects upon land use and traffic circulation patterns. Their implications to the development pattern are outlined in the following sub-section.

1. Interstate highways. Two major sections of the National Interstate Highway System will terminate on the Florida West Coast. Interstate 75, connecting Tampa with Atlanta and other major metropolitan centers in the Midwest as far north as the Canadian border, will terminate north of the Tampa central business district. Interstate 4, extending from Daytona Beach westward through Orlando, Lakeland, and Tampa, will end in the St. Petersburg area. Both highways will intersect at the terminal point of I-75 on an elevated link to be known as the Central Distributor. According to the feasibility study prepared by Wilbur Smith and Associates, Consultants, upwards of 120,000 vehicles per day are expected to travel over this central highway connection by 1975. Completion of the Tampa section of I-4 is scheduled by the Florida State Road Department for 1964; I-75's tentative completion date in Hillsborough County is 1966.

(a) Background. The need for improved facilities to move vehicular traffic between Tampa's center and outlying areas has been recognized for years. As early as 1941, a consultant's report proposed that Central Avenue be widened between Cass Street and Hillsborough River to provide a hundred-foot right-of-way for construction of a four-lane limited access thoroughfare.

A Florida State Road Department report in 1947 again proposed improvement of Central Avenue to provide an expressway between downtown

Tampa and Temple Terrace Highway. An east-west expressway was also proposed along Columbus Drive from North Boulevard to the east boundary of the existing urban area. A grade-separated interchange was recommended where these two facilities intersected. A third proposal made in the 1947 report was a southwest route connecting on the north end with Columbus Drive at North Boulevard, extending southward at an angle, and intersecting Bayshore Boulevard in the vicinity of South Rome and Dakota Avenues. Bayshore Boulevard and Gandy Boulevard were to be utilized to extend this limited-access facility to the east end of Gandy Bridge.

These previously recommended controlled access routes were not constructed. The interstate highway routes are the first attempt to provide this type of facility.

(b) Immediate implications. The interstate highway system can be expected to radically change the use of the existing Tampa street system. Traffic on major radial routes, particularly those near the interstate routes, will be reduced for the time being. However, traffic will increase on all streets leading to the expressways; thus increase can be expected to take place particularly in outlying areas from which expressway routes will be utilized for trips to and from urban centers. Traffic on some crosstown arteries will be reduced because through-traffic will be better accommodated on the expressways. This should be especially true of Hillsborough Avenue.

Many of Tampa's local streets will be permanently terminated by expressway construction. Those parallel to an expressway will carry more traffic from the terminated streets to those having cross-expressway access. Many of these cross-streets are already heavily-traveled thoroughfares.

The interstate highways will effectively act as artificial barriers to development when passing through urban areas. It was impossible in planning these facilities to avoid cutting through established residential neighborhoods. Not only will neighbors be separated from one another, but neighborhood services and facilities provided by the city and county will be disrupted. For example, additional fire sub-stations may be required to serve areas having less direct access to existing stations than formerly. Refuse collection routes may require changing. A number of transit routes will need adjustment. Access to many parks, playgrounds, and schools from portions of present service areas will become more circuitous. Additional traffic on neighborhood streets crossing expressways will result in greater hazards for children who walk to elementary schools and playgrounds. Existing neighborhood shopping facilities will become less convenient in many instances.

(c) Future effects. Both conventional highways and expressways are acknowledged to have urbanizing influences on undeveloped land in semi-rural and rural fringe areas. Travel time, rather than distance,

becomes a major determinant in the location of new developments. For this reason the interstate highways designed for high-speed and high-volume traffic will tend to draw development farther out from existing urban areas than a conventional highway. In Hillsborough County, this should be the pattern between Tampa and Plant City.

Development patterns stimulated by these two types of highway facilities also tend to differ from standard development patterns. The conventional highway, since it allows access to adjacent land, usually promotes a broad band of development along its length which gradually diminishes with distance from a city. An expressway, with access allowed only at fixed intervals, tends to stimulate clusters of development, each having an interchange as its nucleus. Some of these development clusters may evolve into complete communities with attendant service facilities. Some may become small industrial complexes. Others may develop as groupings of highway-serving facilities, such as service stations, motels, and restaurants. A mixture of these basic uses would be the normal situation.

Each intra-city trip in which an expressway is used has three distinct parts:

1. Point of origin to point of entrance to expressway.
2. Point of entrance to point of exit from expressway.
3. Point of exit from expressway to point of destination.

The two most critical segments of intra-city trips are at expressway interchanges and on feeder roads leading to them. It is in these areas that traffic congestion is likely to occur and where advantages of expressway travel can be greatly diminished.

Little or no thought appears to have been directed toward the civic images the interstate highways will create in the Tampa urban area; that is, the common mental pictures or impressions carried away by large numbers of tourists as well as the inhabitants of the Tampa area. If these two expressways are designed and constructed strictly according to engineering principles, they probably will be no better or no worse than expressways in other sections of the country and will reflect no unique civic image of Tampa or the Florida West Coast. However, there is an opportunity, especially in the case of Interstate Highway 75 which is not yet constructed, to create unique civic images of Tampa by proper landscape treatment of the two routes -- the future visual pathways into the city.

2. Florida turnpike. The feasibility of a Tampa-to-Miami turnpike is soon to be undertaken by the Florida Turnpike Authority. If the project is found feasible, tentative plans reportedly call for this facility (unofficially named the "Everglades Expressway") to be located east of U. S. Highway 41 (from a point connecting to or just south of Interstate Highway 4) to Fort Myers. An eventual extension to Miami is contemplated.

The turnpike would necessarily be a limited-access road with probably fewer points of ingress and egress than planned on the interstate highways. Since it would be a toll facility, the turnpike would most effectively be used by motorists traveling considerable distances where the toll charge could be directly related to savings in driving time and mileage. As land contiguous to the facility becomes increasingly urbanized, more local traffic would tend to avoid congested conventional arterial routes to and from employment centers by utilizing the turnpike.

The route tentatively selected by the Turnpike Authority crosses through relatively undeveloped sections of Hillsborough County. The disruptive effects of this road upon existing land use patterns would therefore be substantially less than the disruptions encountered and to be encountered in the construction of the two interstate highways. In fact, if its location is carefully planned and its construction properly timed, this route could effectively serve as a beneficial buffer between future residential and industrial developments.

Summary

In summary, it must be said that the basic major street and highway pattern in Hillsborough County is inadequate to meet both present and future traffic needs. Development of a coordinated major street network has not occurred even though it has been recommended several times within the past 20 years. Construction of new controlled

access routes may offer some relief, but a need for further improvements is obvious.

The value of the interstate highways and proposed turnpike should not be measured solely by their ability to move through-traffic. Rather, the full measure of their value will be felt in improvements such as new community developments resulting from their presence and in the efficiency of vehicular movement into and out of the city and from one point in the city to another.

Areas near expressway interchanges are generally considered prime locations for commercial and industrial uses. It is anticipated that such uses, many generating considerable traffic, will shortly begin to gravitate to interchange locations. If undue traffic congestion is to be avoided on expressway feeder roads and interchanges, detailed planning and effective land use controls for areas surrounding interchanges should be undertaken. Landscaping should also be introduced into interchange development.

Port Development Pattern

Existence of a land-locked harbor with deepwater channels is one of Hillsborough County's unique features that will continue to exert an ever-increasing influence over future economic and community developments. A communities possessing a modern and properly

equipped port enjoy the following advantages now found in cities lacking water transportation facilities:

1. Local commercial and industrial enterprises are provided with relatively convenient and inexpensive means of shipping and receiving goods.
2. Income is derived from trans-shipment of goods through port terminals. In many cases, value is added to products.
3. Industrial growth potential is improved owing to availability of adequate waterfront sites and water transportation.

Harbor and port-oriented facilities cannot be considered separately but have vital linkages with other segments of the urban structure, including interchange with other modes of transportation serving local, hinterland, and national markets. The problem becomes essentially one of water terminal planning and the relationship of water transport with all other modes of transportation. Access to water terminal facilities by rail and highway is especially important. Present and potential conflicts with the several types of traffic generated presents a major problem of coordination.

Existing Port Development

The main entrance from the Gulf of Mexico to the Port of Tampa

is via Egmont Bar Channel (which passes between Mullet Key and Egmont Key) and the Main Ship Channel. The latter extends from Egmont Bar Channel across Tampa Bay via Mullet Key Cut and Tampa Bay Channel. South of the Interbay Peninsula's tip end, the Main Ship Channel divides into the Port Tampa and Hillsborough Bay Channels. The former extends northwesterly into Old Tampa Bay to the Port Tampa area terminals and turning basin, and the latter extends northeasterly through Hillsborough Bay into the Tampa port district. Additional channels extend from Hillsborough Bay Channel to a turning basin near the mouth of the Alafia River and to a turning basin near the tip of Black Point. Present channel depths and widths are as follows: 75/

Egmont Bar Channel	36 feet deep, 600 feet wide
Mullet Key Cut	34 feet deep, 500 feet wide
Tampa Bay Channel	34 feet deep, 400 feet wide
Hillsborough Bay Channel	34 feet deep, 400 feet wide
Port Tampa Channel	34 feet deep, 400 feet wide
Sparkman Channel	34 feet deep, 400 feet wide
Ybor Channel	30 feet deep, 500 feet wide
Seddon Channel	30 feet deep, 300 feet wide
Garrison Channel	30 feet deep, 300 feet wide
Hillsborough River Channel	12 feet deep, 200 feet wide to Lafayette Bridge and from this point 9 feet deep,

100 feet wide to a point
2,000 feet upstream from
Columbus Drive Bridge.

Alafia River Channel 30 feet deep, 700 feet wide

Black Point Channel 30 feet deep, 125 feet wide

The original project for navigational improvement of Tampa Bay was authorized in the River and Harbor Act of June, 1880. A succession of acts for Tampa harbor improvement followed, the most recent one being September, 1954. This latter act included a now completed \$15,000,000 Federal project for deepening and widening existing channels and turning basins. A proposal now being considered by the U. S. Corps of Engineers contemplates deepening Ybor Channel from 30 to 34 feet to allow navigation by large vessels now unable to enter the channel.

The Port of Tampa consists of terminal facilities located at the head of Hillsborough Bay along the Seddon Island bank of Seddon Channel; the Hooker's Point bank of Sparkman Channel; and both banks of Garrison Channel, Ybor Channel, and the Hillsborough River as far as North Boulevard.

There are nearly seven miles of deep water frontage included within the Port of Tampa, of which over four miles, 22,700 linear feet, have been intensively developed. 76/

Other shipping terminals are located on Old Tampa Bay at the Port Tampa slip and within the dredged basin at Rattlesnake; on Hillsborough Bay at

East Tampa; adjacent to the mouth of the Alafia River; and at Port Sutton, situated on Black Point.

Most of the piers and wharves are of bulkhead type construction. With few exceptions, all are provided with rail and highway connections. Specialized mechanical handling equipment is available for specific commodities. General cargo terminals are, for the most part, located along Seddon, Garrison and Ybor Channels. Seafood handling and service facilities for fishing vessels are located along the Hillsborough River. Petroleum handling terminals are established in virtually every section of the port as well as facilities for handling dry bulk commodities. Steamship service is furnished by 18 lines that maintain regularly-scheduled service between Tampa and principal ports of the world as well as 10 firms that provide intermittent service. 77/

In terms of cargo tonnage, the Port of Tampa is the most active port between Mobile, Alabama and Hampton Roads, Virginia. Cargo handled through the port consists principally of bulk commodities. Outbound cargo is primarily phosphate products. Petroleum and petroleum products are the primary inbound cargo. Significant quantities of sulphur (used in phosphate processing) and coal (used by the Tampa Electric Company's plant at Black Point) are also received. Bananas account for highest tonnage figures of any one inbound general cargo commodity.

Both 1960 bulk and general cargo tonnages showed substantial increases over the previous year. According to the Hillsborough County

Port Authority, a total of 14, 786, 470 tons of cargo cleared the port, an increase of nine percent over the previous year. Every other major port in Florida showed a decrease in tonnage during the same period.

A recent decision by the U. S. Interstate Commerce Commission has lowered railroad freight rates on import-export traffic between Tampa and the mid-continent area north of the Ohio and Missouri Rivers. If this decision is upheld, it will place Tampa's port on an equal competitive tariff basis with ports at Jacksonville, New Orleans, and other Gulf and South Atlantic locations. Freight rates in Tampa have been 10 to 20 percent higher on most items shipped.

No great increase in port business is expected to automatically result either from freight rate equalization or the contemplated harbor channel improvements. However, through long-term efforts in port planning, promotion, provision of additional port services, and improvement of harbor-related facilities, the port should be in a better position to compete successfully with other ports now handling the bulk of general cargo trade.

Future Port Potential

Proposed projects for improvement and extension of Florida's intracoastal waterway system may result in increased barge traffic for Tampa's port. The full potential of such barge traffic cannot be realized until a "missing link" in the waterway system, not now considered feasible

by the U. S. Corps of Engineers, is constructed. This incomplete section lies between St. Marks, Florida (presently the eastern terminus of the Gulf Coast section of the Intracoastal Waterway) and the Anclote River (the northern terminus of the segment now under construction connecting Tampa with the Callosahatchee River and the Okeechobee Waterway). A public hearing was recently held by the Corps of Engineers to consider the possibility of a new feasibility study.

Construction of this intracoastal waterway link would make Tampa accessible by river barge traffic from the Mississippi River and entire Gulf Coast. River barges are considerably less expensive in their initial cost than ocean-going barges presently in use. Operating costs are also lower because several barges can be towed by a single towboat on a protected waterway.

Disagreement has arisen as to the most feasible method for linking Tampa with the Atlantic Intracoastal Waterway. Completion of the Anclote River - Caloosahatchee River Waterway and improvement of the Okeechobee Waterway would link Tampa with the Atlantic system. However, construction of a proposed new Cross-Florida Barge Canal from the Withlacootchee River to the St. Johns River would provide a more direct access to the Atlantic Seaboard. To date, the cost of the latter project has been the principal argument against it. There is also a question of how much benefit such a canal would be to Tampa, especially

if there is no protected waterway tie-in between the Anclote River and the Gulf entrance to the proposed Cross-State Barge Canal. Even though sea-going barges would have more direct access from Tampa to the Atlantic Coast over such a route, it is also possible that Tampa might be by-passed by most barge traffic between the upper Gulf Coast states and Atlantic Seaboard.

Further study of this entire problem is needed to fully evaluate eventual advantages and disadvantages to Tampa.

A master site improvement plan is currently serving to guide the Hillsborough County Port Authority in development of new port facilities. The plan's initial stage provides for a southerly extension of Hooker's Point through a pump and fill process. This operation would add 360 acres of made-land to the Port Authority's holdings. An additional fill improvement contemplated by the Atlantic Coast Line Railroad also would provide 420 acres of new made-land on the east shore of Hillsborough Bay between 22nd Street Causeway and Black Point. The proposed extension of Hooker's Point provides space for 22 additional deepwater berths each 500 feet in length. This would double the present berthing space of the entire port.

The development plan further recommends that 190 acres of additional fill area be added along the east side of Hooker's Point near land now occupied by the former Maritime Homes development. In this way, additional piers could be provided.

In addition to this site development, further port expansion could conceivably occur along the east side of Hillsborough Bay from Port Sutton at Black Point south to and slightly beyond the Tennessee Corporation's plant on the Alafia River. This coastline is convenient to U. S. 41 and the Atlantic Coast Line railroad. The bulkhead line has already been set to coincide with this expansion potential.

Summary

The future of Tampa's port is dependent upon many interrelated factors. To date, water-borne traffic has been limited by necessity to traffic generated by local production and local markets. Bulk commodities (phosphate going out and petroleum coming in) have constituted most of the tonnage. Future phosphate movement through the port will be primarily dependent upon national and international demand for the product and its availability at competitive prices. Local phosphate deposits are deemed fully adequate to supply long-range needs. Population growth in the port's market area will largely determine the future volume of in-coming petroleum products. Efforts to increase traffic in general cargo should be stepped up to fill a deficiency in the high-value cargoes on vessels entering and leaving the port.

With equalization of railroad freight rates on import-export commodities in prospect, the port has an excellent opportunity for future growth. With sound port planning and coordinated development, Tampa

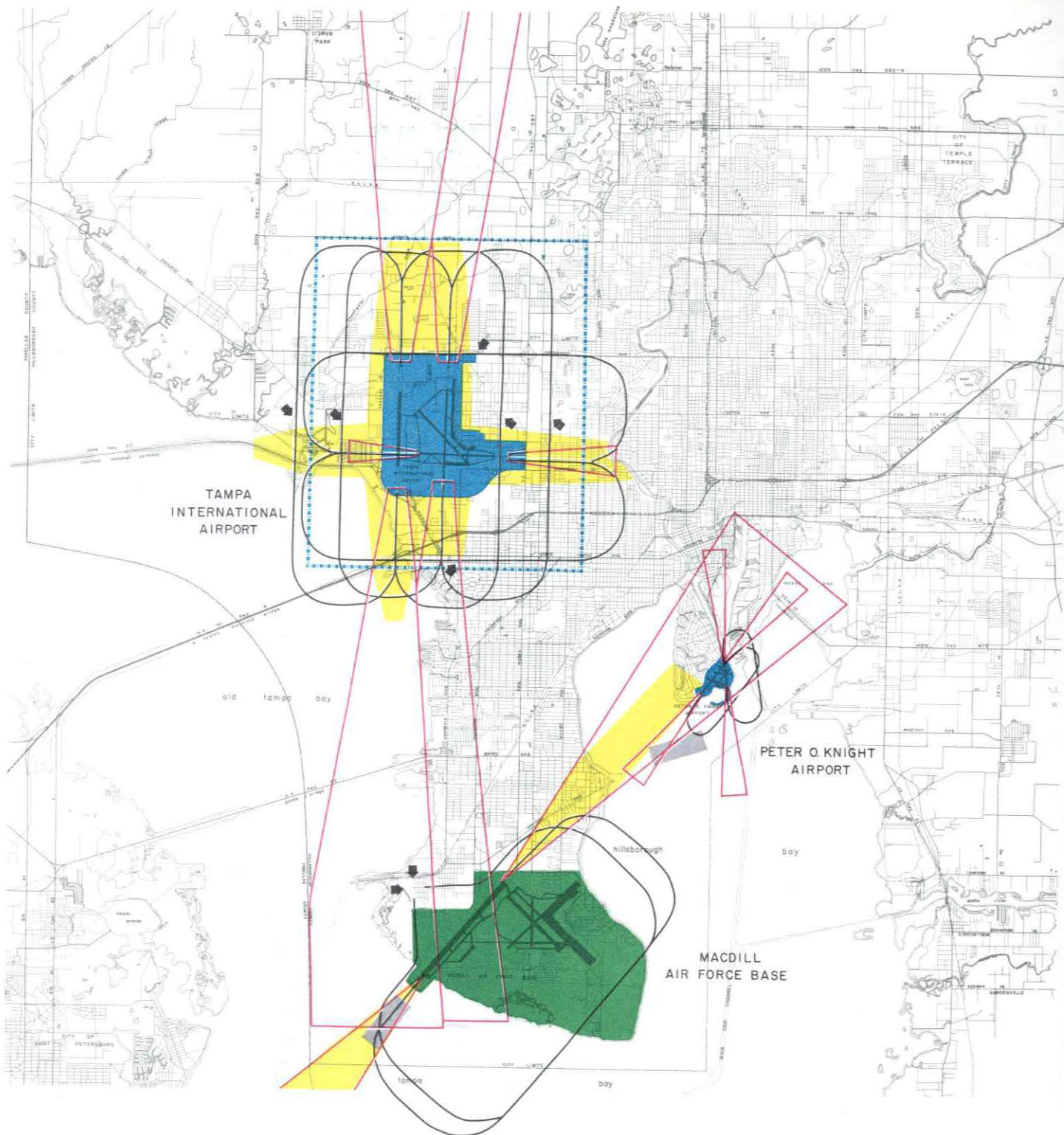
should be able to favorably compete for trade with other Gulf and Southeastern Atlantic ports.

