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ENVIRONMENTAL AND ECONOMIC IMPACT OF RAPID GROWTH ON A RURAL AREA: PALM COAST

*By Helen Privett Bird**

INTRODUCTION

When a corporate giant strides into a county of 4,500 people and starts building a city of 750,000 people, what happens? "It all depends on how gullible the local government is,"¹ says Joel Kuperberg, Executive Director of Florida's Trustees of the Internal Improvement Trust fund, a guardian of public land. Sadly, the plans for the Palm Coast Development (see the preceding article) have not been given an even slightly critical examination by the officials of Flagler County, Florida, wherein Palm Coast is to be situated. In answer to my own letter of inquiry on Palm Coast, the Clerk of the Board of County Commissioners said, "Flagler County does not have an engineer and most of your questions should be directed to ITT—Palm Coast, as they are the only people having the answers to most of your questions at the present time."²

Two tours of the property as a prospective buyer and many trips to interview people in the county provided first-hand data for this study, which counters the pro-Palm Coast thesis of authors Young and Dea in the preceding article. Only one local resident was found who saw the development as a threat if not properly regulated. Mrs. Mary Gurnee and her family moved to Flagler Beach when Daytona Beach became too crowded. A science teacher in the Flagler County school system, Mrs. Gurnee says:

The biggest problem is that people here are used to all of this open space and they can't believe it's going to disappear. They need help in this county to plan for something like this. The only hope I can see is for the state or somebody to come down here and help us before it's too late. This sort of thing can be done right. I've been in Columbia, the new city outside Baltimore, and it's beautiful. But that is not what is planned here. I don't think you can do it

[on this site] by planning a whole bunch of houses right next to each other.³

Regrettably, she is right. Monumental economic and environmental problems are, with the present plans, inevitable. Some developers, however, have discovered that economic as well as esthetic gains can result from genuine protection of the natural environment. For example, a development on Amelia Island in Nassau County, Florida,⁴ has hired an environmental planning advisory council composed of national and local conservation leaders. The council meets to review proposed development plans. This institution serves a dual purpose, in providing input for local environmentalists during the planning process and in keeping them informed on what is being considered, what is being rejected, and why. It is a technique that is likely to be adopted in other communities, because it benefits both the developer and the public. Dozens of valid criticisms, constructive suggestions, and innovative solutions to problems have been provided. Problems are solved before they reach the confrontation stage. In other words, planning, in its ideal and practical sense, is in evidence.

My own estimation of Palm Coast's "environmental program" is shared by a prominent management consultant who is familiar with the area:

Our concern stems from this development's trend to follow all other large real estate developments . . . namely . . . go in . . . bulldoze down all the trees . . . smooth it off and then, having scalped the land of trees, cover grass, and all else, . . . then put up the houses. General, total effect . . . bleak, useless, harmed land, sprouting cubicles of residence, devoid of all nature's beauty, and contributing to the further destruction of the environment because of drainage problems, erosion, and the complete absence of any esthetic value.⁵

A spokesman for the firm now doing Palm Coast's master plan said that the development now underway was initiated by the company before any planning was done. Permission for me to see the master plan was never granted. Engineers at the site claimed they did not have a copy but insisted that they were adhering to it. Their salesmen, called Sales Consultants, said, "By the end of next year [1972] we will have 225 families actually living in Palm Coast."⁶ What will this mean?

A study involving 270 families gives some indication. Albert Veri, of the Division of Applied Ecology at the University of

Miami's School of Urban Studies, was given the problem, "What could one more apartment building do?" He found that replacing 20 single family units with a 270 family apartment complex on the same site will generate a need for:

- 12 acres of public land
- 3 acres service industry
- 4 acres retail stores
- 11 more classrooms
- 400 more cars
- 120,000 more gallons of water per day needed
- 100,000 more gallons effluent and wastes generated
- 2 more firemen plus \$8100 per year more equipment
- 12 more teachers plus \$75,000 per year to school budget
- 3 more policemen plus \$12,900 per year for facilities
- 1600 more library books
- 2 miles improved streets, in addition to
- \$39,930 for health services per year
- \$69,650 for other services per year⁷

Professor Veri states that only so many cars can operate efficiently on a road at one time:

Add 100 cars per hour more to the system already operating at capacity, and 60 mph traffic may drop to 20 mph, an idling car generates 50 times more toxic fumes than one at 60 mph, a 10 minute trip turns into an hour trip, noise increases, tempers flare and accidents increase, and on it goes. Similarly, when existing parks become overcrowded, polluted, or waterfront becomes privately owned and blocked from view, one seeks the pleasures which once existed nearby. Roads beget roads, and now one has to travel two hours to fish or swim in yet "undeveloped" areas.⁸

Unfortunately, Flagler County is the undeveloped area to which I, typical of many, retreat from the urban problems of Jacksonville. When it is developed there will be no such sanctuary within one day's round-trip driving distance from Jacksonville.

