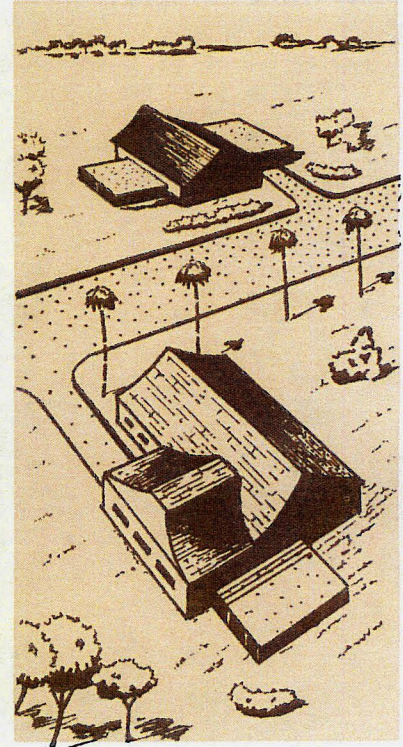
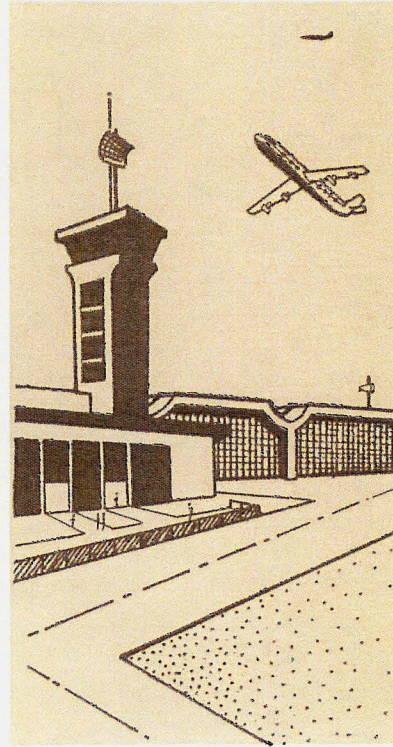
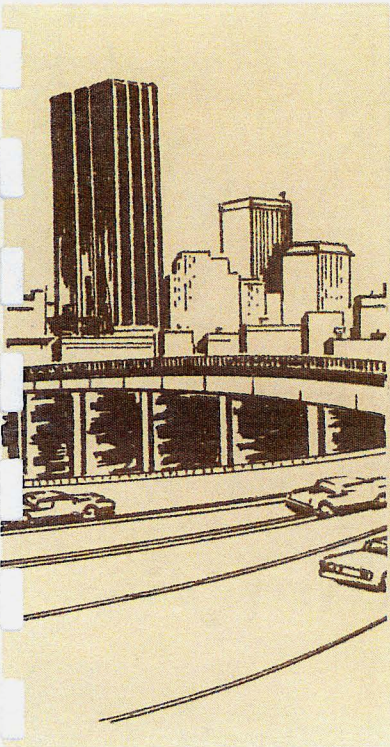


HOW SHOULD WE GROW: SOME BEGINNING CONSIDERATIONS



VOLUSIA AREA PLANNING COMMISSION

PUBLIC INFORMATION SERIES

The Volusia Area Planning Commission is responsible for the establishment of a comprehensive plan for the future growth and development of Volusia County. The Commission strongly believes that public officials and residents should participate in the preparation of the comprehensive plan. Their involvement will assure that the plan properly reflects the aspirations and goals of the entire community.

The Volusia Area Planning Commission will publish a series of five information reports in order to provide officials and residents with an understanding of the planning process and a basis for participating in planning decisions. The objectives of these reports are : (1) to present basic population and economic data necessary for plan development; (2) to outline basic planning principles and goals that will become a part of the plan; and (3) to develop a first phase comprehensive plan. Each of the five reports is summarized below.

VOLUSIA'S POPULATION: PAST, PRESENT AND FUTURE

An analysis of the population of Volusia County and its urban centers. The study reviews population characteristics, estimates current population levels and forecasts future population. The distribution of population is examined and illustrated.

VOLUSIA'S ECONOMY: NOW AND TOMORROW

An analysis of weaknesses and strengths in the economy and a forecast of Volusia County's future economy. Attention is given to the major segments of the economy.

HOW SHOULD WE GROW: SOME BEGINNING CONSIDERATIONS

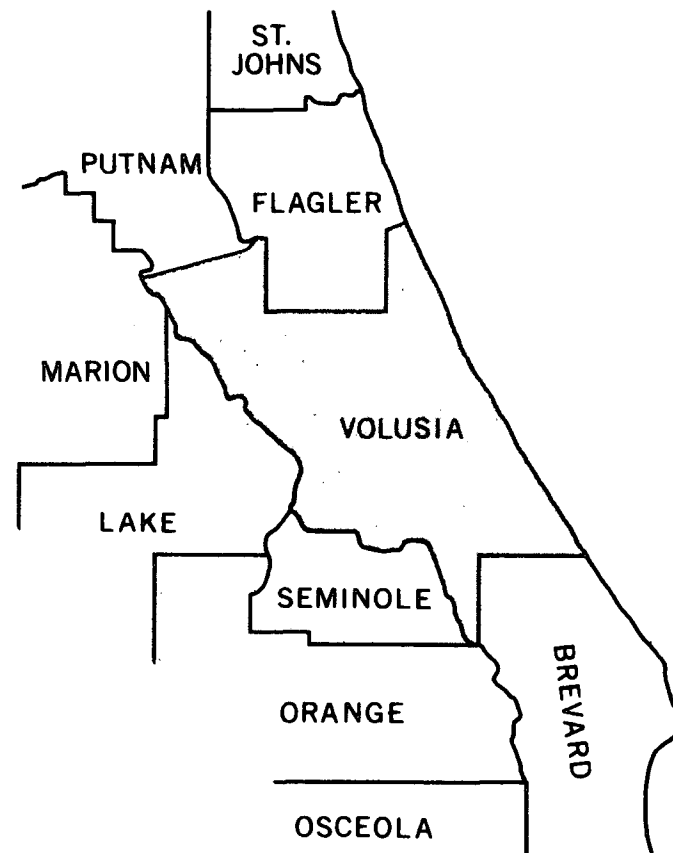
The advantages of compact development are explored. This study is a conceptual plan of how countywide development might occur. Consideration is given to urban expansion, circulation, conservation and agriculture.

METROPOLITAN COASTAL AREA PLAN

A detailed study of the coastal area is presented as a refinement of the conceptual plan. The first phase comprehensive Coastal Area Plan discusses the relationship of future land use (high and low density residential, commercial, industrial and public) and suggests major highway location.

SOUTHWEST VOLUSIA URBAN AREA PLAN

The Southwest Volusia Urban Area includes the communities of DeLand, Lake Helen, Orange City, DeBary, DeLeon Springs, Deltona and their environs. A first phase comprehensive plan similar to that developed for the Coastal Area is presented for Southwest Volusia.



VOLUSIA COUNTY & VICINITY

HOW SHOULD WE GROW: SOME BEGINNING CONSIDERATIONS

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VOLUSIA AREA PLANNING COMMISSION
OCTOBER, NINETEEN SIXTY-SEVEN PRICE: THREE DOLLARS

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INTRODUCTION

How should we grow?

This basic question is vitally important to all Volusia County residents. Urban growth will have a significant impact, either positive or negative, on agricultural and conservation areas. Transportation and utilities systems should be designed to serve the pattern of future urban development. Only after the general pattern of growth for urban areas is decided should a preliminary plan for county development be considered.

The question of how should we grow implies two things: first that we will grow and second that we have a choice as to how growth will occur. Considerable evidence supports the conclusion that we will grow. A previous Volusia Area Planning Commission report pointed out that Volusia County has grown from a population of 125,000 in 1960 to 174,000 in 1967. By 1980, we can anticipate 275,000 residents, and by the year 2000, the population will probably reach 500,000.

The governmental policies we adopt determine the growth pattern we will have. Most local governments in our county already have land use regulations and various policies that affect the growth pattern. These include zoning, subdivision regulations, and policies regarding extension of utilities and public investment. In most instances, land use controls and public policies were adopted to solve immediate problems with little regard to their impact on the future growth pattern. Land use controls and public policies can be effective tools to achieve a desirable pattern of development, once the pattern is identified.

This report examines alternative forms of urban development and the effect each would have on Volusia County. The discussion of alternative development forms is concerned with the distribution of urban land area under various growth patterns because of the structuring influence urban forms exert on other elements of the plan.