In large measure, however, a concomitant attraction of port-oriented industry is prerequisite to expansion of port facilities. Processing of imported and domestic raw materials and fabrication and assembly of water-borne manufactured goods will require additional industrial sites in the port area. For this reason, the importance of protecting suitable port and port-related industrial expansion areas from competing land use developments cannot be overlooked. In addition, attention must also be given to improving transportation facilities and traffic circulation patterns within and to port industrial areas.

Air Transportation Pattern

During the last 10-year period when growth of the Florida West Coast was so rapid, the increase in air traffic generation has risen at an even more remarkable rate.

... the Tampa Bay Area enjoyed increased air travel far beyond what may be expected from the population changes. Between 1952 and 1959 the total number of enplaned passengers at Tampa and St. Petersburg-Clearwater International Airports increased by some 260% to 519,207. By 1970 the enplaning passengers may be expected to number some three times the total of 1959, or 1,200,000, and by the year 2000 this figure should approach seven times the total of 1959, or 3,400,000 enplaned passengers.... 78/



AIR TRANSPORTATION PATTERN TAMPA AND ENVIRONS

LEGEND

- AIRPORTS OPERATED BY HILLSBOROUGH COUNTY AVIATION AUTHORITY:
 - ① TAMPA INTERNATIONAL AIRPORT
 - ② PETER O KNIGHT AIRPORT
- MACDILL AIR FORCE BASE OPERATED BY U.S. GOVERNMENT

- AREA RECOMMENDED FOR NONRESIDENTIAL DEVELOPMENT AND EXCLUSION OF PLACES OF PUBLIC ASSEMBLY*
- DESIGNATED JETTISON AREA
- AIRCRAFT APPROACH ZONE

- AIRCRAFT TRAFFIC PATTERN
- CRITICAL AREA IN WHICH HILLSBOROUGH COUNTY AVIATION AUTHORITY APPROVES BUILDING PERMIT FOR HEIGHT ZONING
- ENTRANCE TO TRAFFIC PATTERN

source: airport zoning map, Tampa International Airport
Hillsborough County Aviation Authority

operations section, MacDill Air Force Base and Base Manual No. 55-1, "air and ground traffic control procedures"

* TAMPA INTERNATIONAL AREA BASED UPON F.A.A. RECOMMENDATIONS

MACDILL AIR FORCE BASE AREA BASED UPON U.S. AIR FORCE STANDARDS



PLATE 12

hillsborough county planning commission

This trend is expected to continue into the future and should contribute substantially to over-all community growth prospects. On the other hand, certain far-reaching development problems are in prospect which will be outlined in the following paragraphs.

In recognition of Tampa's importance as an air transportation center, the Federal Aviation Authority has classified Tampa International Airport as a "large hub airport". This means that the airport handles at least one percent of all U. S. enplaned air passengers. Passengers enplaned and deplaned at Tampa International Airport totaled 282, 838 in 1952; 491, 950 in 1955; 929, 746 in 1960; and 987, 253 in 1961.

This brings the conclusion that passengers prefer to depart from Tampa International because of a greater selection of schedules as long as travel to the airport is convenient in both time and comfort. 79/

Passenger traffic through TIA's terminal is expected to reach one million during 1962. According to the Hillsborough County Aviation Authority, this traffic volume mark should signal the need for detailed planning for a new terminal building and continued expansion of other airport improvements estimated at approximately \$21, 000, 000. Two parallel north-south runways, one planned to eventually extend 11, 100 feet in length and the other to 10, 500 feet in length, will be built in stages to serve the bulk of commercial air traffic. The east-west runway will also be lengthened to 8, 200 feet, but its use will be limited owing to

prevailing wind conditions and operational techniques at the airport. The new terminal building is to be built between the two north-south runways and the present terminal will be converted to office space. Expansion of TIA to a total area of 3,100 acres entailed highway re-routing and widening (Columbus Avenue and Kennedy Road) concurrently with airport improvements. Plate 12 illustrates the air transportation pattern in the Tampa area.

Two other public airport facilities, both operated by the Hillsborough County Aviation Authority, are located in the county. A private airfield also exists just east of U. S. 301 and north of Interstate 4. Peter O. Knight Airport (formerly the Tampa Municipal Airport) occupies approximately 180 acres of land on the south tip of Davis Islands. A \$1,000,000 rehabilitation program to restore the terminal building and landing field is scheduled by the Aviation Authority. This airport's attractiveness for general aviation activities will be significantly improved. Plant City Airport, occupying a 575-acre site three miles southwest of the center of the city, is the second general aviation facility in the county. The single paved runway has recently been repaired and lighted; at present there is no terminal building or control tower.

Future Developments

Technological advances in the aircraft industry are difficult to

anticipate in long-range community planning. For example, the following problems are associated with changes that have occurred in only relatively recent years.

1. The shift of major air carriers to jet aircraft has contributed to the increased importance and development of hub city airports such as TIA. From these central points inter-city and inter-regional traffic (by both conventional aircraft and motor vehicles) radiates out to smaller communities and population areas.

2. As a designated air transportation hub, the Tampa-Hillsborough County area has an implied responsibility for providing not only airport improvements, but also lines of high-speed and relatively direct surface transportation arteries connecting all important points in the air trade area (composed of Hillsborough, Pinellas, Polk, Pasco, Manatee and Sarasota Counties).

The inadequacy of our present road network, particularly in the vicinity of major cities and between city and airport, is one of the greatest deterrents to the further development of transport aviation. 80/

Feeder-line traffic of conventional aircraft serving these areas has to be accommodated at TIA. Terminal facilities for helicopter transport also should be established at appropriate points throughout the county in anticipation of increased use of this form of travel.

Jet airport operations in particular have certain detrimental effects upon the orderly development of surrounding land. The high noise levels associated with jet aircraft both at the airport and under approach and departure paths are disturbing influences on nearby residential sections. Not only are the intense sounds which emanate from jet engines irritating, but they also create unfavorable psychological effects.

In connection with a public opinion poll survey on annoyance by aircraft noise, 80 percent of those who complained of aircraft noise reported some fear of the aircraft crashing into their homes or fear and unwillingness to fly themselves. 81/

In view of this problem associated with airport jet operations, the Federal Aviation Agency has recommended,

... a program to discourage residential development and the erection of public buildings and places of public assembly in areas contiguous to public airports and consequently, subject to high aircraft noise levels. 82/

A plan of this nature should be developed for Tampa International Airport. Areas that could be affected are shown in Plate 12.

4. Benefits can also accrue to land bordering a large hub airport. This may be brought about through planning and adoption and adherence to proper land use regulations.

... even when these new F. A. A. noise guide criteria are imposed on many existing airports, no severe hardship exists when it is recognized that land abutting an airport can become tremendously attractive for commerce, industry, and business when properly planned and controlled for complementary uses. All that must be done is to provide for business uses rather than permitting uncontrolled residential encroachment. 83/

As airport traffic increases in volume and frequency the development of airport-oriented commercial and industrial activities should also rise.

By 10 years from now at our major airports, business facilities will be developed on and adjoining them, making the airports more and more one of the business centers of the communities they serve.... Offices, conference rooms, warehouse and distribution facilities, factories and assembly plants are now and will continue to converge upon the airports. 84/

Summary

Development problems associated with major commercial airports are not strictly limited to the area within airport boundaries. In the case of Tampa International Airport, air and surface travel to and from county and regional points must be considered. Effects on properties in close proximity to the airport must also be evaluated and plans developed for appropriate land use. The TIA facility appears to be adequate to accommodate foreseeable air traffic. A new airport does

not appear to be justified particularly if TIA's development proceeds in an orderly manner.

Private flying activities conceivably should continue to represent the bulk of air traffic at Plant City and Peter O. Knight Airports, in addition to other privately operated airports. There may arise an eventual need for feeder airline service into Plant City Airport as that area's economy grows and as there is increasing population movement and concentration in that direction.

As previously pointed out, heliports located in appropriate places throughout Hillsborough County should be included as integral parts of a comprehensive air transportation plan. These facilities would most appropriately be located as close to major commercial and industrial concentrations as possible and not necessarily at existing landing fields.

Railroad Transportation Pattern

Before Tampa and Hillsborough County developed port and waterborne commerce to any extent (not to mention the highway network and air service), rail transportation served as the most direct and convenient link to other points in Florida and nation. During the "Railroad Building Era" (1880-1890), Tampa experienced its greatest rate of population growth. The community was transformed from a village

bordering upon and serving a small military establishment to a town with the beginnings of an independent economy. Railroad transportation and development activities have played significant parts in broadening the local economy. They have also added to the complexity of problems confronting future growth of Hillsborough County.

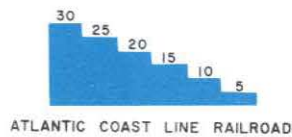
Existing Railroad Pattern

The following is a summary of existing rail connections:

The Atlantic Coast Line Railroad generally follows the Atlantic seaboard southward from Norfolk and Richmond, Virginia, to Jacksonville, Florida, and other intermediate east coast points and to Tampa, Boca Grande, and other Florida central and west coast points. At Richmond, Virginia, connections are made for Washington, D. C., and points in northeastern United States. A freight service is operated from Atlanta to Brunswick with main line connections at both Waycross and Nahunta, Georgia. At Birmingham and Montgomery, Alabama, and Atlanta, Georgia, connections are made with subsidiary lines which provide through routes to Cincinnati, Ohio, Chicago, Illinois, and St. Louis, Missouri. A total of about 5,500 miles of road is operated. The Seaboard Air Line Railroad operates about 4,000 miles of track in the same general territory at the Atlantic Coast Line Railroad, previously described, serving the important common points in Southern Classification Territory, south of Richmond and Norfolk, Virginia. Trackage of the Seaboard Air Line Railroad extends as far west as Birmingham and Montgomery, Alabama, and to Tampa, Boca Grande, and other west coast and central Florida points. From Wildwood, near upper central Florida, a

DAILY RAILROAD TRAFFIC FLOW 1961 HILLSBOROUGH COUNTY

GRAPHIC SCALE



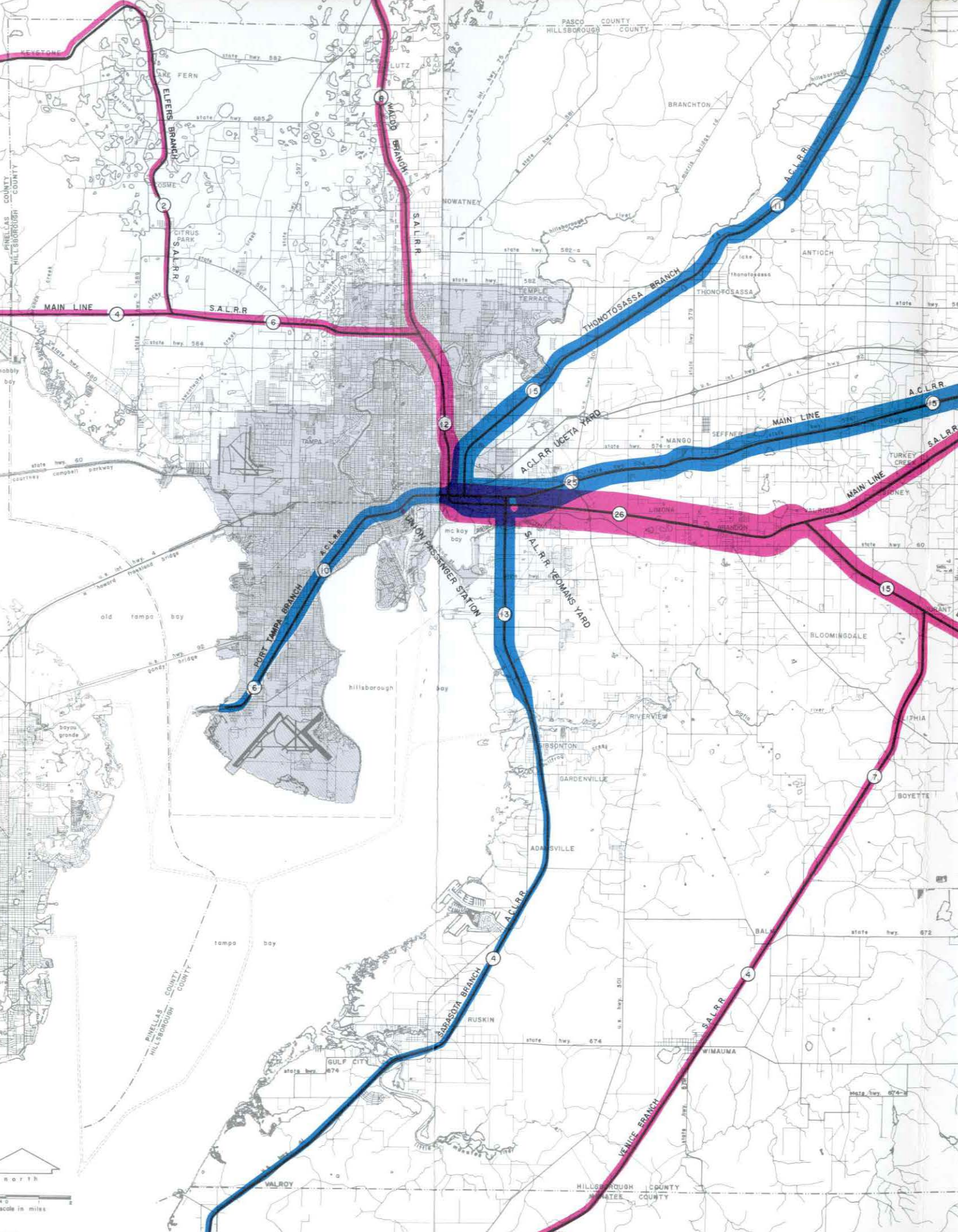
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TRAIN MOVEMENTS PER 24 HOURS



source atlantic coast line railroad
seaboard airline railroad



main line extends southeastward to the
east coast cities of West Palm Beach and
Miami. ^{85/}

ACL rail lines in Hillsborough County radiate in four directions from the main freight terminal at the Uceta Yards located north of Frank Adamo Drive in the eastern part of Tampa. One line runs westerly, crossing through the central business district over Polk Street and extending across Hillsborough River in a southwesterly direction to Port Tampa. Another rail line extends north near 37th Street and then bends northeasterly near Buffalo Avenue, continuing in this same general direction to and beyond Dade City. A third ACL line branches in an easterly direction from Tampa through Plant City. A fourth line extends south toward Sarasota and the lower Florida West Coast.

Yoeman's Yard, the primary SAL R. R. classification and switching yard, is located south of the ACL yard. A main rail line extends westward to 30th Street; from this point an extensive system of spur tracks extends into Hooker's Point, the downtown Tampa area, and Seddon Island. The main SAL line runs northerly, forking near Temple Terrace Highway and 16th Street. A north branch of this fork extends toward Brooksville and a west branch serves Pinellas County. From the latter branch line a spur has been extended south to serve Drew Park and another line meanders northwesterly through the Citrus Park-Lake Fern district to Elfers.

The main SAL line which extends eastward from Yeoman's Yard forks at Valrico. One branch runs eastward through Plant City and then swings northward toward Dade City. The other branch runs southeastward and bends to the east at Keysville with a fork at the county line. From Keysville a line runs north to Plant City. Farther to the west at Durant another branch extends southwesterly to Sarasota.

Other principal rail spurs include those operated by both railroads and serving Tampa Industrial Park; ACL spurs serving MacDill Field, the Rattlesnake port area, Rome Avenue industrial area, Port Sutton, and East Tampa; and SAL spurs in the interior of the county serving the phosphate mines and plants.

Railroad Traffic Flow

A total of 11 trains into and out of Tampa daily constitutes combined railroad passenger operations. Combined scheduled freight movements total 21 inbound and 21 outbound trains per day. There is also a daily average of 14 round trips made by unscheduled freight trains of both lines.

The most heavily-traveled section of track in Hillsborough County is the SAL R. R. line between Tampa and Valrico. This section carries an average of 26 train movements per day. A number of these are phosphate hauls between the mining areas and port loading terminals. Comparative railroad traffic flow movements are shown in Plate 13.

Problems and Conflicts

Rail lines in most areas are considered relatively rigid features of the existing development pattern. This situation is especially true in Hillsborough County. Unless there are substantial economic or other compelling justifications for rearranging railroad facilities and service, this existing pattern must be recognized and basically carried forward into a plan of future development. However, certain serious problems and conflicts now present in the local pattern, as outlined below, should be resolved through planning and appropriate improvements.

1. Rail-highway traffic conflicts. Heaviest rail and motor vehicle movements in Hillsborough County are concentrated in a limited and congested area lying generally between U. S. Highway 301 on the east, Tampa central business district on the west, McKay Bay - Hooker's Point industrial section on the south, and Broadway Avenue on the north. At-grade street crossings of rail lines impede the continuous flow of both through and local vehicular traffic. As this problem intensifies through increased vehicular and rail movements, the development of the east Hillsborough Bay and Brandon areas could conceivably be retarded owing to increasingly longer travel times required in getting to and from principal Tampa employment centers.

Rail traffic and switching movements on other tracks serving industrial areas, particularly the ACL R. R. line leading to the Port

Tampa phosphate loading terminal, create delays in vehicular traffic movements. To solve this problem at two critical highway-rail crossings -- those existing on Dale Mabry Highway and Hillsborough Avenue -- street overpasses have been constructed.

2. Industrial development problems. Property suitable for most industrial uses should have access to railroad service. However, all property adjacent to a railroad line does not necessarily have a potential for industrial development.

Scattered locations of a number of small industrial tracts alongside rail lines throughout the urban area have had a detrimental effect upon appropriate development and use of surrounding land. This pattern has generated increased rail movements oftentimes causing unnecessary conflicts with vehicular traffic. In planning new or enlarged industrial districts, it is essential that these relationships be considered and potential conflicts eliminated or reduced.

