AN ANALYSIS OF SELECTED LAWS AND GOVERNMENTAL PROGRAMS IN FLORIDA, AS RELATED TO MINERAL RESOURCE MANAGEMENT AND SURFACE MINING

Geological Survey
Open-file report no. 76-648

Resource and Land Investigations (RALI) Program

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

AN ANALYSIS OF SELECTED LAWS AND GOVERNMENTAL PROGRAMS IN FLORIDA AS RELATED TO MINERAL RESOURCE MANAGEMENT AND SURFACE MINING

by

Edgar A. Imhoff

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Resource and Land Investigations (RALI) Program

U.S. Geological Survey

Reston, Virginia 22092

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AN ANALYSIS OF SELECTED LAWS AND GOVERNMENTAL PROGRAMS IN FLORIDA AS RELATED TO MINERAL RESOURCE MANAGEMENT AND SURFACE MINING

Edgar A. Imhoff

ABSTRACT

An analysis of selected laws and governmental programs in Florida is presented in terms of their actual or potential impact on surface mining activities. The analysis is based primarily on interviews with governmental planners, a review of statutes and technical reports, and field visitations to Florida. State, regional, and local activities were considered.

State programs found to affect surface mining in Florida are based primarily on the following laws: The Florida State Comprehensive Planning Act of 1972, the Florida Environmental Land and Water Management Act of 1972, the Local Government Comprehensive Planning Act of 1975, the Florida Water Resource Act of 1972, and the Florida Severance Tax Law of 1971. The last named law, however, requires mined-area reclamation only on lands which have been taxed for severed minerals.

Regional points of view are expressed in Florida through ten regional councils, that plan and coordinate, and five water management districts, that plan and regulate. Unlike state planning and regional planning rules, water management districts have strong powers to affect surface mining activities directly and immediately--where public water supply interests are involved.

In Florida, by statute and in terms of program content, county government has the potential to influence the surface mining industry greatly--through a variety of local land use controls and specific mining ordinances. Specific programs of a major phosphate producing county, Polk County, include: zoning, land development guidelines, development impact assessment, and a limerock mining ordinance.

Generally, Florida is viewed as having a broad array of specific planning and management tools for addressing how surface mining and reclamation shall be related to nonmining uses of land and resources.

INTRODUCTION

RALI (Resource and Land Investigations) is a program of the Department of the Interior served by a professional staff based in the U.S. Geological Survey. A principal mission of RALI is to improve the effectiveness and frequency of use of natural resources information in land use planning and decisionmaking. RALI produces both informational and methodological reports, with emphasis on the latter category. Subjects of RALI reports include, for example: natural resources inventory, environmental impact, critical natural areas, land use information systems, utility corridor routing, powerplant siting, state resource management, coastal zone management, and mined-area reclamation.

In 1975, RALI contracted with the Argonne National Laboratory for assistance in a 2-year study of the subject of mined-area reclamation and related land use planning. The objective of the study was to develop bibliographies and guidebooks on the state-of-the-art of integrated surface mining, reclamation, and land use planning. A division of labor was agreed upon with RALI providing most of the expertise on planning and Argonne addressing engineering and economic aspects of the study. A guide to state mined-area reclamation has been published (Imhoff and others, 1976), as USGS Circular 731, and the bibliography, mine case studies, reclamation techniques, and planning criteria reports are in preparation.

Purpose and Scope of this Report

This report, which is based on a recent survey of Florida planners and natural resources managers, and a review of many planning documents, focuses on the nonfederal governmental planning activities in a case study state: Florida. The report addresses the question, "How does nonfederal governmental planning affect surface mining in Florida?" This question is posited on the premise that surface mining is an important transient land use activity in which planners will be interested increasingly as the competition for space, land, and minerals intensifies in the years ahead.

This report addresses the state level broadly, whereas, it focuses specifically on the local scene to discuss activities that are particularly significant in revealing the state-of-the-art of integrated land planning and mine planning in the United States. The report is directed at land and resource planners, wherever they work and regardless of affiliation.

Acknowledgements

This report was made possible through the information and review provided by the following people:

Bobby Barnes, Director of Information, Florida Phosphate Council, Lakeland;

Jean G. Jeffords, Planning Director, Central Florida Regional Planning Council, Bartow;

G. Michael Joachim, Planner, Polk County, Bartow;

Walter O. Kolb, Planner, Division of State Planning, Tallahassee;

Roland E. Nichols, Water Resource Planner, SW Florida Water Management District, Brooksville; and

George P. Stahlman, Development Coordinator, Polk County, Bartow.

OVERVIEW

Florida exhibits the most complete spectrum of planning legislation among the 50 states (American Institute of Planners, 1976). Earl M. Starnes (oral communication 1975), former Director of the Florida Division of State Planning, cites as underlying reasons: rapid growth and associated high water demand, falling ground-water levels, mounting water quality problems, development of shorelands, decline of esthetic quality, and disorderly developments which overload community facilities and burden public budgets. In recent years several major public programs have been established to address the problems cited. The effect of the programs has been to strengthen the hands of government to plan and regulate the use of space, natural resources, and environment. Planning and plan implementation powers have been distributed between local and state government and special districts. Regional goal-setting and evaluation is provided by regional planning councils, in which local participation is voluntary.