After establishing the best form of urban growth for Volusia County, the report describes a preliminary plan for county development. The plan concentrates on the urban land needs for 1980 and the year 2000. A transportation system to serve existing and future urban areas is considered together with the need for conservation areas and development of agricultural potentials. Understanding of these elements and their interrelationship provides a basis for answering the question.

CHAPTER I

THE URBAN FORM

Fortunately or unfortunately, growth has come to Volusia County. In more recent years, the pace of growth has accelerated and will probably continue to accelerate in the future. As more and more people arrive, opportunities for economic gain will multiply — but so will such problems as water pollution and traffic congestion. It seems prudent, therefore, that we should give more attention to this question of “How should we grow?” than has heretofore been the case.

The basic choice that must be made before a preliminary plan can be developed is the urban growth pattern. To guide this choice, the existing pattern of urban development is evaluated to see how we have grown. Next, three specific forms of urban development are studied and compared. A recommendation of the growth pattern best suited for Volusia County is then made.

Urban development in Volusia County may occur in an infinite variety of physical arrangements or development patterns. This infinite number of development forms can be regarded as a continuum ranging from a uniform dispersal of activities over the county at one extreme to the concentration of all activities at a single point at the other extreme. To help formulate a preliminary plan, three development forms have been evaluated: dispersed, corridor and compact.

Each of the three is mapped and described later. For the purpose of analysis, each is regarded as a theoretically "pure" form, although none of them are likely to occur in their pure state. The actual county growth pattern will probably be a combination of several forms. Through carefully considered public policies, future growth can be guided into the pattern which combines the best aspects of these development alternatives.

The growth form that is best for Volusia County is the one that will lead to the long range goals and objectives for the development of our county. A restatement of the Volusia Area Planning Commission's goals is presented in order that these goals may be related to the various development alternatives. The Commission's basic objective is to help create the best possible living, working and leisure time environment for all the residents of Volusia County. The Commission's specific goals are:

- To protect existing residential areas from encroachment by detri-

- mental uses and to encourage variety and innovation in housing
- To encourage commercial centers rather than strip commercial development; to guide industrial uses to those areas best suited for industry; and to preserve prime agricultural lands for agricultural pursuits.
- To develop the highest possible level of public facilities and services for all citizens at the lowest possible cost.
- To protect and improve the social, cultural, aesthetic and other amenities expressed in the physical development of the county and its municipalities.
- To preserve and enhance scenic areas, historic sites, and open spaces, and to reserve adequate lands for park and recreation purposes.
- To conserve natural resources by preventing further contamination of air and water, and protecting water recharge areas and surface water bodies.

THE EXISTING PATTERN

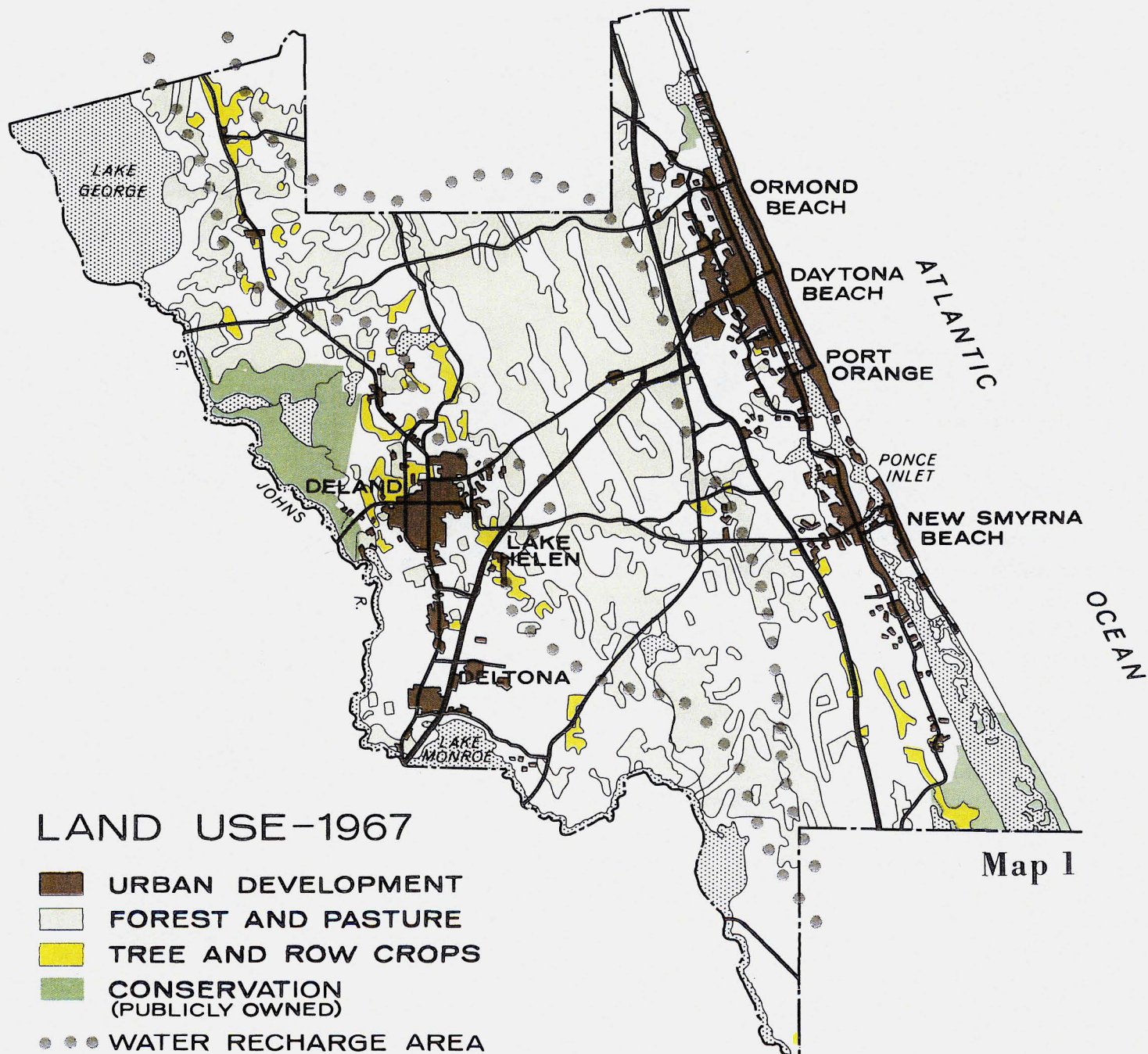
The map of existing development (see opposite page) illustrates the pattern of growth that has occurred in Volusia County. Existing development is classified as urban or agricultural. Managed forest and pasture areas, which account for a high percentage of the land area, are distinguished from other agricultural lands. The road networks that connect Volusia's urban areas with each other and with areas outside of the county are shown.

A recently completed United States Geological Survey study indicates that the central lowland area is the principal water recharge area in Volusia County, and suggests methods to conserve this vital resource. The general extent of this area is indicated on the map.

Urban development in Volusia County presently has a total of 41,800 acres. These urban areas contain 174,000 people, with an average population density of 4.2 persons per acre. Urban development is concentrated in two general areas: the Metropolitan Coastal Area and the West Volusia Urban Area.

The Coastal Area, which extends from Ormond Beach on the north to Edgewater on the south, is about 25 miles long and 4 miles wide. The greatest population concentration is in the Ormond Beach-Holly Hill-Daytona Beach area. A major break in this densely built-up pattern occurs at Ponce Inlet-Spruce Creek. The predominant development form in the Coastal Area is a linear or corridor pattern. The areas on the peninsula and around the central cities of Daytona Beach and New Smyrna Beach are relatively compact; scattered or dispersed development has recently occurred on the fringes of the urban areas.

The West Volusia Urban Area, extending from DeLeon Springs on the north to DeBary on the south, measures about 16 miles north-south and 6 miles east-west. The area is characterized by small retirement settlements such as Lake Helen, Orange City, DeBary and DeLeon Springs. The greatest population concentration occurs in and around DeLand and in the rapidly growing community of Deltona. Scattered or dispersed development predominates in West Volusia. Several small centers have developed but these have a relatively low density.



ALTERNATIVE DEVELOPMENT FORMS

Volusia County may choose to follow one of the three basic development forms outlined below: dispersed, corridor or compact. Each of the development forms would have a different impact on the Volusia environment, and each would make the cost of providing public services and facilities either higher or lower. The positive and negative effects of each form on land use, public services and cost of government are discussed.