3. Rail line traffic through central business districts. Changing city development patterns have resulted in present-day central business district railroad problems in Tampa and Plant City. In the past, rail service into or close to downtown commercial and industrial activity was considered proper and functional. Today, expansion needs of the CBD's and increased use of trucks and autos make this former pattern obsolete.

Two rail lines intersect in Plant City's downtown area. Within Tampa, the movement of trains carrying phosphate to the Port Tampa terminal create innumerable conflicts with both pedestrian and vehicular flow and impede downtown area expansion needs. Publicly-stated methods of overcoming the Tampa situation have included moving the industrial complex at Port Tampa and subsequent abandonment of the cross-Inter-bay rail line; a railroad bridge crossing of Hillsborough Bay into Port Tampa thereby eliminating rail traffic through the business district; and construction of a combined street-railroad elevated structure through downtown. A feasibility study of the latter project has recently been completed.

Summary

Although certain aspects of the county's railroad pattern are unfavorable to an orderly and efficient future development pattern, it is the availability of adequate and frequent rail service at competitive rates which contributes to the area's over-all economic potential. It should be the intent of the preliminary plan to encourage both the most appropriate total land use and transportation patterns.

As population densities increase in the county, existing rail rights-of-way and/or lines in certain sections conceivably could be adapted for use in a rapid mass transit system. Lines leading directly from residential sections to major employment centers in and around Tampa would be best fitted to such a system.

Summary

The importance of transportation to the economic growth of Hillsborough County was summarized in the "Economic Base Report".

Transportation... has become an increasingly important element in the final cost of a product. Technological advances have cut basic production costs and the outlays for transporting raw materials; intermediate inputs and final products have taken on new significance in the highly-competitive U. S. economy. Transportation is a key generating factor in Hillsborough County's economy.... Hillsborough's growth industries will be predominantly market oriented, focused on expanding consumer and industrial markets of the state and region and increasing volumes of tourists and visitors. Hillsborough's transportation facilities will have a two-way significance. (1) as outbound routes to the market; and (2) as inbound channels for bringing in raw materials and semi-finished goods and attracting mobile consumers. 86/

Improvement of local transportation can be brought about through coordinated efforts in accordance with a plan. The development of such a plan should receive high priority in the community.

The local importance of transportation calls for a continuous look at the total efficiency with which the total transportation job is being done. 87/

The coordination of interstate and local traffic arteries, the zoning of land for transport-oriented uses and the projections of future highway needs... should be part of a comprehensive transportation plan for the county. 88/

Section VI. MAJOR PUBLIC FACILITIES PATTERNS

Section VI. EXISTING MAJOR PUBLIC FACILITIES PATTERNS

In addition to identification, general description, and measurement of land use in Hillsborough County, as set forth in a previous section, it is also important to recognize the major public facilities patterns that serve existing population. Major public facilities include schools, parks, water and sewer utilities, and public buildings such as fire stations, government office buildings, and libraries. Essential to the preparation of the Preliminary Plan of Development is an analysis of the adequacy of these patterns, together with estimates of future requirements.

Pattern of Public Schools

The legislative act creating the City-County Planning Commission stipulated that a "plan of development" for the county be prepared. As a part of this plan, the Planning Commission was directed to recommend physical improvements including "the general location of educational facilities, . . . to serve the people of Hillsborough County".

This sub-section presents a survey of public school facilities and their relationship to estimated future population growth. Later studies will define long-range future school needs in more detail and plans will be drawn and recommended for implementation by the Hillsborough County Board of Public Instruction.

Previous School Studies

The Office of the State Superintendent of Public Instruction, Florida State Department of Education, has prepared several school plant surveys of Hillsborough County. A new survey is to take place during April, 1962. However, the previous survey, completed in October of 1956, included estimates of school memberships and additional school capacity required through the 1961-62 school term.

This is the third comprehensive school building survey made of Hillsborough County since 1946. . . . The Board of Public Instruction did not construct all the buildings recommended in the 1946 and 1952 surveys. However, if the Board had constructed all the facilities recommended. . . it still would not have solved its present building problem because the recommendations. . . were too conservative. The school population has increased much more rapidly than was anticipated. . . . Therefore, building needs have been greater than were anticipated. In October, 1956, approximately 3,000 children in Hillsborough County were on double session and at least 6,000 other children were being taught in sub-standard or temporary classrooms. Therefore, the school building situation. . . is critical at the present time. . . . 89/

The 1956 survey estimated that by the 1961-1962 school term there would be a total membership in county schools of over 76,000 students, classified by grade as follows:

<u>Grade</u>	Estimated 1961-62 White Memberships	Estimated 1961-62 Non-White Memberships	Estimated 1961-62 Combined Memberships
1 - 6	35, 788	8, 738	44, 526
7 - 9	16, 901	3, 090	19, 991
10 - 12	<u>10, 493</u>	<u>1, 416</u>	<u>11, 909</u>
<u>Totals</u>	63, 182	13, 244	76, 426

Actual daily membership during the 1960-61 school term totalled almost 79, 000 students, classified as follows:

<u>Grade</u>	Actual 1961-62 White Memberships	Actual 1961-62 Non-White Memberships	Actual 1961-62 Combined Memberships
1 - 6	37, 923	8, 087	46, 010
7 - 9	17, 837	2, 762	20, 599
10 - 12	<u>10, 883</u>	<u>1, 500</u>	<u>12, 383</u>
Totals	66, 643	12, 349	78, 992

The 1956 estimates, while proven to be on the conservative side, nevertheless provided a sufficient general guide for the Board of Public Instruction to determine the need for new classroom and school facilities.

Standards for school building capacities and site areas were also recommended by the State Department of Education. These standards included:

1. Elementary schools. An absolute minimum enrollment of 180 students was recommended with a maximum student body size to be determined by building design and site size,

... rather than by some arbitrary number of pupils.... Therefore, the staff sees no reason that the Board should not construct elementary schools in urban areas with as many as 24 or 26 classrooms if the building is of the ranch-type single-loaded corridor design and if the site is adequate. 90/

Assuming an average of 30 students per classroom, this would mean an elementary school of between 720 and 780 students. A fifteen-acre site for an elementary school was also recommended.

2. High schools. It was recommended that high school developments should follow certain basic standards.

The maximum desirable size to construct junior and senior high schools has not been fully determined by research study. However, research studies do show that the cost per pupil of high schools does not decrease after an enrollment of 1,000 is reached. Neither does the richness of the program offering increase.... Taking all of these facts into consideration, the staff recommends that the maximum size of junior high schools be 1,200 pupils and that the maximum size of senior high schools be 1,500 pupils. 91/

Junior high school sites of from 20 to 25 acres and senior high school sites of from 30 to 40 acres were recommended in the 1956 study.

3. Additional school development standards. Only general statements regarding school location standards were included in the 1956 survey.

Before the location of any proposed new site is decided upon, a careful study is especially important to avoid costly mistakes. . . . In most areas small schools are no longer necessary because children can be transported a number of miles to a larger, more satisfactory center. Furthermore, small schools, particularly for the upper grades, have been found to be uneconomical. 92/

However, there are certain generally accepted school location standards. 93/ For example, elementary schools should serve a contiguous residential area within walking distance, normally one-half mile. Thus, elementary schools should be spaced approximately one mile apart. Since this is basically the proper spacing for major streets in a typical residential development, it is possible to develop a pattern of a one-square-mile neighborhood bounded by major streets with an elementary school and local park functioning as the central focal points.

An elementary school should be located close to the center of the neighborhood it serves, but not on a major street or in close proximity to commercial or industrial areas, railroad tracks, or airport approach zones. A junior high school should be located so as to serve residential areas within one mile of its site. Senior high school students are old enough to travel considerable distances and a senior

high school, therefore, may serve an extensive area. Since senior high schools usually accommodate students from over a wide area and are substantial traffic generators, locations on or just off major street routes are desirable in order to afford convenient access.

Existing Pattern of Schools in Hillsborough County

There are 73 elementary, 15 junior high, and 5 senior high schools presently being operated by the Board of Public Instruction in Hillsborough County. Also, there are 11 schools teaching classes in both the elementary and junior high categories, 9 in the junior high and senior high categories, and 2 all-grades schools. In addition, two special schools are operated by the Board of Public Instruction and teaching staff furnished to the two juvenile homes. The bulk of these school facilities are located in the Tampa urban area and in the section eastward toward Plant City. Schools serving rural areas of the county are found principally in outlying communities, such as Wimauma, Ruskin, and Pinecrest. Plate 14 illustrates the location of each school and Table 3 lists the schools by type, name, and grades taught.

The existing pattern of elementary, junior high, and senior high schools in the county is complex and does not lend itself to easy analysis on an over-all basis. Desirable standards of school location have not been followed in all cases. Some schools have been constructed in

locations off-center to neighborhoods served and others are adjacent to major street routes or railroads. In recent years, however, area standards for new school sites have been increased.

Perhaps more than any other single major public facility pattern, the public school pattern emphasizes the need for a comprehensive plan of development for Hillsborough County. Selection of school sites should contribute to guiding future growth and population distribution into desirable neighborhood and community patterns rather than solely serving residential areas that have already developed. School site selection, therefore, may contribute in a major way to creation of a logical, orderly, and efficient development pattern.










Future Population and Public School Enrollment Trends

Planning for schools is basically concerned with size and location of future school sites. In order to accurately appraise these needs, future population growth and school enrollments must be estimated as closely as possible. Total enrollments, rather than average memberships, are used in this report to provide maximum numbers of students that may be expected. Although exact school enrollment projections are difficult if not impossible to develop, reasonable estimates may be obtained for use in outlining future plans.

1. Future population. Earlier studies prepared as a part of the "Economic Base Report" indicate that it is reasonable to expect a

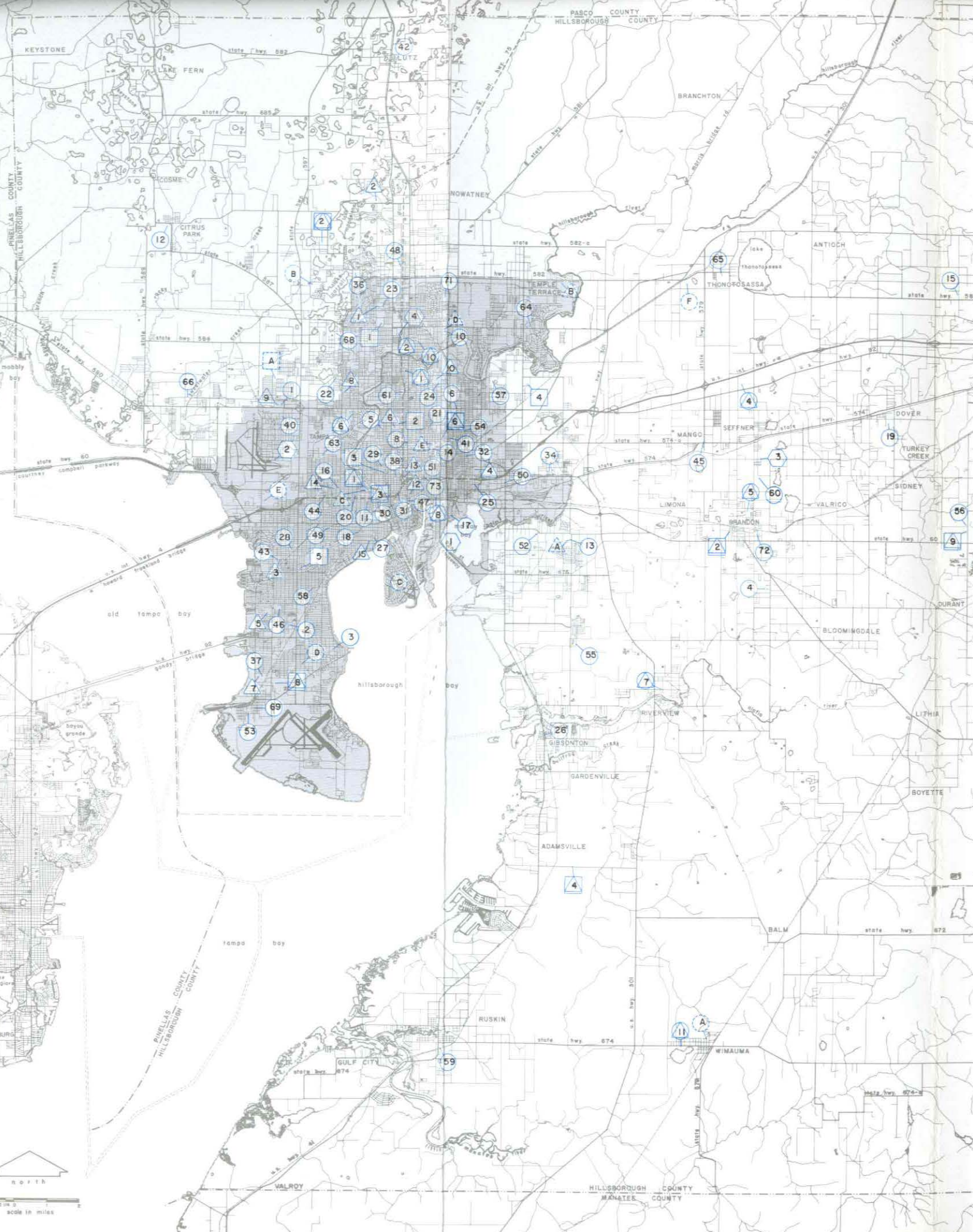
PATTERN OF PUBLIC SCHOOLS HILLSBOROUGH COUNTY

LEGEND

-  ELEMENTARY SCHOOL
-  ELEMENTARY-JUNIOR HIGH SCHOOL
-  JUNIOR HIGH SCHOOL
-  JUNIOR HIGH-SENIOR HIGH SCHOOL
-  SENIOR HIGH SCHOOL
-  ALL-GRADES SCHOOL
-  SPECIAL SCHOOL
-  AUTHORIZED NEW SCHOOLS
-  MUNICIPALITIES

NOTE: figures and letters refer to schools listed on table opposite

source: hillsborough county board of public instruction



KEYSTONE

PINELLAS COUNTY
HILLSBOROUGH COUNTY

MOBILE BAY

STATE HWY 60
COURTESY CAMPBELL PARKWAY

OLD TAMPA BAY

BOYON GRANDE

VAL ROY

GULF CITY

VAL ROY

scale in miles

north

PINELLAS COUNTY
HILLSBOROUGH COUNTY

STATE HWY 674

VAL ROY

STATE HWY 674

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population of 320,000 persons in Hillsborough County by 1980. Expectations are that 23.2 percent of the total 1980 population will be of "school age" (between 6 and 17 years of age) as compared with 21.7 percent in this age category in 1960. In round figures, total number of children of all school ages should increase from 86,000 in 1960 to over 190,000 persons by 1980. This will constitute a 120 percent increase for this age category compared to slightly less than a 110 percent increase forecasted for the total county population. The need to adequately prepare the school system's physical plant to cope with this expected future school age population is obvious.

2. Future school enrollment projection method. Estimates of future school enrollment are best undertaken by studying trends in resident births and birth rates, by determining the relationship between the number of children born in Hillsborough County and the number enrolled in first grade six years later and, finally, by determining trends in statistical relationships (survival rate) as groups of children proceed through the elementary, junior high, and senior high school grades.

The number of children born within Hillsborough County in 1960 gives an indication of probable first grade enrollment during the 1966-67 school term. This, in turn, permits rough estimates to be made for segments of the school enrollment as far into the future as 1978.

However, in order to make complete enrollment estimates, it is necessary to arrive at certain assumptions regarding the future birth rate, future population growth, and class survival rates from year to year. This has been done on Table 4 and is summarized in the following section.

This method of estimating enrollment is most valid for the immediate future, say five or six years, and becomes less valid as it is projected further into the future. To provide maximum accuracy it is therefore necessary to recheck, revise, and bring up-to-date the enrollment estimates each year.

(a) Resident births. The number of children born annually in Hillsborough County of county residents from 1949 to 1960 is shown on Table 4. Resident births in 1960 were 164 percent of 1950 births. During this same period, the total county population increased 159 percent. The over-all birth rate increased from 23 per 1,000 population in 1950 to 24 per 1,000 in 1960. White births remained constant at 22 per 1,000; non-white births rose sharply from 26 per 1,000 persons in 1950 to 33 per 1,000 in 1960.

Resident births based upon population estimates between 1950 and 1960 are shown on Table 4 together with projected births.

(b) Ratio of resident births to enrolled first graders. This ratio, derived from past experience, is important since it provides the necessary

relationship between resident births and those children entering the county school system six years later. Based upon local experience between 1956 and 1961, there has averaged approximately 1.3 times more students enrolled in first grade than were born in Hillsborough County six years earlier.

(c) Survival rates. The third group of known statistics on which a school projection is made is the survival rate, or the number of students progressing from one grade to the next succeeding grade the following year. This is a figure that can fluctuate widely but, by comparing past trends, future survival rates can be estimated and future grade enrollments projected.

Table 4 shows estimated future school enrollments based upon actual resident births, projected resident births, actual survival rates, and projected survival rates. The number of resident births for each year from 1946 through 1960 is shown in column three. During the base years selected for statistical purposes, (1950 and 1960 for white persons and 1960 for non-whites), there were 22.0 births per 1,000 white persons and 33.0 births per 1,000 non-white persons. Assuming these rates will remain constant throughout the 20-year planning period, future estimated births can be obtained. These figures are shown in column four.