All of my attempts to communicate with particular engineers or consultants at or for Palm Coast were diverted. It became almost humorous. I would phone someone at Palm Coast, whereupon he, or his secretary, would hang up as quickly as possible. A few minutes later I would receive a call from their Public Relations people in New York. The Public Relations Director would soothingly

assure me that I was not "getting the run around." He merely wanted to be sure that I derived my information from the person best qualified to provide it. In *his* opinion, this was the Vice President for Operations. Although the New York office said that the Vice President spent three days a week at the development, when I checked with secretaries at Palm Coast itself they indicated that he was there only about two days a month. Consequently, I decided to gather my own information. In retrospect, this decision was undeniably wise, since letters and countless phone calls to the developers failed to produce any of the material promised to me for use in this article.

Flagler County, population 4,454, is located 30 miles north of Daytona Beach and 70 miles south of Jacksonville. It is known mainly for the famed Marineland attraction. There are three major north-south highways and one state road running east-west. Rail, bus, and air transportation is through Daytona Beach or Jacksonville. Government is by county and city commissions. There is no county engineer, no county health department to regulate air and water pollution and solid waste disposal, no county forester, no zoning, and until a few months ago, no subdivision regulation. Fire protection is by the Florida Division of Forestry and two small volunteer departments. There is a good 35 bed hospital but no ambulance service except a temporary arrangement with Daytona—30 miles away. Police and Sheriff departments are modest. Schools are deplorable. Into this atmosphere has come the ITT Community Development Corporation with plans for a city of 750,000 by about 1990.

SPECIFIC DEVELOPMENT-RELATED PROBLEMS

Taxes

The local citizens believe that the broadened tax base from this development will provide them with funds for schools and other amenities. A banker thinks that Palm Coast will contribute to the economy far in excess of their demands for County services. They are almost certainly wrong.

Figure 1 shows nine Florida Counties that gained population between 1950 and 1970. Population growth for the 20 year period was 440%, but taxes went up a staggering 1253%, or 12½ times. And those counties still have not solved their problems even with such tremendous expenditures. Figure 2 shows nine Florida Coun-

Taxes In Nine Florida Counties Gaining Population: 1950-1970

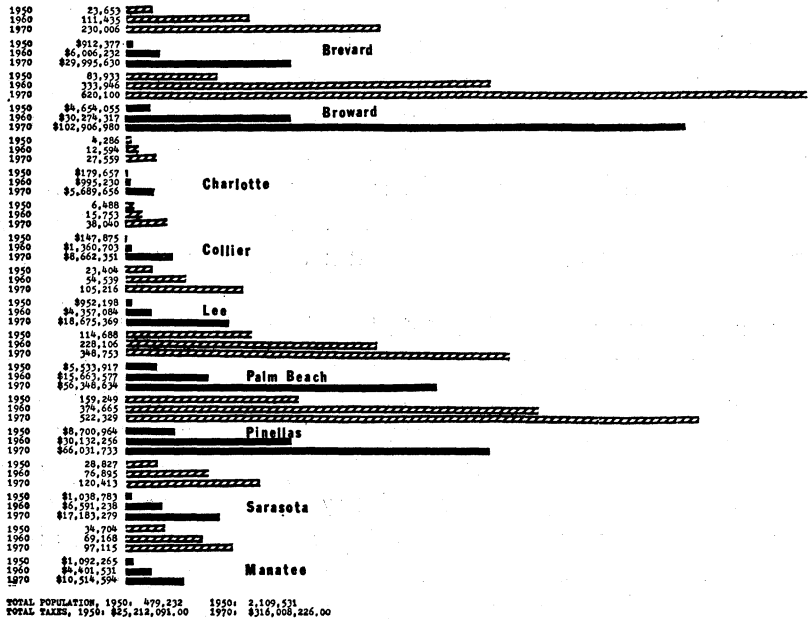


FIGURE 1. Compiled by Helen P. Bird from data supplied by the Department of Revenue, Tallahassee, Florida. © 1972, ENVIRONMENTAL AFFAIRS.