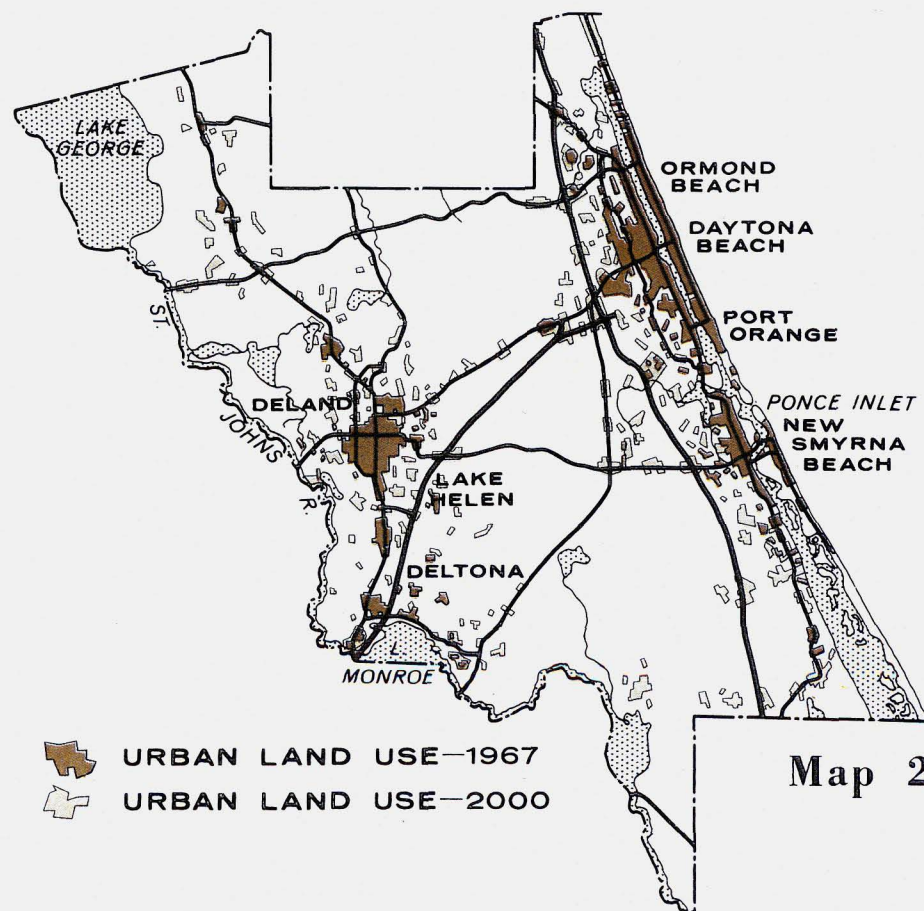
Dispersed Development

Dispersed development is the form that emerges when growth can occur anytime, anywhere, as dictated by market forces, land costs, personal choice or whim.

Dispersed development leads to unsafe and unhealthy conditions and destruction of visual assets. Housing served by septic tanks in poorly drained areas produces public health hazards. Commercial clutter replaces areas of unique scenic value. Other characteristics of dispersed development include:

- Residential sprawl; leap-frogging of good land to develop cheaper outlying areas which are more costly to provide with urban services.
- Industry interspersed with residential uses.
- Shopping facilities scattered; declining downtowns.
- Agricultural uses driven away from urban centers.
- Utility service by package plants and septic tanks making future integration into a system costly and endangering water supplies.
- Highway mileage up; continuous streets difficult to achieve.
- Low utilization of facilities; high cost of government.

The illustration of each development form has been designed for a population level of 500,000. The future allocation of urban land areas shown in illustrating dispersed and corridor development forms assumes that the present population density will be maintained. The illustration of compact development assumes that the density of urban development will increase 10 per cent.

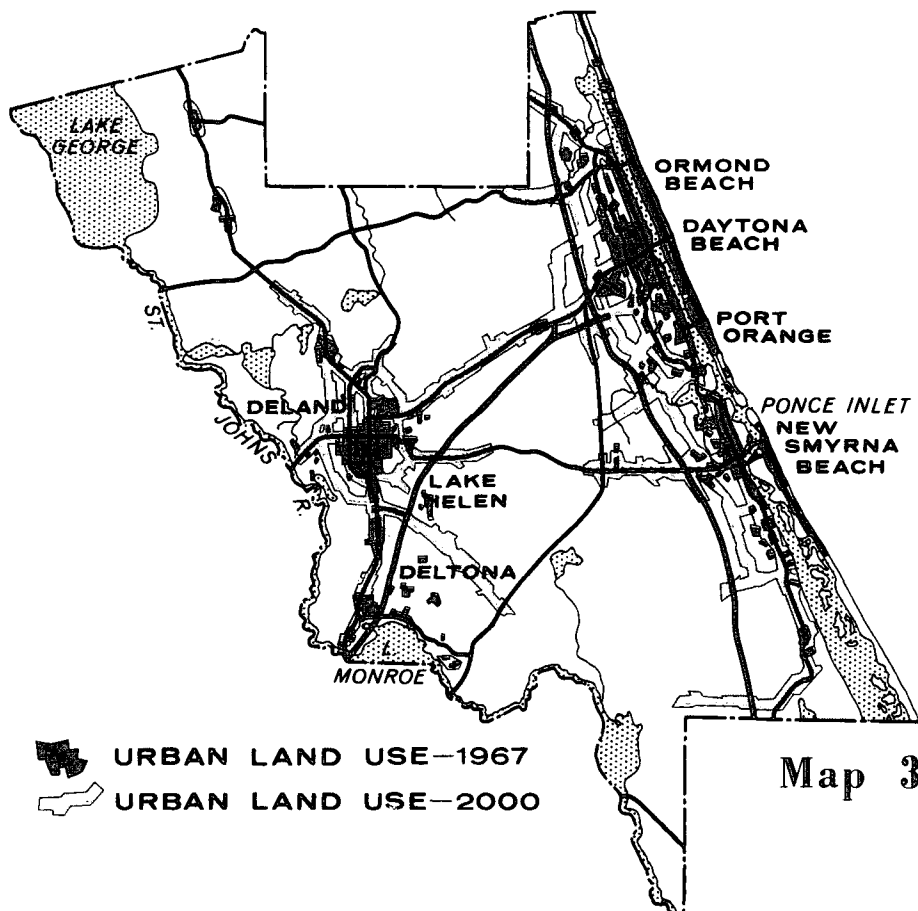


Corridor Development

Corridor development is typified by fingers of development extending along existing highways. The development pattern is *formless* in the sense that there are no identifiable neighborhoods or communities. Non-residential activities are distributed at random along the highways and intermixed with residential uses. Corridor development results in loss of amenities to tourists; travel is monotonous and slow; visual blight and disorder predominate along highways. Other characteristics of corridor development include:

- Residential development stringing out at the rear of commercial and industrial uses or along the highways.
- Strip commercial development scattered along highways.
- Utility systems costly to construct and inefficient.
- Highways hazardous because of uncontrolled ingress and egress, capacity limited, slow travel over long distances.
- Cost of government services high.

Some of the disadvantages of this form can be minimized by controlling and structuring corridor development. Transportation and utility spines can be used to connect activity centers and service roads can be constructed to minimize traffic congestion. These transportation-utility corridors can connect and serve clusters of clearly identified neighborhoods set apart by greenbelts with neighborhood-serving facilities at the center of each community.



Compact Development

Compact development emphasizes vertical growth and the filling in of areas that have been previously by-passed by development. Under this concept, existing cities and towns grow in two ways: horizontally by new suburban development at the edges and vertically by more intensive use of the already urbanized land.