TABLE 4

ACTUAL AND PROJECTED FUTURE SCHOOL ENROLLMENTS, 1946 - 1980
HILLSBOROUGH COUNTY, FLORIDA, SCHOOL DISTRICT

Year (1)		Actual and Projected Future Resident Births (2)		Actual and Projected Future Enrollment In First Grade (3)		Actual and Projected Future School Enrollments By Grades (4)						Total Enrollments	
Past	Future	Actual	Projected	Actual	Projected	Actual			Projected			Actual	Projected
						Elementary	Jr. High	Senior High	Elementary	Jr. High	Senior High		
1946						21,840	8,727	6,264				36,831	
1947						22,455	8,579	6,966				38,000	
1948						23,544	8,870	7,537				39,951	
1949		5,453		5,142		24,915	9,028	7,313				41,256	
1950		5,713		5,380		26,538	9,389	7,553				43,480	
1951		6,243		5,217		28,278	10,244	7,863				46,385	
1952		6,686		5,272		29,833	10,561	7,905				48,299	
1953		6,981		6,291		32,205	11,390	9,022				52,617	
1954		7,389		7,121		34,873	12,155	7,721				54,749	
1955		7,712		7,239		37,299	13,531	8,421				59,251	
1956		8,010		6,908		38,335	15,062	8,774				62,171	
1957		8,458		7,465		41,210	16,365	9,598				67,173	
1958		8,874		8,209		44,799	17,496	10,746				73,041	
1959		9,367		8,866		47,483	18,712	11,989				78,184	
1960		9,509		9,297		49,469	20,388	12,729				82,586	
1961			9,915	9,176		49,943	21,624	13,409				84,976	
	1962		10,321		10,001				52,535	22,259	14,436		89,230
	1963		10,727		10,387				55,305	22,510	15,943		93,758
	1964		11,133		10,965				58,330	23,330	16,840		98,500
	1965		11,593		11,506				61,121	24,665	17,279		103,065
	1966		11,945		12,152				64,473	25,843	17,509		107,825
	1967		12,351		12,332				67,629	27,072	18,150		112,851
	1968		12,758		12,859				70,497	28,384	19,246		118,127
	1969		13,164		13,387				73,509	29,965	20,127		123,601
	1970		13,570		13,914				76,482	31,735	21,031		129,248
	1971		14,119		14,442				79,442	33,256	22,125		134,823
	1972		14,668		14,970				82,268	35,060	23,344		140,672
	1973		15,217		15,497				85,454	36,447	24,669		146,570
	1974		15,766		16,025				88,640	37,812	25,858		152,310
	1975		16,315		16,553				91,872	39,074	27,272		158,218
	1976		16,864		17,082				95,017	40,731	28,310		164,058
	1977		17,415		17,609				98,205	42,344	29,357		169,906
	1978		17,966		18,323				101,580	43,951	30,376		175,907
	1979		18,517		19,037				105,142	45,521	31,670		182,333
	1980		19,068		19,752				108,894	47,133	32,919		188,946

- (1) School data for school term ending in year listed. Birth data for end of calendar year.
- (2) Projected resident births in Hillsborough County for period 1961-1980 based upon 1950 and 1960 average of 22.0 white births per 1,000 white persons and 1960 average of 33.0 non-white births per 1,000 non-white persons. Totals shown include both white and non-white persons.
- (3) Based upon average percentages of white and non-white children born in Hillsborough County between 1949 and 1954 enrolled in First Grades 1956-1961. This amounted to 1.31 times the white children and 1.25 the non-white children born over the six-year period. Actual experience was employed as basis for projections to 1980.
- (4) Estimates of future enrollments by grades based upon actual white and non-white survival rates of students in Hillsborough County Schools between 1949 and 1960.

SOURCES: Hillsborough County Board of Public Instruction and Hillsborough County Bureau of Vital Statistics.
 Projections prepared by Hillsborough County Planning Commission, August, 1961.

Column five records the number of children enrolled in the first grade from 1946 through 1961. Of children born of county residents during the six-year period from 1949 to 1954, an average of 131 percent of the white children and 125 percent of the non-white children were enrolled within the first grade six years later. By projecting the ratio of resident births to children enrolled in the first grade, the estimated first grade enrollments for the years 1962 through 1980 have been determined and are shown in column six.

Survival rates for all grades vary from year to year. A 12-year white student survival rate and an 11-year non-white rate, based upon actual enrollment experience, were used to determine future enrollments by grades. Actual enrollment figures are shown in columns seven through nine and future grade estimates are summarized in columns ten through twelve on Table 4. Total enrollments also are listed in columns thirteen and fourteen.

3. Projected school enrollments. Both intermediate (through the 1966-67 school term) and long-range (to the 1979-80 term) projected school enrollments require study so that some estimate of the future school plant problem may be obtained.

Future School Developments

Projections for the intermediate six-year planning period indicate that the Hillsborough County School District may have to provide for the following enrollment increases:

<u>School Grade</u>	<u>Actual and Projected Enrollments</u>		<u>Estimated Increases Six-Year Period</u>	
	<u>Actual 1960-61</u>	<u>Estimated 1966-67</u>	<u>Number</u>	<u>Percent</u>
Elementary	49,943	67,629	17,686	35.4
Junior High	21,624	27,072	5,448	25.2
Senior High	<u>13,409</u>	<u>18,150</u>	<u>4,741</u>	<u>35.5</u>
<u>Totals</u>	84,976	112,851	27,875	32.8

Assuming an average of 30 students per classroom, this increase in school enrollment will mean an estimated minimum need by the 1966-67 school term for a total of new 590 elementary, 182 junior high, and 158 senior high classrooms. Translated into school buildings and taking into account new buildings and additions included on the Hillsborough County Board of Public Instruction's 1961 list of school projects and those currently under construction, this would mean an equivalent of the following new facilities: *

18 new 24 - classroom elementary schools

2 new 40 - classroom junior high schools

3 new 50 - classroom senior high schools

Over the planning period, or by 1980, total public school enrollment in Hillsborough County is expected to rise from 85,000 students

* These building requirements are mentioned only for illustrative purposes.

during the 1960-61 school session to close to 189,000 students by 1979-80. Of course, such long range projections must be subjected to periodic review and updating so that unpredictable future conditions are reflected in the projections. In this way the school building program can be approached in accordance with a realistic and long-range planning program.

In any case, the immediate school building need would appear to be preparation for the substantial increase in elementary grade enrollments anticipated over the next six years. Site locations for these elementary schools as well as for new junior and senior high schools, should also be considered in relation to total community development requirements.

Pattern of Public Parks and Recreation Areas

One of the most serious land use area deficiencies of Hillsborough County and its municipalities is the lack of well-located and adequately-sized public parks. Subdivision after subdivision has been developed with little or no regard to reservation of land for permanent public open space. Acquisitions of such land by the several governmental units (Hillsborough County and the Cities of Tampa, Plant City, and Temple Terrace) have not kept pace with the rapid urbanization of the county. Comparison of existing local land use in park and recreation development with averages of a number of other cities (0.46 acre per 100

persons in the typical area) and generally recognized standards (1.00 acre per 100 persons) indicates that on the basis of total urban population, there now is a local deficiency of between 600 and 2,300 acres of land for public park purposes. 94/

In order to meet future demands of an increasingly larger, more urban, and more-densely settled population and in order to reduce present acreage deficiencies, the addition of several thousand acres of park land to present supply will be required. Standards of park location and development and the need for a program to translate requirements into results is the basic purpose of the following discussion.

Types of Park Land Reservation

A park can be defined either as a recreation area or as open space.

Park. A piece of ground, in or near a city or town, kept for ornament and recreation; also, an area maintained in its natural state as a public property. 95/

A park can function both as an area where some form of recreation can be enjoyed and as a permanent open space giving relief from and variety to a more or less solid residential, commercial, and industrial urban landscape. Properly planned and developed parks may also be utilized to add character and amenity to the environment, to create buffer areas between land uses, to afford permanent access to light and air, and often to lend increased stability to surrounding property values.

There are many ways to classify park land including classification by size, location, and function. Since seven separate governmental agencies (the State of Florida; Hillsborough County Parks and Playgrounds Department; Hillsborough County Board of Public Instruction Facilities and Recreation Division; City of Tampa Parks and Cemeteries Department; City of Tampa Recreation and Relations Department; City of Plant City; and City of Temple Terrace) are responsible for public parks and recreational activities in Hillsborough County, the least complicated classification of local park facilities is by the jurisdictional division responsible for development. Plate 15 illustrates the pattern of park and recreation areas in Hillsborough County and Table 5 tabulates these by name and ownership.

However, a different concept of park classification should be developed that does not strictly adhere to political boundaries and ownerships. This new concept recognizes four broad categories of parks which are classified according to their function, size, intensity of development, accessibility, and length of visit by patrons: 96,/97/

1. Local parks include small tot lots where younger children can play under a mother's watchful eye; large playfields for baseball, football, and similar sports; neighborhood parks with facilities for picnicking, strolling, and many more activities; and others. These parks serve local recreation needs and are oriented toward the user. Easy access reflected in distances from home to park of under one mile, in most cases small size

varying from a portion of a city block to several hundred acres, and intensive development wherein most space is put to some use such as a ball diamond, wading pool, tennis court or picnic area -- all these are characteristic of the local park. In general, local parks provide facilities for more active, organized recreation of shorter duration than do other parks. (Ragan Park in Tampa is a typical local park).

2. Metropolitan (or regional) parks are unfamiliar because they are relatively new... and few actually exist... A (regional) park is defined as an expanse of space to which the public has access and which, because of its physical attractiveness and unusual development, offers recreational opportunities that attract numerous visitors irrespective of physical impediments to travel or crossing of political boundaries. Functions of a (regional) park are:
- (a) To provide recreation opportunities developed specifically for the (regional) area's needs.
 - (b) To provide for recreation interests which cannot be or are not normally satisfied in local parks.
 - (c) To provide large parcels of open space as a land use element.

Metropolitan (regional) parks should provide for recreational activities that occupy the major portion of a day or longer, such as camping, hiking, fishing, ... and boating. Many different types of facilities should be available. A single facility (a golf course, for example) is not considered a metropolitan (regional) park.

The minimum size of metropolitan (regional) parks... in other parts of the country varies from 50 acres to more than 1,000 acres... More important than size in acreage is a size large enough to encompass a complete landscape unit. A stream valley site, for example

EXISTING PATTERN OF PARKS AND RECREATION AREAS

HILLSBOROUGH COUNTY

L E G E N D



PARK



RECREATION AREA



PARK AND RECREATION AREA



MUNICIPALITIES

source: hillsborough county parks and playgrounds department
city of tampa parks and cemeteries department
city of tampa recreation and relations department
city of plant city
city of temple terrace

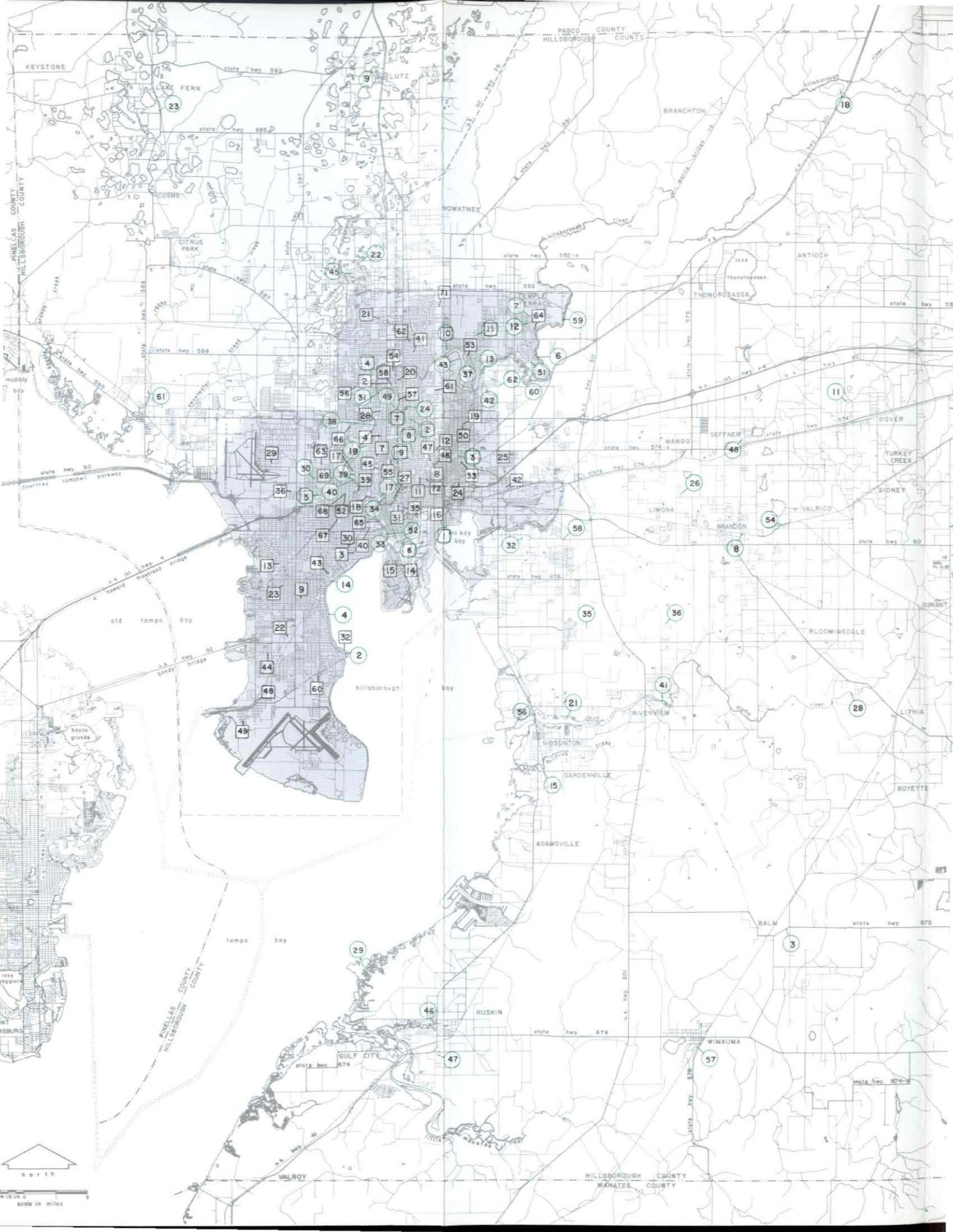


TABLE 5

EXISTING PARKS AND RECREATION AREAS

HILLSBOROUGH COUNTY

March, 1962

PARKS

Name	Number of Acres	Ownership	Name	Number of Acres	Ownership	Name	Number of Acres	Ownership
1. Alderman's Ford	360	County	22. Jean	3	County	43. Rogers	180	Tampa
2. Ballast Point	3	Tampa	23. Keystone	30	County	44. Roseland	1.2	Plant City
3. Balm	10	County	24. Lake Roberta	0.8	Tampa	45. Roy Haynes	3	County
4. Bayshore Boulevard	25	Tampa	25. Laura St.	2.1	Plant City	46. Ruskin Common Good	1	County
5. Bealville	20	County	26. Limona	9.8	County	47. Ruskin Suncoast Theatre	10	County
6. Bltmore	1.9	Temple Terrace	27. Lithia Club House	2	County	48. Seffner	3.2	County
7. Bonny Brae	2	Temple Terrace	28. Lithia Springs	160	County	49. Seminole Gardens Center	2	Tampa
8. Brandon	10	County	29. Mangrove Point	254	County	50. Springhead	8.5	County
9. Bullard	3.5	County	30. Marti	3	Tampa	51. Temple Terrace	18	County
10. Burchwood	3.6	Plant City	31. North	2	Tampa	52. Tony Janus	1	Tampa
11. Dover	7	County	32. Palm River	5	County	53. Turkey Creek	10	County
12. Fairmont Circle	0.6	Temple Terrace	33. Plant	6.5	Tampa	54. Valrico	0.5	County
13. Folk	2	Tampa	34. Police Station	0.5	Tampa	55. Waller	2.3	Plant City
14. Fred Ball	2	Tampa	35. Progress Village	10	County	56. Williams	5	County
15. Gardenville Playground	4.75	County	36. Providence	6.5	County	57. Wimauma	1.9	County
16. Guilford	2.9	Plant City	37. Riverbend	1	Tampa	58. Winston	9	County
17. Highland	0.8	Tampa	38. Rivercrest	9	Tampa	59. Unnamed	1.5	Temple Terrace
18. Hillsborough River	2,810	State	39. Riverside	2	Tampa	60. Unnamed	3	Temple Terrace
19. Hixon	12	Tampa	40. Riverside Gardens	2	Tampa	61. Unnamed	4.6	County
20. Hurrah	10	County	41. Riverview	10	County	62. Unnamed	10.3	County
21. Island	5.2	County	42. Robles	5	County			

PARKS WITH RECREATION AREAS (1)

Name	Number of Acres	Ownership	Name	Number of Acres	Ownership	Name	Number of Acres	Ownership
1. DeSoto (playground)	3.5	Tampa	5. MacFarlane (playground)	80	Tampa	9. Robles (playground)	17	Tampa
2. Giddens (playground)	0.6	County	6. Marjorie (Davis Islands Tennis Club)	12	Tampa	10. Rowlette (playground)	80	Tampa
3. Jackson Heights (playground and community center)	6.5	Tampa	7. Memorial (swimming pool)	10	Tampa	11. Temple Crest (playground)	2.8	Tampa
4. Lowry (playground)	105	Tampa	8. Ragan (playground)	14.5	Tampa			

RECREATION AREAS

Name	Location	Existing Facilities	Name	Location	Existing Facilities
1. Adelson Field	Plant City	2 baseball diamonds, clubhouse	37. Lincoln (school)	Plant City	playground
2. American Legion	Tampa	playground, tennis	38. Marshall (high school)	Plant City	baseball & softball diamonds, volleyball
3. Anderson	Tampa	playground, community center	39. Municipal Trailer Park	Tampa	community center
4. Broward (school)	Tampa	playground	40. North Boulevard	Tampa	community center
5. Brown (school)	Plant City	playground	41. North Tampa	Tampa	playground, community center

1. DeSoto (playground)	3.5	Tampa	5. MacFarlane (playground)	80	Tampa	9. Robles (playground)	17	Tampa
2. Giddens (playground)	0.6	County	6. Marjorie (Davis Islands Tennis Club)	12	Tampa	10. Rowlette (playground)	80	Tampa
3. Jackson Heights (playground and community center)	6.5	Tampa	7. Memorial (swimming pool)	10	Tampa	11. Temple Crest (playground)	2.8	Tampa
4. Lowry (playground)	105	Tampa	8. Ragan (playground)	14.5	Tampa			

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2. American Legion	Tampa	playground, tennis	38. Marshall (high school)	Plant City	baseball & softball diamonds, volleyball
3. Anderson	Tampa	playground, community center	39. Municipal Trailer Park	Tampa	community center
4. Broward (school)	Tampa	playground	40. North Boulevard	Tampa	community center
5. Bryan (school)	Plant City	playground	41. North Tampa	Tampa	playground, community center
6. Burney (school)	Plant City	playground	42. Oak Park	Tampa	playground, community center
7. Clearfield	Tampa	playground, community center	43. Palma Ceia	Tampa	playground
8. College Hill	Tampa	playground	44. Palma Ceia Lions	Tampa	playground
9. Corona	Tampa	playground	45. Plymouth	Tampa	playground
10. Courier Field	Plant City	2 softball diamonds, volleyball	46. Ponce De Leon	Tampa	playground
11. Cuscaden	Tampa	playground, swimming pool, tennis	47. Ponce De Leon	Tampa	community center
12. Cyrus Green	Tampa	playground, swimming pool	48. Port Tampa	Tampa	playground, community center
13. Dale Mabry (school)	Tampa	playground, tennis	49. Port Tampa Southwest	Tampa	playground, community center
14. Davis Islands	Tampa	playground	50. Potter (school)	Tampa	playground
15. Davis Islands Pool	Tampa	swimming pool	51. Recreation Center	Plant City	community center, tennis, shuffleboard
16. De Soto	Tampa	community center	52. Rey Park	Tampa	playground
17. Duran	Tampa	playground	53. Riversite	Tampa	playground
18. Edgewater	Tampa	playground	54. Riverview Terrace	Tampa	playground
19. Fair Oaks	Tampa	playground, community center	55. Robles Park Village	Tampa	community center
20. Flora and Central	Tampa	playground	56. Rome and Sligh	Tampa	playground
21. Forest Hills (school)	Tampa	playground	57. Seminole (school)	Tampa	playground
22. Foster	Tampa	playground, tennis	58. Seminole Heights	Tampa	community center, swimming pool
23. Friendship	Tampa	playground	59. Simmons (school)	Plant City	playground, playfield
24. Gary	Tampa	playground, community center	60. Skyview	Tampa	playground, tennis
25. Grant Park	Tampa	playground, community center	61. Sligh and Foster (school)	Tampa	playground
26. Haines St.	Plant City	community center	62. Spring Hill	Tampa	playground
27. Henderson (school)	Tampa	playground	63. Tampa Bay Blvd. (school)	Tampa	playground
28. Henry and Ola	Tampa	playground, tennis	64. Temple Terrace Center	Temple Terrace	community center
29. Hunt	Tampa	playground, community center, tennis	65. Tourist Recreation Center	Tampa	community center
30. Hyde Park	Tampa	playground	66. Wellswood	Tampa	playground
31. India St. (school)	Tampa	playground	67. West Pines	Tampa	playground
32. Interbay	Tampa	community center	68. West Tampa	Tampa	community center
33. Jackson Heights (school)	Tampa	playground	69. West Tampa Heights	Tampa	playground, tennis
34. Jackson (school)	Plant City	playground	70. Wilson (school)	Plant City	playground
35. Kid Mason Fendall	Tampa	community center	71. Witter (school)	Tampa	playground
36. Lincoln Gardens	Tampa	playground	72. Wolff Settlement	Tampa	playground

NOTES:

(1) Includes only parks having recreation areas under supervision of City of Tampa Recreation and Relations Department. Numbers are keyed to location map opposite this table.