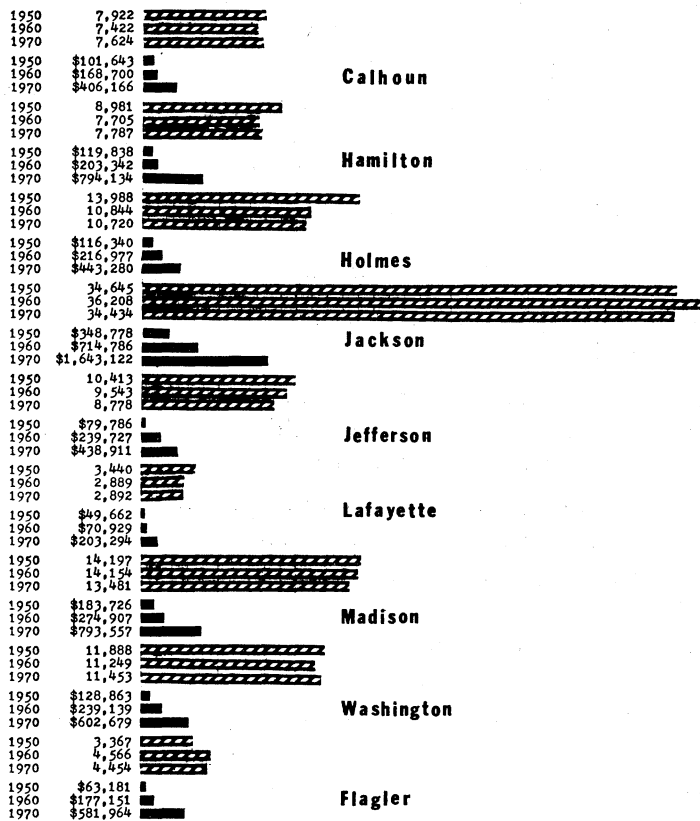
ties that lost population between either 1950 or 1960 and 1970. Using 1950 as 100%, the population in 1970 had dropped to 93%. During that same period taxes went up 4.96 or about five times. This is less than one-half the tax increase experienced by the counties with rapid growth.⁹

Salt Water Intrusion

The District Forester, a man with many years experience, informed us that "salt water intrusion into most areas of the county has been the determining factor that this county has not developed."¹⁰ His information is based on the experience of farmers and others in the county, and is confirmed by the Bureau of Water Resources of the Florida Department of Natural Resources. In a January 1972 issue of *Florida Conservation News*, it is stated that both salt water encroachment and salt water intrusion are problems already and that development is a possible problem in the area.¹¹

Hydrologist, G. W. Leve, of the U.S. Department of the Interior Geological Survey, stated, "There is great difficulty in obtaining

Taxes In Nine Florida Counties Losing Population: 1950-1970



TOTAL POPULATION, 1950: 108,841 1970: 101,623
 TOTAL TAXES, 1950: \$1,191,817.00 1970: \$5,907,107.00

KEY: = 1,000 Population
 = \$200,000 in Taxes

Compiled by Helen P. Bird from data supplied by the Department of Revenue, Tallahassee, Florida. © 1972, ENVIRONMENTAL AFFAIRS.

FIGURE 2. 1/10th scale of Figure 1.

fresh water from the Floridian aquifer in this area because of salt-water contamination.”¹² He said that the firm hired to do consulting on water “. . . did not consult with us on a number of occasions to obtain information on wells and quality of water in the area.”¹³

Yet when asked about the salt intrusion problems during a phone conversation, which was tape-recorded with his permission, the Palm Coast Vice President for Operations said, “No, that’s an untrue statement. There is no problem with salt water intrusion.”¹⁴ The New York consulting firm apparently was not aware of the above mentioned study by the state. Significantly, the Bureau of

Geology in Tallahassee said, “. . . this agency has no record of a proposed development in Flagler County under the name of Palm Coast Development.”¹⁵ My own observations are instructive in this regard. During visits to both of the visitor information centers and to the engineering offices, I noticed that all used old-fashioned water coolers with a five gallon jug turned upside-down, instead of the more common circulating fountains. My associate, Mr. Wallis, tasted water from the spigot in the restroom and found it to be salty . . . and sulfury.¹⁶