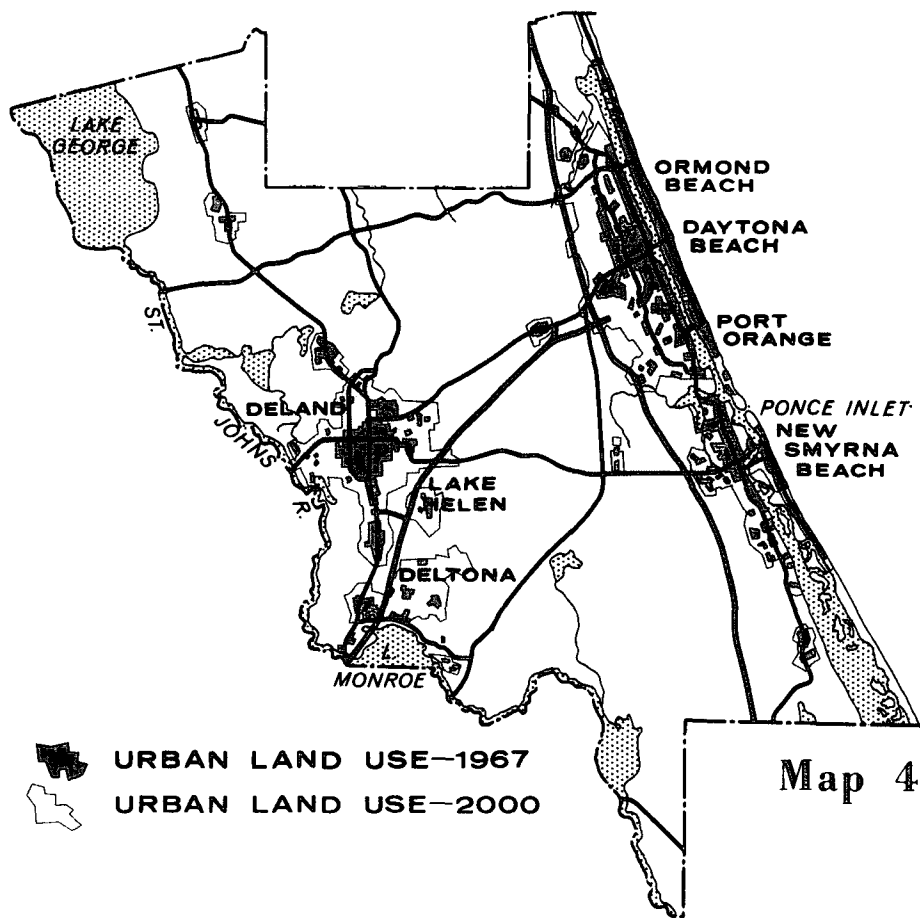
This form of development results in greater efficiencies in providing services and facilities. People are closer to the things they need or want to do, travel distances are shorter and some facilities can be reached on foot. Multi-family housing is encouraged particularly near shopping, recreation and other activity centers. More land is available for open space uses beyond the city.

The compact development concept also allows for new growth in the form of pre-planned communities. These new towns and urban centers could offer a variety of housing types and residential densities. They could also provide for industry and commerce, although they would not necessarily be self-sufficient communities. Other characteristics of the compact development form include:

- High density residential development at city core; suburban

spread limited to areas which show greatest potential for residential growth and which are not needed for agriculture, industry or open space.

- Planned industrial parks on the periphery of existing urban areas and separated from residential areas by green strips, selected industrial uses at the city center and at major transportation hubs.
- Central business districts updated to clean, modern, aesthetically pleasing shopping areas with off-street parking and other amenities; neighborhood shopping areas at or near intersections of major thoroughfares.
- Belts of agriculture around the limits of urban growth and in the areas between cities, well protected against urban encroachment.
- More efficient utilities and services such as fire and police protection, garbage pickup, sanitary sewers, etc., at lower cost since the areas served are compact.
- Short travel distances within the compact areas; good possibility that a mass transit system will be feasible.
- Efficient, economical government because of shorter utility lines and streets and a smaller total service area; a better level of services at lower cost to taxpayers.



RECOMMENDATION

The foregoing brief description shows that certain patterns of growth tend to produce more environmental benefits than others. In particular, the compact form of development not only offers the best opportunity to meet the stated goals of the Volusia Area Planning Commission, but also permit governmental services to be provided more efficiently and at the least expense to the taxpayer.

Compact development clearly has advantages over other forms of growth; however, some characteristics of the other development forms can suitably be incorporated in the plan for urban growth. For example, the character of the Coastal Area should continue to be linear, although it is recommended that the Halifax area and the New Smyrna Beach area retain their separate identity. Compact development should be encouraged within this linear form and should focus upon the cities of Daytona Beach and New Smyrna Beach. In West Volusia, while the scateration of smaller cities will remain, future growth should be encouraged near these cities rather than in isolated or remote areas.

After considering all factors at length, the Volusia Area Planning Commission endorses the general concept of compact development as being in the best interests of Volusia County, and further recommends that all subsequent long-range plans and programs of Volusia County and its municipalities be oriented towards this basic policy.

CHAPTER 2

THE PRELIMINARY PLAN

The previous chapter, by establishing the most desirable development form, provides the framework for formulating a preliminary plan. This chapter describes the preliminary plan for the future growth of Volusia County. A copy of the plan itself is in the pocket opposite of page 24.

The preliminary plan divides land use into three general categories — urban, conservation and agriculture. Subsequent studies of the Metropolitan Coastal Area and West Volusia Urban Area will refine the preliminary plan with respect to urban areas. These more detailed studies will be concerned with specific types of urban land use such as residential, commercial, industrial and public.

This chapter discusses planning considerations which significantly affect the development of the preliminary plan. The four elements (urban growth, transportation, conservation and agriculture) which make up the plan are evaluated in terms of their future needs and prospects. The implementation section discusses some of the tools that can be used to carry out the plan and some of the problems associated with the use of these implementation tools.

Among the factors that must be considered in evolving a development plan are Volusia's image, population growth, soil quality and topographic conditions.

Volusia's Image

Volusia's two distinct populated areas, the Metropolitan Coastal Area and the West Volusia Urban Area, are separated by the central lowlands, and an undeveloped forest area.

The Metropolitan Coastal Area is dominated by Daytona Beach and its resort atmosphere. This is a place where people come for fun, excitement and relaxation. Its rich variety of activities attracts visitors of many different ages and backgrounds, and has made the Metropolitan Coastal Area desirable to many as a place to live. The atmosphere in the southern part of the Coastal Area, in and around New Smyrna Beach, is quiet and relaxed, more like the communities of West Volusia.

The West Volusia Urban Area includes several small retirement communities in an agricultural setting, and a vacation area. DeLand, the largest city in West Volusia and the home of Stetson University, is widely known as a cultural center. Deltona is a rapidly growing new community; its growth and close relationship with the Orlando metropolitan area via Interstate-4 is having an impact on the relaxed atmosphere of West Volusia. The St. Johns River valley on Volusia's western boundary is famous for its natural beauty and fine fishing.

Population Growth

A previous Volusia Area Planning Commission study provides the population data and projections needed for development of a preliminary plan. The expected growth is a guide to the amount of urban land area that will be needed. As noted above, Volusia can expect a population of 275,000 by 1980, and of 500,000 by the year 2000. The preliminary plan uses these two population levels as a guide; however, the success of the plan does not depend on reaching a given population level by a certain date.

In addition to population estimates for the county as a whole, data on Volusia's two major population concentrations — the Coastal Area and West Volusia — are needed. The table below gives current and future population estimates for the county and the two major areas.

TABLE 1
POPULATION ESTIMATES AND PROJECTIONS

YEAR	WEST VOLUSIA	COASTAL	COUNTY*
1967	42,500	130,500	174,000
1980	71,900	202,700	275,000
2000	131,000	362,000	500,000

*The people who do not live either in West Volusia or the Coastal Area constitute only a minute portion of Volusia County's total population.

Soils

The types of soils that occur in Volusia County strongly influence the way land is used. Soil characteristics such as drainage, moisture capacity, permeability, texture and mineral portion differ widely throughout the county, offering a broad range of soil types with varying degrees of usefulness for urban development and agriculture.

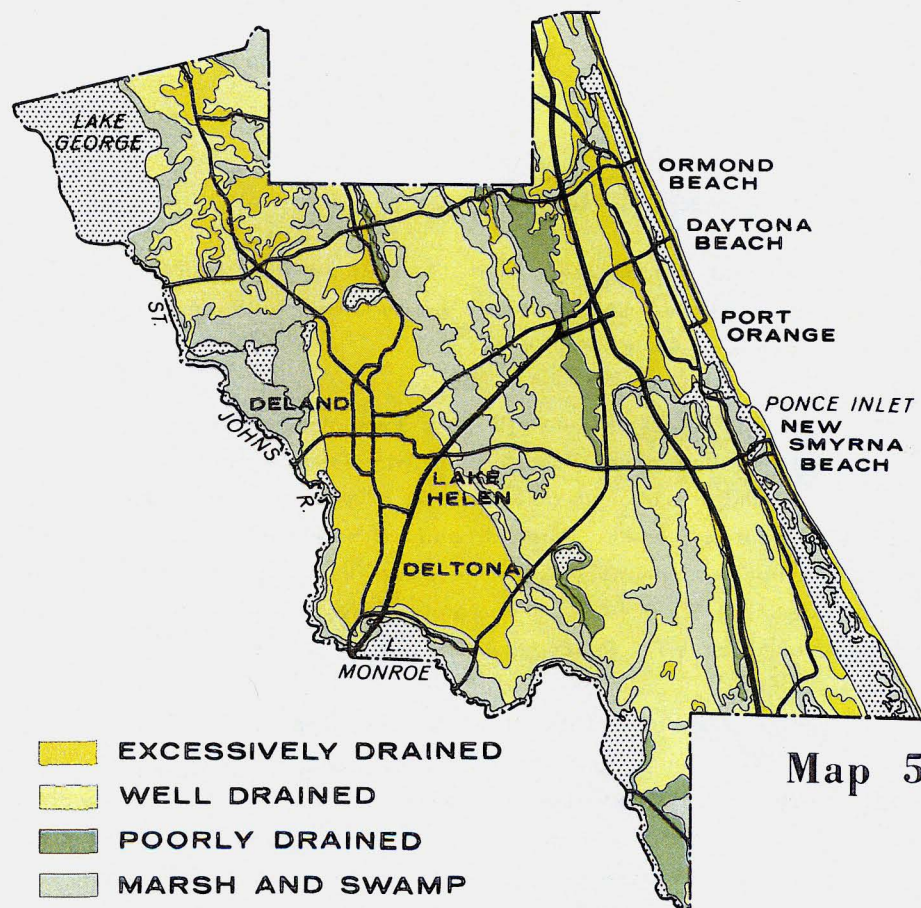
These characteristics were used to group soils into four categories in order to provide a generalized concept of the urban and agricultural utility of Volusia's soils. Drainage was considered the most important characteristic in determining soil usability. The uses and limitations of the four main soil types as classified by drainage are:

- **WELL TO EXCESSIVELY DRAINED** — Some limitations for dwellings; satisfactory for septic tanks, light industry, roads, railroads and airports; some limitations for agriculture.

- **MODERATELY WELL TO SOMEWHAT POORLY DRAINED** — Some limitations for dwellings and light industry; severe limitations for septic tanks; slight to severe limitations for roads, railroads and airports; satisfactory for agriculture.

- **POORLY TO VERY POORLY DRAINED** — Unsuitable for dwellings, light industry, roads or railroads, unless under complete water control; unsuitable for septic tanks as they will create health hazards; some limitations for agriculture.

- **MARSH AND SWAMP** — Unsuitable for urban uses, roads, railroads, and airports; not recommended for agriculture; suitable only for native vegetation, forest, water storage, wildlife and primitive recreation areas.



Topography

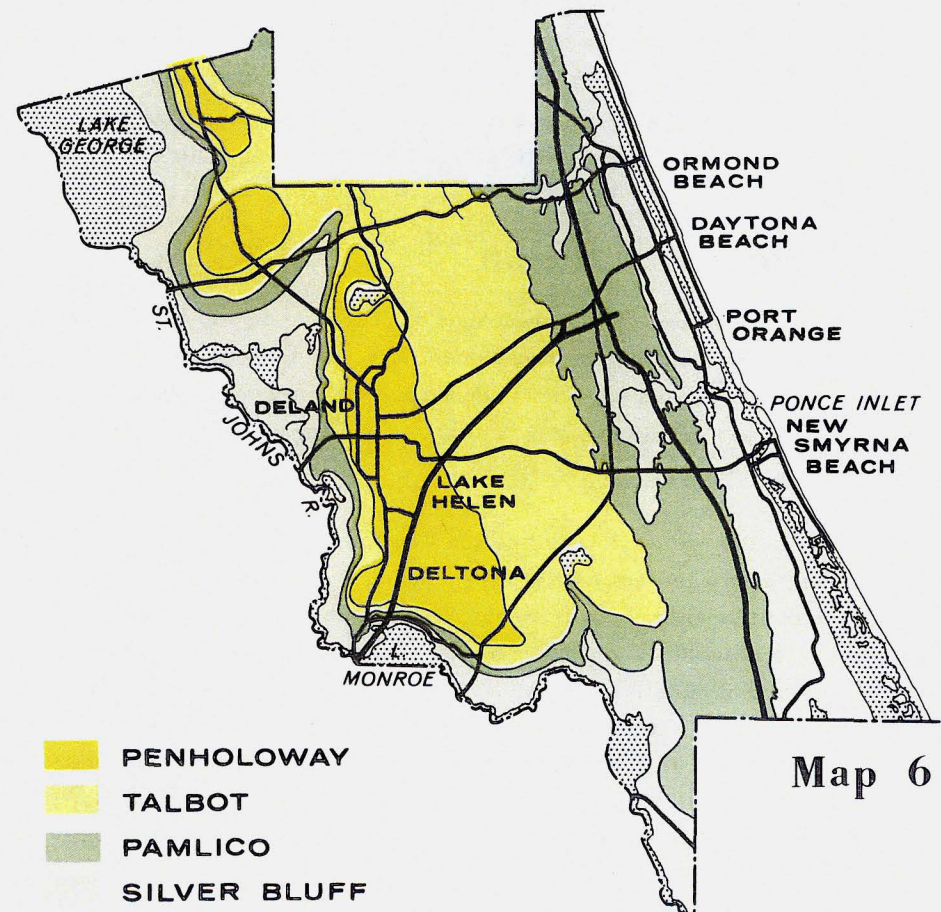
The topography of Volusia County is comprised of four marine terraces that were created over long periods of time by fluctuation of the ocean level. A brief description of each of these terraces follows:

- **PENHOLOWAY**—The Penholoway Terrace is the highest of the four—ranging from 70 to 100 feet above sea level. It has an irregular or more pitted land surface with numerous sinkholes which often become clogged, by nearly impermeable peaty material, that retards the downward movement of water, thus forming sinkhole lakes.
- **TALBOT**—Located in Central Volusia, the Talbot land mass, with a width of 10 miles is the widest of the terraces. It is relatively flat, with an elevation of 40 to 50 feet.
- **PAMLICO**—The Pamlico Terrace is approximately 6 miles wide, 25 to 30 feet above the sea and is basically level.
- **SILVER BLUFF**—Situated along the coast and the St. Johns River, this formation is the newest of the terraces. It is fairly level and averages 15 feet in elevation.

Generally, the sand hills found in various parts of Volusia are dunes that have built up along the edges of a terrace as the shoreline changes. The sand ridges found in the Halifax area between Clyde Morris Boulevard and Nova Road were formed in this manner.

Surface drainage in Volusia County is poorly developed because of the topography. Along the DeLand Ridge, rainfall seeps into the underground while small tributaries of the St. Johns River drain the areas west of the DeLand Ridge.

Spruce Creek and the Tomoka and Halifax Rivers are the principal means of drainage in the coastal area.



ELEMENTS OF THE PLAN

The preliminary plan combines four plan elements; urban expansion, transportation, conservation and agriculture. Although each element is evaluated and discussed separately, their relationship to each other has been carefully considered. The plan and its elements are an attempt to establish for all the people of Volusia County a common basis for understanding their problems and it provides objectives towards which all efforts can be directed without waste, confusion or ineffective action.

Urban Expansion

Areas where urban growth should occur were determined in accordance with the compact development form, soil and topographic conditions, and the existing roads and utilities systems. All residential, commercial, industrial and public uses should take place in the suggested urban expansion areas.

Because West Volusia and the Coastal Area have distinct development characteristics and growth potentials, it is necessary to differentiate between these two areas. West Volusia's better drained soils encourage scattered development since housing can be served by septic tanks, and the area is in fact composed of several low density suburban communities. The poor soils and drainage that characterize most parts of the Coastal Area mean that urban development there is dependent upon municipal or private sewer systems and man-made drainage systems. The Coastal Area has developed around central cities with a denser population.