As in most states, Florida historically has delegated land use planning and land use control to local government--county and municipal. New state programs are directed at strengthening local capabilities to plan and implement through land use controls, and at strengthening state and regional capabilities to monitor, provide uniform criteria, and coordinate. A few regulatory roles are held at state levels, but most powers to control land and resource use still reside with county boards of commissioners and city councils.

The important practical effect of new state legislation in Florida is that industries such as phosphate mining must now deal with a complex array of governmental regulations and interest.

STATE LAWS AND PROGRAMS

Examination of major new programs indicates the practical impact on surface mining of state level planning activity in Florida.

The Florida State Comprehensive Planning Act of 1972 (Chap. 23, Florida Statutes) established a state comprehensive planning process and a Division of State Planning responsible to the Governor. The division takes the State lead in policy planning and has prepared and released to the public: (1) a proposed Land Development Element of the State Comprehensive Plan, and (2) The Green Plan.

The Land Development Element (Florida, Department of Administration, 1976), also known as the State Land Development Plan, is the policy phase of land development and related aspects, of the Florida State Comprehensive Plan. The proposed policies for mining are excerpted from the element and attached hereto as Appendix A. The policies pertaining to reclamation planning and mineral reservation seem to be particularly significant in indicating the likely direction of future legislation.

The Green Plan (Florida, Department of Administration, 1976) complements the Land Development Element and broadly identifies environmentally sensitive areas and important open spaces that "should be preserved" from development. The Green Plan has been prepared as an interim guide for governmental agencies and private land developers. The Land Development Element and the Green Plan have been transmitted to the Florida legislature for its information. Neither of these documents have been endorsed or adopted officially as a policy guide.

When compared with mineral resources data (U.S. Geol. Survey, 1970), the Green Plan is useful for flagging potential or actual conflicts between surface mining and other land uses or values. For example, such a comparison suggests a potential conflict of phosphate mining: with recreation areas in northern Florida, with prime citrus land in central Florida, and with urbanization in central Florida.

The Florida Environmental Land and Water Management Act of 1972 (Chap. 380, Florida Statutes) establishes two closely related programs which can affect surface mining: a critical areas program and a program regulating development of regional impact, hereafter referred to as DRI.

Basically the critical areas program seeks (1) to protect environmental, historical, and natural areas of regional or statewide significance, or (2) to preserve an area important to community development and public investment. Earl M. Starnes, former Director of the Florida Division of Planning (Oral Communication , 1976) summarizes the structured process of establishment of an area, as follows:

> "The critical areas program in Florida can be viewed as a generally sequential process. Its basic components are nomination, critical areas analysis, critical areas designation, promulgation of development regulations, and implementation and enforcement of the management program."

By January 1975, three areas involving a total of about 600,000 acres had been established and were being withheld from development under the police power of state (fig. 1). The areas were: the Big Cypress Swamp, which is a wildlife area, an aquifer recharge area, and a natural regulating reservoir for surface-water runoff; the Green Swamp, an area important for similar reasons, and; all the Florida Keys (Islands) including incorporated cities.