Dead End Canals

The federal hydrologist said he was not consulted on the effect of canals. He stated:

If the canals are allowed to transmit salt water (connected to the ocean or intracoastal waterway) they could produce additional salt water intrusion in the shallow aquifer.¹⁷

However, if the canals contained control structures to prevent salt water from entering and if they transmitted only fresh water, they could recharge the shallow aquifer with fresh water—hence a beneficial effect.¹⁸

During the sales efforts in the motor tours of the property, the employees assure prospective buyers that they will have access to the Intracoastal Waterway and to the ocean via their canals. One employee said that about three miles of the proposed 40-mile canal network has been dug. I was told that the inland canals were already connected to the main entrance canal. Because the area is extremely difficult to traverse, even by foot, I was unable to check personally on this information. The Vice President to whom I was referred for such information, however, told me on the phone that Palm Coast had state permits to connect the interior canals. I said they did not.

V.P.: “That is erroneous. We do have permits.”

Bird: “You have permission to connect your inland canals with the four big ones?”

V.P.: “Yes.” And later, “As far as the permits are concerned we feel that we have enough permits in order to develop these canals we have already filled.”

Bird: “You feel that a person who buys a lot on one of those canals would have access to the Intracoastal Waterway?”

V.P.: “Definitely.”¹⁹

The Palm Coast developers were seriously mistaken on the permit question, since on April 21, 1971 the Florida Department of Air and Water Pollution Control advised Palm Coast Engineer John Barton as follows:

It is brought to your attention that the three letters of Certification issued to you on October 16, 1971 [sic 1970] covered only the dredging of entranceway canals connecting the upland property to the Intracoastal Waterway at three locations in Flagler County. The issuance of these Certifications did not include the connections to contemplated upland canals.

You are advised that additional Certification in accordance with Public Law 91-224 will be required for any connections that are made to the three canals previously certified.²⁰

A letter of January 14, 1972 from the same department (now called, however, the Department of Pollution Control), stated, "The certification was for three entranceway canals into the Intracoastal Waterway. . . ." ²¹ It did not mention any additional certifications to cover connection of the upland canals. Moreover, the communication stated, "The effects of these extended bodies of water upon water quality are subtle and extremely difficult to detect in the early degradative stages." ²²

In 1971, Dr. John Betz, University of South Florida microbiologist, surveyed 40 canal systems in Florida coastal areas. In 83% he found either a coliform count of at least 2400 per 100 ml of salt water or a gas gangrene count exceeding 1000. In 18 of the 40 systems he found both. He admitted that comparable conditions exist in barnyards, but then wryly noted that people do not pay \$10,000 for 100 feet of barnyard frontage. Both values are significant because such organisms are not normally found in salt water, and because when they are found, they are observed to reproduce and die rapidly. In order to have such conditions, one must:

1. Destroy the natural purification mechanisms of the waters that were there previously (i.e., salt marsh or mangroves). One may do this by creating so-called waterfront residential property.

2. Severely inhibit the normal physical purification mechanisms, which usually means inhibiting ordinary water flow or the tidal flushing.

3. Supply such bacteria from sewage or from land runoff.²³

The problem of canal maintenance at Palm Coast has not been determined. The Vice President said: "We will maintain the canals

for a period of time—a year or two. After that it would be set up in some kind of a district with taxation powers—we haven't really worked out the mechanics of that now."²⁴

Before moving to Tallahassee in 1971 to take the Directorship of the TIITF, Joel Kuperberg had years of experience with the canals in South Florida. He states:

One of the problems is a lack of access to even get a piece of equipment into the completed project to work on the canal. And then where do you put the smelly junk you get out—it's like cleaning out a septic tank—nobody wants it in his yard. So what do you do? There is no law about it.