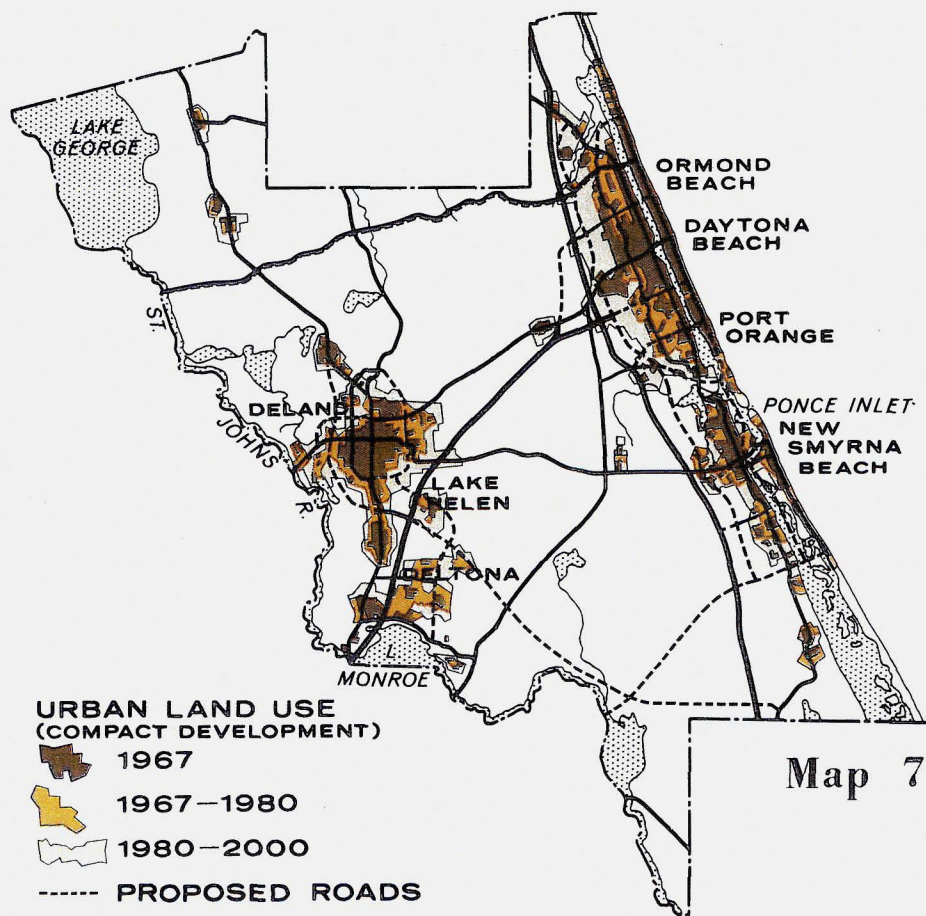
In order to define the most likely areas for urban growth, it is necessary to know how much urban growth is expected. The population forecasts indicate the number of people we will have, but the plan is concerned more with acres of land than with numbers of people. The amount of land needed for future urban expansion depends on both the anticipated population level and the population density.

Population density is useful in estimating the amount of land needed for future urban growth. Density is determined by dividing the number of people by the number of acres they occupy. Some 41,800 acres in Volusia County are presently devoted to urban use. Since the urban population totals 174,000, the average density of the county's urban areas is 4.2 persons per acre. Of the total urban land area, 15,700 acres are in West Volusia and 26,100 are in the Coastal Area.

Density in the Coastal Area is expected to increase from the present 5.0 persons per acre to 5.5 in 1980 and to 6.0 in the year 2000, mainly as a result of the anticipated shift to high-rise construction and multi-family housing. The expected increase in density in West Volusia from the present 2.7 persons per acre to 3.0 in 1980, and to 3.5 in the year 2000, will come primarily from filling in vacant land.

TABLE 2
URBAN LAND NEEDS (IN ACRES)

YEAR	WEST VOLUSIA	COASTAL	COUNTY
1967	15,700	26,100	41,800
1980	23,900	36,800	60,700
2000	37,400	60,300	97,700



According to the estimated population and density levels, the amount of land the whole county will need for urban development will be 60,700 acres in 1980 and 97,700 acres in the year 2000. Of the 1980 county total, 23,900 acres will be in West Volusia, and 36,800 acres in the Coastal Area. By the year 2000, urban uses will require 60,300 acres of land in the Coastal Area and 37,400 acres in West Volusia.

The general locations recommended for urban expansion by 1980 and the year 2000 are indicated in Map 7. Three different patterns are shown: existing, short range (1967-1980), and long range (1980-2000). For the short range, areas near existing development which can easily be provided with utilities and urban services should be developed. The locations shown for short range development include areas that were bypassed when outlying areas were developed. The cost of providing utilities and services to these locations will be minimal.

Long range expansion should take place in areas that have adequate drainage and good soils. The locations marked for long range development are in the general direction of growth and represent logical areas for highway and utility expansion. As a rule, it will not be economically desirable for the county or municipalities to provide urban services to long range development areas until the short range areas have been developed.

Transportation

The transportation plan deals only with major road needs and corridor alignments. Recommendations concerning local thoroughfares and more exact right-of-way locations will be included in detailed planning studies.

Volusia County's existing road network provides good connections between populated areas within the county and between Volusia and other counties. Only two new intercounty roads are needed: the Cape Kennedy Roadway to link the DeLand area with the spaceport, and the University Parkway to provide access from Volusia to the new university east of Orlando and from Metropolitan Orange County to the proposed National Seashore Park. Specific road improvements recommended for urban areas include:

WEST VOLUSIA URBAN AREA

- DeLand Loop — A circular route around the city to provide a way for people of DeLand to avoid congested downtown streets.
- DeLand Truck Route — A route for through truck traffic from Interstate-4 to the west and north.
- SR-92 Extension — A continuation of SR-92 from its present termination at SR-17 to connect with SR-44 west of DeLand.
- Cape Kennedy Roadway — A new highway from 15-A at I-4 to U. S. 1 at the Volusia/Brevard boundary.
- Lake Helen-Deltona Road — A north-south road connecting Deltona with Lake Helen and DeLand.

HALIFAX AREA

- I-4 Connector — An extension of I-4 into U. S. 1 with a new causeway to A1A.
- Beltline Industrial Boulevard — A new roadway paralleling I-95 from south of Spruce Creek to north of the Ormond Airport.

- Flomich Avenue Extension and Causeway—An extension of the I-4/SR-92 crossover north to Eleventh Street at I-95 and east to the North Beaches.
- Port Orange Causeway and Extension — An extension of an improved Port Orange Causeway west to I-95.
- Tomoka Park Causeway—An extension of Nova Road northeast to Tomoka State Park and across the Halifax River to A1A.

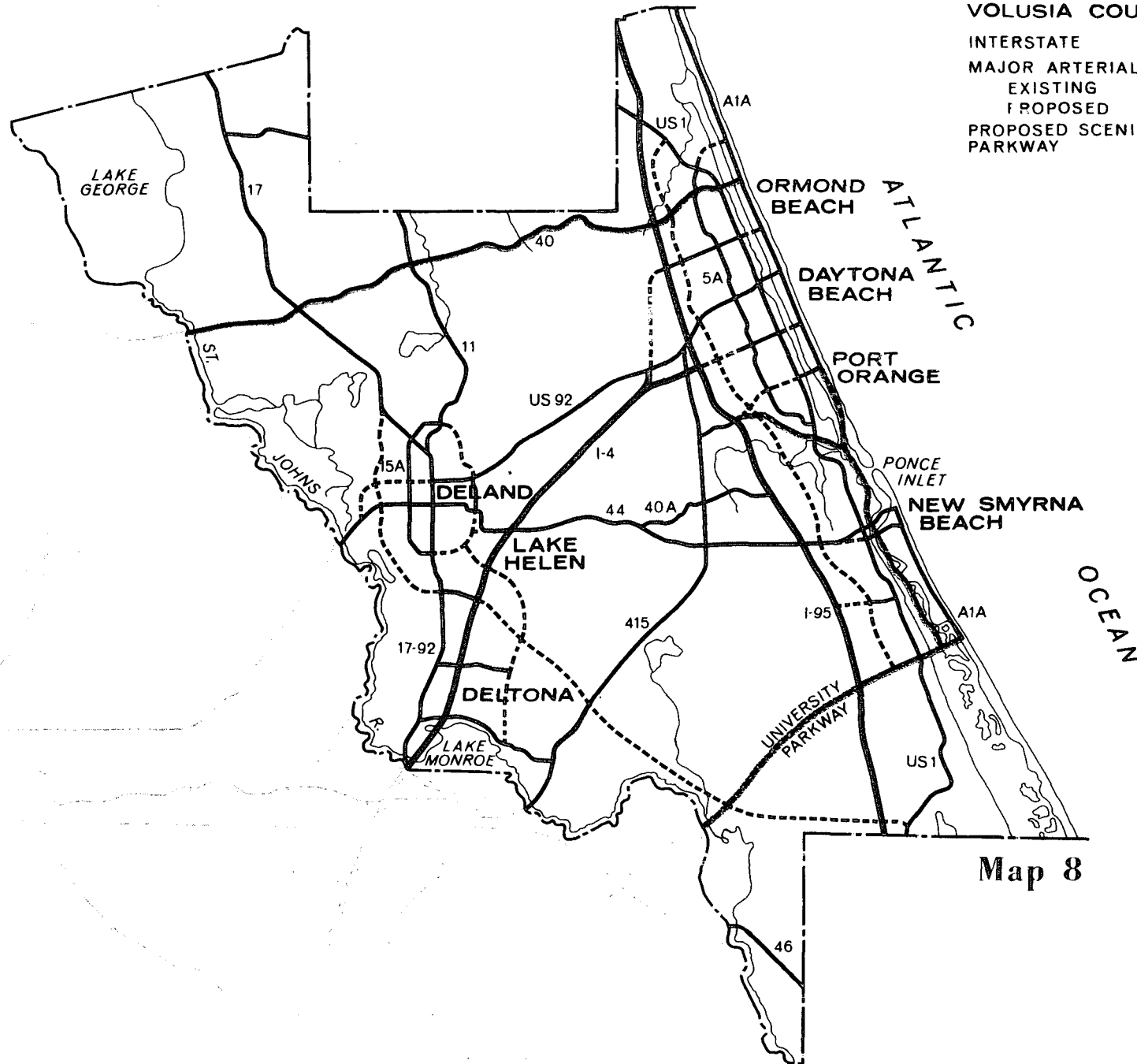
SOUTHEAST COASTAL AREA

- Ponce Inlet Parkway — A new scenic parkway from north of Ponce Inlet to the entrance of the proposed National Seashore Park. (Careful design and water circulation planning will be required.)
- Spruce Creek Parkway — A continuation of Ponce Inlet Parkway west through the Spruce Creek area to I-95.
- University Parkway — A major intercounty road to link the National Seashore Park and Volusia County with Orlando and Florida Technical University.
- Turnbull Bay Road—A new north-south through route west of New Smyrna from the University Parkway to Taylor Road.