SOURCES:

Hillsborough County Parks and Playgrounds Department, City of Tampa Parks and Cemeteries Department, City of Tampa Recreation and Relations Department, City of Plant City, and City of Temple Terrace.

should include both slopes.... Metropolitan (regional) parks, because of their size and dependency on attractive natural features, are oriented more toward natural resources and less toward user convenience.

The jurisdiction and operation of a metropolitan (regional) park is not limited to any single unit of government.... In some areas, an agency has been created to develop and administer a metropolitan (regional) park system. Frequently, parks which function as metropolitan (regional) parks are operated by different levels of government such as cities, counties, special districts, or the state. (Hillsborough River State Park can be classified as a metropolitan or regional park).

3. Resource - based parks such as Yellowstone or Colonial Williamsburg are usually centered on some scenic or historic site. For this reason access cannot be a requisite; rather the sites must be developed where such natural or historical features or resources exist.... Resource-based parks may be hundreds of miles from a major population center. Because of the long driving distances involved, many users stay overnight or longer. The park size may vary from several hundred acres to thousands of square miles. Camping, hiking, fishing, and boating are the types of activities that predominate. Usually only a small part of the total area is developed. (In Florida, the Everglades National Park would be an example of a resource-based park).
4. Preserves, conservation projects and greenbelts also serve other increasingly important objectives:
 - (a) Prevent the natural congestion inherent in a town or city from compounding itself by the town's expansion "Topsy fashion" into a neighboring community.
 - (b) Provide large natural areas for the replenishment of underground water resources.

- (c) Assist with sound long-range mosquito control.
- (d) Reduce future community service costs.
- (e) Conserve wildlife and fish feeding and spawning grounds.
- (f) Protect high value agricultural lands.

The actual size and character of reservations, preserves and greenbelts, unlike normal active recreation areas and parks, are dependent upon the natural features of the particular region, its population characteristics, density of development, nearness to urban concentrations and such special problems as condition of underground water resources, insect concentration, fish and wildlife resources, etc. (The proposed Green Swamp Water Conservation Project would be an example of this more specialized category of park).

5. ... a parkway is an elongated park serving as a link between various park systems in a city or metropolitan area. In a more recent context, parkways have come to be known as superhighways designed into a scenic setting and connecting important population centers and regions. Often, parkways serve as links between urban centers and important recreational areas. (Courtney Campbell Parkway is the best local example of this type of facility).

Existing Park Pattern in Hillsborough County

A complete study and analysis of all park properties in Hillsborough County is beyond the scope of this report. A subsequent report of the City-County Planning Commission specifically concerned with park development will more adequately cover the subject. However, a few general comments can be made at this stage.

1. Utilization. Within Hillsborough County and its municipalities "parks" are considered principally as ornamental green spots for passive

or quiet recreational activities. Active recreation and playground activities, such as baseball, swimming, basketball, for the most part are carried on in separate "recreational areas". For example, 28 parks within Tampa, ranging in size from the half-acre Police Headquarters Building Park to the 180-acre Rogers Park, contain little in the way of active recreational facilities. Recreational activities, under supervision of the City of Tampa Recreation Department, occur in 71 different locations, including nine school grounds and eleven "parks".

This same development pattern is true in Plant City, where recreational activities are almost completely centered around school playgrounds. With allowance for its golf course, Temple Terrace has a sparsity of planned park facilities, and a definite pattern is not discernible. Hillsborough County parks, at least the 23 that are developed, generally have combined active and passive recreational facilities. Eleven county-owned or leased park properties are as yet undeveloped or are in the process of development.

The separation of park and recreation areas would be unnecessary if adequate land areas were acquired and designed for combined use. Reservation at the time a subdivision is platted of sufficient acreage for public use and the design and development of a dual-purpose park and recreation area would result in more functional and attractive public open spaces.

2. Classification. The existing make-up of park and recreational facilities within Hillsborough County does not render itself suitable for precise classification according to the five general categories of parks and open spaces previously outlined. However, the following breakdown essentially establishes the general classification pattern of existing facilities:

(a) Local parks. Most park and recreation developments in Hillsborough County are local parks serving neighborhood areas. Owing to rapid population growth in the urban sections over the last 15 years, this park type (particularly the "recreational area") has received the most emphasis, but has not resulted in a satisfactory pattern. The following quotation summarizes local park problems in Tampa and elsewhere:

The major present problems in user-oriented recreation areas are their small size and poor location. Their total area is probably half or less of what would be adequate for today's needs. . . many of the fastest growing suburban areas have thus far made extremely inadequate provision for parks. . . and with the available land taken up in large-scale developments, there are neither vacant lots nor vacant sites upon which parks may be constructed later. 98/

(b) Metropolitan or regional parks. There are only two park facilities within Hillsborough County that may be classified as

regional parks in terms of actual use: The Hillsborough River State Park and Lowry Park. A need for future expansion of parks in this category is readily apparent when the expected growth of the entire region is considered.

(c) Resource - based parks. Hillsborough County is seriously lacking in park and recreational facilities related to natural resources, particularly with regard to water-oriented facilities. Although a number of parks are sited on shorelines, Lithia Springs Park and (to a limited extent) Ballast Point and DeSoto Parks are the only parks where the waterfront is utilized to any degree. Not a single public park has been developed around one of the larger fresh-water lakes found in the northern part of Hillsborough County. However, an undeveloped 254-acre county-owned tract on Mangrove Point near Ruskin does offer a potential site for a sizeable resource-based park development.

(d) Preserves, conservation projects, and greenbelts. No examples of this classification are found in Hillsborough County although many opportunities for future developments do exist. Watershed projects of the Southwest Florida Water Management District could produce sizeable parks or open spaces while also providing conservation areas. Citrus groves, if protected from urban development, could also lend to greenbelt-type developments.

(e) Parkways. Courtney Campbell Causeway and Bayshore Boulevard are the only two existing facilities which may be categorized as parkway development. Both of these facilities should be protected and further developed as scenic drives with a park-like atmosphere. Other opportunities exist for parkway improvements along the numerous rivers, streams, and bays, as well as around several larger lakes.

3. Park location and distribution. The largest park improvements in Tampa are found principally in the older developed sections of the city. Smaller, intensively-developed recreational centers are more in evidence in residential sections recently subdivided. As mentioned previously, Plant City has attempted to meet its park needs by utilizing school grounds for recreation. County-maintained park improvements are located primarily in or near unincorporated community settlements such as Ruskin, Gibsonton, Riverview, and Brandon; few have been developed in the close-in urban fringe of Tampa. Many opportunities to develop attractive and useful neighborhood centers by joint development of contiguous school and park sites have been overlooked.

Future Park Developments

Future park improvements undertaken by all governmental units operating in Hillsborough County should be coordinated as to utilization, classification, and spatial distribution with an over-all development plan. Unfortunately, little coordination of this nature has taken place

in past years. In order to accomplish this objective, a comprehensive plan of parks and open spaces should be prepared to serve as a guide for future decisions involving park lands.

Federal aid in bringing about an improved and coordinated system of parks and open spaces in Hillsborough County is possible under the provisions of Title VII of the U. S. Housing Act of 1961. This act authorizes a program of Federal grants to states and local public bodies to assist in the acquisition of permanent open-space land. A grant not in excess of 20 percent of the cost of acquiring title to the land may be made to a public body which is authorized to acquire open-space land. In the case of a public agency exercising open space responsibilities for an urban area as a whole, such as a city-county park board, Federal financial participation can be increased up to 30 percent.

The lands to be acquired with this aid must be designated for permanent open-space uses under a comprehensive plan and can include land which has value for the following purposes:

1. Park and recreational purposes.
2. Conservation of land and other natural resources.
3. Historic or scenic purposes.

The program applies to land only to be set aside for parks, playgrounds, parkways, watersheds, and other specific open-space uses which are

not to be developed for building projects. Actual costs of land development, however, are not included in this program and would have to be borne by the local public agency.

With or without Federal financial assistance, the task of providing the parks for a 1980 county population of more than double that of 1960 is formidable. Considerable planning and effort will be necessary to overcome a mounting deficiency of park land.









Water and Sewer Service Area Pattern

A supply of potable water and a method of distributing it to concentrations of population have concerned community builders since ancient times. The establishment and growth of many great cities were related to proximity to a fresh water supply. For example, the availability of fresh water from the Hillsborough River was an important factor in the site selection of Fort Brooke Military Reservation at the head of Hillsborough Bay.

Not until more recent times, however, has increased knowledge of both the nature and the spread of diseases resulted in emphasis being placed upon the sanitary disposal of waste matter through an efficient public sewerage system. Although during the 1880's the City of Tampa first built a water works and sewerage system, which emptied into the river and bay, it was not until years later that the city constructed a sewage treatment plant.

WATER AND SEWER SERVICE AREAS HILLSBOROUGH COUNTY

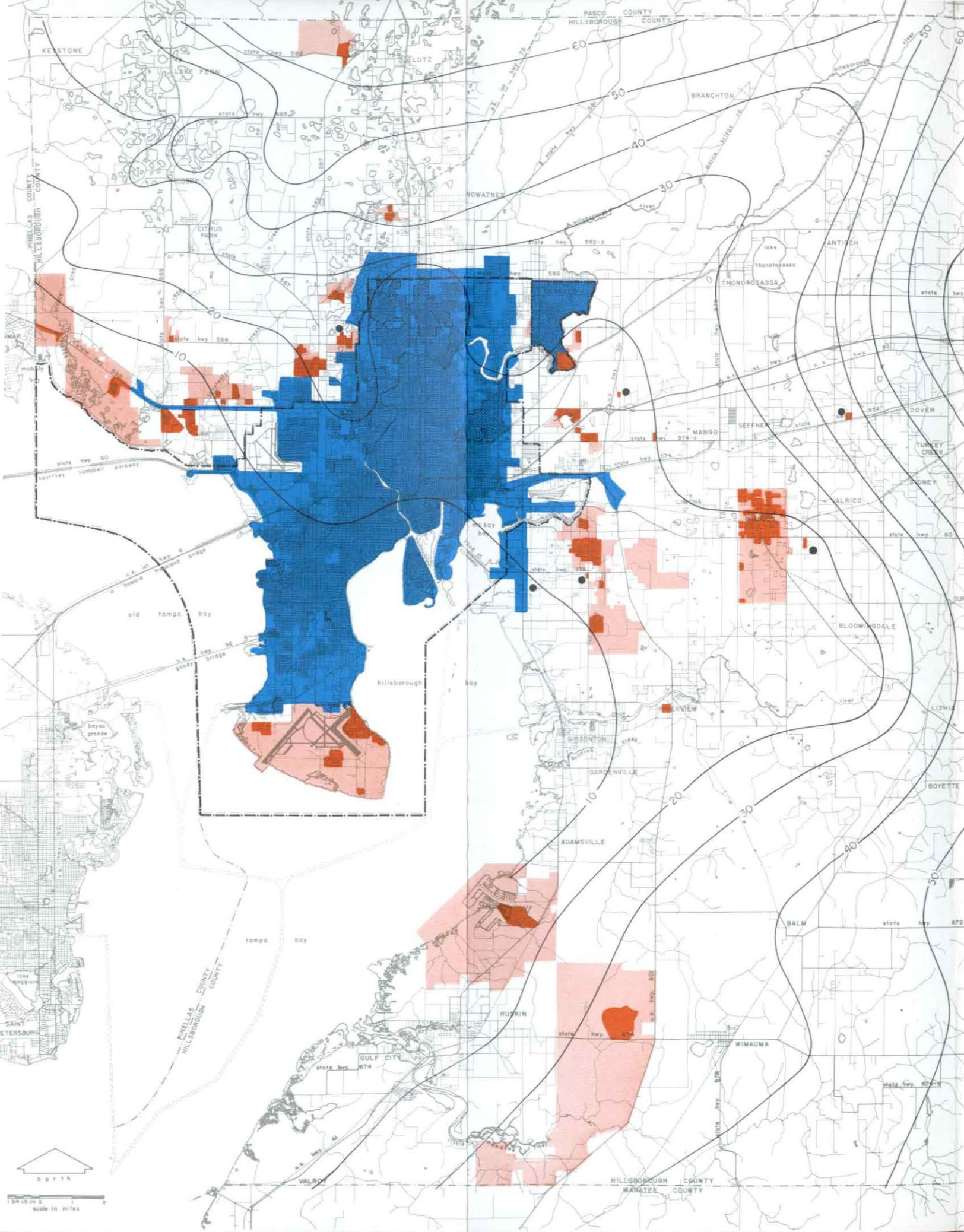
L E G E N D

-  AREA SERVED BY MUNICIPAL WATER SYSTEM
(CITIES OF TAMPA, PLANT CITY, AND TEMPLE TERRACE)
-  AREA SERVED BY MUNICIPAL WATER AND SEWER SYSTEMS
(CITIES OF TAMPA AND PLANT CITY)
-  AREA TO BE SERVED BY PROPOSED EXPANSION OF MUNICIPAL SEWER SYSTEM
(CITIES OF TAMPA AND TEMPLE TERRACE)
-  PROPOSED WATER AND/OR SEWER FRANCHISE AREA
(HILLSBOROUGH COUNTY)
-  EXISTING FRANCHISED WATER AND/OR SEWER SERVICE AREA
(HILLSBOROUGH COUNTY)
-  AEROBIC DIGESTION PLANT
-  20 CONTOUR LINES REPRESENT THE PIEZOMETRIC SURFACE IN FEET ABOVE MEAN SEA LEVEL
-  CORPORATE LIMITS LINE

source: u.s. geological survey
cities of tampa, plant city, and temple terrace
hillsborough county engineering department
j.e. greiner company
macdill air force base

PLATE 16

hillsborough county planning commission



Today, water and sewer services are so essential to public health and well-being that they have become accepted functions of local government. Coupled with recognition of the importance of these services for public health and convenience should also be recognition of the strong influence which the provision of such services exerts upon the whole community development pattern. If an orderly utility expansion policy is compromised, the results are found in the form of an uncoordinated scattering of developments and increased costs of providing separate permanent utility services over a long period of time.

This section of the report is primarily concerned with the character and extent of existing water and sewer services in Hillsborough County, general adequacies and defects of existing systems, and possible implications to future planning and community development caused by the pattern that emerges. Plate 16 illustrates various elements of the water and sewer service pattern. The problem of septic tank use also will be explored. However, this study is not intended as an engineering evaluation of present facilities.

Existing Water and Sewer Service Areas

Only in recent years, after a number of technological advances in independent community water and sewer systems were made, did unincorporated portions of Hillsborough County have a choice of water

and sewer system installations. Before these advances, individual water wells and cesspools (later supplemented by septic tanks) comprised the basic services available to individuals and subdivision developments beyond the extension capabilities of the central systems of Tampa and Plant City.

The following is an evaluation of both the individual and community water and sewer systems with respect to future development in the county.

1. Private water wells and septic tanks. Even though community water and sewer systems are now practical in most areas, the greater proportion of rural and suburban population still depends upon wells and septic tanks.

(a) Private water wells. An estimated 67 million gallons of water per day is pumped from Hillsborough County ground for industrial, farm, public, and private water supplies. This compares with 23 mgd taken from the Hillsborough River by the City of Tampa for its municipal supply.

Only the upper 1,000 feet of the Cenozoic section is used as a source of water in the county. Only two water wells over 1,000 feet deep were inventoried during the investigation.

The depth of a well is controlled by economy and by depth to salt water. For economical reasons, a well is finished at the shallowest

depth at which a given yield at a given draw-down is obtainable. The depth of a well, for most purposes, must also be limited by the depth to salt water. In the northeastern part of the county, the depth to salt water is probably more than 4,000 feet below the surface. The maximum depth of a fresh-water well in the area would be about 4,000 feet. 99/

A portion of the public water supply is also derived from the principal aquifer in Hillsborough County. Some City of Tampa inhabitants use private well systems as do rural residents.

Public water systems for part of Tampa, for St. Petersburg in Pinellas County, for Plant City, Temple Terrace, and numerous subdivisions near Tampa derive their supplies from wells. . . . Figures from the City of Tampa indicated the presence of 1,500 to 1,600 wells in the city. The figures included 149 commercial wells and 1 industrial well. Individual wells supply an estimated 4 mgd to rural residents who are not furnished water by the public water systems. . . . Irrigation of truck crops and citrus groves by ground water probably exceeds 15 mgd. 100/

A basic problem involved in increased pumping of the ground water supply, particularly for municipal and community water supplies as well as individual commercial, industrial, and agricultural uses, is the gradual depletion of water in the principal aquifer. This is particularly serious if there is not adequate recharge or if ground water is permanently lost through intrusion of increased concentrations of dissolved materials including salt. Certain sections of the county have already experienced this situation.

Future development of ground-water supplies for municipal or other large users will be controlled by the elevation of the piezometric surface and by geological conditions that affect quality of water. The decline of water levels caused by extensive development of ground-water supplies may make the placing of well fields unfeasible in the area where the elevation of the piezometric surface is less than 50 feet above sea level. . . . Development of the ground-water resources to its full potential will necessitate control of waste-flow from wells and may warrant the plugging of springs where feasible. 101/

Except for some locations in the vicinity of Tampa and the coast, including the Ruskin area that is already heavily pumped, most ground waters would be suitable for municipal use. 102/

If this lowering or loss of ground water continues and the problem extends further inland from the coast, it may become necessary to drill wells into deeper water-bearing sands than these in the principal aquifer. Original capital outlay and long-run operational costs, particularly for individual wells, could conceivably increase as the usefulness of the principal aquifer diminishes in other portions of the county. Individual users pumping relatively small quantities of ground water probably would be more severely penalized in comparison to users pumping larger amounts and whose unit costs are less.