The only solution I see is a marina system which would offer side benefits such as safety of property left in boats, safety of boats, and would solve a lot of headaches regarding waterway maintenance and access channels.²⁵

Tree Preservation

Advertising brochures for Palm Coast once proclaimed, "Palm Coast is the bright promising land of tomorrow because it is virgin, lush and unspoiled." A subsequent revision, however, deleted that passage. With only slightly less exuberance, the new edition says, "Water oaks, live oaks, and palm stretch along both sides of the main access road to the property. And the trees are going to stay . . ."²⁶

Are we talking about the same property? The road on which I drove was narrow and poorly paved. It was bordered by sandpine, frequent cypress swamps, and common shrubs. It passed numerous borrow pits left over from the road construction. Perhaps symbolic of a more general misperception of reality by the developers, these pits were marked by signs which read "Fresh Water Pond." The vertical sides of the "ponds" were clearly visible from the road. Frequent large "Deer Crossing" signs, moreover, suggested that deer might continue to inhabit the area. Such an eventuality, however, is highly unlikely.

As one approaches the area of present development, the vegetation thins out dramatically. The great preponderance of underbrush and small trees, including entire forests of oak and palm, have been bulldozed, leaving only a few water oaks, which will probably die within five to ten years because of the amount of fill that has been piled upon their roots.

In the model home area I counted 46 dead trees that had been tagged by the developer for removal. Water was standing in pools

around their trunks, an indication that the most elementary precautions for their survival had not been taken. The Vice President declared:

We have instituted a tree saving program. We try to save as many as possible. We plan to reforest these areas to compensate for any losses, planting trees on the site after development; at least as many trees as were there originally—in some cases there may be more than were there originally.²⁷

Of course that would be impossible. I would surmise that less than 1% of the trees have been saved. Not long ago, the area was a forest so dense that one could not see farther than a few feet into it. It was breathtakingly beautiful. Nevertheless, there remains hope for the areas they have not touched; as of January 1972 the developers hired a full-time forester, a welcome step forward.

In my brief conversations with Palm Coast executives, I mentioned several of the most gifted ecological planning firms, such as Wallace, McHarg, Roberts and Todd, as well as Albert R. Veri and Associates. Since the executives had never heard of them, I explained briefly some rudimentary concepts of ecological planning, such as "making the plan fit the site," rather than vice versa. Much development, for example, could have been made to accommodate the site by utilizing only the naturally high areas. Such a plan was developed for south Florida by the Center for Urban Studies.²⁸ The techniques have been worked out and are available to anyone who is interested enough to seek them out.

Mosquito Control

Vast areas proposed for development carry names like Hulett Swamp, Graham Swamp, and Pringle Swamp. They are, as their names suggest, wet. And they produce prodigious amounts of enormous mosquitos. Mosquito control will probably require huge amounts of pesticides. When asked if they would have any effect on the water supply the development's engineer said he "hadn't given it too much thought."²⁹ A federal geologist said, "That is an interesting question but it would have to be studied before any statement could be made."³⁰

Highway Construction

A major interchange is being planned for I-95 at Palm Coast Parkway. There are plans for a major highway to the beaches via

a high level bridge over the Intracoastal Waterway. Environmental impact statements should be sought on both of these projects. Nothing should be done to disturb the salt marshes or the river. A science instructor, Mrs. Gurnee, explained:

It's important to leave the river just the way it is. This is where all the fish come from. They spend part of their life up in these marshes. This means money from all of the people who come here for the good fishing they can't get in other places that have already been built up.³¹

Schools

During a sales effort on October 16th, 1971 the question of school accreditation was skillfully sidetracked. When asked whether the school for the area is accredited, a consultant responded evasively, "It's a very good school—they pick you up by bus. . . ."³² Later that same day I bought *The Flagler Tribune*, which had a front page article on a School Board meeting:

Heard a letter from Dr. Herman Frick, Florida Committee of Southern Association of Schools and Colleges Accreditation stating he had visited the school plant last week and had two objections to conditions, either of which is sufficient to cause the school to be dropped from the SASCA accredited list.³³

One concerned salaries, and the other was:

The physical plant is seriously inadequate in areas as Science laboratories, library, physical education, facilities, vocational education, commerce and others.³⁴

In the past, the schools have been situated so as to facilitate the transportation of children from all over the county to a central area. Palm Coast has donated property for a new school but it is not in this central area. As a result, Superintendent Craig was quoted in *The Flagler Tribune* of December 16, 1971 as saying, ". . . five additional buses would be necessary to transport students to the new high school. . . ."³⁵ The donation was questioned by one board member because of a clause requiring it to revert to the developer if at any future date it should cease to be used for a school. It is not uncommon for such gifts to be made free and clear. For example, many of the school sites in Jacksonville were outright gifts.