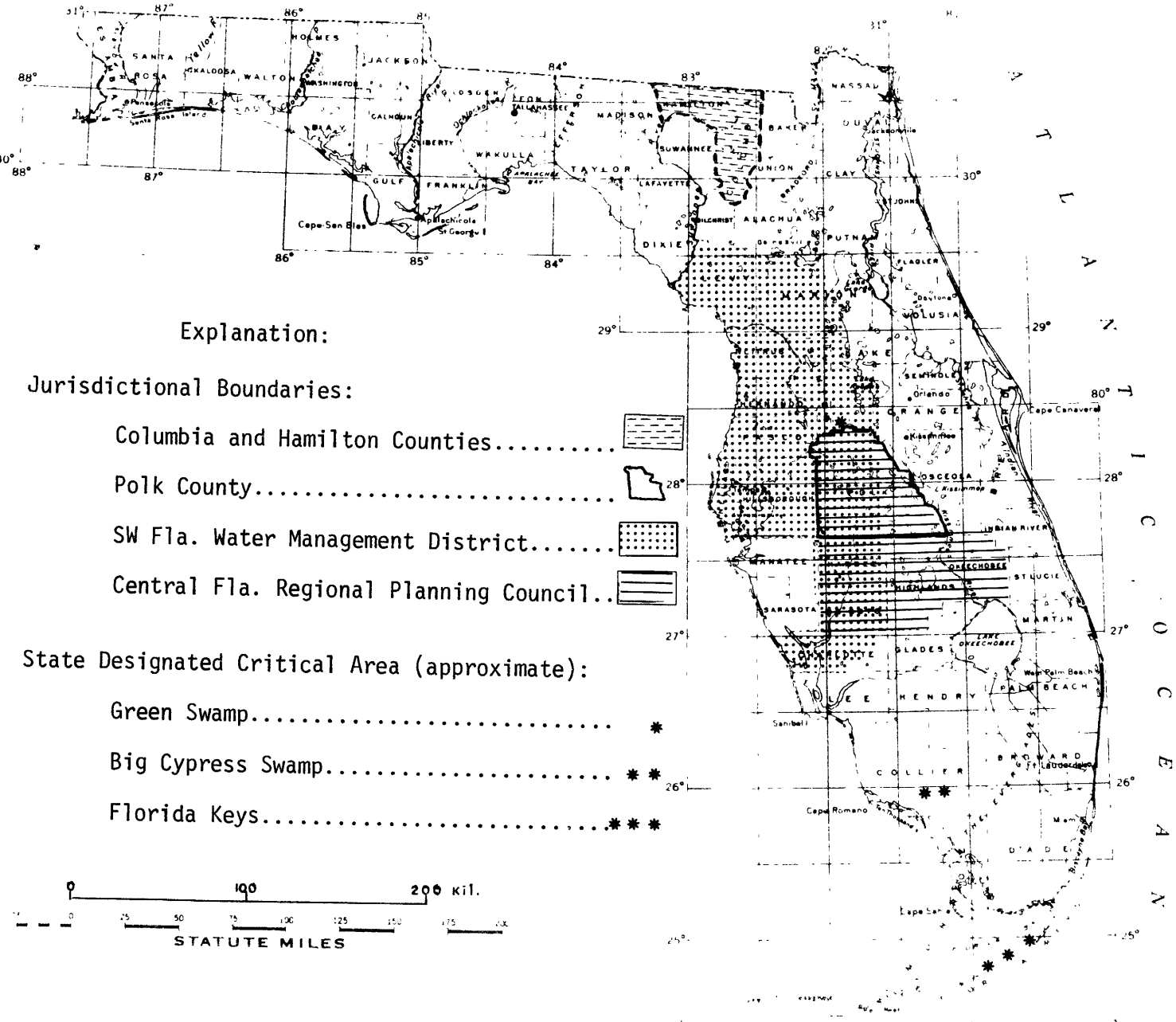

Figure 1.-- Guide to Place Names and Jurisdictional Boundaries in Florida.

The upper Suwannee River basin, the area surrounding a proposed large-scale phosphate mine was nominated as a critical area because of state concern over impact of the proposed operations on ground-water levels and river flow. In this case, the state (as authorized under 380.06 of Florida Statutes) dealt with the developer directly because the local unit of government had not adopted local land use controls. Walter Kolb of the Division of State Planning (oral communication, 1976) reports that an agreement was reached between the state and the company on lands that would be withheld from mining. The public purpose having been attained, the designation process was not pursued to the regulatory level. A public letter of intent from the mining company to the Division of State Planning (Appendix B) sets forth the land and resources measures the company will implement to protect the public interest. In Appendix B, note particularly the agreement to abstain from mining of the flood plain.

In statutory language (an excerpt of Sec. 380.06 Florida Statutes is attached hereto as Appendix C), the program to regulate development of regional impact (DRI) is broad, to wit:

> "Development of regional impact means any development which, because of its character, magnitude or location, would have a substantial effect on the... (general welfare)."

Rules and regulations promulgated under the 1972 Act, (Florida, Department of Administration, State Division of Planning, 1973), further specify development presumed to be of regional impact. The language referring to mining operations classifies mining as coming under the DRI program if, annually, more than 100 acres of land are to be stripped or mined and the proposed consumption[1/] of water would exceed 3 million gallons per day.

1/ "Consumption" refers to total water extracted, without regard to the amount lost into the atmosphere or product.

"Presumed" looms as a key word. Practically, it means that most proposed large mines will come under the DRI program. The mine operator will have to file an application for development approval from a local unit of government, thus initiating a sequence of hearings, and review and comment at local, regional, and state levels. The application will be reviewed in terms of impact on: the environment and natural resources of the region, the economy of the region, the public facilities of the region, the public transportation facilities of the region, housing of the region, and miscellaneous impacts such as effect on public plans. Responsibility is shared by various levels of government, with evaluation at the regional level, approval or denial at the local level, review and appeal at the state level, and implementation of the agreed upon form of development at the local and private level. Several phosphate mine applications have run, or are running, the DRI gauntlet. Bobby Barnes (oral communication, 1976) of the Florida Phosphate Council observes that the process, while costly and time consuming, brings out information useful to planning and has been marked by reasonable compromise--including the settling of differences between government and industry, short of resorting to an "appeals board"[1/] or judicial review.

1/ The appeals body is the Florida Land and Water Adjudicatory Commission. Persons having standing to bring appeals on DRI's are the landowner, the developer, the appropriate regional planning agency, and the Division of State Planning.

New legislation complements the Florida Environmental Land and Water Management Act by requiring municipalities and counties to prepare and adopt comprehensive plans to guide development. Land use, coastal zone protection, and resource conservation are required considerations in this planning. Intended for using fully, and strengthening the powers of local government, the new act is known as the Local Government Comprehensive Planning Act of 1975. If municipalities fail to name a land planning agency by July 1, 1976, the county shall become responsible for the development of the plan. But if the county should fail to act by July 1, 1979, the Division of State Planning shall prepare the comprehensive plans. If the state must act, the Administration Commission shall have the authority to adopt the comprehensive plan. The effect of the act on surface mining is yet to be demonstrated but, if the intent of the act is achieved, the effect will be profound, for the statutory intent is "... no public or private development shall be permitted except in conformity with comprehensive plans...prepared and adopted in conformity with this act."