The inevitable comment at this point is, "We may need all those roads, but how can we ever pay for them?" The program above outlines long range needs covering a period of 20 or more years. All roads do not have to be built immediately. We must, however, develop a plan for a system of roads now so that the roads we build can eventually form a system adequate to meet future needs. To finance our road program there are, in addition to normal revenue sources, two proposed Federal programs which may help; the Urban Expressway Program and the Scenic Parkway Program. Ninety-ten Federal financing is anticipated for both programs.

MAJOR HIGHWAY FACILITIES VOLUSIA COUNTY, FLORIDA

INTERSTATE
MAJOR ARTERIAL
EXISTING
PROPOSED
PROPOSED SCENIC
PARKWAY



Map 8

Conservation

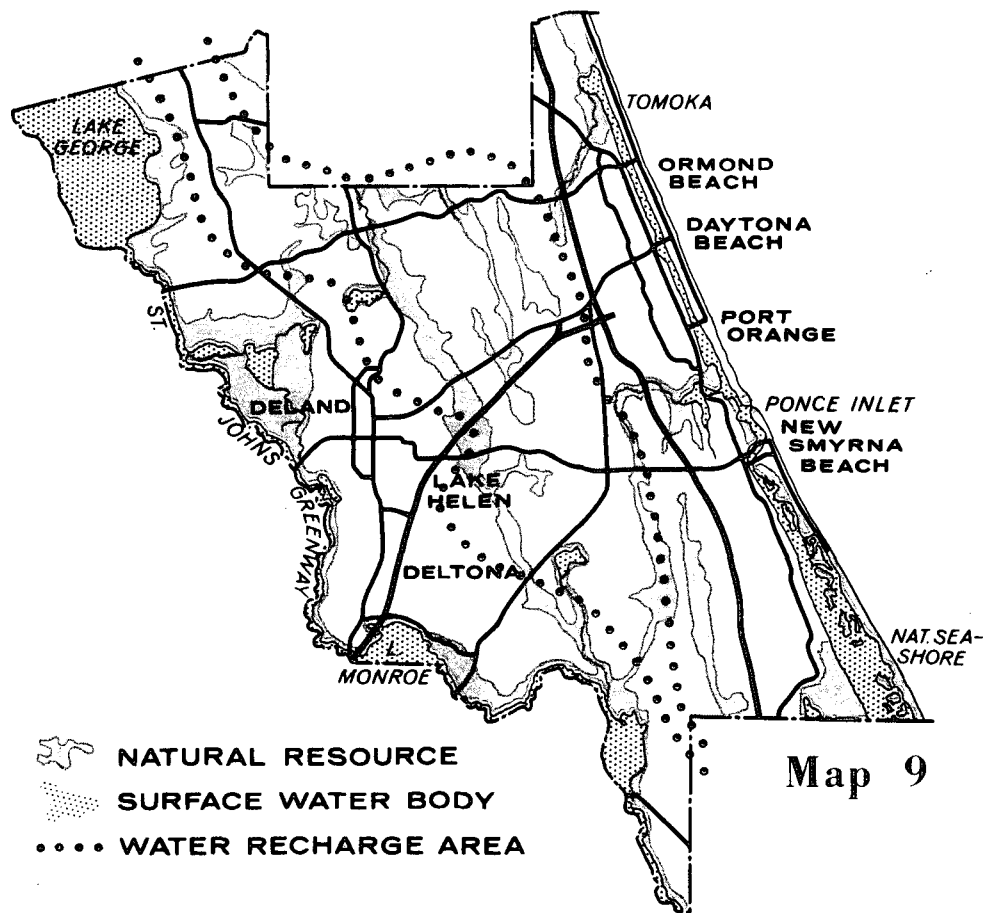
Portions of Volusia County are presently devoted to conservation. These include the 18,900 acre Lake Woodruff Wildlife Refuge and the National Aeronautics and Space Administration property maintained by the Federal Government, and Tomoka and Hontoon State Parks, maintained by the State. In addition, large portions of Central Volusia are privately-owned wildlife refuges maintained by their owners.

Conservation areas need not be purchased by a government agency or even limited in use in order to meet conservation objectives. In most cases proper land use controls are all that is needed. Agriculture, forestry, grazing and recreation are some of the activities that could be permitted and encouraged in conservation areas.

The Volusia Area Planning Commission's program of conservation is concerned with preservation and wise use to protect natural water areas; to preserve water recharge areas; to preserve potential flood control reservoirs; to control pollution; and to protect values inherent in natural conditions. Proposed conservation areas include:

- **CENTRAL VOLUSIA WATER RECHARGE** — A recently completed United States Geological Survey (USGS) study identified Central Volusia as the County's principal water recharge area and potential source of fresh water. According to estimates, Volusia County will need 85 million gallons of water a day by the year 2000. The present well fields cannot furnish that amount of water. A study has been authorized to identify a well field area capable of producing 85 million gallons per day and to detail water management practices that will insure its long term utility.

The USGS recently studied water conservation measures for Central Volusia. Surface water covers the ground in this area because the underground limestone is saturated leaving surface water with no place to go. Developers have suggested draining this water to the Halifax or St. Johns Rivers. The USGS, cautioning that drainage to either river would lose the water, suggested as an alternative that the water be drained into natural ponding areas for storage until it could filter into the limestone aquifer.



• **ST. JOHNS GREENWAY** — The St. Johns Valley has minimal potential for urban development because of periodic flooding. If the St. Johns Valley were maintained as a combined recreation/conservation area, it would be a valuable permanent open space. This concept anticipates that most of the "Greenway" would remain in private ownership subject to land use controls. Agriculture, forestry and grazing could be carried on there without destroying its function as a greenway.

• **PONCE INLET/SPRUCE CREEK** — This suggested conservation area includes the undeveloped peninsula at Ponce Inlet, the Mangrove Islands in the Halifax River, and the lowlands around Spruce Creek and Rose Bay. The area would become a permanent buffer between the Halifax area and New Smyrna Beach, permitting each to retain its separate identity. The lowlands are subject to periodic flooding and therefore should remain open while areas of higher elevation could become recreation sites. The natural character of the area should be retained.

• **TOMOKA** — This conservation area is envisioned as a green strip along the Tomoka River. It is a scenic area characterized by both marshland and high bluffs. If preserved in its natural state, the full recreational potential of the Tomoka River could be realized. Parts of the area should be added to the State Park while other parts could be protected by land use controls.

• **NATIONAL SEASHORE** — The proposed National Seashore comprises 30,000 acres of southeast Volusia County with 18 miles of ocean beach. The area is relatively undisturbed by man and offers a variety of soils, vegetation and wildlife.

Agricultural Potentials

Three factors must be considered in determining the county's agricultural potentials: (1) types of agriculture; (2) potential agricultural areas; and (3) preserving agricultural lands.

The principal types of agriculture in Volusia County are:

- **CITRUS** — Citrus contributed almost half of Volusia's total farm income in 1964. The county's primary citrus areas are in West Volusia and Southeast Volusia. Expansion of Volusia's citrus areas will be limited because of the high probability of freeze damage, the large proportion of groves in small ownership, and competition from extensive new plantings in South Florida.

- **LIVESTOCK PRODUCTS** — The second largest source of agricultural income is livestock including poultry, dairy products, and beef cattle. A poultry or dairy farm requires little acreage while beef cattle production needs larger acreages. Dairying is compatible with urban uses, with limitations; poultry is not. Dairying and poultry will expand; beef cattle production appears to be limited to existing areas.