After presentations at a School Board meeting by Palm Coast spokesmen, Project Director Dan Cooper and Jacksonville attorney William Adams, the donation was approved with strings:

Board member Raymon Tucker voted “no” saying that he did not want to appear to be ungrateful for the gift, but, he had some reservations about the reverter clause and wanted more time to study the legal aspects.³⁶

Present school conditions were described by Mrs. Gurnee:

I’m teaching science in an old building that was a temporary several years ago. Our school situation is deplorable. Our high school burned down a year and a half ago and we don’t have a high school.³⁷

As to the above mentioned School Board meeting, the paper further reported:

A petition signed by 55 teachers was presented to the Board by Coach Jack Hall asking that the Board proceed immediately to demolish the old building and begin construction of new plant facilities so as to alleviate the poor teaching situation now existing in the schools.³⁸

Subdivision Regulations

The most significant step made thus far by the County was initiated by a prominent civic leader. That step was reported in the July 8, 1971 *The Flagler Tribune*:

The Flagler Board of County Commissioners took action to stop shelling existing subdivision streets and to stop accepting new subdivision plats until the Board could adopt some specific subdivision regulations. This action of the Board at their Tuesday morning meeting was the result of a request made by L. E. Wadsworth.³⁹

Later in the same meeting they approved a Palm Coast plat.

A. Street Construction

Instead of setting their own standards for streets the County has apparently adopted those set by Palm Coast. It will prove costly to the County if this policy is not changed. Palm Coast streets are 18 to 20 feet wide on 50 foot rights of way. Other developers such as Killlearn Estate, Golden Gate Estates, and Port St. Lucie use a 60 foot right of way. Deltona Lakes Subdivision and Marco Island dedicate a 100 foot right of way for major roads with 20 feet of dual lanes and a 60 foot right of way with 20 feet of surface on other roads. They maintain their streets for one year after completion.⁴⁰ Palm Coast streets are turned over to the County upon completion. Palm Coast is applying a 6 inch shell and limerock

base with a 1 inch asphaltic concrete topping.⁴¹ Jacksonville requires a 12 inch compacted subgrade, 6 inches of limerock and a 1¼ inch layer of asphalt. A spokesman for the Public Works Department said, "If we're going to maintain a street into perpetuity we want it built properly to begin with."⁴²

Since Flagler County has no engineer, there is little if any control over Palm Coast construction. The Palm Coast Vice President's comment was, "They're aware of the roads that we're putting in and they feel these meet adequate standards."⁴³

B. *Performance Bonding*

Performance bonds are vitally important, since they assure that work done in public areas will be carried out in a specifically prescribed manner. Duval County, for example, requires any one of the following:

1. A plat bond from a recognized guaranty company.
2. A personal bond guaranteed by an irrevocable letter of credit.
3. A cash deposit from which the city will pay the contractors as the work is performed.
4. Street construction by the developer in accordance with county specifications, and then submission of the plat.⁴⁴ The important point is that Duval County can require whatever it feels is necessary to protect the public interest.

The Flagler Tribune for September 9, 1971 carried this account of a Flagler County Commission meeting:

Palm Coast subdivisions are bonded and the bonds were presented at the meeting.

Chairman Louis Steflik pointed out that the Board attorney, H.T. Cook, had brought to his attention that the bonds were not surety bonds. Mann [the Palm Coast attorney] said this was correct; but, it was the same type of bonds accepted by Florida Land Sales Board and all other states except New York.

The Board then approved the subdivision and bonds.⁴⁵

Apparently, the Commission's own attorney was not present at the meeting, so the Board, credulously, took the word of the developer.

C. *Inequitable Treatment*

As to the same Commission meeting, the local newspaper states in two front page articles:

The request of Armand Fichetti to have a subdivision plat approved was held up until the Board had completed and approved an ordinance on subdivision regulations.

There was some hesitancy on the part of the Board to approve these two [Palm Coast] plats after turning down the request for a subdivision submitted by Armand Fichetti earlier in the meeting.

Mann [Palm Coast attorney] stated that it would hold up their sales and adversely affect the continued development of the Palm Coast program.⁴⁶

They were approved.