Figure 2.-- Natural revegetation of waste rock piles from phosphate mining which occurred in Polk County, Florida before a state mined-area reclamation act was passed in 1971

The Florida Water Resources Act of 1972 (Chap. 72-299, Florida Statutes) establishes state and regional programs for the management of water resources and related land resources. Water planning provisions of the act are interwoven with land development provisions of the acts heretofore described, for purposes of conserving and developing water on a sub-state basis approximating hydrologic boundaries. The act mandates water use and land use regulations, including the issuing of permits for water use in mining operations. The State is divided into five water districts which function as public corporations, e.g., Southwest Florida Water Management District. A district performs hydrologic studies, maintains a water budget analysis, owns and operates water control facilities, issues permits for water use, and establishes minimum allowable rates of flow and water levels. Rules and regulations have been promulgated with respect to consumptive use of water, regulation of wells and management and storage of surface water.

An example of the functioning of a water management district with regard to mining is provided in a commentary by Roland E. Nichols of the SW Florida Water Management District (letter, July 9, 1976).

> "The Southwest Florida Water Management District not only approves or denies consumptive water-use permits, but may also modify the permit application to allow withdrawal of only that amount of water actually necessary for mining and benefication processes. The District may also require that a mining operation recharge water to the artesian aquifer in amounts equal to those pumped from the Floridan Aquifer and may require other conservation practices as a condition of a permit. The District also assists the R.P.C.'s (Regional Planning Councils) in reviewing the water-related aspects of a complex DRI. The District will make a recommendation to the R.P.C. as to whether a development permit should be approved or denied based on the developments' impact on local and regional water resources."

Under recent amendments to the Water Resources Act, the Florida Department of Environmental Regulation supervises water districts, generally, and formulates an integrated, coordinated plan for the use and development of the waters of Florida. The districts are helping develop the Florida State Water Plan.

Figure 3.-- This site in Polk County, Florida was mined for phosphate rock prior to present state and local requirements for reclamation. Natural revegetation and waterfowl use are evident.

Florida's mined-area reclamation program includes state requirements that can reasonably be construed as requiring land planning and reclamation by the developer, with recognition of local land use controls--where such controls exist. The Florida Severance Tax Law of 1971, the program established under Chapter 211, Part II, Florida Statutes, is mandatory only on lands for which severance taxes have been paid. In practical effect, this includes most phosphate lands but "misses" most sand, gravel, clay, and limerock operations.

REGIONAL PROGRAMS

Florida is divided into ten regional planning councils and five water management districts--generally along dissimilar boundaries. Within the regional council jurisdictions there are, here and there, areas of nonmembership due to the nonparticipation of a county or municipality: membership is voluntary . The Councils are advisory, providing technical assistance to local government and performing the studies necessary for development of regional goals, regional perspective--and perhaps, ultimately, regional comprehensive plans. In contrast, the water management districts are sub-state units of government regulating water use and having the authority to gather the information and take the courses of action necessary to conserve the public water supply within the districts. The councils and districts are both important to surface-mining operators in Florida.

The impact of the water management districts resides in their powers to issue or deny permits for water use. To illustrate, during 1974-76, the Southwest Florida Water Management District issued water use permits for four new phosphate mines involving some 90,000 acres of land area (Nichols, oral communication, 1976). Functions of water management district pertaining to mining were discussed previously under the heading Florida Water Resources Act.

Regional Planning Councils (called R.P.C.'s) are important as recommendatory bodies to local government. Nichols (letter, July 9, 1976) appraises the role of the R.P.C.'s;

> "Generally, the County Commissions follow the recommendations made by the R.P.C. (on Development of Regional Impact Statements), but in a few instances, the County Commissions have acted against the recommendation of the R.P.C. One such example is the Tampa Bay R.P.C.'s recommendation for denial of a development permit for the Phillips Petroleum Company's phosphate mine, and Manatee County's approval of the permit.

When such actions occur, the R.P.C. can appeal the County's decision to the State, but this rarely becomes a reality due to the great expense, time, and hard feelings involved. The State would generally not oppose a R.P.C.'s decision. The Counties, however, may oppose the R.P.C.'s recommendation because of the perceived economic benefits that the proposed development may bring to local interests."

LOCAL GOVERNMENT

Florida has 67 counties and several hundred municipalities. By statutory authority the local level of government can be powerful in influencing the use of land and resources. A sampling[1/] of local government programs, however, shows a wide spectrum of program content and suggests a broad range of successful implementation. A few counties have virtually no land use planning program; a few have adopted practically every type of land use control device; and most have some type of planning and regulation.

1/ Survey by E. Imhoff, Jan.-Mar., 1976.

The following discussion centers on Polk County, an important mining area and a county that illustrates most of Florida's major problems and opportunities.

The major land use activities impacting Polk County are phosphate mining, citrus agriculture, tourism, cattle raising, and urban development (J. Jeffords, written commiuncation, 1976). Information developed by Polk County Division of Development Coordination (1973) shows that Polk County produces annually a significant portion of the world's phosphate, and that Polk County is one of the top citrus producing counties in the Nation. Major land use for tourism occurs at Circus World and Cypress Gardens, but, the impact of tourism is rather broadly distributed across the county--centering somewhat on the 550 natural lakes. Residential and commerical developments are booming in response to in-migration, natural population increase, and tourism. Polk County (1973) has estimated that water withdrawals may now exceed annual water yields. Urban sprawl is displacing citrus growing and preempting possible future phosphate mining, according to Joachim (oral communication, 1976). Although phosphate mining now directly affects only 15 percent of the county area there are actual and potential conflicts between phosphate mining and other land uses, particularly residential, because of water use, noise, dust, aesthetics, and possible radioactive hazards associated with some mine spoils. Figures 2 thru 6 illustrate a range of opportunities and problems created by phosphate mining. Several programs have been created in Polk County to avoid or reduce conflicts.