(b) Septic tanks. Although the State of Florida Health Department does not endorse the use of septic tanks, their actual use and acceptance is general and widespread. Certain community development problems

associated with this particular method of individual sewage disposal should be considered.

Chapter 5 of the Florida State Sanitary Code defines a septic tank as,

"A water-tight receptacle for use in rural, farm or sparsely developed urban areas with adequate size tracts. . . ."

Septic tank use should therefore be limited to developments having low density of population. The reason for this is that many methods of sewage disposal acceptable in such low-density areas and in rural areas frequently create highly undesirable conditions if utilized in urban and suburban sections. In actual practice, the code definition as set forth above is not enforced and septic tanks are found in almost all urban and suburban areas in Hillsborough County.

Technical limitations of septic tanks. What may be an acceptable utility for a single rural dwelling, or at most a minor disposal situation faced by an individual owner of large acreage, becomes a significant problem in a compact, subdivided development. An obnoxious sanitation condition caused by malfunction of a septic tank is endured only by one family in most rural areas. But, when a similar circumstance arises in a subdivision many neighbors are affected. Another situation to be considered is an instance whereby one septic tank may operate perfectly but where the utilization of one or more additional tanks throws the percolation capability of the soil dangerously off-balance.

A percolation test administered to raw land to determine its suitability for septic tank operation acts merely as a rough sufficiency indicator. Other factors play more instrumental roles but unfortunately cannot be easily and accurately evaluated. These factors include the length of time the septic tank will continue to function properly, whether a point will be reached when the soil of the drain field breaks down as an effective filter, the detrimental influence the effluent may exert on the underground aquifer, and the transpiration rate existing under normal and abnormal conditions. These points, combined with the practical impossibility of measuring the actual harmful effects of septic tank discharge in any given area, present substantial arguments against the long-run practicability of a septic tank. At best, this disposal method should be looked upon as temporary in most areas and perhaps totally unacceptable in certain areas where a combination of unfavorable factors exists.

The Hillsborough County Health Department has been able to exercise some control over the use and placement of septic tanks, even though their efforts have been limited by lack of a definite legal framework. Jurisdiction over approval of septic tank installations, however, was transferred to the Hillsborough County Plumbing Department in January of 1962; whereupon the following requirement was established:

No septic tank and/or drain field shall be constructed or installed until a permit for such construction or installation has been obtained from the Hillsborough County Plumbing Department. 103/

Minimum required capacity for septic tanks used to be 540 gallons, but was recently raised to 750 gallons. The following are new minimum requirements:

1. Minimum capacities for septic tanks (residential use):

2 or less bedrooms	750 gallons
3 bedrooms	900 gallons
4 bedrooms	1000 gallons
Each additional bedroom, add	250 gallons
2. Minimum areas for absorption field:

There shall be an allowance of 85 square feet of drain field per bedroom.
3. Minimum capacities for septic tanks (non-residential under 1200 gallons):

Septic tanks and/or drain fields for non-residential purposes and less than 1200 gallon capacity shall be of sufficient size to accommodate the use of the structure in connection thereof. 103/

Other minimum standards for developments using septic tanks have been advocated by the County Health Department but have not been officially adopted. These include:

1. Minimum lot area of 7500 square feet. (Current Florida Sanitary Code standards requires 6000 square feet.)
2. Septic tanks should be kept as far back from lake and stream edges as possible to prevent water pollution. Septic tanks preferably should be at

least 100 feet from water's edge with an optimum distance of around 200 feet.

3. An absolute minimum lot area of one-half acre where there is to be an installation of both a septic tank and private water well. (The Florida Sanitary Code stipulates only that no part of a septic tank and drain field may be located within 50 feet of any water supply well or cistern). All subdivisions designed to accommodate 25 or more people are required by the Florida Sanitation Code and local regulation to have either water or sewer systems before approval of a plat.

Other limitations of septic tanks. In addition to technical limitations of septic tanks, the general lack of understanding of proper septic tank operation and usefulness contributes to the total problem. In many cases, for example, it is concluded that the septic system is operating satisfactorily simply if household plumbing operates properly, when, in fact, effluent may be bubbling up through the drain field.

Area drainage conditions have a strong influence over the proper functioning of septic tanks. Land that can be altered to improve drainage for agricultural development is not necessarily adaptable to subsurface sewage disposal. Physical limitations are quite stringent for septic

tank drain fields, and such installations must be examined on an individual basis.

Records of the County Health Department indicate that the majority of subdivisions recently approved for septic tanks have been in the Brandon area. Around Clarkwild, between Temple Terrace and Thonotosassa, a number of septic tank subdivisions also have received Health Department approval. Percolation tests are optional on the part of individuals and developers and are not required prior to issuance of a building permit. Both development areas mentioned above are located in regions of well-drained, deep sands. In general, satisfactory percolation tests have been recorded over this type of soil association. However, the County Health Department has pointed out that parts of the Brandon area, in particular, are fast approaching a saturation point for septic tank usage.

2. Franchised community water and sewer utility companies.

Privately-owned and operated water and sewer utility companies have been a recent innovation in Hillsborough County. No longer do new developments necessarily have to be tied to older, central systems emanating from Tampa or Plant City nor be dependent upon individual septic tanks and water wells service. Relatively large-scale residential and several commercial and industrial developments now operate independently of central systems and avoid well and septic tank problems through use of independent water and sewer utility systems.

Although this innovation has solved certain problems, it has raised a whole series of new ones. Both the old and new problems will be explored in the following discussion.

(a) State legislation. One purpose of the County Water and Sewer Act (Senate Bill 522) passed by the Florida State Legislature in 1959 is to alleviate certain problems affecting water supplies and public health in areas outside municipal jurisdiction. This particular act, one of several similarly-directed legislative bills in 1959, was the result primarily, of unreasonable rates charges and/or inadequate services provided by private utility companies in several counties. Before passage of this Act, public regulation of water and sewer facilities was virtually non-existent.

The Water and Sewer Regulatory Act (House Bill 340) also emerged from the 1959 session. This Act provides for a central public agency to supervise private utility operations in unincorporated county sections throughout the state. The Florida Railroad and Public Utilities Commission serves in this supervisory capacity. The Commission's principal duties are to regulate and fix rates. For example, a private utility company must first obtain a franchise from the Board of County Commissioners to operate within a specified area of a county and must then apply for certification from the Railroad and Public Utilities Commission. The latter Commission then approves or disapproves the

proposed method of service and rate structure. If approved, a state utility tax of 1 1/2 percent is levied annually against the utility company's gross revenue.

(b) Hillsborough County utility regulations. Along with the state enabling legislation passed in 1959, Hillsborough County was also granted (through House Bill 1019) exclusive authority to issue water and sewer utility company franchises within its own unincorporated sections. The act empowers the Board of County Commissioners with jurisdiction,

... to supervise and control the methods and means of providing water and sewer systems, ... to fix reasonable rates and fees therefore and to establish reasonable rules and regulations to protect the public health and general welfare of the inhabitants of said county.... 104/

This law further stipulates that all Hillsborough County utility franchise holders are to abide by regulations of the Florida State Board of Health.

The typical Hillsborough County franchise contract states that a licensee may exercise utility service only within a platted subdivision. However, extension of the system can be authorized by the Board to other platted sections within an approved franchise area.

Location of pipe lines and their depth below grade are subject to County approval. If a licensee fails to provide adequate service or

in case there is an unwarranted interruption of such service, the Board is enabled to appoint a receiver to operate the system. Forfeiture of the franchise can ensue after violation of any regulation established by the Florida State Board of Health or through non-payment of an annual fee as outlined below.

The law requires each application for a Hillsborough County franchise to be accompanied by a minimum fee of \$500. Exceptions to this are applications for small areas (an individual plant, motel, school, etc.) to which a fee of \$100. is affixed. No fees are charged to municipalities applying for a county franchise. Moreover, in actual practice, Hillsborough County has not required an application from the City of Tampa to operate or extend its water and sewer systems outside its corporate limits.

Fees and charges are based upon acreage and annual gross revenue as illustrated in the following table: 105/

Number of Acres in Franchise Area	Initial Application Fee
Up to 150	\$ 500
151 - 200	600
201 - 300	750
301 - 400	900
401 - 500	1, 000
Each additional 500 acres or fraction thereof	1, 000

Annual Gross Utility Company Revenue	Annual Charge
0 - \$14,999	1%
\$15,000 - \$29,999	1.25%
\$30,000 - and up	1.5%

Up to the present (March, 1962), Hillsborough County has granted franchises for the operation of 29 individual private utility systems. Fifteen systems are authorized to provide both water and sewer service, four to supply just water (one system has two separate franchise areas), and ten to provide only sewer service. All franchises carry exclusive 25-year contracts with renewal options.

Seven franchise holders operate sewage disposal systems solely for some individual use. For example, Florida Industrial Properties, Inc. (Yocam Batteries) and Ocean Products, Inc. (shrimp processors) have sewerage facilities for treatment of industrial wastes. Silver Lake Country Club also operates its own sewage disposal system. The remaining systems furnish either water and/or sewer services to properties in designated franchise areas and service one or more subdivisions ranging in area from a few to several hundred acres.

(c) Problems of franchised community water and sewer systems. One section of the Hillsborough County franchise law states that

... the Board (of County Commissioners)
shall not grant a certificate for the construction, operation or extension of a

water system or sewer system in or into any territory served by any public utility or municipality or into any territory defined in a certificate issued to a public utility or a municipality of which otherwise would compete with any other water system.... 105/

An exception to this may be granted if the Board of County Commissioners determines that the territory into which a water or sewer system is to be extended has inadequate service or is otherwise deficient in meeting reasonable public needs.

There are several examples of overlapping water and sewer operations in Hillsborough County. Purity Springs Water Company's situation perhaps serves as the best example. Since 1912, this company has operated a water service which gradually expanded by 1961 to include some 5,200 customers. Although the franchise area is outside the City of Tampa's corporate limits, a definite overlapping of water service areas (parallel water lines) exists between the City of Tampa and Purity Springs. In 1950, the City awarded Purity Springs a 99-year water service contract, but recently negotiated for purchase of the system. In September, 1961, the City of Tampa purchased the water works for approximately \$1,000,000 and the franchise was surrendered.

Tampa's 1961 northeast area annexation also enveloped the water and sewer franchise area of Southern Utilities of Tampa, Inc. However, Hillsborough County's franchise regulations stipulate that:

Whenever an area embraced within any such franchise is annexed to and incorporated into the corporate limits of any municipality, such municipality shall have the right to purchase the water and/or sewer franchise and facilities in such an area for just compensation. 105/

It is probable that the City of Tampa will eventually exercise this purchase privilege.

A rather perplexing situation exists in regard to Pinecrest Utility Corporation. The southern portion of this sewer service assignment falls into an area considered part of the service area of the City of Tampa's sewerage system. In order to resolve certain legal aspects of this problem, Pinecrest turned over its sewer lines in the overlapping area to the City.

A municipal versus private utility company problem prevailed between the City of Temple Terrace and Riverside Sewage Disposal System, Inc. The only sanitary sewers within the corporate limits of Temple Terrace are located in the southeastern section of the city adjacent to the Hillsborough River. This system was owned and operated by Riverside, Inc. The area served by Riverside sewer lines within the city, however, was served by the municipal water system. This placed the private utility at a distinct disadvantage in collecting sewer charges due to the fact that both water and sewer services were not under its jurisdiction. Recently, however, the City of Temple Terrace has taken

steps to acquire the private sewer system for coordination into its over-all sewer system now planned for installation.

Similar jurisdictional problems confront four other franchise utility systems in the county. These particular companies provide only sewer service to subdivisions serviced by the Tampa water system. This division of utility ownership makes enforcement of sewer service charges more difficult. As a consequence, Hillsborough County informally encourages development of combined water and sewer utility operations in all new franchise area applications.

3. Municipal water and sanitary sewer systems. There are three municipally-owned and operated water and/or sewer systems in Hillsborough County.

(a) Plant City. Almost two-thirds of the Plant City area is served by city water. Relatively large gaps exist in the service pattern in the north-central, northwest, and southwest areas where water is not now available. Individual private wells supply water for the remainder of the city. When a new subdivision is created the developer must install all water lines at his own expense on a non-reimbursible basis.

Sewer service within Plant City has been extended only to approximately one-fourth of its total corporate area. Existing sewer service is concentrated principally in the central and southern portions.

As in the case of new water lines, private developers are required to install all sewer lines which are to be connected to the municipal sewerage system. The City offers no rebate to a developer. Current plans are to enlarge the capacity of the sewage disposal plant and to make other major improvements in lines and service.

(b) Temple Terrace. Temple Terrace provides water service to almost all developments within its corporate limits. The only developed areas lacking water coverage are along the north reach of the Hillsborough River, the northernmost section along the ACL Railroad, and the north half of the newly annexed portion. Subdivision developers are obligated to install their own lines up to 6 inches in diameter. The City assumes installation costs on larger pipe sizes. There is no rebate policy to a developer for cost of utility extensions.

At present, Temple Terrace lacks effective sanitary sewerage. The only sewer service area is in the extreme southeastern portion of the city. However, a sewer improvement program now underway will provide the community with complete coverage.

(c) City of Tampa. The City of Tampa provides water service to most of the corporate area. Water lines have also been extended to developments in close-by unincorporated areas. For instance, municipal water lines have been extended along West Hillsborough Avenue into county subdivisions adjacent to the highway. To the north

of Tampa, water service has been extended past the city limits for a maximum distance of about one mile into the lower fringe of the lake district. In the area between McKay Bay and U. S. Highway 41, city water service is available as far south as Black Point. Water lines have also been extended for approximately one mile east and southeast from the city between State Roads 574 and 60. Water rates to customers residing inside and outside the City of Tampa are the same.

Tampa is the only one of the three municipalities in the county which does not require developers to install water lines at their own expense. Within Tampa, a developer submits his proposed plat to the City Water Department for approval. The City then lays the water lines at public expense.

Not quite half of the Tampa area has sanitary sewer service. Coverage is virtually complete around Hillsborough Bay from Ballast Point to and including Davis Islands. However, the service area pattern becomes somewhat intermittent in the extreme northeastern, northern, western, and southern areas of the central city. An improvement program has been proposed which will provide added sewerage coverage particularly to the Belmont Heights district and north of Sulphur Springs. Private developers within the city must assume the costs of installing sewer lines without any eventual rebate.

Future Water and Sewer Service Pattern

Future urban growth in Hillsborough County will require extensions of present central system water and sewer service areas in Tampa, Plant City, and Temple Terrace. In the past, however, central system extensions have not kept pace with new developments occurring in fringe areas. Sewer service, in particular, has not been available to many sections of the corporate area, not to mention suburban developments. This condition has given rise to private water and sewer utility company operations franchised and regulated by the County of Hillsborough. To date, independent tax-supported utility districts have not been created.

The future urban development pattern in Hillsborough County is directly related to the availability of water and sewer services. The continuance of some of the prevailing policies for the provision of these basic public services constitutes a hazard to an orderly and efficient over-all community pattern.

1. The policy governing extension of city water lines to developments outside the Tampa corporate limits should be carefully examined. Provision of municipal services constitutes one of the principal reasons for the very existence of cities and normally serve as a determining factor in both the timing and the direction of urban

development, as well as in the proper extension of corporate limits. Extension of such services beyond municipal boundaries should therefore be carried out only on a selective basis consistent with proper community growth.

2 Regardless of the relative efficiency of some septic tank installations, it is more desirable to have a sewerage system operated by a private community utility company and even more desirable to have connections to a municipally-operated facility. Except in rural areas of low-density population and within certain suburban areas, public sewerage is both the most logical and most efficient permanent solution to waste collection and disposal.

In some areas of the country new subdivisions initially employing septic tanks should also provide capped sanitary sewer house connections and lateral lines. This will facilitate eventual connection to trunk lines of an expanded municipal system and will greatly reduce individual hook-up expense. In general, septic tanks should be considered only as a short-term answer to the disposal problem.

3. The full extent of Hillsborough County's utility franchise regulatory authority has not yet been exercised. Under the regulations governing issuance of franchises, it is stipulated that a basic purpose of the County Commission should be

... to promote and provide for the orderly growth of areas not presently included within the limits of existing municipalities and in so doing to protect the health and general welfare of the inhabitants of Hillsborough County. 105/

To date, emphasis has been placed on a limited interpretation of this Act's purpose. Regulation of rate structures rather than the orderly future development of the county has tended to become the central purpose. As the county becomes increasingly urbanized, the wise establishment and regulation of utility franchise areas by Hillsborough County will go far in ensuring compact and efficient urban development patterns properly related to the existing incorporated areas. The alternative is a disorganized, haphazard, and inefficient development pattern -- a pattern which Hillsborough County can ill afford.

Public Buildings Patterns

Governmental activities of all kinds and at all levels are continuously being expanded to keep pace with growing needs for new and augmented public services. The widening scope of these activities in turn increases the requirement for public building space. Substantial public funds are invested annually in construction of new public buildings and in continued leasing of office and warehouse space.

Within the Tampa area, three cities (Tampa, Plant City, and Temple Terrace), Hillsborough County, the State of Florida, the United States Government, and several foreign governments maintain numerous departments and agencies within a multitude of public buildings. In general, these buildings have been located throughout the area in an uncoordinated manner without regard to their interrelationships or to a comprehensive development plan for the community. As individual public buildings become obsolete, however, and as the scope of public functions and responsibilities increases throughout the years, there will exist a continuing need for the replacement and the adding of public buildings. This section will set forth general criteria for the location of such buildings.

The usefulness of a public building is measured by its functional suitability for its particular purpose and by the appropriateness of its location. A poorly designed or poorly constructed building impairs

the efficient conduct of public business; an improperly located building is even more wasteful and inefficient. Prior to selection of a public building site, the character and location of the site in relation to other physical elements in the community should be related to an over-all plan of future development.

There are two principal classifications of public buildings. In the first category are those buildings centrally located to serve an entire city and surrounding area. These include such structures as city halls, main libraries, court houses, post offices, and federal buildings. The second group is comprised of buildings such as fire stations, branch libraries, and community recreation centers that are distributed throughout a city to serve localized needs.

Planning for Public Buildings

No absolute criteria can be established to determine public building needs and locations since conditions vary greatly in different communities. However, there are certain general considerations that are valuable in planning public buildings. As mentioned above, centralized and localized public buildings are the two basic groupings found in most communities.

1. Centralized public buildings. Groupings of centralized public buildings afford numerous advantages:

(a) Grouping of public structures can be a great convenience to citizens and facilitates the efficient transaction of public business and the coordination of public agency activities.

Where public buildings are scattered, some are invariably found in locations inconvenient to the majority of population served.

(b) The appearance of a public building is substantially enhanced if a properly landscaped site of ample size is provided. A group of well-planned public buildings generally will be more impressive and attractive than several individually located buildings, especially if arranged in a spacious setting.