- **HORTICULTURAL** — Ferns, nursery products, flowers and turf crops are included under this grouping. Horticultural activities are generally located near urban areas and require only small land holdings (average 2.5 acres). Significant expansion of this type of agriculture, particularly ferns, is anticipated.

- **FORESTRY** — Managed forests are located in the central lowlands and in Northwest Volusia. Pulpwood contributes the most to

Volusia's forestry economy; sawlogs, posts and pilings are of little importance because of the small size and scatteration of trees. Some increase in forest productivity, particularly of hardwoods, is anticipated, although forest acreage will probably decline.

- **VEGETABLES** — Only a small amount of land has been developed as cropland in Volusia. Cabbage, peppers, cucumbers and lettuce are the main crops. Recently there have been new plantings of vegetables in South Volusia east of Osteen, and more can be expected in this area because of favorable soil conditions and land parcels of adequate size.

The existing pattern of agricultural land use is illustrated by Map 10. Areas of citrus production, improved pasture, cropland and managed forest appear; holdings used for horticulture activities are too small to indicate at this scale. Except for these and the urban concentrations, the remainder of the county's land areas are presently lightly used and of limited economic importance.

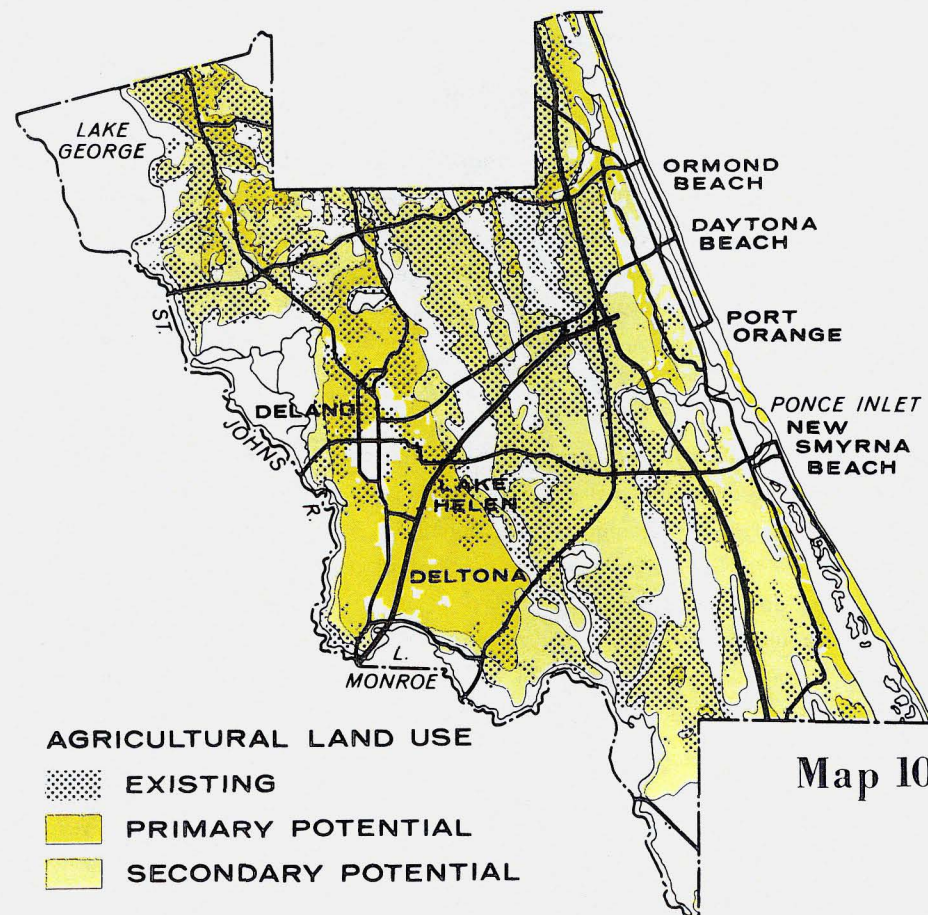
Excluding swamps and conservation areas, this remaining land was classified as primary and secondary agricultural potentials on the basis of soils and other factors. Lands indicated as having primary potential are those with well drained soils which, in the light of existing trends and technology, could best support intensive agricultural uses. High potential agricultural land is well suited for citrus, horticulture, poultry and dairying. Lands shown as secondary agricultural potential typically have

less productive soils as well as other economic liabilities. Most secondary agricultural areas are best suited for grazing and timber.

Two factors that affect agriculture's ability to reach its full potential are urban growth and taxation. The brevity of this study permits only a statement of how these factors affect agriculture.

Volusia, like other large counties, has experienced considerable urban growth, particularly in suburban areas. Suburban growth usually seeks out the well drained land that is also prime agricultural land. However, subdivisions seldom directly displace agricultural uses. Most farms near urban areas go out of production long before the land is put to urban uses. Agriculturalists are understandably reluctant to put additional capital into land that is close to urban growth. The result is an undesirable mixture of scattered subdivisions and idle farm land.

Florida's land assessment policy allows bona fide farmland to be taxed according to its potential earning capacity. This policy was adopted to preserve farming as part of the fabric and economy of urban counties. However, speculators have used this special tax concession to hold lands idle under the pretext of farming until urban development becomes profitable. The progress that has been made in differentiating between bona fide farmers and land speculators must be continued if this method of agricultural assessment is to survive.



IMPLEMENTATION

This plan represents the Volusia Area Planning Commission's best answer, at this point, to the question "How should we grow?". The advice, ideas and suggestions of many individuals, groups and agencies were sought and have been used in preparing this plan. Any plan of this type should be flexible enough to allow for changing circumstances. However, unless the plan is used to shape our development, it will have little value.

It will be helpful if governmental agencies formally adopt the plan as a guide for future growth, but this alone will not guarantee that the plan will be implemented. The final section of this report concerns tools that can help implement the plan. Existing land use controls, zoning and subdivision regulations, and public policies regarding assessments and utilities are examined to determine their effects upon the objectives of the plan.

- **ZONING** — Zoning is a land use regulation that establishes a system of zoning districts and specifically limits the uses that will be permitted in each zoning district. Zoning is correctly used when it furthers a plan for future growth. The conceptual plan was concerned only with urban development, agricultural areas and conservation areas. Zoning should be used to encourage compact development and to prohibit urban uses in agricultural and conservation areas. Rural residential zoning should regulate development in areas that are in transition from agriculture to urban use.

- **SUBDIVISION REGULATIONS** — The extent to which subdivisions are regulated varies greatly. Under minimum regulations, merely a record-keeping process, few public improvements are required. Unpaved streets and septic tanks are permitted. The result is that everybody is

taxed to pay for improvements when they become necessary. Stricter regulations would require that improvements be installed before a subdivision plat can be recorded. This would put the cost where it belongs, on the purchasers who will benefit from the improvements.

Where improvements are not required, subdivisions become scattered; requiring improvements encourages compact development. The subdivision review process also minimizes the problem of obtaining most major street and utility rights-of-way. All these measures benefit the community.

- **ASSESSMENT POLICIES** — The method of assessing property has a significant impact on the implementation of a plan for future growth. Property in Florida is assessed at 100% of its fair market value based upon its highest and best use. That is a good theory as far as it goes, but the method of determining its highest and best use is the critical factor. Once a plan has been developed and accepted by governmental agencies, property should be assessed according to its highest and best use as indicated by the plan.

- **UTILITIES** — Several public and private utility systems operate in Volusia County. The managers are concerned with providing an adequate level of service for a particular area and in general, desire to expand their areas of service. Because the development and expansion of these systems have not been related to a plan for future growth, duplications and inefficiencies have resulted. The Federal government recently required that a coordinated utility plan be developed for each metropolitan county. Such a utility plan, if designed in accordance with a plan for future growth, can be a very useful tool in shaping the growth pattern.

PRELIMINARY PLAN

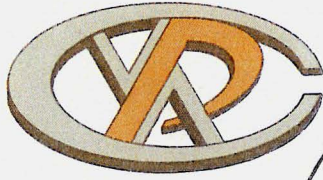
STAFF

Bruce Briggs Planning Director
Maurice Robbins Assistant Planner
Douglas Hill Graphics Director
Jerry Von Kaas Secretary

Staff responsible for lay-out and graphics of this report. The Volusia Area Planning Commission is an affiliate of the East Central Florida Regional Planning Council.

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VOLUSIA AREA PLANNING COMMISSION

Two Twenty - Nine Second Street Holly Hill, Florida 32017 904/253-0631

Participating Governments: Daytona Beach, Deland, Holly Hill,
New Smyrna Beach, Ormond Beach, South Daytona, Volusia County