Figure 4.-- Some of the formerly abandoned phosphate mine areas in Florida--as in this Polk County scene, are now being converted into attractive residential areas--often through planned unit development.

Polk County participates actively in the Central Florida Regional Planning Council and cooperates with the Southwest Florida Water Management District and other state and regional agencies. But the most powerful tools for reduction of conflict between mining and other uses are local plans and ordinances, particularly zoning, land development guidelines, a limerock mining ordinance and a development impact assessment process.

Zoning is presently an effective public regulatory device for influencing private land use decisions in Polk County. In the zoning ordinance, phosphate mining is classified as "a special planned unit development" to be permitted under the condition that a mine plan be submitted directly to the County Board of Commissioners. Reclamation standards are a required component of the mining plan. Mining activities covered include new mines, expansion of existing mines, and remining old sites. Since the ordinance became effective in 1970, 12 permits for surface mines have been granted by the Polk County Board.

Figure 5.-- About 15 percent of the land area of Polk County, Florida is affected by the mining of phosphate rock. This settling pond represents perhaps the major space and water-using element of the phosphate mining process.

Polk County land development guidelines represent the first phase of the county comprehensive plan. Although not mandating or prohibiting any particular action, the guidelines represent an official expression of policies intended to influence governmental programs. Of particular interest to surface mining is the encouragement of the adoption of a subdivision ordinance which could be used to minimize preemption of potentially valuable mineral deposits by urban development.

Polk County has adopted a special ordinance for the regulation of limerock mining, a quarrying or open pit operation having the potential of interfering with the important Floridan Aquifer. This special ordinance differs from the zoning ordinance applicable to phosphate mining by relying more on performance standards than on limits. An excerpt of the ordinance is attached as Appendix D.

Finally, Polk County has adopted a process of impact assessment as a condition of accepting any application for a land use control ruling on planned unit development (including mined lands) or any request for special exception or rezoning that would develop more than 50 acres of land (most mines will). The process places much responsibility for generation of data on the developer. Various local, regional, state and Federal agencies participate actively in the process, which is considered successful by the county, as indicated in the following statement from a report of the Polk County Division of Development Coordination (1974):

"The information gained has helped provide the decision-makers a better base for action. It has taken the traditional zone change, special exception, and planned unit development actions out of the realm of a simple decision of land use compatibility into the world of physical, social, and public service impacts. The Board of County Commisssioners are now able to determine if a project will adversely affect public water, public sewer, schools, fire protection, police protection, emergency medical services, health care, mosquito control, recreational facilities, and many others.

The developer also benefits from the impact statement requirement and subsequent review. The impact statement allows him to analyze and think out his request before making major investments. As part of the impact statement, he must consider soil and water limitations by either providing for them within his project, requesting action by the appropriate governing body, or withdrawing the request."

A detailed format has been perfected over the 4-year period in which some 80 assessments have been completed by Polk County.