(c) A grouping of public buildings also permits provision of combined parking areas and other joint facilities that might not otherwise be justified for a single structure.

Centralized public buildings may interfere with the logical continuity and growth of a central business district if inappropriately located. They should be conveniently adjacent to, but not within the retail core of the central business district. The report, "Central Tampa - An Economic Analysis of its Expansion Potential", prepared by Hammer and Company Associates, contains several references to existing public building locations in downtown Tampa.

Traditionally, major public buildings have occupied key locations in Downtown areas. There has been some tendency to relocate certain "line" activities -- maintenance shops and warehouses, jails, police stations, fire headquarters, and so forth... outside the intensively built-up areas... but for the most part the administrative offices of governmental units have remained in or near the central core.

In Tampa, the governmental agencies alone account for approximately 60 percent of the total Public and Semi-public space in the Downtown Area. They comprise 92 percent of Downtown employment. [Public and Semi-Public employment] At one time virtually all of the Public space was concentrated in the Inner Core area. However, most of the construction of recent years -- the new County Court House, new State Office Building, new Police Station and other smaller units -- have taken place outside the Core with the result that the bulk of public space is now located in the Fringe areas. 104/

Pointing toward future improvement of the central business district's position and possible role public building developments could assume, the Hammer report continues:

Traditionally in a central district development the location of government offices Downtown can be a major factor in shaping and re-directing the forces of growth and change in the central area. In recent years, there has been a trend toward decentralization of some of the operating units of government... but for the most part the administrative offices have continued to occupy important locations in the central area.

The trend for decentralization of the operating units is good and should be encouraged as it unclutters the Downtown area and permits it to serve its "central work" functions more efficiently. However, the administrative offices should be located in the downtown area and suitable provision should be made for their expansion as required by continued population growth. 106/

More specifically, the recommendation was made that:

Administrative offices of governmental agencies should, where feasible, be located in the area bounded by Polk Street on the north, Governor Street on the east, Lafayette on the south and Florida on the west to facilitate conduct of governmental business by residents. . . and the efficient interchange of information, materials and services among employees and agents of the various local, state and Federal government units. 106/

The Hammer report also recommended that a "government center" be developed. * Such a project,

. . . involves preparation of a physical plan and program for future location of public buildings to house governmental agencies occupying, or expected to occupy, space in the central area. 107/

Existing public buildings in both Plant City and Temple Terrace have been located without much attention being paid to possible central

* Work on such a government center study and plan for a centralized public buildings grouping in Tampa is contemplated by the City-County Planning Commission in conjunction with preparation of a plan for the Tampa CBD.

groupings and relationships to total public building needs. For example, City Hall and the County Building in Plant City would have formed the nucleus for an attractive civic center development if they had been located together. As the planning program progresses, it will be possible to detail a county-wide public buildings plan.

2. Localized public buildings. Site selections for public buildings serving local neighborhood needs require consideration of factors involving the particular use of the structures involved. Branch libraries, fire sub-stations, police precinct and sheriff department stations, and community recreation centers can be included in this category. However, thorough evaluation of all buildings in each of these basic categories is beyond the scope of this report.

(a) Branch libraries. Communities with 100,000 persons or more usually require branch or suburban libraries to serve outlying population. Mobile library units are also useful for serving more sparsely-developed residential sections. Such auxiliary facilities are integral parts of a library system which centers around a main library where all administrative and service functions, such as classifying, cataloging, and binding, are usually carried on.

A branch library should serve a surrounding area within a one or two-mile radius with a minimum supporting

population of between 20, 000 to 30, 000 persons. A site near or adjacent to a shopping center, where the greatest number of persons in tributary neighborhoods would have convenient access to it in the course of everyday activities, is desirable. Such a site should have a minimum area of one acre.

In addition to the main public library located north of the central business district, the City of Tampa maintains six branch libraries. These branches are scattered, but primarily are located in residential areas. Building needs for new library facilities, based upon a cursory examination, would include a new main library as well as branches to serve the extreme northern and eastern sections of Tampa. Another branch library in the lower Interbay area might also be feasible.

Plant City and Temple Terrace both have public libraries. The unincorporated sections of Hillsborough County are served primarily by mobile book units.

(b) Fire Department substations. The location of a fire department substation is based primarily upon the character of the district to be protected and the need for speed and dependability in answering alarms. For example, major commercial and industrial areas should be within three-fourths of a mile to one mile of a fire station, and residential areas within one and one-half

to two miles. A minimum site area of between a half-acre to an acre is desirable depending upon building size. Substations should be located for maximum operational flexibility; that is, spaced so that a neighboring station's area can be covered while neighboring equipment and men are answering an alarm. The buildings should be near major street intersections and, particularly in the case of Hillsborough County, on routes that have access across the Interstate Highways. The number of companies and type of equipment at each station is determined by the character of the area served.

Nineteen fire department stations are located at various points throughout the City of Tampa. These facilities are generally situated near, but not directly on, major street routes. Most developed sections within the corporate area are inside recommended distances for a fire department substation.

The City of Plant City has a central fire station and one substation; a third building is contemplated in the near future. Temple Terrace is served by a volunteer fire department.

Problems. Problems confronting provision of adequate fire protection and, as a consequence, properly sited fire substations in Hillsborough County are as follows:

1. Limitation of the services of full-time, organized, and well-equipped fire fighting units to the three incorporated areas. Although substantial development already has taken place and continues to occur on the fringes of the two cities and in smaller unincorporated communities, fire protection is provided by a number of volunteer, privately-supported fire fighting units. State authority does exist, however, for creation of special improvement fire protection districts in Hillsborough County.

In newly annexed areas, the City of Tampa provides service to areas that generally are already developed. When a new area is annexed fire protection responsibility is taken over by the City, but seldom does the Tampa Fire Department assume and maintain former volunteer equipment and property. Rather, new substation sites are acquired, developed, and units equipped.

2. Since private water companies franchised by Hillsborough County are basically engaged in selling water to consumers, adequate provisions are not usually made for eventual fire fighting needs. New subdivisions outside the corporate area are seldom provided with fire hydrants or sufficiently-sized water lines to maintain prolonged hydrostatic pressure of 40 to

50 pounds per square inch. As new areas are connected to a central system substantial improvements have to be made at greater public cost to up-grade a water system than if such improvements had been incorporated into the original design. However, control over this situation is possible:

Water shall be supplied in the mains and/or in water supply reservoirs in sufficient quantity to meet the maximum or "peak" demands of the system with a minimum pressure of 30 psi at the users tap. In addition, sufficient quantity shall be available at all times to meet the minimum requirements prescribed by said Board of County Commissioners for fire protection. Fire hydrants shall be installed on mains at such intervals as may be prescribed by said Board of County Commissioners, or fire hydrant fittings shall be "tapped" at required intervals.

In the event the Board of County Commissioners requires the franchise holder to furnish water for fire protection, said Board may use so much of the annual franchise fees as are necessary to reimburse the franchise holder for the expense of furnishing such service. 103/

3. Interstate Highway Routes 4 and 75 will disrupt the effective service areas of a number of fire fighting units in Tampa. A detailed study of this situation might reveal the need for additional substations on streets having cross-expressway connections so that equipment from more than one station can cover any contiguous district.

4. It appears that in the near future it will become necessary to replace several Tampa Fire Department station buildings with new structures. Deterioration and functional obsolescence effect public as well as private buildings and necessitate such action.

(c) Police Department precinct and Sheriff Department stations.

Location criteria for police department precinct stations are basically the same as those described for fire department substations. That is, they should be near the intersection of major traffic arteries and have a site area of between one-half and one acre. Where urban residential densities prevail the radius served would be two and one-half to three miles. In rural or semi-rural areas in the county, an outlying office of the Sheriff's Department would best be located in a community settlement.

Area growth of the City of Tampa is a primary determinant of police precinct stations. At present, the recently-completed Tampa Police Station near the central business district functions as the central police headquarters building. The greater the distance police patrol districts are from this central station, however, the more inefficient patrol operations become. This is due to increased driving times involved in patrols returning downtown from assignments, bringing arrested persons into official custody, etc.

Considering the facts that the City of Tampa has a land area of some 85 square miles and that a driving distance exists of approximately 11 miles from the most distant point in the city to central headquarters, full and efficient use of personnel time for assigned police duties is greatly diminished. Precinct stations located at appropriate locations in the community, perhaps in conjunction with fire department substations, could substantially improve this operational problem.

3. Other public buildings. School building and park and recreation area standards and requirements have been outlined in another section of this report. There are, however, other public building facilities meriting consideration from a planning standpoint.

(a) Hospital facilities range in magnitude from a clinic, to a district or outlying hospital, to a large and specialized hospital. A district hospital should have a desirable size of 200 beds, be located on 15 to 20 acres of land, serve a population of between 50,000 to 75,000 persons, be near a district center, and have good transportation access. Larger hospital facilities would have a desirable size of 500 beds, be located on a site of 25 acres or more, serve a metropolitan area, and be within a special medical center area, preferably near a medical school. Good transportation access is essential. The Hillsborough County

Board of Public Assistance is currently evaluating the need for a new hospital in the Tampa area. A thorough study of long-range public hospital requirements should also be undertaken.

(b) Civil Defense disaster centers require the development of new concepts in public building planning. The necessity of providing such centers is becoming increasingly obvious owing to mounting international tensions, not to mention their possible use during periods of natural disasters including hurricanes, floods, etc. At least one civil defense control center should be provided. Other shelter areas outside of the critical target area around MacDill A. F. B. and the general Interbay section should be selected and provision made for adequate short-term protection from possible disasters.

(c) Other specialized public building uses, including publicly-operated universities, fair grounds, cemeteries, museums, community centers, etc., require careful consideration on an individual basis since they seldom can be related to any general planning standards. Airport facilities have been discussed elsewhere within this report.

Most existing public buildings, particularly those constructed over the last 30 years, will probably be retained over the planning period or until 1930. The probable life of such

facilities is about 50 years. New public structures, however, should fit into and become integral parts of a planned pattern of community development.

Future Public Building Pattern

For the most part, the future pattern of community development in Hillsborough County will determine the need and appropriate locations of localized public buildings and facilities such as branch libraries, fire stations, and the like. Following completion of the Preliminary Plan of Development which will outline basic future growth patterns, space and location studies of future public buildings required should be undertaken by the City-County Planning Commission as a part of its advance planning program.

A study of major commercial centers is scheduled by the Planning Commission in the near future. Appropriate development of centralized public buildings will be considered as a part of this study.

Briefly stated, the major problems of public building locations are as follows:

1. Centralized public building groupings require detailed study before development plans can be formulated. Tampa, Plant City, Temple Terrace, Brandon, and Ruskin appear to be areas potentially suitable for civic center developments.

2. Localized public buildings are primarily dependent upon the distribution of population. If the population is distributed over wide geographic areas of the county, it will be more difficult to provide proper public community facilities and services than if it were compact and distributed evenly around a central core.

3. Certain existing public buildings and their service areas will be disrupted owing to construction of the Interstate Highway system through Hillsborough County.

4. Coordination of new private developments with eventual public building or service needs will add to more efficient and economical operation.

Summary

Capital investments for major public facilities such as schools, water and sewer systems, and fire and police protection are essential and are made more or less automatically as population expands or as industrial and commercial developments take place. It is also desirable to expand park and library facilities in proportion to population increase, but the automatic provision feature is not as essential. It is possible, although not desirable, to accept lower standards of the latter, but impossible for a community to expand properly without the former facilities.

The locations of both the essential and desirable public facilities described in the preceding section can materially contribute to the development of an improved and more efficient community pattern. However, over-all coordination and direction to both private and public efforts in this field must be brought about. One of the purposes of the City-County Planning Commission's program is to assist local governments and the general public to make proper decisions in establishing new capital improvements.

From the standpoint of sound development of Hillsborough County's economy, wise public decisions are essential.

What a local area does bears directly upon what it can expect in the way of private development. Local public policy can set the general framework within which existing entrepreneurs can either prosper or fail. It can make the local area either more or less attractive for new investments; it can set the stage for private capital to more fully utilize the area's economic assets, or by failing to remove bottlenecks it can stifle this private investment altogether. Public policy can largely determine the efficiency of local land use patterns -- it can perpetuate a haphazard pattern of development that can block future growth or encourage more orderly development that can attract and protect investments. 109/

APPENDICES

Appendix A. FOOTNOTES

Section I. Introduction

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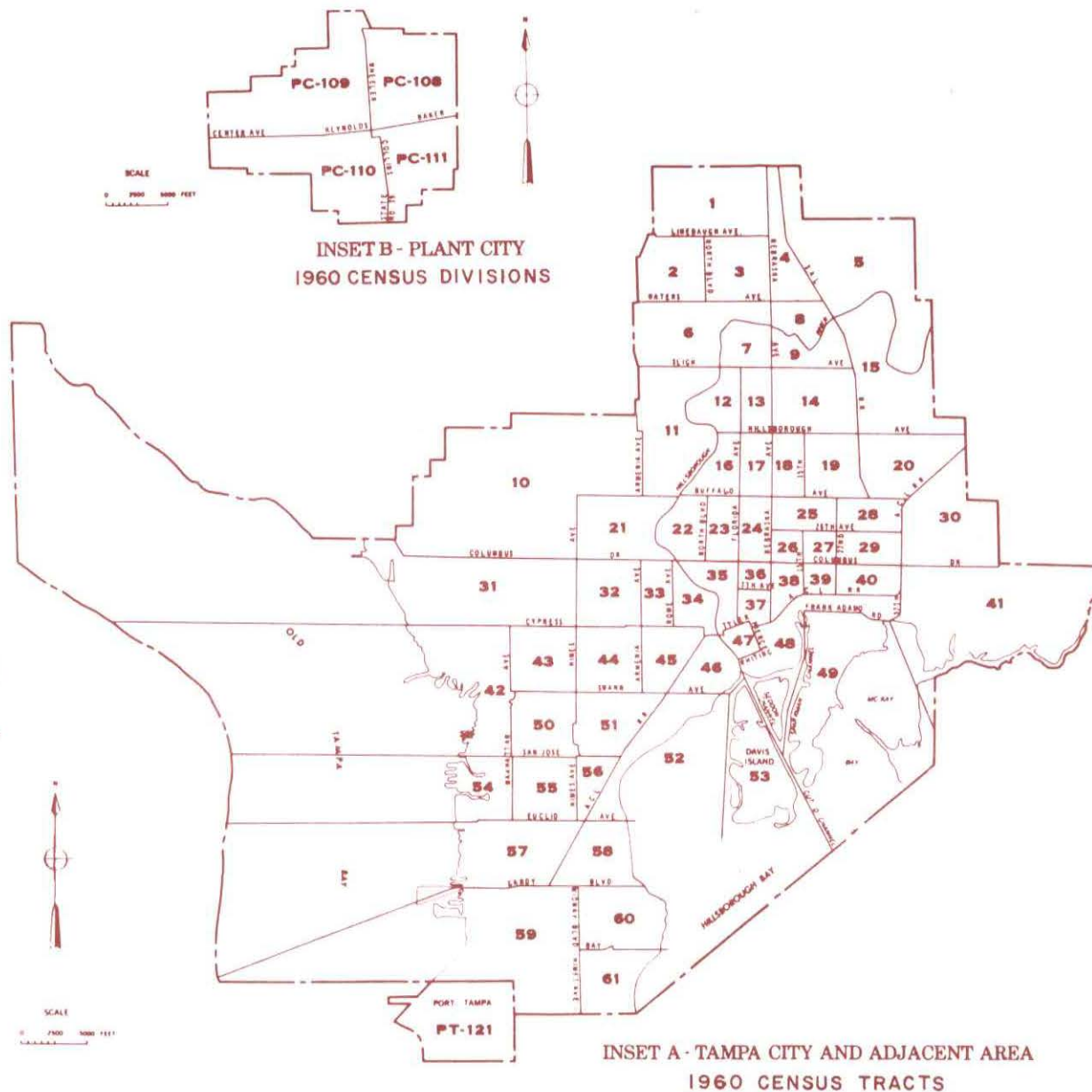
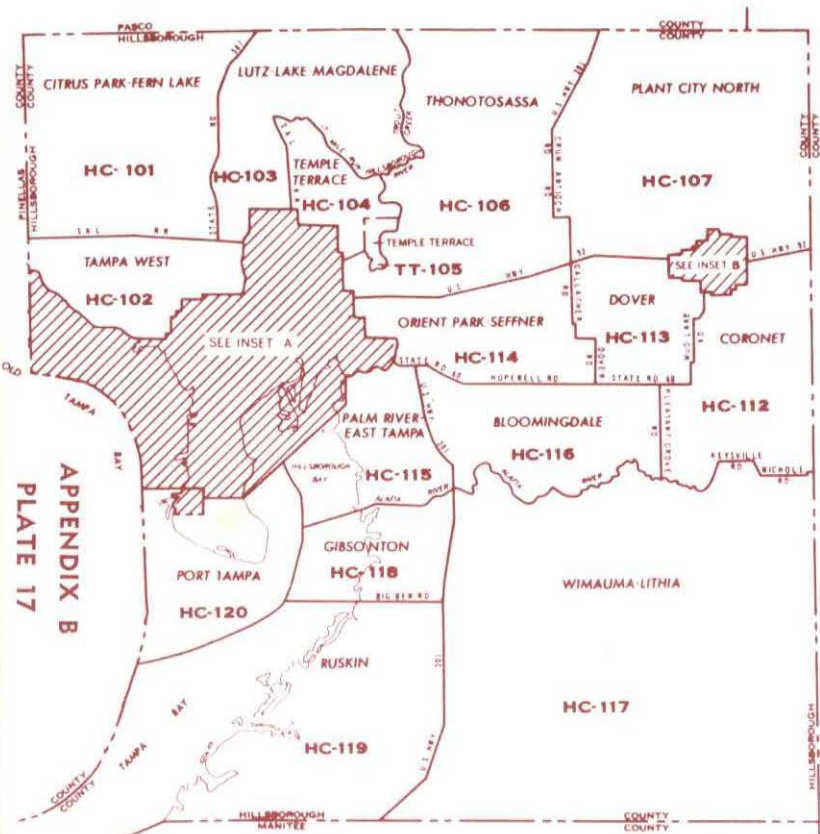
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Appendix B. SUMMARY OF