Comparison of Public Offering Statements

The Florida Uniform Land Sales Practices Law has a provision calling for a public offering statement to “. . . make known to prospective purchasers all unusual and material circumstances or features affecting the subdivided lands.”⁴⁷ The Statement is supposed to include:

Information concerning improvements, including streets, water supply, levees, drainage control systems, irrigation systems, sewage disposal facilities and customary utilities, and the estimated cost, date of completion and responsibility for construction and maintenance of existing and proposed improvements which are referred to in connection with the offering or disposition of any interest in subdivided lands. . . .⁴⁸

Some of this information is given in the Palm Coast Offering Statement (although it is buried in the inner pages thereof), but some of it is missing. Cape Coral and Marco Island have the estimated cost of septic tanks printed in red type on the first page, together with a statement that they may be required in the early stages of development. Palm Coast has this information in regular black type on page four. Their estimated cost of septic tanks, incidentally, is low compared to other subdivisions.⁴⁹

Of the developments featuring canals I did not find any that phrased their statements in such a way that the prospective buyer would understand that he would have to bear the cost of maintaining the canal, or what exactly that would entail.

Many developers offer lots that have been surveyed and staked, for example, Killlearn, Marco Island and Deltona. Some even include street lights. At Palm Coast, the property owner would have to pay an estimated \$50.00 to \$75.00 to have his lot surveyed. There is no mention of street lights.

Salesmen said that sewer and water service will be provided by Atlantis Development Corporation, a wholly-owned subsidiary of the developer. The sewage system will be developed "when economically feasible." There was some question as to who designed the Palm Coast system. An engineer who told me that he had designed it said that there exists a holding tank arrangement to store sewage now being generated for treatment later, when the system is complete. Effluent will be sprayed over the golf courses.⁵⁰ The Vice President told me that the system was designed by a Consultant from ITT Levitt. He also said that the existing buildings are presently using septic tanks.⁵¹

Because of the saline content, there is considerable question as to the wisdom of using effluent for irrigation. In some tertiary treatment methods the salinity is reduced, but in others it is actually increased.⁵² Further study should be conducted on this subject. In Duval County the regulation of private utilities has become so burdensome the County is buying them. Flagler County might investigate alternate methods of handling waste disposal, particularly a system that would handle all of the municipalities, including Flagler Beach.

Regulation at the County level can be crucial. Kuperberg states:

The installment land sales technique works anywhere from eight to twelve years out front. Developers lay out and sell lots years before they actually produce them. By the time they come to the Trustees for a permit to dig a canal they have already sold thousands of lots.

No matter what is in the fine print in the Public Offering Statement they will use the argument that it is not good for the image of Florida to deny these people the property they bought.

I hope we have seen the last of this type of permit granting. I will not recommend it. But of course, I am an employee and what really counts is how the Cabinet votes when it sits as the Trustees of the Internal Improvement Trust Fund.⁵³

The most recent occurrence of this scenario was with respect to the scandalous "land exchange," in which the Marco Island Development Corporation "gave" the state several thousand acres of land that the state already controlled, in exchange for permits to dredge and fill other areas that were of undisputedly high biological productivity. The final battle of that war, when the permits go to the federal agencies for approval, is yet to be fought. Clearly, Flagler County must not allow itself to be similarly exploited.

REDUCING THE IMPACT OF DEVELOPMENT

Water quality and quantity are vital at Palm Coast. We asked Mr. Leve how local officials could ascertain the information necessary for intelligent decisions in this regard. He suggested that the municipality, the county, or the state could request hydrological urbanization studies. Such studies are already underway in Orange and Duval Counties.⁵⁴ They would determine such matters as the location of suitable areas for sanitary landfill sites and the suitability for sewage spreading. Flagler County might well consider ordering a moratorium on further development at Palm Coast until it can determine more completely what is required to protect the environment and the life and health of the people already living in the area.

Since Flagler County lacks the technical and environmental experts necessary to gather and interpret vital information, it is suggested that the County consider commissioning a Special Task Force of prominent Florida environmental leaders to advise them. This could be done in cooperation with St. Johns County, which itself will be affected by later stages of development.

There is still time to save the incredible beauty of the area, while permitting development. Future generations will find it difficult to forgive a blunder of the magnitude being allowed at Palm Coast. As the ancient prophet, they will revile and call down:

Woe to those who join house to house, who add field to field, until there is no more room.⁵⁵



FOOTNOTES

* Environmental Consultant with Southeastern Environmental Services, Jacksonville, Florida.