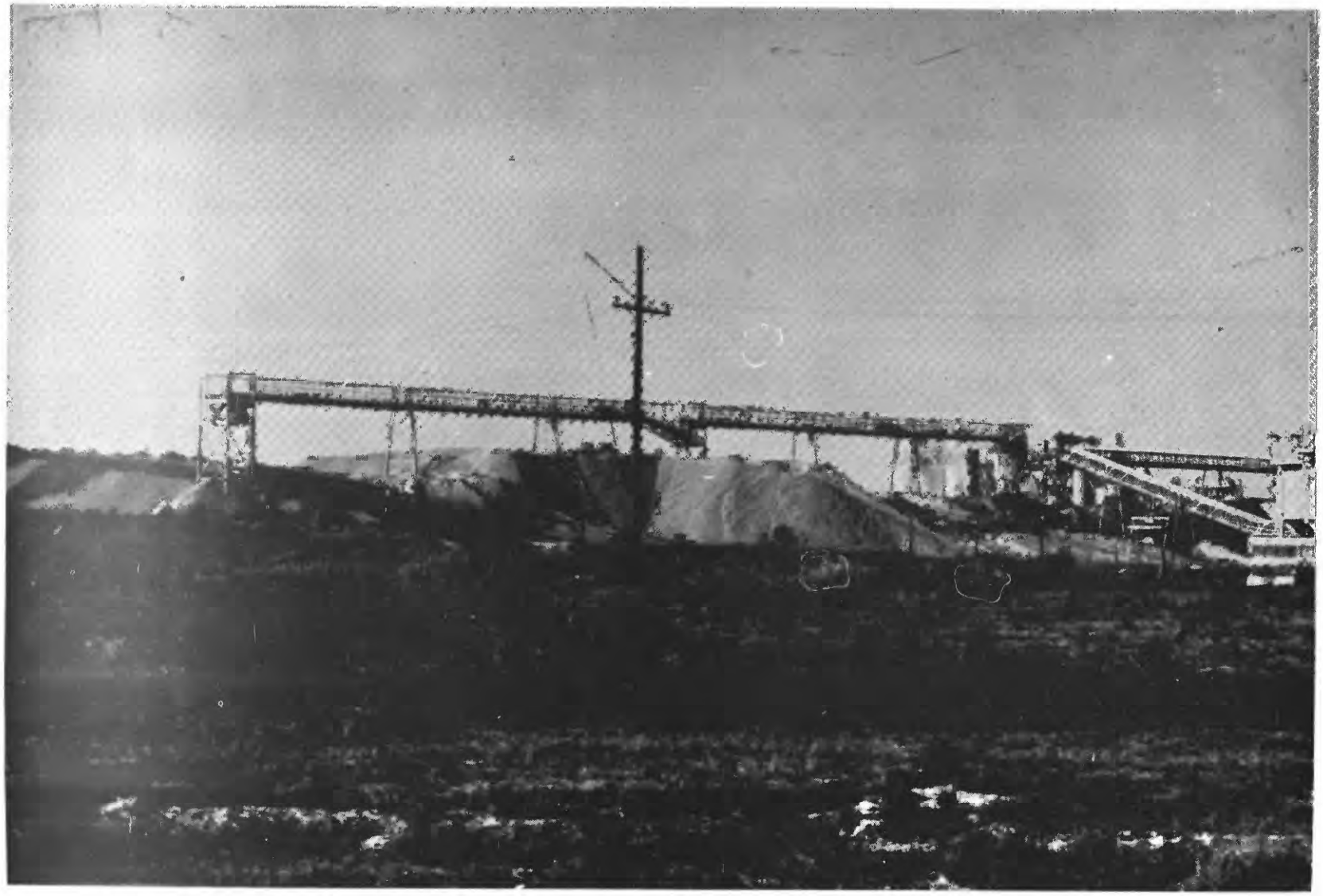

Figure 6.-- Besides mine pits and settling ponds, the mine mill is the chief visual expression of the phosphate mining industry in Florida. Several of these plants dot the landscape of Polk County, Florida and produce a significant share of the world's fertilizer supply.

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APPENDIX A
MINERALS POLICY STATEMENT
Excerpt from: Land Development Element
Florida State Comprehensive Plan, 1976, p. 42-47

Objectives

1. Achieve efficiency in the use of all mineral resources.

2. Develop reasonable options which will allow the future use of mineral resources.

3. Reclaim all mineral sites so as to enable their productive use after the resource is depleted.

Policies

1. Coordinate mining plans, operations and reclamation with land planning at all levels of government.

The extraction of minerals from the earth's surface is typically one of society's major undertakings in the securing of needed raw materials. All phases of the mining process--exploration, land acquisition, the mining operation itself, and reclamation--require huge expenditures of dollars and energy. Just as important is the careful coordination with other land development to minimize economic and environmental disruption and to assure the successful recovery of mineral resources. To this end, all levels of government must be actively involved in the coordination of mining with land planning.

2. Encourage the conservation and efficient use of nonrenewable mineral resources.

Unlike virtually all other natural resources, mineral deposits are finite and are being rapidly depleted. It is imperative that the state encourage those mining and refining processes which both conserve mineral resources and utilize those extracted to the fullest extent.

3. Encourage research and development in extraction technology.

Given favorable markets, the quantity of minerals mined from a given site is often limited by the contemporary mining technology rather than the size of the total deposit. Technological advances, such as reservoir pressurization and the application of tertiary recovery techniques in the oil industry, and the development of double-floatation processes in phosphate ore recovery, have resulted in several-fold increases in production over older methods. Research and development of dry rock processing could reduce the impact of mining and water resources.

4. Encourage reprocessing or "scavenger" operations.

If the demand for a given mineral resource remains high, many "mined out" sites as well as waste areas of former mines, can be profitably re-mined. So-called "soft-rock" phosphate mining in the old hard-rock phosphate districts, and phosphate "debris" mining are examples of re-mining which is presently underway.

5. Encourage the utilization of by-products generated during the mining and refining of the principle ore.

Most mineral extraction and refinement operations generate a number of by-products of varying economic worth. Some of those, such as the heavy-mineral silicates recovered in titanium oxide production and fluorine and uranium recovered in the production of phosphoric acid, are being marketed. Others, such as by-product gypsum arising from phosphate processing, await the development of techniques to convert them to useful materials, at a competitive price.

6. Encourage research into the uses of the state's lesser known minerals.

A considerable body of information has been developed regarding the utilization of the state's known valuable mineral resources, such as phosphate ore and oil. However, little is known about the extent, properties and potential uses of some other minerals, such as many of Florida's clays.

7. Encourage geological exploration of the state and the compilation of all existing minerals data into a "mineral atlas".

The high production mineral deposits in Florida, such as the heavy mineral deposits in the Trail Ridge area or the Central Florida land-pebble phosphate district have been prospected and mapped in considerable detail. However, in many cases, the location and extent of secondary deposits of various minerals are not well known. Moreover, the existing, state-wide minerals data are presently not available in a comprehensive and usable form. The compilation of a "minerals atlas" would be an important document in the land planning effort.

8. Discourage land development on sites containing high value mineral resources when the development will prevent future resource extraction.

Mineral deposits underlying certain types of structurally and energy intensive land use are, in most cases, lost deposits. Valuable phosphate rock deposits underlie many of the roads and urban areas in the Central Florida land-pebble phosphate district; large portions of the Miami Oolite Limestone--the only significant construction material in southeast Florida--are unavailable due to rapid urban expansion.