1960 U. S. CENSUSES OF POPULATION AND HOUSING



APPENDIX B

TABLE 6

SUMMARY OF 1960 U. S. CENSUSES OF POPULATION AND HOUSING

HILLSBOROUGH COUNTY, FLORIDA

Prepared by Hillsborough County Planning Commission

September, 1, 1961

POPULATION				NUMBER AND TENURE OF HOUSING UNITS								VALUE AND RENT OF OCCUPIED UNITS				CONDITION OF ALL HOUSING UNITS						NON-WHITE OCCUPIED HOUSING UNITS			
Census Tract Number	Total Population (April 1, 1960)	Non-White Population		Total Number of Housing Units	Owner Occupied Units		Renter Occupied Units		Vacant Units		Median Value of Owner Occupied Units (In Dollars)	Average Rent of Renter Occupied Units (In Dollars)	Sound Condition		Deteriorating or		Dilapidated Condition		Total Number and Percent of All Units		Deteriorating or Dilapidated Units (Number and Percent of Non-White Units)				
		Number	Percent		Number	Percent	Number	Percent	Number	Percent			Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent			
City of Tampa																									
1	6,231	1	00.0+	1,999	1,765	88.3	99	05.0	135	06.7	12,600	68	1,960	98.0	37	01.9	2	00.1	-	-	-	-			
2	3,196	5	00.2	1,090	922	84.6	94	08.8	74	06.8	8,100	58	938	86.1	106	09.7	46	04.2	2	00.2	-	-			
3	4,393	393	13.5	1,708	1,265	74.1	273	16.0	170	09.9	6,700	48	1,428	83.6	218	12.8	61	03.6	155	09.1	86	55.5			
4	3,683	423	11.5	1,363	928	68.1	312	22.9	123	09.0	5,500	53	1,218	89.4	109	07.8	39	02.8	109	08.0	4	03.7			
5	7,319	2	00.0+	2,348	1,935	82.5	214	09.0	199	08.5	7,000	60	2,175	92.6	142	06.1	31	01.3	2	00.1	-	-			
6	5,199	4	00.1	1,931	1,621	84.0	179	09.2	131	06.8	9,400	40	1,668	86.4	194	10.5	69	03.6	1	00.1	-	-			
7	3,692	9	00.2	1,431	698	48.8	610	43.0	117	08.2	8,400	40	1,215	84.9	183	12.8	33	02.3	1	00.1	-	-			
8	3,214	-	00.0	1,400	867	62.5	367	26.2	158	11.3	6,200	48	1,073	76.6	299	21.4	28	02.0	-	-	-	-			
9	2,819	-	00.0	948	804	84.8	95	10.0	49	05.2	11,000	63	933	98.4	14	01.5	1	00.1	-	-	-	-			
10	7,491	10	00.1	2,766	1,618	58.5	805	29.1	343	12.4	9,100	61	2,356	85.2	360	13.0	50	01.8	1	100.0+	-	-			
11	6,767	8	00.1	2,198	1,886	85.8	197	09.0	115	05.2	10,600	67	1,852	84.2	285	13.0	61	02.8	2	00.1	1	50.0			
12	3,162	6	00.2	1,200	913	76.1	216	18.0	71	05.9	8,600	50	1,705	92.6	118	06.3	20	01.1	1	00.1	1	100.0			
13	3,415	1	00.0+	1,323	906	68.5	331	25.0	86	06.5	9,500	56	1,073	81.1	197	14.9	53	04.0	1	00.1	-	-			
14	5,363	5	00.1	1,841	1,586	86.2	183	09.9	72	03.9	10,000	61	1,705	92.6	118	06.3	20	01.1	2	00.1	-	-			
15	5,346	52	01.0	1,578	1,288	81.6	210	13.3	80	05.1	8,200	50	1,160	73.5	321	20.3	97	06.2	1	00.1	-	-			
16	3,246	-	00.0	1,177	923	78.4	182	15.5	72	06.1	8,600	50	1,021	86.7	136	11.8	20	01.7	-	-	-	-			
17	3,022	1	00.0+	1,243	711	57.2	441	35.9	91	07.3	9,500	55	1,616	78.6	232	17.9	45	03.5	1	00.1	-	-			
18	4,766	1,384	29.0	1,483	1,068	72.0	245	23.3	70	04.7	6,700	48	1,086	73.2	253	17.1	144	09.7	354	23.9	199	56.2			
19	6,702	3,446	51.4	2,087	1,453	69.6	481	23.1	153	07.3	5,500	46	1,313	62.9	591	28.3	183	08.6	947	45.4	475	50.2			
20	4,922	3	00.1	1,584	1,325	83.6	182	11.5	77	04.0	8,700	49	1,456	91.9	114	07.2	14	00.9	-	-	-	-			
21	3,894	3	00.1	1,235	1,080	87.4	121	09.8	34	02.8	9,500	68	1,216	88.5	11	00.9	8	00.6	-	-	-	-			
22	3,180	2	00.1	1,258	991	55.0	451	35.9	114	09.1	7,700	56	834	66.4	330	26.3	92	07.3	-	-	-	-			
23	5,083	2	00.0+	1,827	741	40.6	853	52.1	133	07.3	8,500	42	1,602	87.7	201	11.0	24	01.3	-	-	-	-			
24	4,818	1,974	41.0	1,492	643	43.1	774	51.9	75	05.0	7,300	40	1,408	84.4	54	03.6	30	02.0	468	31.4	3	00.6			
25	2,787	4	00.1	980	575	58.7	332	33.9	73	07.4	7,100	44	814	83.1	140	15.2	17	01.7	1	00.1	-	-			
26	4,604	915	19.9	1,368	513	37.5	791	57.8	64	04.7	6,200	39	1,204	88.0	110	08.0	54	04.0	240	17.5	84	35.0			
27	5,185	4,338	83.7	1,450	968	66.1	713	49.2	69	04.7	6,600	40	779	53.7	344	23.7	327	22.6	1,125	77.6	519	46.1			
28	4,213	3,111	73.8	1,341	744	55.5	515	38.4	62	08.1	6,900	46	700	52.2	344	25.7	297	22.1	923	68.8	557	60.3			
29	2,620	223	8.5	781	621	81.6	109	14.3	31	04.1	6,200	46	532	69.9	179	23.5	50	06.6	57	07.5	32	56.1			
30	1,841	1,281	69.6	848	445	51.2	63	11.5	40	07.3	8,400	57	932	89.9	41	07.5	12	02.2	312	36.9	11	03.5			
31	5,337	3	00.1	1,634	1,338	81.9	244	14.9	52	03.2	7,600	45	1,366	83.6	191	11.7	77	04.7	2	00.1	1	50.0			
32	5,177	3,157	53.7	1,764	1,003	56.9	385	21.8	85	04.8	6,200	44	996	56.3	330	30.0	238	13.5	840	47.6	504	60.0			
33	6,478	5,609	86.6	2,148	924	43.0	1,152	53.6	72	03.4	7,700	41	1,695	78.9	395	18.4	58	02.7	1,584	73.7	358	22.6			
34	4,103	1,843	44.9	1,720	477	27.7	1,062	61.8	81	05.5	8,700	43	914	53.1	602	35.0	204	11.9	550	32.4	411	74.7			
35	2,898	3	00.1	1,358	395	29.1	817	60.2	146	10.7	9,500	44	1,007	74.1	266	19.6	85	06.3	3	00.2	1	33.3			
36	6,036	5,168	85.6	2,054	211	10.3	1,687	82.1	156	07.6	9,100	41	730	35.5	678	33.6	843	41.1	1,597	77.8	971	60.8			
37	6,248	3,563	57.3	2,016	640	31.7	1,270	63.0	104	05.3	6,600	42	1,063	52.7	678	33.6	275	13.7	1,022	50.7	553	54.1			
38	4,924	2,571	52.2	1,672	506	30.3	1,001	59.9	165	08.8	6,200	40	579	34.6	787	47.1	306	18.3	650	36.9	424	65.2			
39	3,734	2,157	57.8	1,120	556	49.6	499	44.6	65	05.8	6,900	40	665	50.4	376	33.6	79	07.0	565	50.4	218	38.6			
40	3,226	48	01.5	975	569	58.4	346	35.5	60	06.1	6,500	40	1,133	94.7	42	03.5	21	01.8	6	00.6	3	50.0			
41	3,693	7	00.2	1,196	85.3	78	06.2	78	06.5	20,300	80	1,428	95.8	50	03.4	13	00.8	-	-	-	-				
42	4,460	-	00.0	1,481	1,136	76.2	274	18.4	81	05.4	11,900	70	1,575	92.4	102	06.0	28	01.6	46	02.7	24	52.2			
43	4,781	162	03.4	1,705	1,252	73.4	370	21.7	83	04.9	10,300	67	1,575	92.4	102	06.0	28	01.6	46	02.7	24	52.2			
44	4,777	1,771	37.1	1,943	830	42.7	950	48.9	163	08.4	8,000	50	1,392	71.7	230	11.8	321	16.5	561	28.9	383	68.3			
45	5,975	285	04.9	3,491	750	21.5	2,156	61.8	885	16.7	9,200	58	3,001	86.0	469	11.7	81	23.2	89	02.5	79	88.6			
46	4,192	13	00.3	1,392	4	03.0	113	85.6	15	11.4	6,300	42	101	76.5	31	23.5	-	-	1	00.8	-	-			
47	2,664	1,718	64.5	961	291	30.3	550	57.2	120	12.5	6,300	42	299	31.1	580	60.4	82	08.5	474	49.3	353	74.5			
48	3,112	8	00.3	1,078	688	63.8	301	27.9	89	08.3	6,400	45	968	89.8	82	07.6	28	02.6	2	00.2	-	-			
49	3,987	2	00.1	1,207	1,049	86.9	112	09.3	46	03.8	13,700	92	1,209	80.6	3	00.2	2	00.2	-	-	-	-			
50	4,495	14	00.3	1,491	1,269	75.0	320	18.9	102	06.1	17,000	65	1,329	90.4	139	09.4	4	00.2	4	00.2	1	25.0			
51	5,109	9	00.2	2,356	1,105	46.7	1,042	44.0	219	09.3	13,600	69	2,170	91.7	182	07.7	14	00.8	2	00.1	1	50.0			
52	4,809	14	00.3	1,829	1,252	68.5	410	22.4	167	09.1	21,100	96	1,825	99.8	4	00.2	-	-	-	-	-	-			
53	4,420	1	00.0+	1,337	1,180	88.9	87	06.5	62	04.6	18,200	98	1,325	90.1	11	00.8	1	00							

13	3,410	1	00.0+	1,323	906	68.5	331	25.0	86	08.5	5	0.00	1,035	86.3	143	11.9	22	01.8	2	00.2	1	50.0
14	5,363	5	00.1	1,841	1,586	86.2	183	08.9	72	03.9	56	81	1,073	81.1	187	14.6	23	04.0	1	00.1	1	100.0
15	5,346	52	01.0	1,578	1,288	81.6	210	13.3	80	05.1	61	1,705	92.6	114	08.3	20	01.1	2	00.1	-	-	
16	3,246	-	00.0	1,177	1,258	83.6	182	15.5	72	06.1	50	8,200	76.4	321	20.3	97	06.2	1	00.1	-	-	
17	3,032	1	00.0+	1,243	1,171	87.4	441	35.0	91	07.3	50	8,400	75.5	136	11.6	20	01.7	-	-	-	-	
18	3,475	4	00.1	1,293	936	72.4	286	22.1	71	05.5	35	8,400	73.5	73	05.9	7	00.6	1	00.1	-	-	
19	4,766	1,384	29.0	1,483	1,068	72.0	345	23.3	70	04.7	38	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
20	3,646	54.4	2.087	1,483	881	23.1	481	23.1	48	04.8	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
21	4,922	3	00.1	1,584	1,325	83.6	192	11.5	72	03.9	46	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
22	3,894	3	00.1	1,235	1,080	87.4	121	09.8	34	02.8	46	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
23	3,180	2	00.1	1,256	691	55.0	451	35.9	114	09.1	35	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
24	5,053	2	00.0+	1,827	1,027	52.1	133	07.3	73	07.4	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
25	4,818	1,974	41.0	1,492	643	43.1	774	51.9	75	05.0	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
26	2,797	4	00.1	980	575	58.7	332	33.9	73	07.4	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
27	4,604	915	19.9	1,368	513	37.5	791	57.0	64	04.7	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
28	5,185	4,328	83.7	1,450	888	46.1	713	49.2	89	04.7	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
29	4,213	3,111	73.8	1,341	744	55.5	515	38.4	83	06.1	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
30	2,620	223	08.5	761	821	81.6	109	14.3	31	04.1	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
31	1,841	1,281	69.6	548	445	81.2	63	11.5	40	07.3	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
32	5,337	3	00.1	1,634	1,338	81.9	244	14.9	52	03.2	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
33	5,877	3,157	53.7	1,764	1,003	56.9	676	38.3	72	04.4	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
34	4,178	5,609	86.6	1,740	924	43.0	1,152	53.6	79	04.4	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
35	4,103	1,843	44.9	1,720	1,062	61.8	181	10.5	181	10.5	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
36	2,898	3	00.1	1,358	395	29.1	817	60.2	146	10.7	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
37	6,036	5,108	85.6	2,054	211	10.3	1,687	82.1	156	07.6	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
38	6,245	3,583	57.3	2,016	840	31.7	1,270	63.0	106	05.3	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
39	4,824	2,371	52.2	1,672	506	30.3	1,001	50.9	165	08.0	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
40	3,734	2,157	57.8	1,120	456	49.6	469	44.0	65	05.8	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
41	3,236	46	01.5	975	569	58.4	346	35.5	80	06.1	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
42	3,693	7	00.2	1,196	1,020	85.3	98	08.2	78	06.5	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
43	4,400	-	00.0	1,481	1,136	78.2	274	18.4	81	05.4	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
44	4,781	182	03.4	1,705	1,136	78.2	274	18.4	81	05.4	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
45	1,771	1,771	37.1	1,943	830	42.7	950	48.9	163	08.4	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
46	5,975	295	04.9	3,491	750	21.5	2,156	61.0	585	16.7	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
47	2,654	11	05.7	132	113	85.6	115	11.4	50	07.5	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
48	1,710	1,710	64.5	961	291	30.3	550	57.2	120	12.5	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
49	3,112	8	00.3	1,078	688	63.8	301	27.0	89	08.3	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
50	3,987	2	00.1	1,297	1,040	86.9	112	09.3	146	03.8	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
51	4,465	14	00.2	1,691	1,269	75.0	320	18.9	102	06.1	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
52	5,109	10	00.2	2,386	1,105	46.7	1,042	44.0	219	09.3	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
53	4,809	14	00.3	1,829	1,252	68.5	410	22.4	167	09.1	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
54	4,420	1	00.0+	1,337	1,188	88.9	87	06.5	62	04.6	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
55	6,110	6	00.1	1,940	1,699	87.6	161	08.3	80	04.1	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
56	2,681	3	00.1	1,018	714	70.1	255	25.1	49	04.8	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
57	8,466	0	00.0	2,697	2,282	87.5	122	04.7	70	04.0	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
58	4,195	15	00.4	1,571	1,184	77.8	234	15.4	14	06.0	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
59	8,865	21	00.2	2,446	2,043	83.5	245	10.0	103	06.8	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
60	4,510	20	00.4	1,534	1,048	68.3	384	25.0	102	06.7	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
61	3,260	215	06.6	733	468	63.8	221	30.2	44	06.0	44	8,400	73.5	136	11.6	20	01.7	-	-	-	-	
City of Tampa Totals																						
274,870 46,453 16.9 94,936 60,038 63.2 28,170 29.7 6,728 07.1 9,328 (4) 52 77,207 81.4 12,820 13.5 4,819 05.1 12,720 13.4 6,261 48.2																						
Census Tracts of Other Incorporated Places and MacDill Air Force Base																						
PT 121 (City of Port Tampa)	1,764	834	35.9	574	392	66.5	153	26.7	39	06.8	Information Not Available	Information Not Available	433	75.4	89	15.5	52	00.1	180	31.4	100	55.6
TT 105 (City of Temple Terrace)	3,812	26	00.7	1,068	924	86.5	77	07.2	67	06.3	Information Not Available	Information Not Available	1,059	92.2	9	00.8	-	-	1	00.1	-	-
HC 130 (MacDill Air Force Base)	4,145	322	07.8	846	-	-	718	85.0	127	15.0	-	-	679	80.3	165	19.5	2	00.2	57	06.7	22	38.6
PC 108	3,076	4	00.1	1,061	809	76.2	170	16.0	82	07.8	888	83.7	125	11.8	48	04.5	-	-	-	-	-	
PC 109	4,264	1	00.0+	1,554	1,066		304	19.5	182	11.7	795	88.9	146	08.4	26	01.7	-	-	-	-	-	
PC 110	4,260	1,572	36.9	1,376	724	52.6	549	39.9	103	07.5	747	57.8	389	28.3	192	13.9	410	29.8	230	56.1		
Plant City Totals																						
15,711 4,557 29.0 5,240 3,194 61.0 1,585 30.2 461 08.8 3,812 72.7 899 17.2 529 10.1 1,225 23.4 622 50.8																						
Census Tracts of Hillsborough County Unincorporated Areas (5)																						
101	3,580	102	02.8	1,358	862	63.5	176	13.0	320	23.5	1,083	78.3	176	13.0	119	08.7	32	02.4	16	50.0		
102	12,327	16	00.1	4,224	3,240	76.7	283	06.7	701	16.6	3,802	90.0	146	03.5	276	06.5	6	00.1	3	50.0		
103	10,587	13	00.1	3,904	2,699	74.3	452	11.6	553	14.2	3,447	88.3	342	08.0	114	08.0	5	00.1	-	-		
104	6,617	71	01.1	2,154	1,646		180	10.0	4	00.2	4	00.2	-	-	-	-	-	-	-	-		
105	1,891	0	00.0	1,000	98.2	17	01.7	-	-	-	-	-	-	-	-	-	-	-	-	-		
106	2,592	14	00.6	1,000	98.2	17	01.7	-	-	-	-	-	-	-	-	-	-	-	-	-		
107	1,452	58	02.8	1,000	98.2	17	01.7	-	-	-	-	-	-	-	-	-	-	-	-	-		
108	2,389	32	01.3	1,000	98.2	17	01.7	-	-	-	-	-	-	-	-	-	-	-	-	-		
109	1,329	160	11.0	1,000	98.2	17	01.7	-	-	-	-	-	-	-	-	-	-	-	-	-		
110	673	55	07.5	1,000	98.2	17	01.7	-	-	-	-	-	-	-	-	-	-	-	-	-		

... a joint City-County
Planning Commission
serving the cities of
Tampa, Plant City, and
Temple Terrace, and the
County of Hillsborough

HILLSBOROUGH COUNTY PLANNING COMMISSION

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Vice-Chairman	Matt Jetton
	Paul Bearss
	Joseph E. Hendricks
	George S. Jenkins
	C. Bruce Jones
	Bruce M. Robbins, Sr.
	Jack L. Rodriguez
	Joe H. Taylor
	Frank Valenti

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Frank Blandford, Assistant Director
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James C. McDonnell, Land Planner
Clarence Robinson, Research Planner
Donald Barnes, Planning Aide (Temporary)
Elliot Lipson, Planning Aide (Temporary)

Lionel Michaud, Chief Draftsman
Victor Garcia, Draftsman
James Lashley, Junior Draftsman
Bruce Lashley, Draftsman (Temporary)
Rita Sneath, Secretary
Barbara Tankersley, Stenographer
Doris Walter, Stenographer

Room 274

County Courthouse

Tampa 1, Florida