¹ Communication with the author (Oct. 29, 1971).

² Letter to author (Oct. 27, 1971).

³ Interview with author (Oct. 16, 1971).

⁴ The Amelia Island Company, a subsidiary of Sea Pines Plantation Company, Hilton Head Island, South Carolina.

⁵ Letter to author (Dec. 13, 1971).

⁶ Tape-recorded interview with Sales Consultant at Palm Coast (Oct. 16, 1971).

⁷ From A. R. Veri, "Population Densities: How Do They Affect Environment?", *THE FLORIDA NATURALIST* (Oct. 1971).

⁸ *Id.*

⁹ The author wishes to thank W. Curtis Lovelace and George A. Clements for assistance in preparing the tax/population charts.

¹⁰ Letters to author (Oct. 28, 1971 and Jan. 18, 1972).

¹¹ FLORIDA CONSERVATION NEWS, Department of Natural Resources, Tallahassee, Florida at 8.

¹² Letter to author (Nov. 4, 1971),

¹³ *Id.*

¹⁴ Telephone conversation tape-recorded with permission of Eli Pritchert, Vice President for Operations, on or about Nov. 13, 1971.

¹⁵ Letter to author (Nov. 11, 1971).

¹⁶ The author wishes to thank Mr. William Wallis for assisting in research for this article.

¹⁷ Letter, *supra* note 12.

¹⁸ *Id.*

¹⁹ Pritchert, *supra* note 14.

²⁰ Letter from David H. Scott, Chief, Bureau of Permitting to John A. Barton, ITT Levitt Development Corp., Flagler Beach, Florida.

²¹ Letter to the author from James W. Carr, Regional Biologist, Jacksonville, Florida.

²² *Id.*

²³ Based on material presented at the ECOSWF Conference in Ft. Meyers, Florida in January 1972, which in turn was based on a Report of Investigation of the Environmental Effects of Private Waterfront Canals, prepared by William Barada and William M. Partington, and published by the State of Florida Board of Trustees of the Internal Improvement Trust Fund (Feb. 1, 1972).

²⁴ Pritchert, *supra* note 14.

²⁵ Communications, *supra* note 1.

²⁶ Advertising brochure, "Where Would You Rather Be This Winter?" Palm Coast.

²⁷ Pritchert, *supra* note 14.

²⁸ AN ENVIRONMENTAL LAND PLANNING STUDY, SOUTH DADE COUNTY, FLORIDA, Division of Applied Ecology, Center for Urban Studies, University of Miami, Coral Gables, Florida (1971).

²⁹ Interview with John Barton at Palm Coast on Dec. 15, 1971.

³⁰ Telephone conversation with G. W. Leve (Dec. 20, 1971).

³¹ Interview, *supra* note 3.

³² Taped interview, *supra* note 6.

³³ The Flagler Tribune, Bunnell, Florida (Oct. 14, 1971).

³⁴ *Id.*

³⁵ *Id.* (Dec. 16, 1971).

³⁶ *Id.* (Nov. 25, 1971).

³⁷ Interview, *supra* note 3.

³⁸ The Flagler Tribune (Nov. 25, 1971).

³⁹ *Id.* (July 8, 1971).

⁴⁰ Information obtained from the Public Offering Statements of the within-named developments as provided the author by the Division of Florida Land Sales, Department of Business Regulation, State of Florida.

⁴¹ Pritchert, *supra* note 14.

⁴² Conversation with Mr. Davenport, Public Works Department, City of Jacksonville.

⁴³ Pritchert, *supra* note 14.

⁴⁴ Davenport, *supra* note 42.

⁴⁵ The Flagler Tribune (Sep. 9, 1971).

⁴⁶ *Id.*

⁴⁷ 1969 FLORIDA STATUTES, Chapter 478.24(1).

⁴⁸ Chapter 478.24 (1)(e).

⁴⁹ Information, *supra* note 40.

⁵⁰ Barton, *supra* note 29.

⁵¹ Pritchert, *supra* note 14.

⁵² Technical data supplied to the author on July 30, 1971 by John Yang, Civil Engineering, State University of New York, Buffalo, New York 14214.

⁵³ Communication, *supra* note 1.

⁵⁴ Leve, *supra* note 30.

⁵⁵ HOLY BIBLE, Book of Isaiah, Chapter 5, verse 8.