9. Encourage the protection of future mineral extraction sites through sequential land use and time-phased land use regulation.

The extraction of minerals, in many instances, has been hampered or prevented altogether by zoning and other land use restrictions. Sequential land use or "sequential zoning" would keep potential mine sites in a low-energy land use until mining was feasible and would allow extraction to occur before the land is committed to further structurally intensive uses.

10. Require mandatory reclamation of all mining sites.

Present statutory requirements concerning mandatory reclamation exempt many mining operations. These exemptions should be excluded so that the costs of reclamation are shared by all operators. Reclamation plans and the uses of this land should be based on local, regional, and state participation and their subsequent needs determination. There are many possible options available for the use of mined-out land, such as commerical and industrial uses, carefully designed residential development, wetlands and recreational uses.

11. Require that mines from which the state purchases minerals practice sound extraction and reclamation techniques.

Various state activities, particularly road construction, require the purchasing of substantial quantities of minerals. The state should require that operators supplying these minerals practice extraction and land reclamation techniques which are sound from both a conservation and an environmental point of view.

12. Encourage innovations in land reclamation technology.

Land reclamation has taken great strides in recent years in the quantity and the usability of reclaimed lands, lessening of associated deleterious environmental effects, and expeditious reclamation. Most of these innovations have come from private industry. The state should strongly encourage these efforts and lend technical support wherever possible.

13. Identify and evaluate all hazards associated with reclaimed lands.

Recent concerns over potential radiation hazards on reclaimed phosphate lands emphasize the need to identify and evaluate possible hazards associated with reclaimed lands. Such an evaluation process is not only necessary for reasons of safety, but feedback from it may be important in instituting changes in reclamation techniques to eliminate those hazards.

14. Carefully plan and coordinate mining and processing activities with available water supplies to insure protection and the most beneficial uses of water resources.

Many mining activities, particularly phosphate mining and processing, are prodigious users of water, and without careful planning can lead to water supply problems. Intensive mining activity in Polk County, for example, in combination with other heavy uses such as citrus irrigation and processing, has resulted in serious aquifer drawdown. It is, therefore, critical that the location and timing of new mine openings, the rate of water use in existing operation and other such factors be carefully coordinated with Water Management Districts to assure adequate supplies for other beneficial purposes.

APPENDIX B

LETTER OF INTENT

February 25, 1974

Mr. Earl M. Starnes, FAIA
Director
Division of State Planning
660 Appalachee Parkway
Tallahassee, Florida 32301

Dear Mr. Starnes:

This Letter of Intent will serve to confirm our several conferences with you, Mr. Rhodes, Mr. Hyde and your attorney, Mr. Lesinger.

On December 14, 1973, Occidental Chemical Company filed with you, as required by law, a Notice of Intent to undertake a Development of Regional Impact in Hamilton County, Florida, an unregulated jurisdiction, and on December 20, 1973, a similar Notice of Intent with respect to such a development in Columbia County, Florida.

As expressed in our several conferences, Occidental Chemical Company desires to cooperate fully with the Division of State Planning and the Boards of County Commissioners of Hamilton and Columbia Counties. To this end we propose to exclude the flood plain area of approximately 10,000 acres.

U.S.G.S. Flood Prone quadrangle maps, Attachment A, (Fargo SW, Benton, White Springs E., White Springs W.) show the area on each side of the main stem of the Suwannee River and that area near the affected tributaries and springs which is being withdrawn in the interest of the State. Accordingly, please substitute Attachment B for the location of Project, Item 9, Hamilton County Notice of Intent, and for the location of Project, Item 9, Columbia County Notice of Intent.

Occidental Chemical Company shares your concern in maintaining the present high quality levels of the waters of Louisa Springs, Bell Springs, Telford Springs, as well as any other third magnitude or larger spring within said area, and agrees that no minerals will be removed from, or industrial wastes deposited upon, land within a 500 foot radius of any such spring, or Falling Creek Sink or any similar sink, whether such areas are shown as excluded on the attached maps or not, or allow runoff from disturbed land to enter springs or sinks.

Occidental likewise shares your concern for Deep Creek, Roaring Creek, Robinson Creek, Hunter Creek, Four Mile Branch and Falling Creek. No minerals will be removed from, or industrial wastes deposited upon, any land within the flood plains of any of said creeks at least one-half mile up the creek run from the normal confluence of the creek with the main stem of the Suwannee River.

In preparing the attached maps which reduce the over-all areas under consideration, we have been guided by the "100 year flood plain" of the Suwannee River as pictured on the U.S.G.S. Flood Prone quadrangle maps, and agree with you that such constitutes better protection for the River than the heretofore referred to buffer zone. Note, however, that where the flood plain is coincident with the river bank, we have still provided a buffer of not less than 500 feet outside the flood prone area.

We would like to again thank you for the splendid cooperation we have received from members of your staff in evaluating the probable impact and merits of our proposal.

We trust that this letter and the enclosures are in accordance with the understanding reached with your office February 18, 1974, and will satisfy the requirements of your office and of the Boards of County Commissioners of Hamilton and Columbia Counties.

Sincerely,

OCCIDENTAL CHEMICAL COMPANY

W. W. Atwood
Technical Services Manager

WWA/PLH

Enclosures - Attachment A
and B in triplicate

cc: Mr. M. W. Chesson, General Manager and Authorized Agent, Suwannee River Phosphate Division

APPENDIX C

Florida Statutory Requirements for Information to be submitted with a Statement on Development of Regional Impact, (DRI), Mining

a. For the proposed development, indicate:

   (1) Type of mining operation

   (2) Yearly schedule of operation

   (3) Estimated area in acres of land surface mined

   (4) Estimated area in acres of surface mined land reclaimed

   (5) Proximity of the mining operation to urban areas

   (6) What chemical processes, if any, are involved in the mining operation?

b. Describe the condition of the land prior to any mining including:

   (1) The uses existing at the time of the application and if the land has a history of previous mining the uses which preceded any mining.

   (2) The capability of the site prior to any mining to support a variety of uses giving consideration to soil foundation characteristics, topography, and vegetative cover.

c. What will be the amount of removal or disturbance of solid minerals or overburden?

d. What considerations have been given to insuring the maximum effective recovery of the mineral resource?

e. What are the plans for recycling water and waste water renovation?

f. Will the operation require or are there plans to interest or transfer water from one watershed to another?

g. How many cubic yards of material will be removed by dredging and what will be the disposition of the dredged soil?

h. Reclamation

(1) What are the plans for reclamation and rehabilitation of the area after completion of each phase of operation? Detail the use which is proposed to be made of the land following reclamation, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses.

(2) Give a time schedule for the completion of all stages of reclamation.

i. Is the developer leasing the land for the mining operation? If so, give every legal owner of the property (surface and mineral) to be mined.

j. What provisions, if any, have been considered for a program for periodic inspection and maintenance of retaining dikes?

Excerpt of Section 380.06 (6) Florida Statutes on Development of Regional Impact.

APPENDIX D

Excerpt from Polk County Limerock Ordinance

SECTION V GENERAL MINIMUM STANDARDS: There will be no limerock Mining permit issued unless such mining meets the following:

(A) The mining operation shall provide for the release of surface water runoff, collected or uncollected, in a manner approximating the natural surface water flow regime of the area.

(B) Treatment of storm-water runoff shall be provided by settling ponds, soil fixatives, control of non-point chemical pollutants, or the performance equivalent structures or systems when such runoff may contaminate surface of ground water resources.

(C) Soils exposed during site alteration shall be stabilized and runoff and siltation retained on the site.

(D) Top soil shall be replaced and any altered land not under water shall be revegetated. The site shall be substantially reclaimed within one (1) year following completion of mining. Revegetation shall be accomplished with pre-existing species or other suitable species except that undesirable exotic species shall not be replanted or propagated.

(E) Man-made lakes, ponds, or other containment works shall be constructed with a maximum slope of 30 degrees to a depth of six feet of water. Whenever mineral extraction is completed, revegetation and disposal of soils or tailings shall be completed, before abandonment. Existing quarry lakes are exempt from this provision, except that whenever any person carries out any activity or applies for a development permit, as defined herein, to develop any existing quarry lake area, these regulations shall apply.

(F) The mining operation shall not detrimentally change the quantity of ground and surface water available for recharge to the Florida Aquifer. The mining operation shall not allow storm water created by mining operation or activities pertaining thereto to discharge or runoff into an existing sinkhole.

(G) The mining operation must not impair the water retention and filtering capacity of wetlands soils or vegetation.

(H) New drainage facilities shall release water in a manner approximating the natural local surface flow regime, through a spreader pond or performance equivalent structure or system, either on site or to a natural retention or natural filtration and flow area. New drainage facilities shall also maintain a ground water level sufficient to protect wetland vegetation through the use of weirs or performance equivalent structures or systems. Said facilities shall not retain, divert, or otherwise block or channel the naturally occuring flows in a strand or a slough.

(I) Site alteration shall be permitted only when such alteration will not cause siltation of wetlands or reduce the natural retention and filtering capabilities of wetlands.

(J) Ground water withdrawal shall not exceed the safe yield per acre as determined by the Southwest Florida Water Management District.

(K) No activity shall cause or create an impact vibration at any point on any perimeter of the mining site with a displacement in excess of the permitted impact vibration displacement for the frequencies as set forth in the following table, if there are any structures within one mile.

MAXIMUM PERMITTED IMPACT VIBRATION DISPLACEMENT
(in inches)

Frequency (cycles per second)	MI.
10 and below	.0016
10-20	.0010
20-30	.0006
30-40	.0004
40-50	.0002
50-60	.0002
60 and over	.0002

(L) No mining activity shall cause or create a noise level at any point beyond the boundary line of mining site property which exceeds the maximum amounts as set forth in the following table, if there are any structures within one mile.

MAXIMUM PERMITTED SOUND PRESSURE LEVEL
(in decibels)

Octave band (cycles per second)	
20 to 75	79
75 to 150	74
150 to 300	66
300 to 600	59
600 to 1,200	53
1,200 to 2,400	47
2,400 to 4,800	41
above 4,800	39
OR	
a Weight Sound Pressure	50

(M) No air contaminant shall go beyond the perimeter of the mining site at any point.

(N) No mining shall occur within one hundred (100) feet of the perimeter of the mining site.

(O) The entire mining site shall be fenced to minimum height of four (4) feet to prevent accidental intrusion.

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